

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 DESIGNED BY: K. AKWABI
 CHECKED BY: R. DURRENBARGER
 SUPERVISOR: RANDAL DURRENBARGER
 JCS: 10/14/11
 REVISIONS: 2-27-12

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

EXISTING SYSTEM No. 28-080-04551 (PG&E)
 EXISTING TYPE H SERVICE (120/240 V)

RS18 EXISTING TYPE III-AF SERVICE EQUIPEMENT ENCLOSURE No. 04551
 CTID No. 0428080R004551

PROVIDE EQUIPMENT ITEMS ① THROUGH ⑭, ⑰, ⑲, ⑳, TWO ㉔, ㉖, ㉗.

EXISTING LOAD:
 4-310 W HPS LUMINAIRES (UNMETERED)
 1-175 W MERCURY SIGN LIGHTING FIXTURES (UNMETERED)
 4-200 W HPS LUMINAIRES (UNMETERED)
 524 W FLOURESCENT SIGN LIGHTING (UNMETERED)
 1000 W CCTV AND TMS (METERED)
 1000 W TMS (METERED)
 2-100 TDC (METERED)
 200 W HAR (METERED)

MODIFIED LOAD:
 4-310 W HPS LUMINAIRES (METERED)
 1-175 W MERCURY SIGN LIGHTING FIXTURES (METERED)
 4-200 W HPS LUMINAIRES (METERED)
 524 W FLOURESCENT SIGN LIGHTING (METERED)
 1300 W TRAFFIC MONITORING STATION WITH CCTV (METERED)
 2-100 TDC (METERED)
 200 W HAR (METERED)
 1000 W RAMP METERING (METERED)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq,CC	80	3.8/8.0, 0.0/13.5	202	290

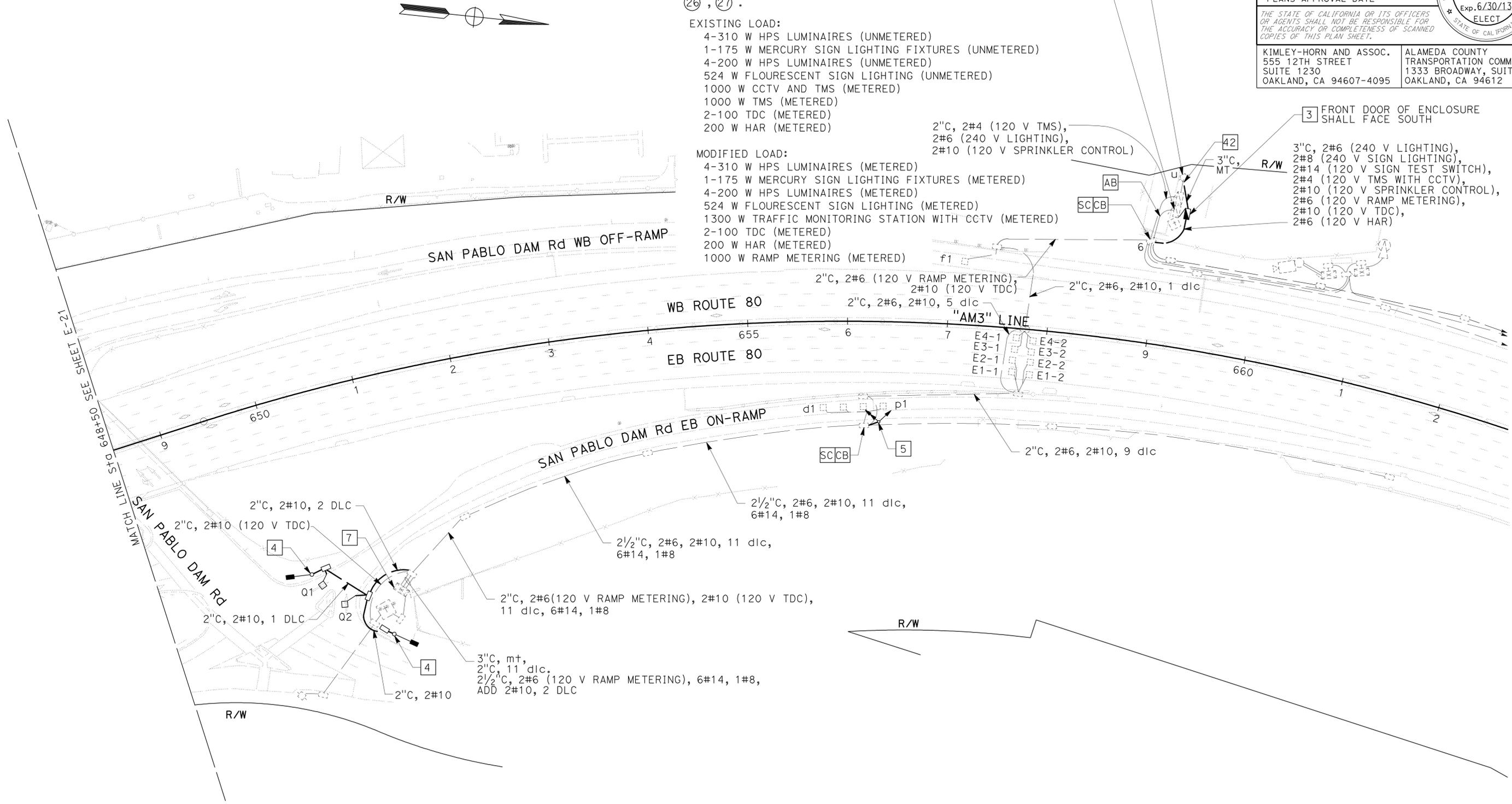
REGISTERED ELECTRICAL ENGINEER DATE 10/14/11
 DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT
 STATE OF CALIFORNIA

2-27-12
 PLANS APPROVAL DATE

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KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



**MODIFY RAMP METERING SYSTEM
 LOCATION 13**

E-22

APPROVED FOR ELECTRICAL WORK ONLY.

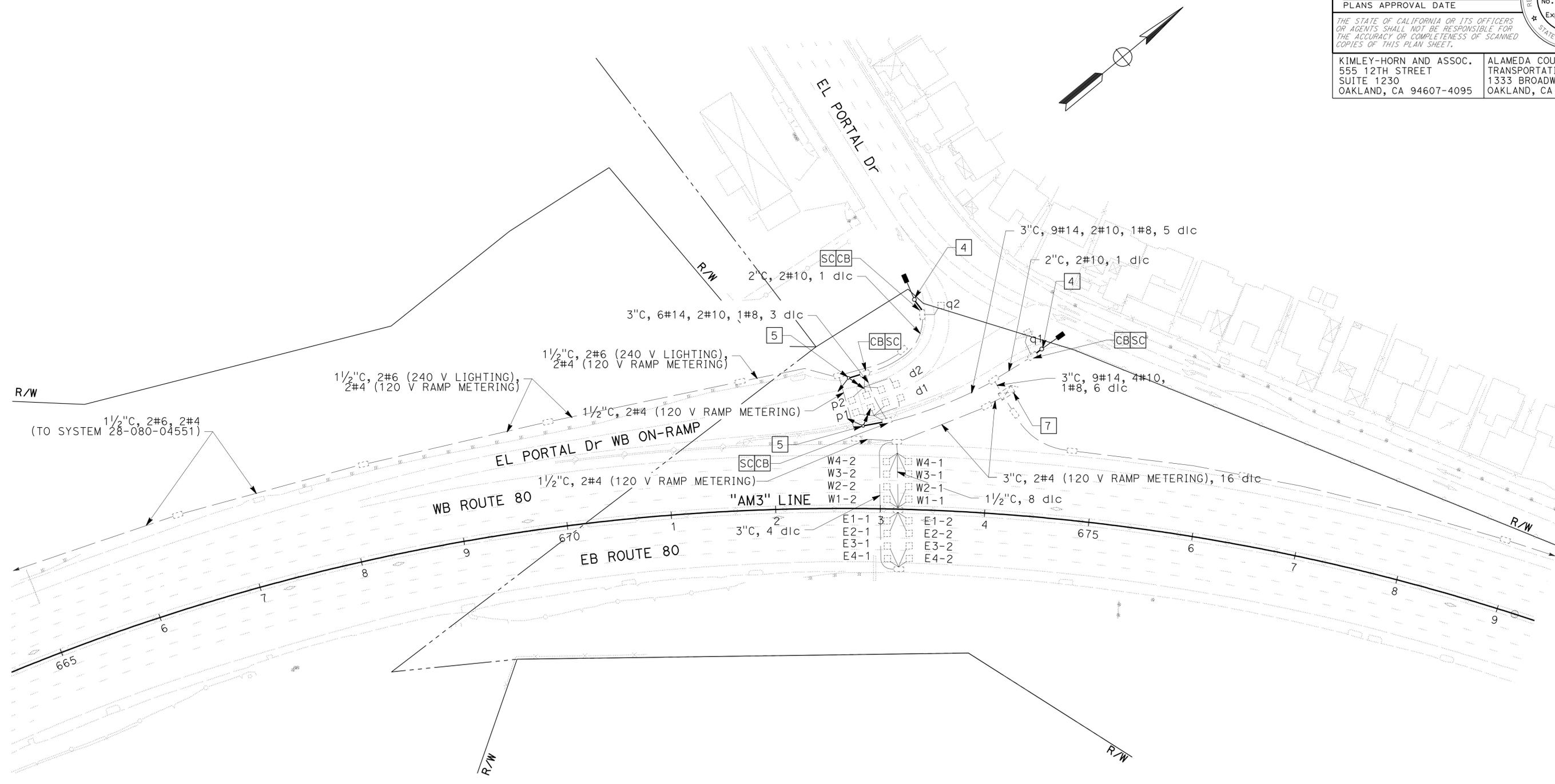
FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	203	290
			10/14/11		
REGISTERED ELECTRICAL ENGINEER			DATE		
2-27-12			PLANS APPROVAL DATE		
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KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 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	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	JCS	DATE
	RANDAL DURRENBARGER	CHECKED BY	R. DOLE	K. AKWABI	10/14/11



MODIFY RAMP METERING SYSTEM LOCATION 14

SCALE: 1" = 50'

E-23

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FOR NOTES, SYMBOLS AND ABBREVIATIONS SEE SHEET E-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	204	290

10/14/11
 REGISTERED ELECTRICAL ENGINEER DATE
 2-27-12
 PLANS APPROVAL DATE

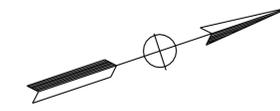
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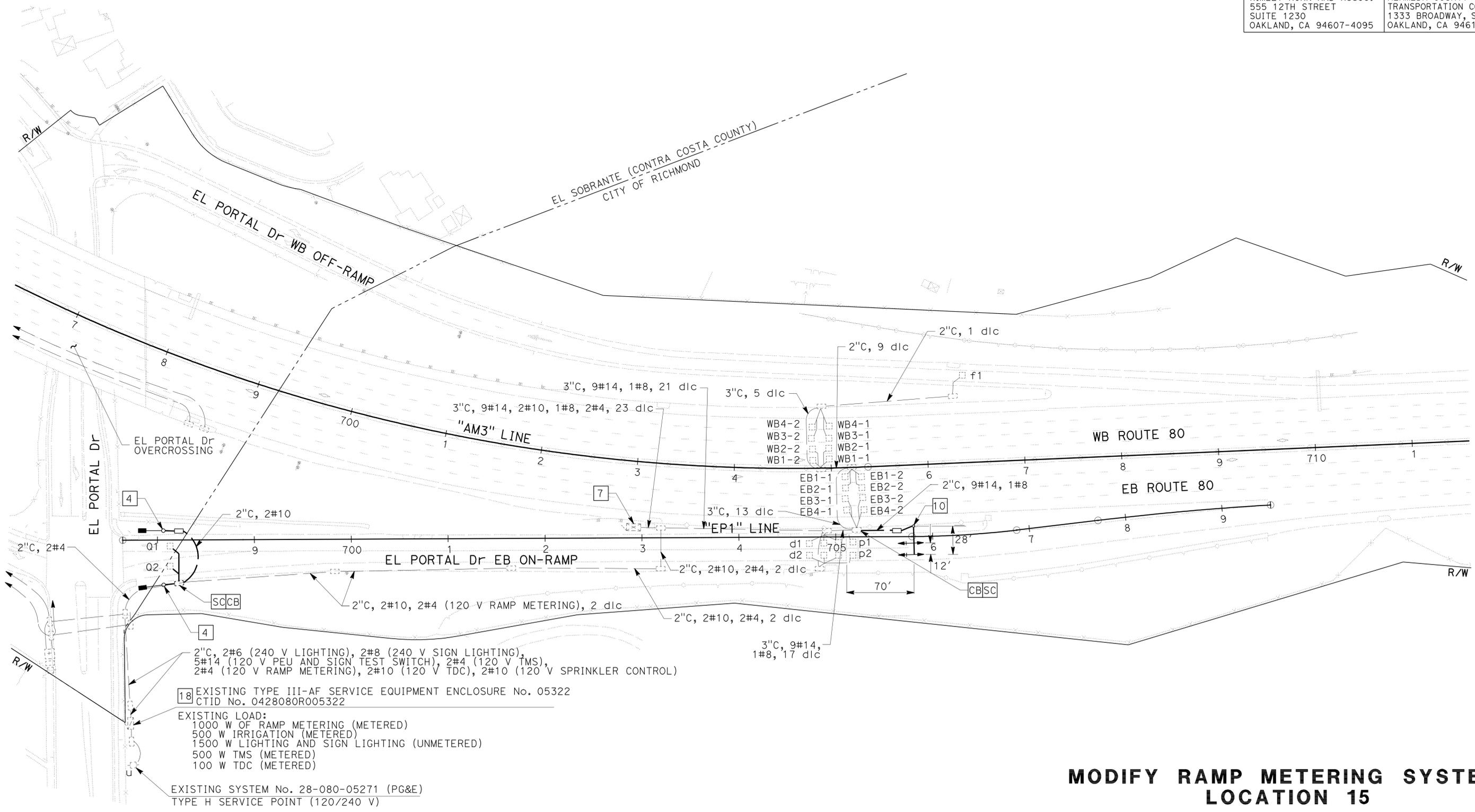
ALAMEDA COUNTY
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 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

NOTE:

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	REVISOR	DATE
EL CALTRANS	RANDAL DURRENBARGER	R. DOLE	10/14/11
	CHECKED BY	REVISOR	DATE
	K. AKWABI	R. DOLE	10/14/11



- 2" C, 2#6 (240 V LIGHTING), 2#8 (240 V SIGN LIGHTING), 5#14 (120 V PEU AND SIGN TEST SWITCH), 2#4 (120 V TMS), 2#4 (120 V RAMP METERING), 2#10 (120 V TDC), 2#10 (120 V SPRINKLER CONTROL)
- 18 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 05322 CTID No. 0428080R005322
- EXISTING LOAD:
 1000 W OF RAMP METERING (METERED)
 500 W IRRIGATION (METERED)
 1500 W LIGHTING AND SIGN LIGHTING (UNMETERED)
 500 W TMS (METERED)
 100 W TDC (METERED)
- EXISTING SYSTEM No. 28-080-05271 (PG&E)
 TYPE H SERVICE POINT (120/240 V)

MODIFY RAMP METERING SYSTEM LOCATION 15

SCALE: 1" = 50' **E-24**

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FOR NOTES, SYMBOLS AND ABBREVIATIONS SEE SHEET E-1

LAST REVISION DATE PLOTTED => 02-MAR-2012 08-22-11 TIME PLOTTED => 15:02

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	205	290

10/14/11
REGISTERED ELECTRICAL ENGINEER DATE

2-27-12
PLANS APPROVAL DATE

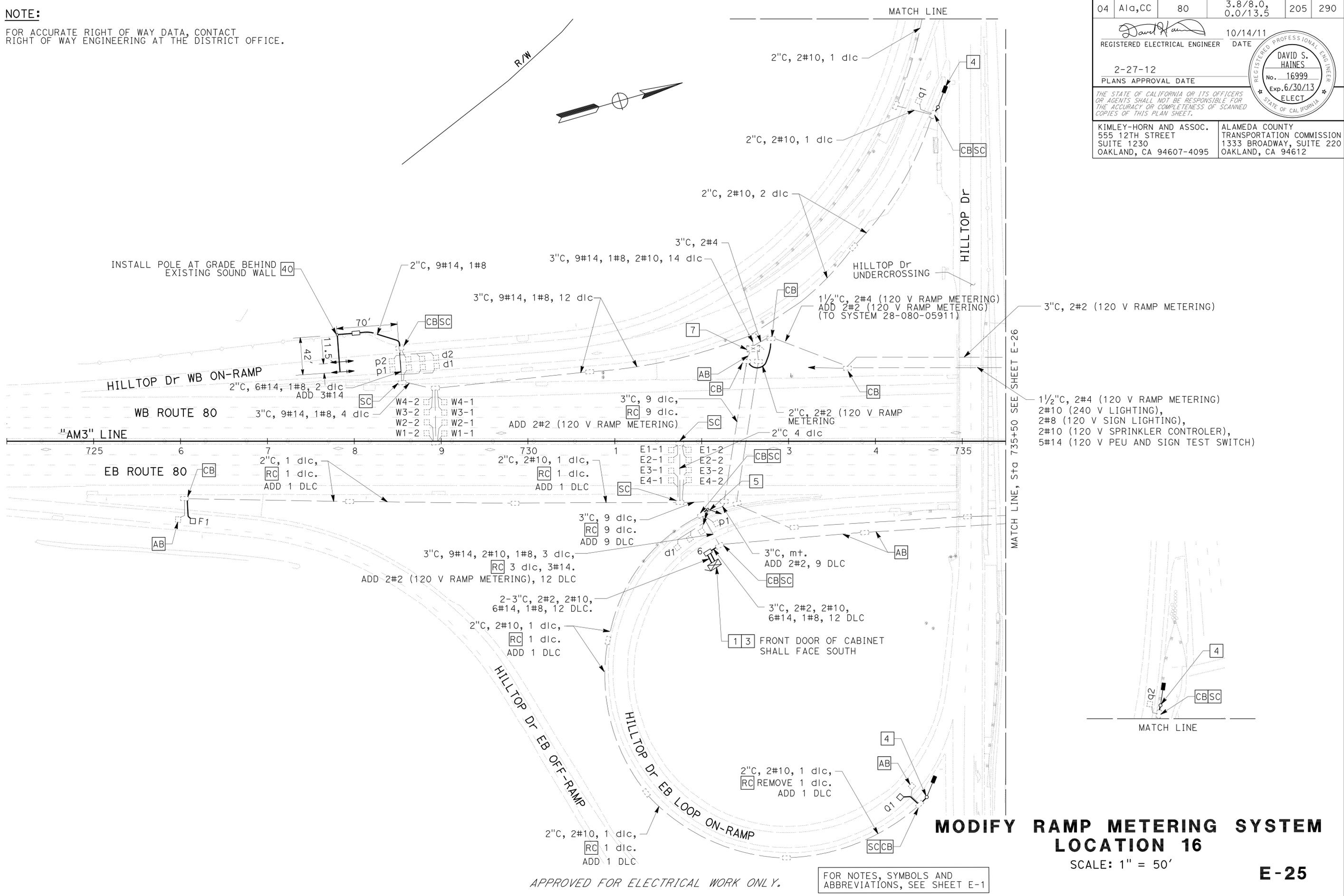
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1333 BROADWAY, SUITE 220
OAKLAND, CA 94612

DAVID S. HAINES
No. 16999
Exp. 6/30/13
ELECT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	RANDAL DURRENBARGER	R. DOLE	10/14/11
	CHECKED BY	REVISOR	DATE
	K. AKWABI	JCS	10/14/11



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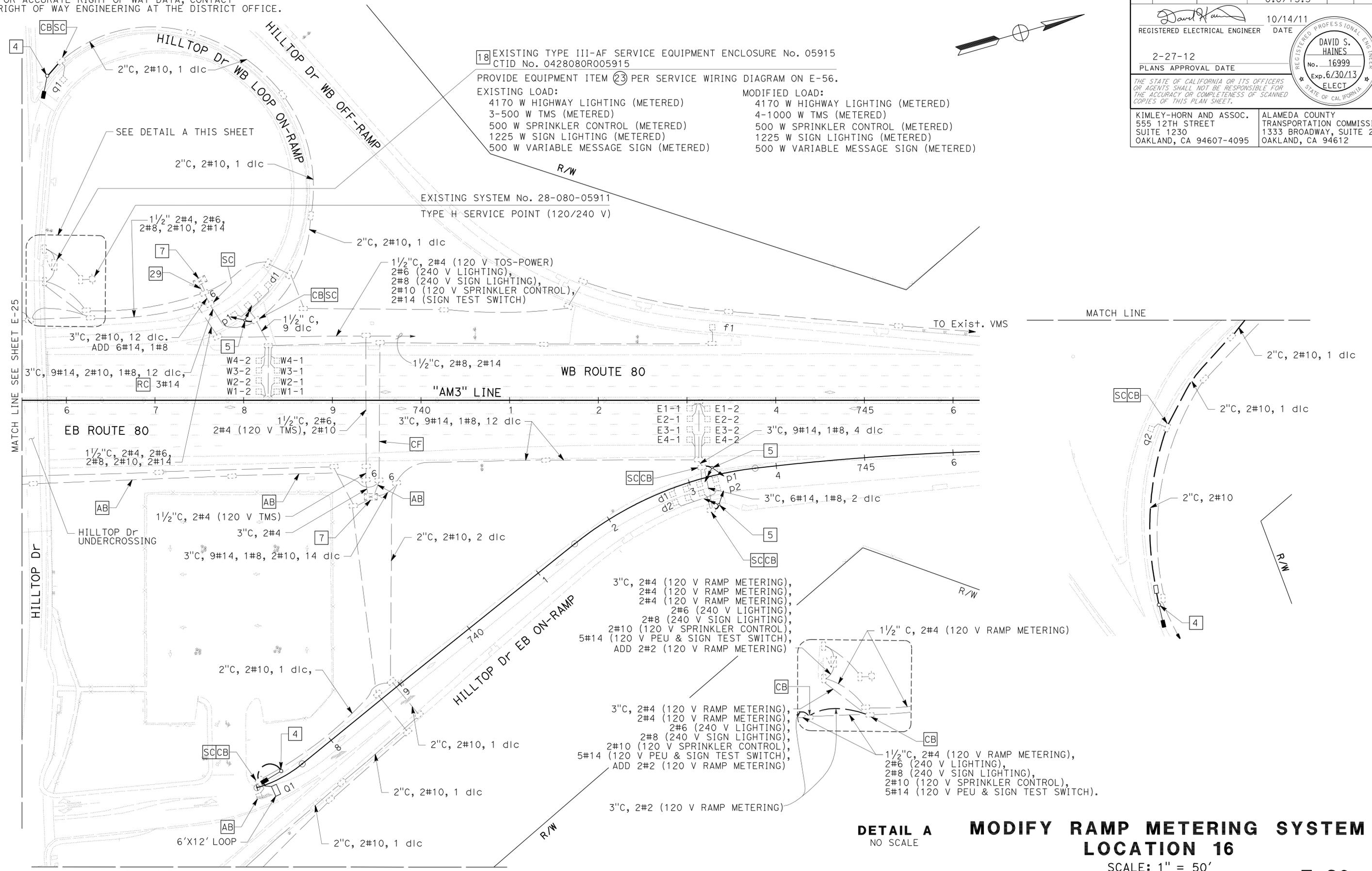
FOR NOTES, SYMBOLS AND
ABBREVIATIONS, SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: RANDAL DURREBERGER
 SUPERVISOR: R. DOLE
 DESIGNED BY: K. AKWABI
 CHECKED BY: JCS
 DATE: 10/14/11

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	206	290

REGISTERED ELECTRICAL ENGINEER DATE 10/14/11
 PLANS APPROVAL DATE 2-27-12
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 KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095
 ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612



18 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 05915
 CTID No. 0428080R005915
 PROVIDE EQUIPMENT ITEM 23 PER SERVICE WIRING DIAGRAM ON E-56.
 EXISTING LOAD:
 4170 W HIGHWAY LIGHTING (METERED)
 3-500 W TMS (METERED)
 500 W SPRINKLER CONTROL (METERED)
 1225 W SIGN LIGHTING (METERED)
 500 W VARIABLE MESSAGE SIGN (METERED)
 MODIFIED LOAD:
 4170 W HIGHWAY LIGHTING (METERED)
 4-1000 W TMS (METERED)
 500 W SPRINKLER CONTROL (METERED)
 1225 W SIGN LIGHTING (METERED)
 500 W VARIABLE MESSAGE SIGN (METERED)

1 1/2" C, 2#4 (120 V TOS-POWER)
 2#6 (240 V LIGHTING),
 2#8 (240 V SIGN LIGHTING),
 2#10 (120 V SPRINKLER CONTROL),
 2#14 (SIGN TEST SWITCH)

3" C, 2#4 (120 V RAMP METERING),
 2#4 (120 V RAMP METERING),
 2#4 (120 V RAMP METERING),
 2#6 (240 V LIGHTING),
 2#8 (240 V SIGN LIGHTING),
 2#10 (120 V SPRINKLER CONTROL),
 5#14 (120 V PEU & SIGN TEST SWITCH),
 ADD 2#2 (120 V RAMP METERING)

3" C, 2#4 (120 V RAMP METERING),
 2#4 (120 V RAMP METERING),
 2#6 (240 V LIGHTING),
 2#8 (240 V SIGN LIGHTING),
 2#10 (120 V SPRINKLER CONTROL),
 (120 V PEU & SIGN TEST SWITCH),
 ADD 2#2 (120 V RAMP METERING)

1 1/2" C, 2#4 (120 V RAMP METERING),
 2#6 (240 V LIGHTING),
 2#8 (240 V SIGN LIGHTING),
 2#10 (120 V SPRINKLER CONTROL),
 5#14 (120 V PEU & SIGN TEST SWITCH).

DETAIL A MODIFY RAMP METERING SYSTEM LOCATION 16
 NO SCALE

SCALE: 1" = 50'

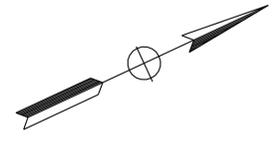
E-26

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FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 CHECKED BY: K. AKWABI
 DESIGNED BY: R. DOLE
 SUPERVISOR: RANDAL DURRENBARGER

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	207	290

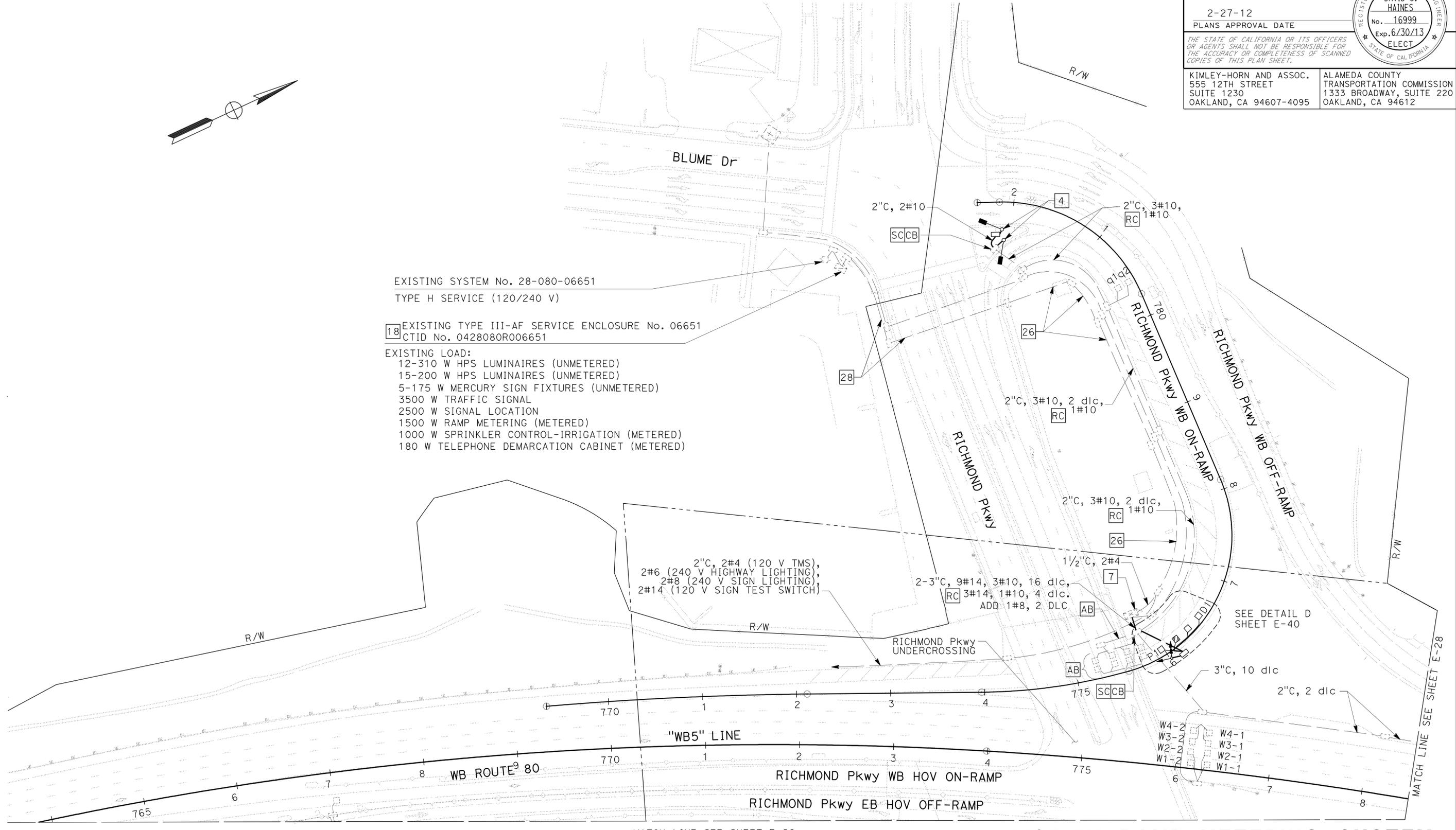
REGISTERED ELECTRICAL ENGINEER: *David S. Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT

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ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
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FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

**MODIFY RAMP METERING SYSTEM
 LOCATION 17**
 SCALE: 1" = 50'
E-27

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	208	290

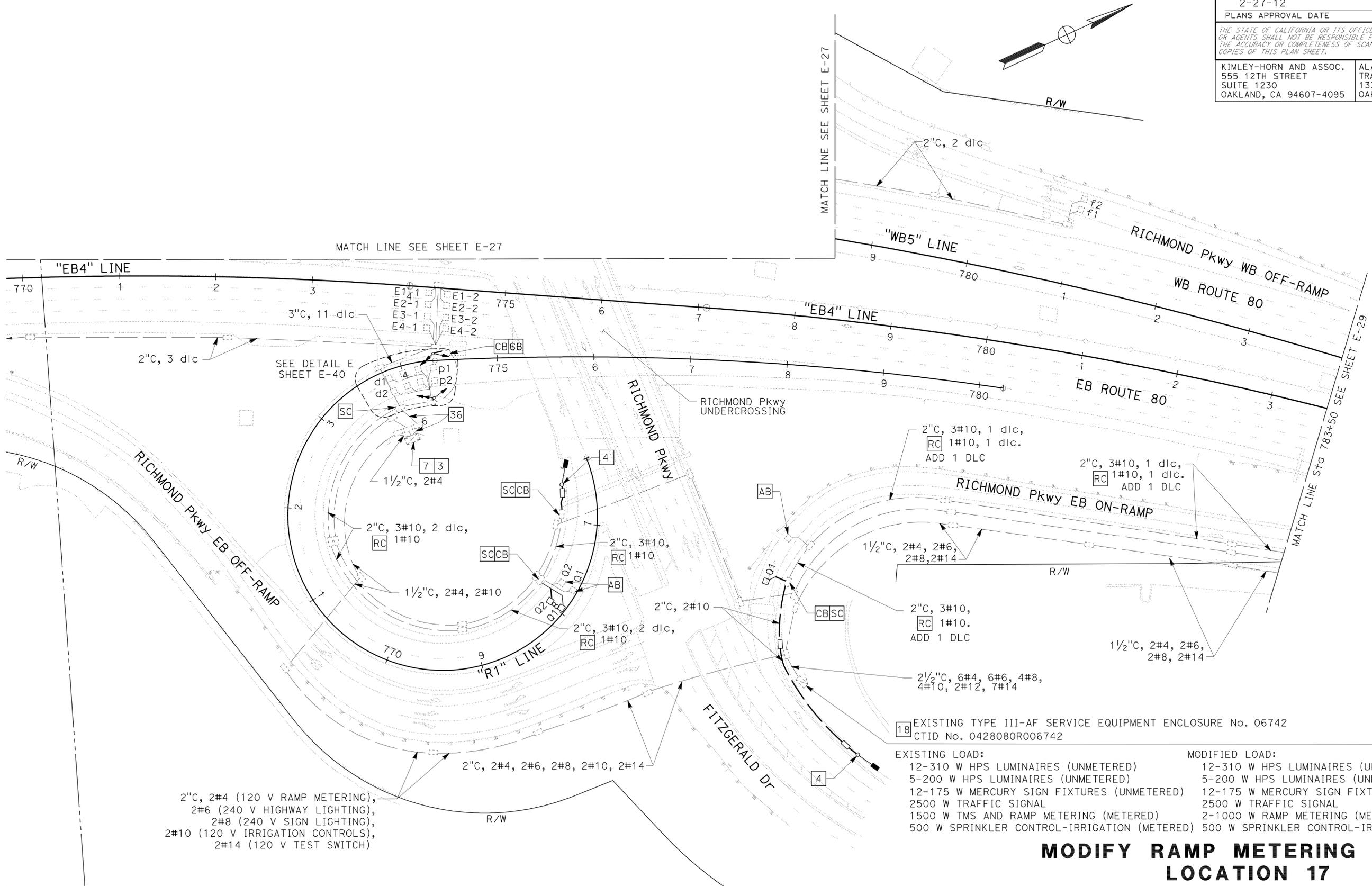
10/14/11
 REGISTERED ELECTRICAL ENGINEER DATE
 2-27-12
 PLANS APPROVAL DATE

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 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
Et Caltrans	RANDAL DURRENBERGER	K. AKWABI	JCS	10/14/11



2" C, 2#4 (120 V RAMP METERING),
 2#6 (240 V HIGHWAY LIGHTING),
 2#8 (240 V SIGN LIGHTING),
 2#10 (120 V IRRIGATION CONTROLS),
 2#14 (120 V TEST SWITCH)

18 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 06742
 CTID No. 0428080R006742

EXISTING LOAD:	MODIFIED LOAD:
12-310 W HPS LUMINAIRES (UNMETERED)	12-310 W HPS LUMINAIRES (UNMETERED)
5-200 W HPS LUMINAIRES (UNMETERED)	5-200 W HPS LUMINAIRES (UNMETERED)
12-175 W MERCURY SIGN FIXTURES (UNMETERED)	12-175 W MERCURY SIGN FIXTURES (UNMETERED)
2500 W TRAFFIC SIGNAL	2500 W TRAFFIC SIGNAL
1500 W TMS AND RAMP METERING (METERED)	2-1000 W RAMP METERING (METERED)
500 W SPRINKLER CONTROL-IRRIGATION (METERED)	500 W SPRINKLER CONTROL-IRRIGATION (METERED)

MODIFY RAMP METERING SYSTEM LOCATION 17

SCALE: 1" = 50'

E-28

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FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: RANDAL DURRENBERGER
 SUPERVISOR: RANDAL DURRENBERGER
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI
 REVISIONS: JCS 10/14/11

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	209	290

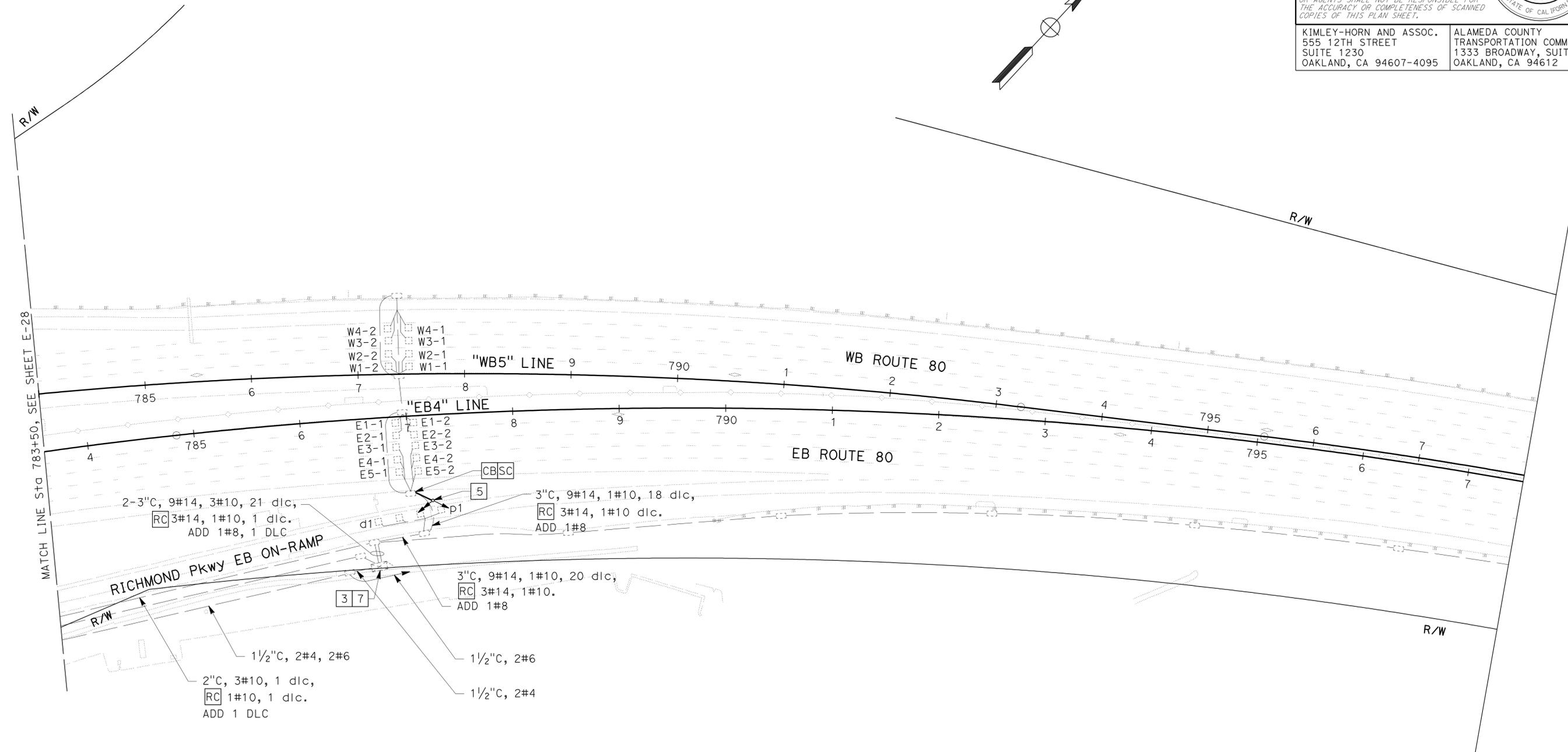
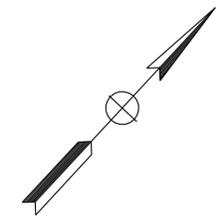
REGISTERED ELECTRICAL ENGINEER: *David S. Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

REGISTERED PROFESSIONAL ENGINEER
 DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT
 STATE OF CALIFORNIA

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ALAMEDA COUNTY
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**MODIFY RAMP METERING SYSTEM
 LOCATION 17**

SCALE: 1" = 50'

E-29

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FOR NOTES, SYMBOLS AND ABBREVIATIONS SEE SHEET E-1

LAST REVISION: 08-22-11 DATE PLOTTED => 02-MAR-2012 TIME PLOTTED => 15:02

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 CONSULTANT: K. AKWABI
 CONSULTANT: R. DURRENBARGER
 JCS: 10/14/11
 REVISIONS: 2-27-12

NOTE:
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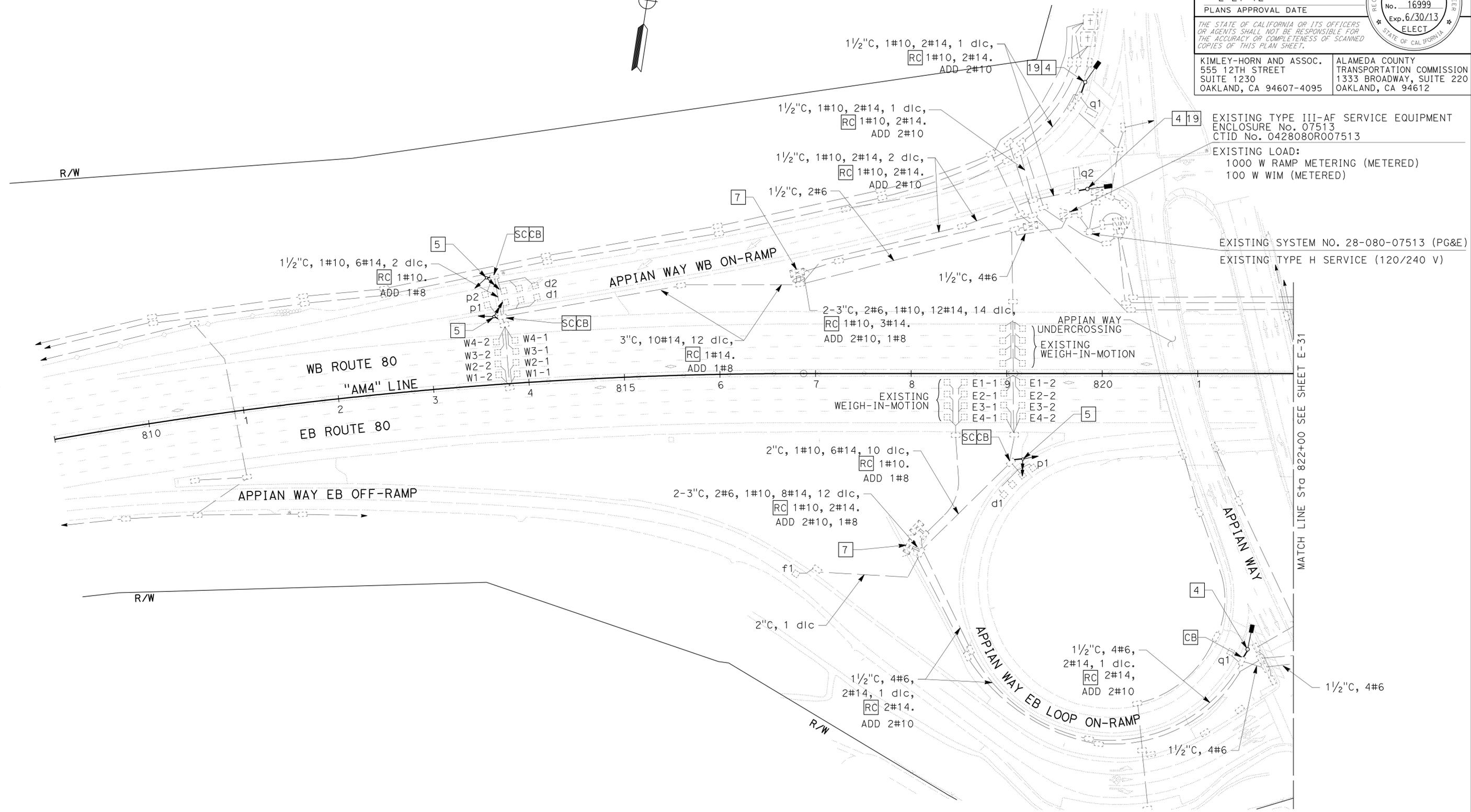
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	210	290

REGISTERED ELECTRICAL ENGINEER: *David S. Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

REGISTERED PROFESSIONAL ENGINEER
 DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
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 STATE OF CALIFORNIA

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

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 TRANSPORTATION COMMISSION
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**MODIFY RAMP METERING SYSTEM
 LOCATION 18**
 SCALE: 1" = 50'
E-30

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FOR NOTES, SYMBOLS AND ABBREVIATIONS SEE SHEET E-1

NOTE:

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	211	290

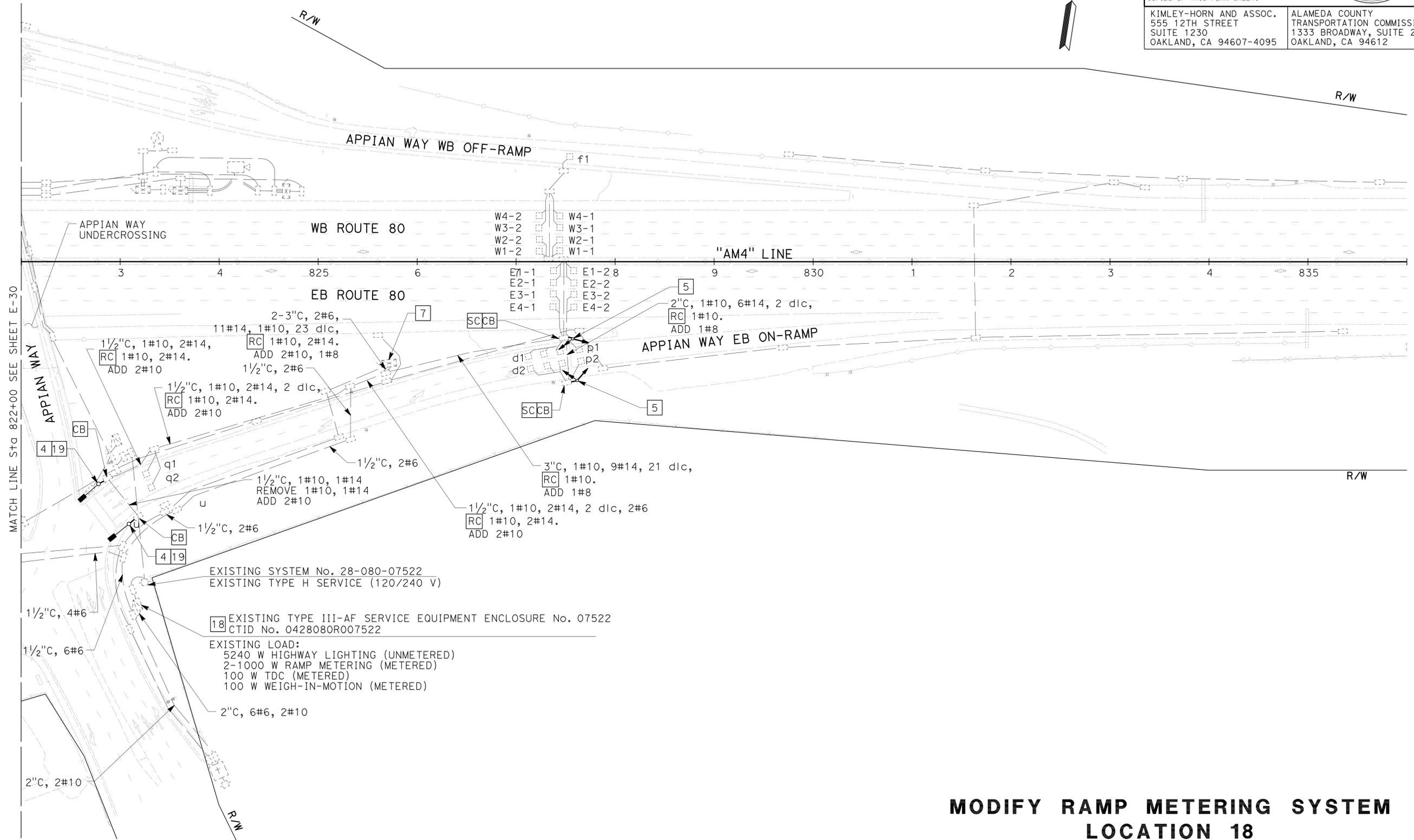
10/14/11
 REGISTERED ELECTRICAL ENGINEER DATE
 2-27-12
 PLANS APPROVAL DATE

DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
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 OAKLAND, CA 94612



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Et Caltrans®
 CONSULTANT: RANDAL DURRENBERGER
 SUPERVISOR: RANDAL DURRENBERGER
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI
 JCS
 10/14/11
 REVISED BY: DATE REVISED

**MODIFY RAMP METERING SYSTEM
LOCATION 18**

SCALE: 1" = 50'

E-31

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FOR NOTES, SYMBOLS AND
ABBREVIATIONS SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]
 R. DOLE
 K. AKWABI
 REVISED BY: [Blank]
 DATE REVISED: [Blank]
 JCS
 10/14/11

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	212	290

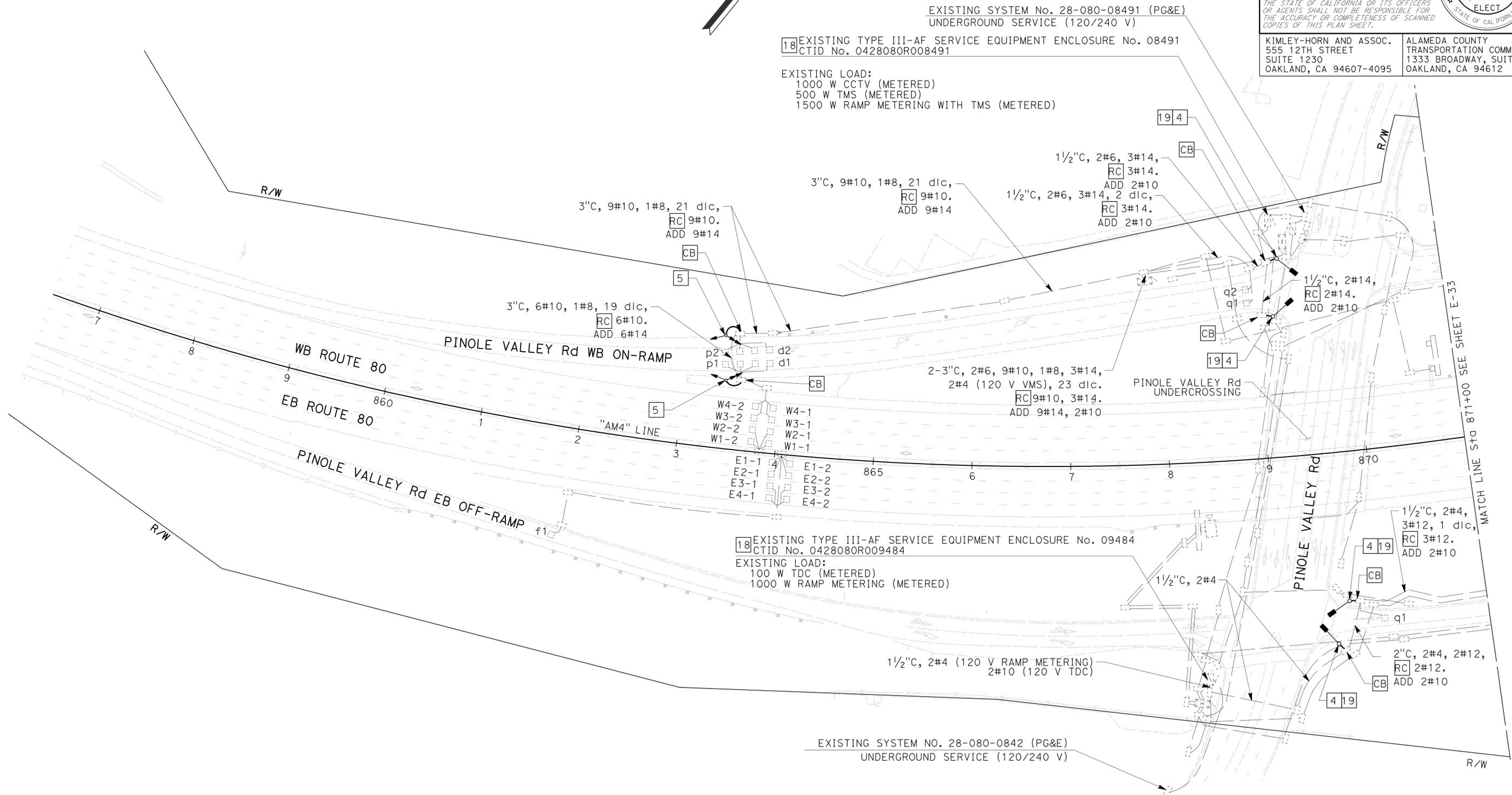
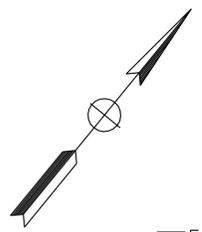
REGISTERED ELECTRICAL ENGINEER: *David S. Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

DAVID S. HAINES
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 OAKLAND, CA 94612



**MODIFY RAMP METERING SYSTEM
 LOCATION 19**

SCALE: 1" = 50'
E-32

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FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

LAST REVISION DATE PLOTTED => 02-MAR-2012 08-22-11 TIME PLOTTED => 15:03

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

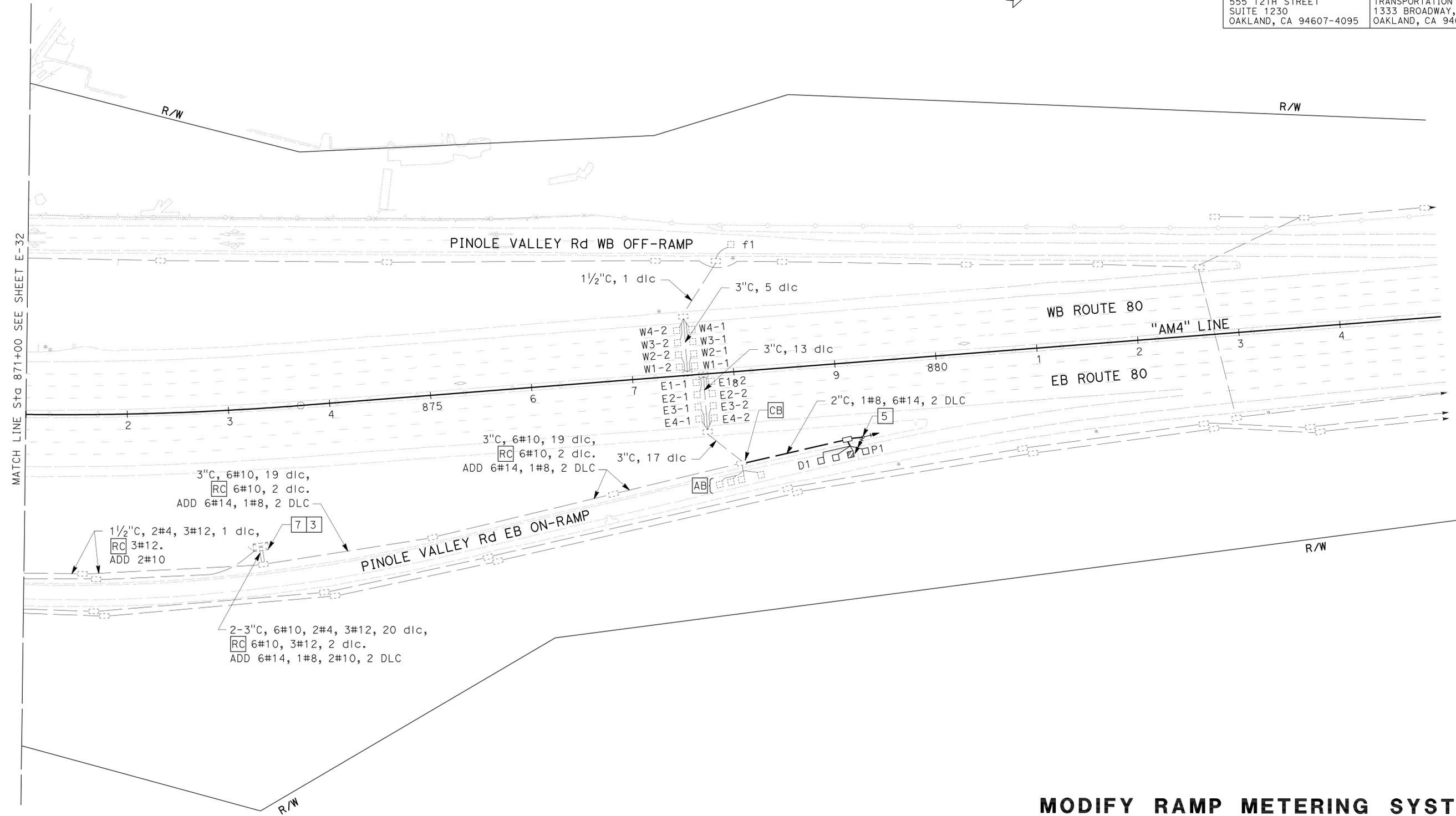
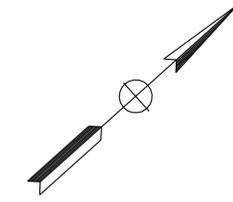
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04	Alameda	80	3.8/8.0, 0.0/13.5	213	290

10/14/11
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 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT: RANDAL DURRENBERGER
 CALCULATED/DESIGNED BY: K. AKWABI
 REVISIONS: R. DOLE, K. AKWABI
 JCS 10/14/11



**MODIFY RAMP METERING SYSTEM
LOCATION 19**

SCALE: 1" = 50'

E-33

APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

LAST REVISION: 08-22-11 DATE PLOTTED => 02-MAR-2012 TIME PLOTTED => 15:03

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 SUPERVISOR: RANDAL DURREBERGER
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI
 DESIGNED BY: R. DOLE
 CHECKED BY: K. AKWABI

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq,CC	80	3.8/8.0, 0.0/13.5	214	290

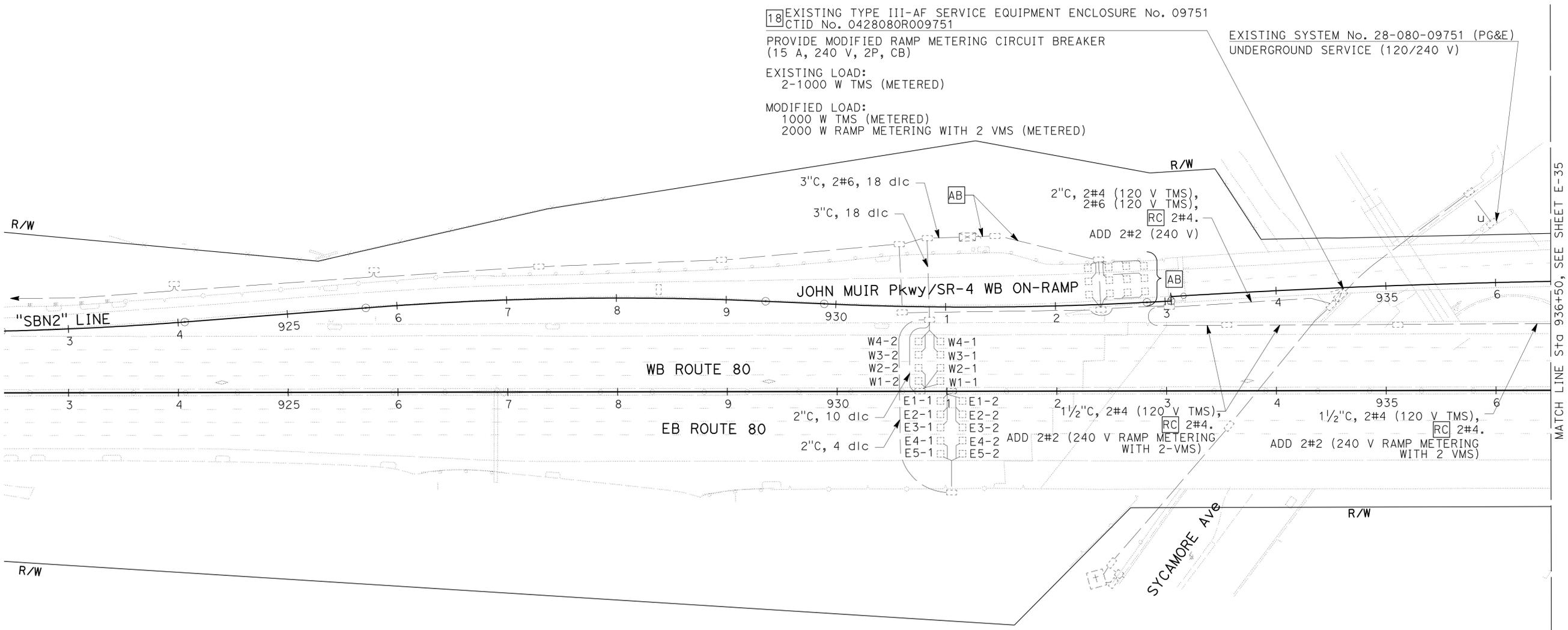
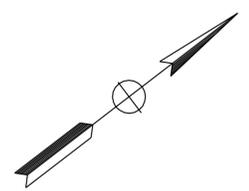
REGISTERED ELECTRICAL ENGINEER DATE 10/14/11
 PLANS APPROVAL DATE 2-27-12

DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT

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.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



18 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 09751
 CTID No. 0428080R009751
 PROVIDE MODIFIED RAMP METERING CIRCUIT BREAKER
 (15 A, 240 V, 2P, CB)
 EXISTING LOAD:
 2-1000 W TMS (METERED)
 MODIFIED LOAD:
 1000 W TMS (METERED)
 2000 W RAMP METERING WITH 2 VMS (METERED)

EXISTING SYSTEM No. 28-080-09751 (PG&E)
 UNDERGROUND SERVICE (120/240 V)

R/W

R/W

MATCH LINE Sta 936+50, SEE SHEET E-35

**MODIFY RAMP METERING SYSTEM
 LOCATION 20**

SCALE: 1" = 50'

E-34

APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND
 ABBREVIATIONS, SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 DESIGNED BY: K. AKWABI
 CHECKED BY:
 SUPERVISOR: RANDAL DURRENBERGER

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	215	290

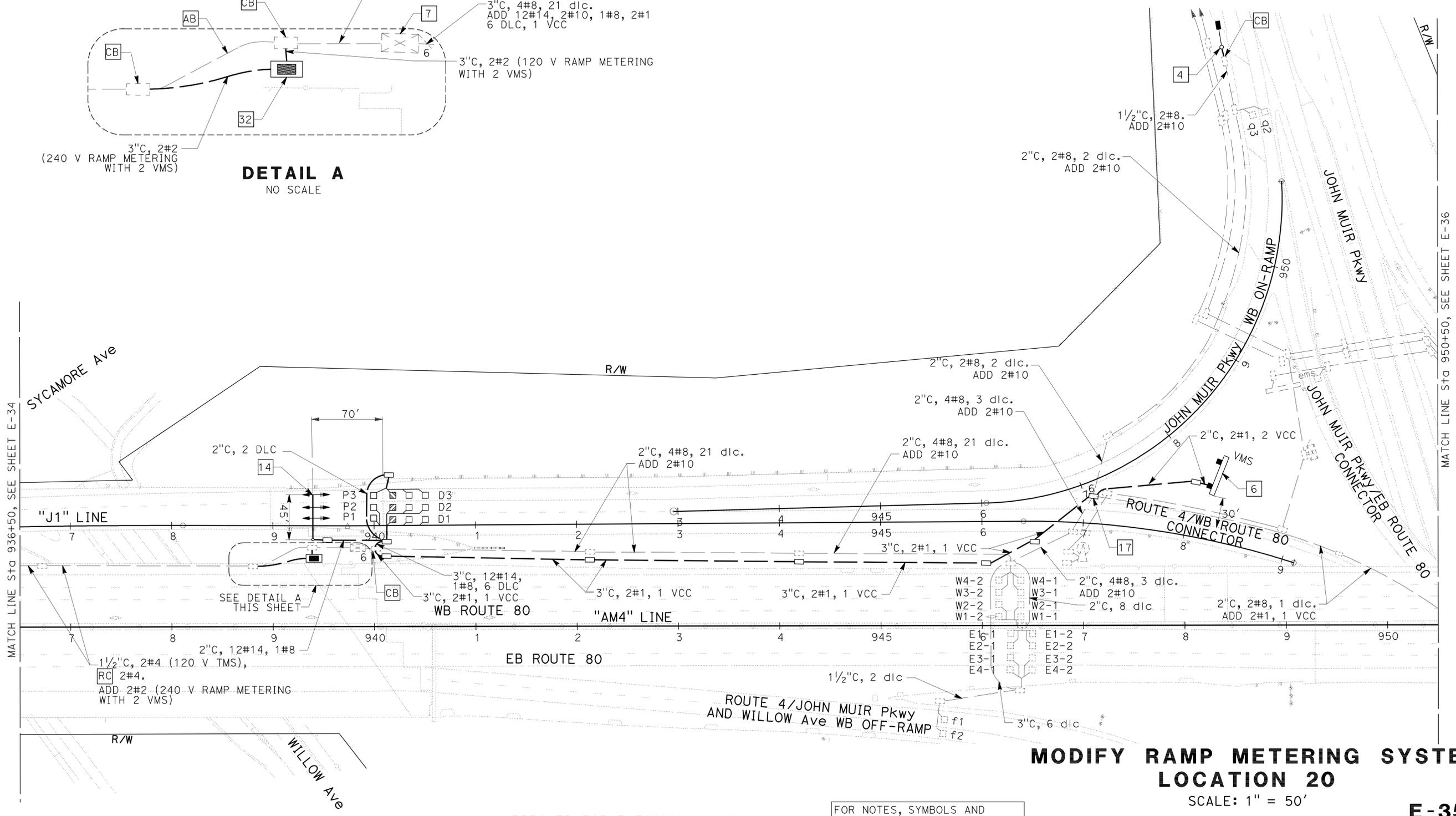
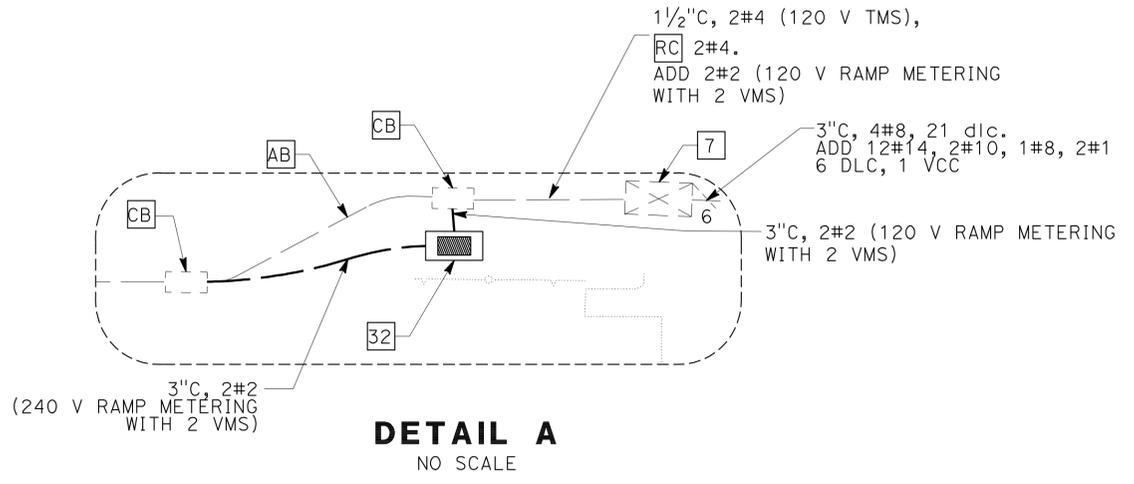
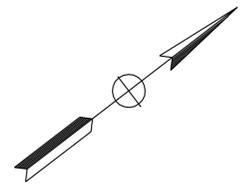
REGISTERED ELECTRICAL ENGINEER: *David Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT

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.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



**MODIFY RAMP METERING SYSTEM
 LOCATION 20**

SCALE: 1" = 50'

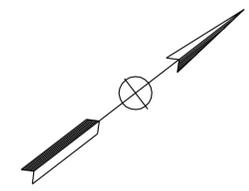
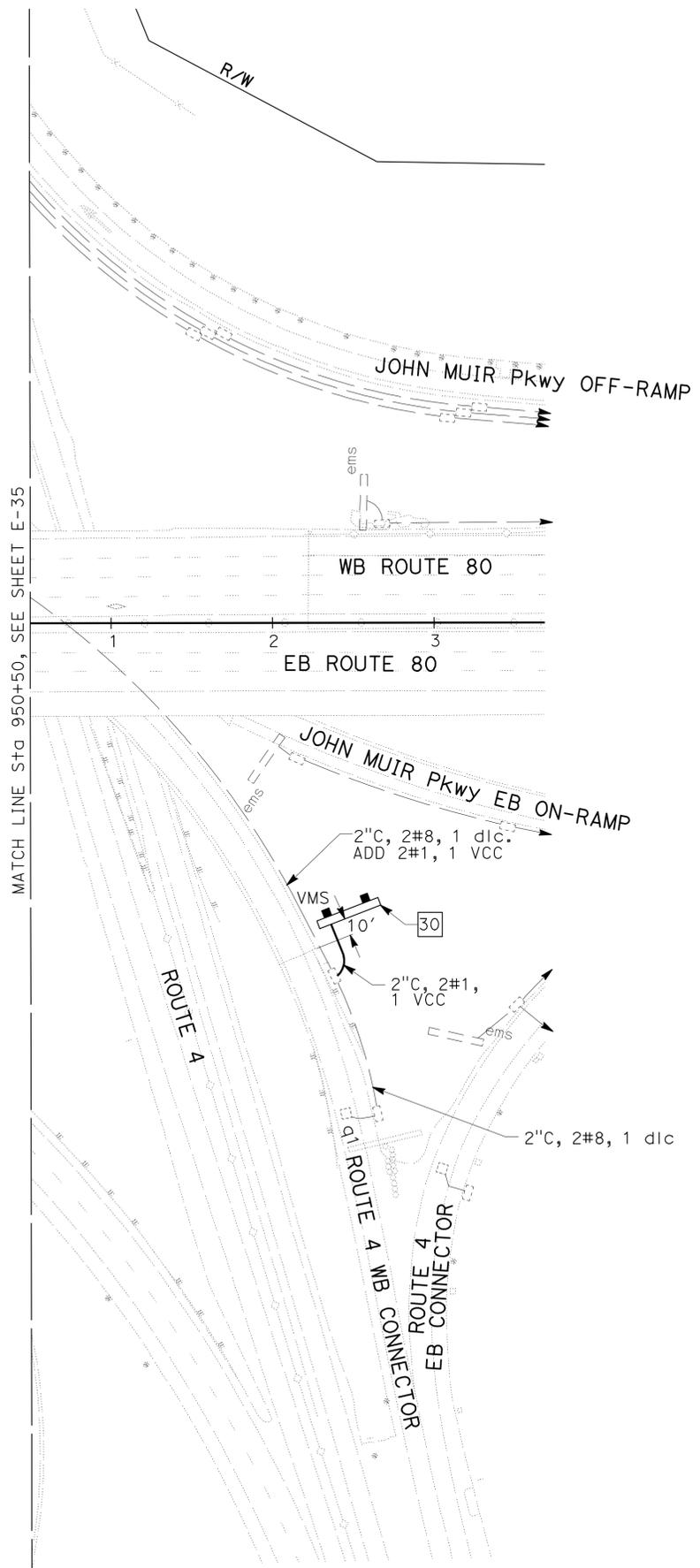
E-35

APPROVED FOR ELECTRICAL WORK ONLY.

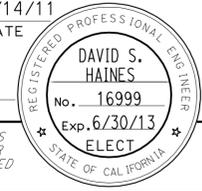
FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE	JCS	10/14/11
Caltrans	RANDAL DURRENBERGER	R. DOLE		K. AKWABI		
		K. AKWABI		R. DOLE		

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



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq,CC	80	3.8/8.0, 0.0/13.5	216	290
			10/14/11		
REGISTERED ELECTRICAL ENGINEER			DATE		
2-27-12			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.					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



**RAMP METERING SYSTEM
LOCATION 20**

SCALE: 1" = 50'

E-36

APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 CONSULTANT: K. AKWABI
 CONSULTANT: R. DURREMBERGER
 JCS
 10/14/11

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alq,CC	80	3.8/8.0, 0.0/13.5	217	290

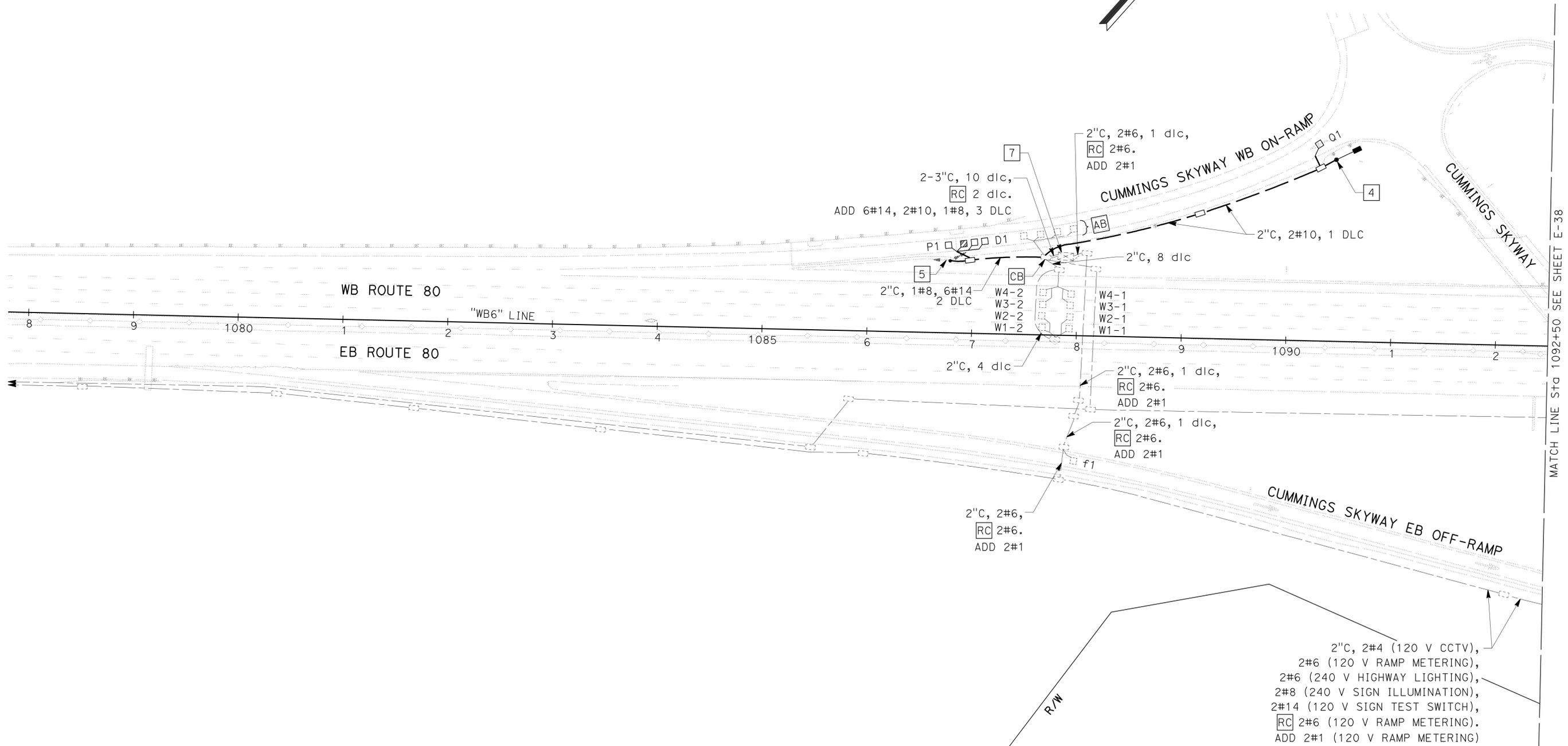
REGISTERED ELECTRICAL ENGINEER: *David S. Haines* DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

REGISTERED PROFESSIONAL ENGINEER
 DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT

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.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



**MODIFY RAMP METERING SYSTEM
 LOCATION 21**

SCALE: 1" = 50'

E-37

APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

LAST REVISION: 11-09-11 DATE PLOTTED => 02-MAR-2012 TIME PLOTTED => 15:03

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 CONSULTANT: K. AKWABI
 CONSULTANT: RANDAL DURRENBERGER
 JCS
 10/14/11

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	218	290

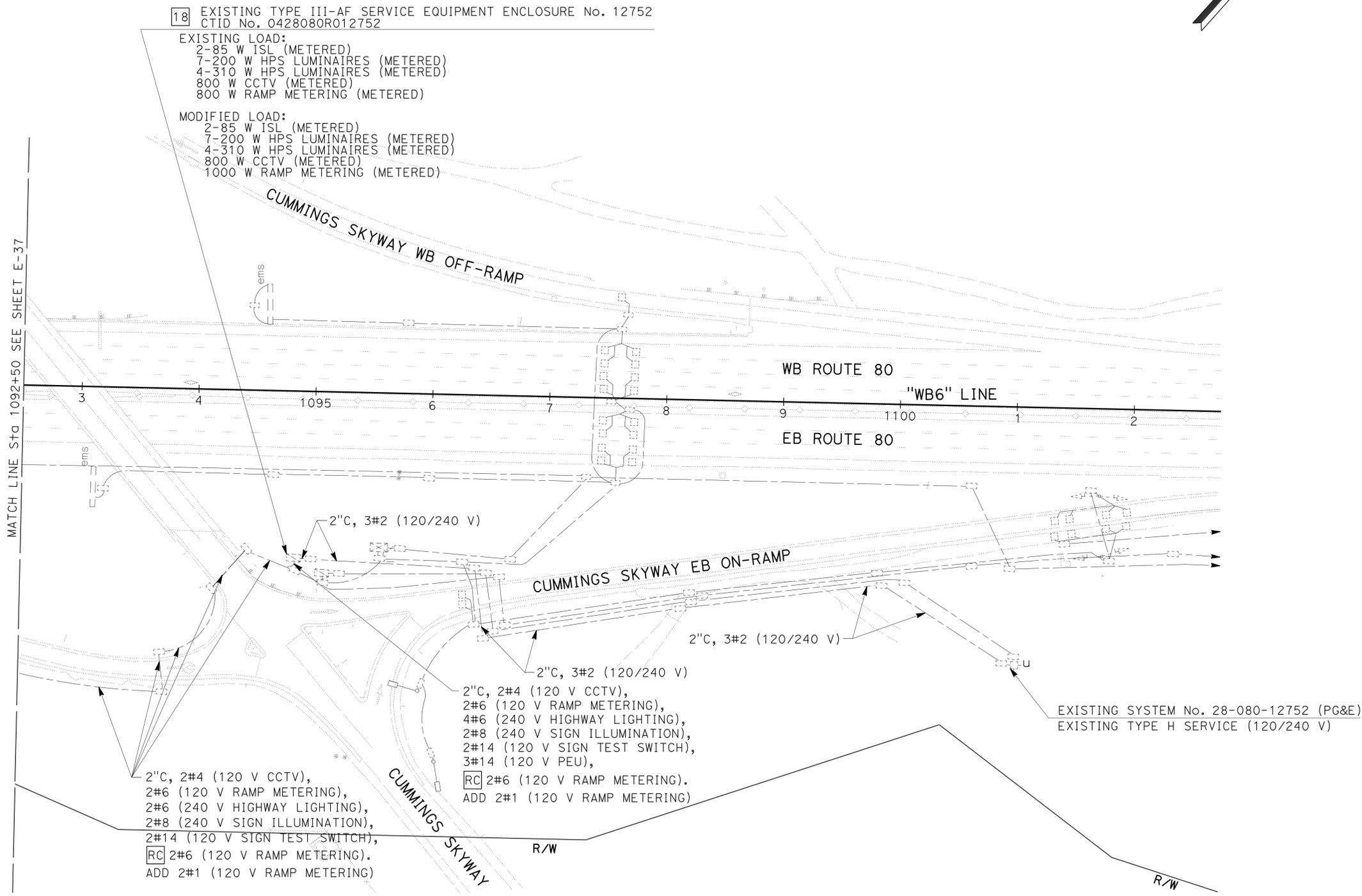
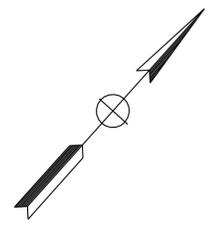
10/14/11
 REGISTERED ELECTRICAL ENGINEER DATE
 2-27-12
 PLANS APPROVAL DATE

DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT
 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.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

**MODIFY RAMP METERING SYSTEM
 LOCATION 21**

SCALE: 1" = 50'

E-38

LAST REVISION: DATE PLOTTED => 02-MAR-2012 08-22-11 TIME PLOTTED => 15:03

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 SUPERVISOR: RANDAL DURRENBARGER
 DESIGNED BY: K. AKWABI
 CHECKED BY: []
 REVISIONS: []
 DATE: 10/14/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	220	290

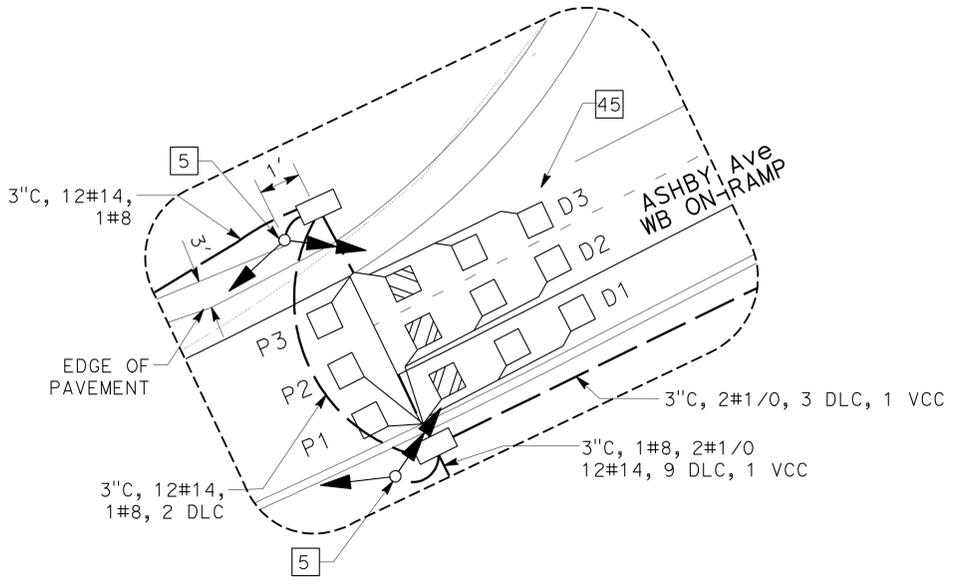
REGISTERED ELECTRICAL ENGINEER: *David S. Haines*
 DATE: 10/14/11
 PLANS APPROVAL DATE: 2-27-12

REGISTERED PROFESSIONAL ENGINEER
DAVID S. HAINES
 No. 16999
 Exp. 6/30/13
 ELECT
 STATE OF CALIFORNIA

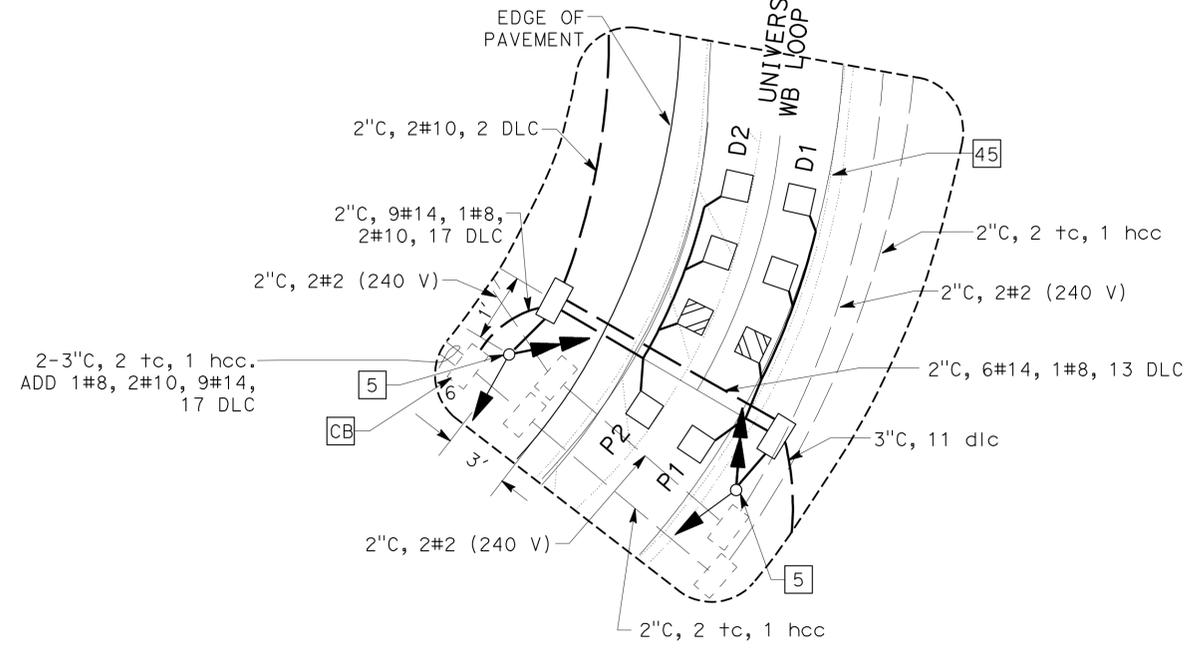
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

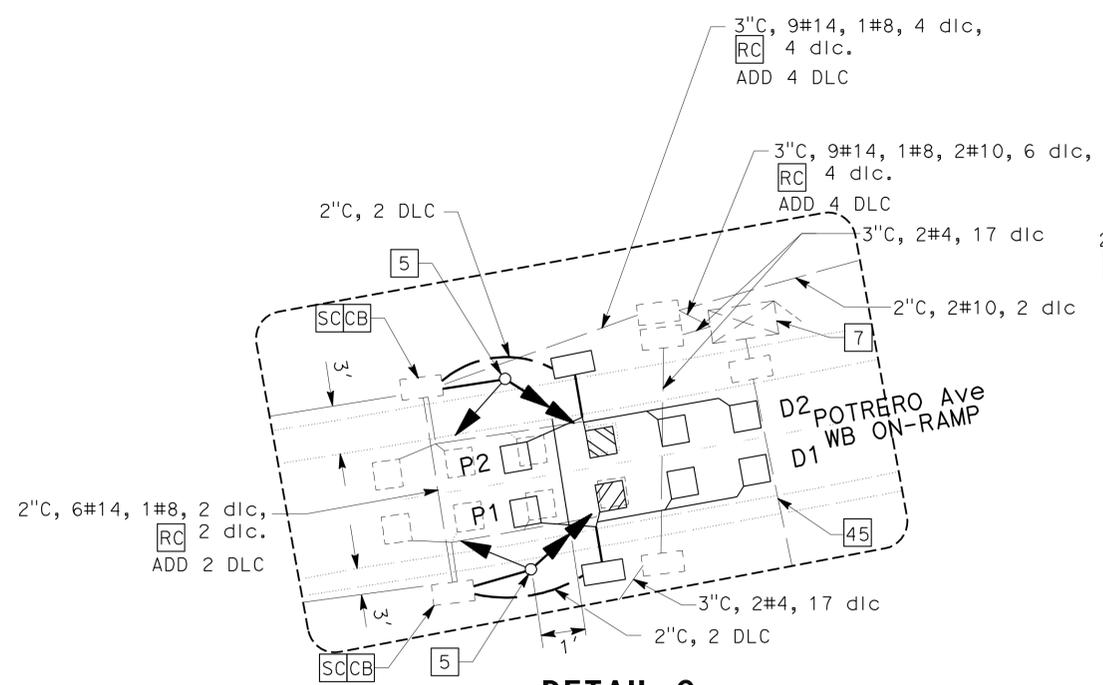
ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



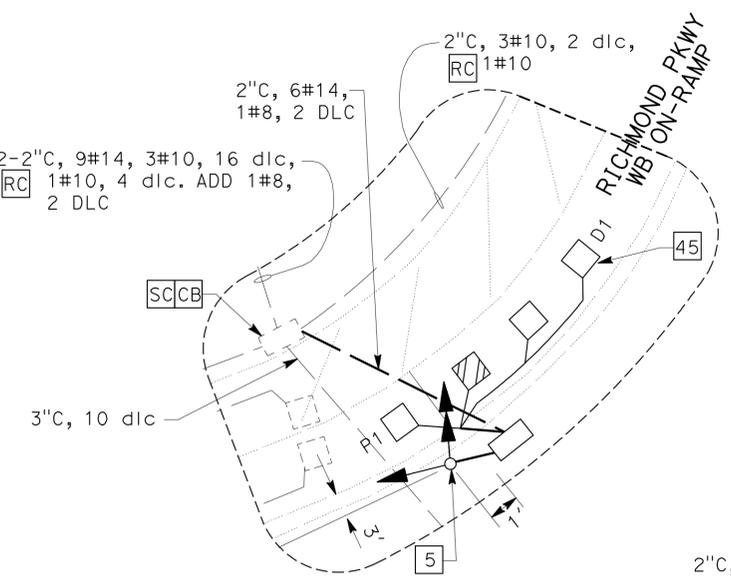
DETAIL A
 ASHBY Ave WB ON-RAMP
 (SHEET E-4)



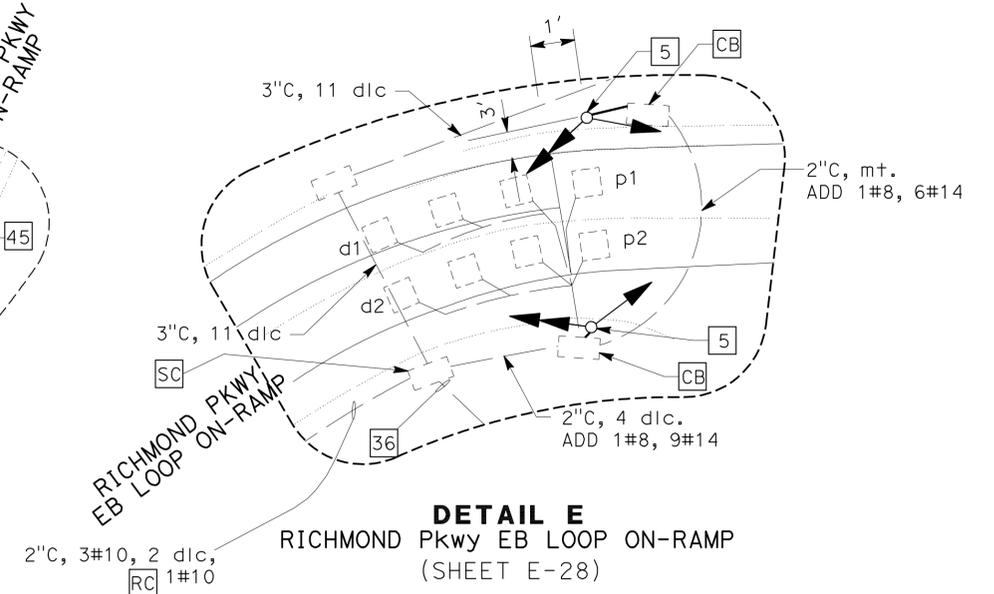
DETAIL B
 UNIVERSITY Ave WB LOOP ON-RAMP
 (SHEET E-6)



DETAIL C
 POTRERO Ave WB ON-RAMP
 (SHEET E-16)



DETAIL D
 RICHMOND Pkwy WB ON-RAMP
 (SHEET E-27)



DETAIL E
 RICHMOND Pkwy EB LOOP ON-RAMP
 (SHEET E-28)

ELECTRICAL DETAILS
 (LOOP DETAILS)

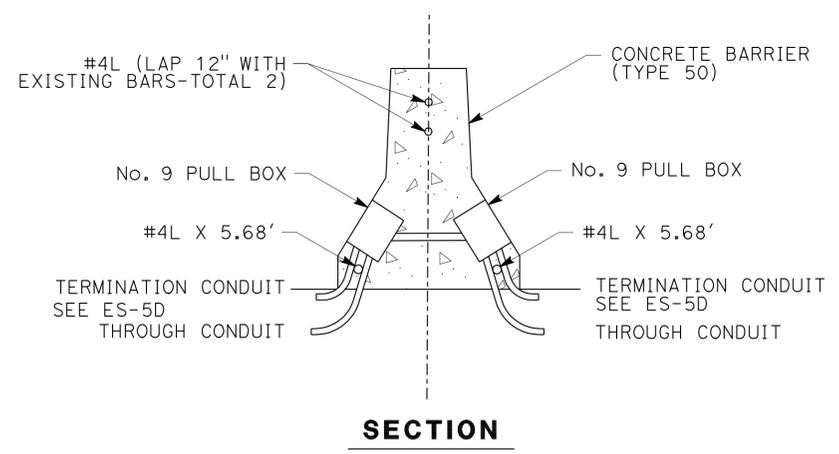
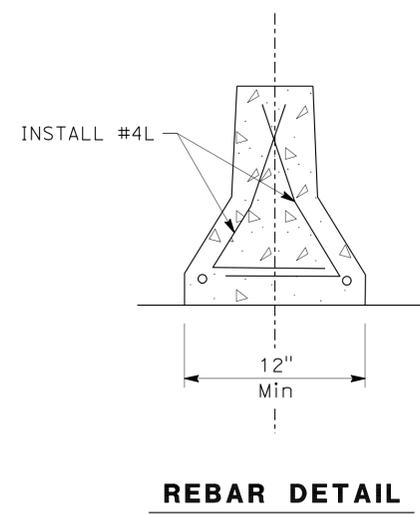
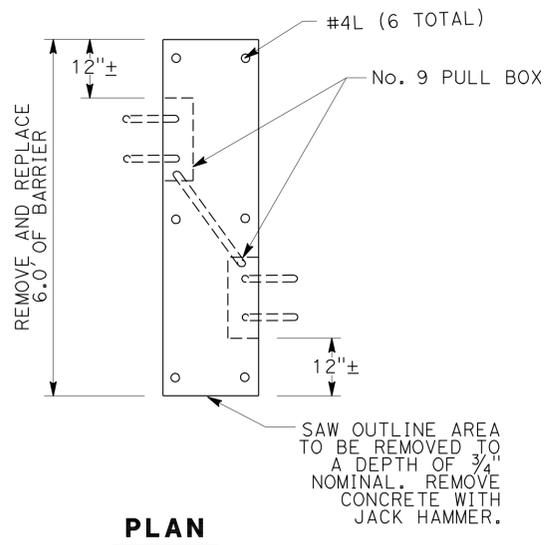
APPROVED FOR ELECTRICAL WORK ONLY.

FOR NOTES, SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1

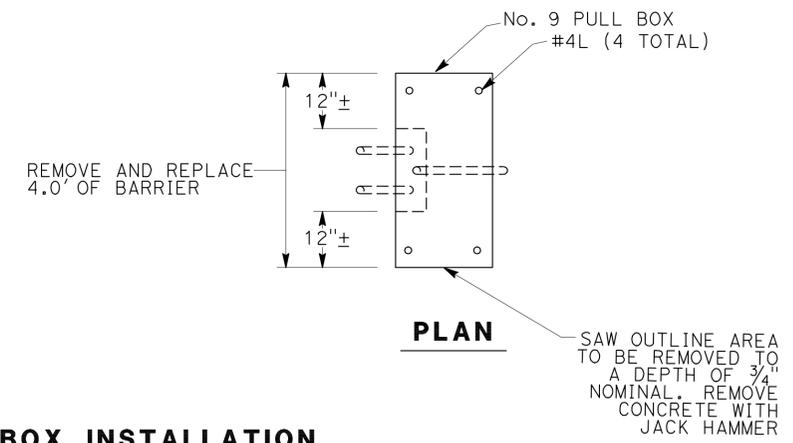
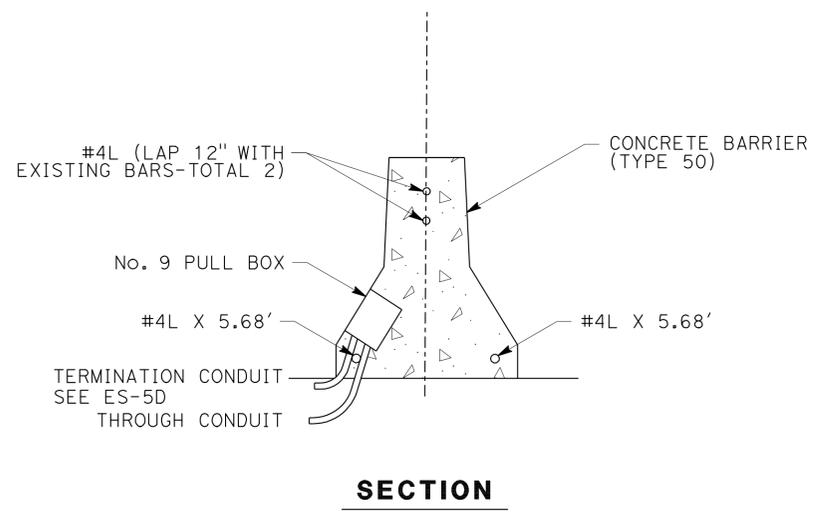
NO SCALE

E-40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	80	3.8/8.0, 0.0/13.5	221	290
REGISTERED CIVIL ENGINEER			DATE	10/14/11	
2-27-12			PLANS APPROVAL DATE		
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



DETAIL "A"
CONDUIT AND No. 9 DOUBLE PULL BOX INSTALLATION
IN EXISTING MEDIAN BARRIER



DETAIL "A-1"
CONDUIT AND No. 9 SINGLE PULL BOX INSTALLATION
IN EXISTING BARRIER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	DESIGNED BY	CHECKED BY	REVISOR	DATE
	RANDAL DURRENBARGER	R. DOLE	K. AKWABI	JCS	10/14/11	

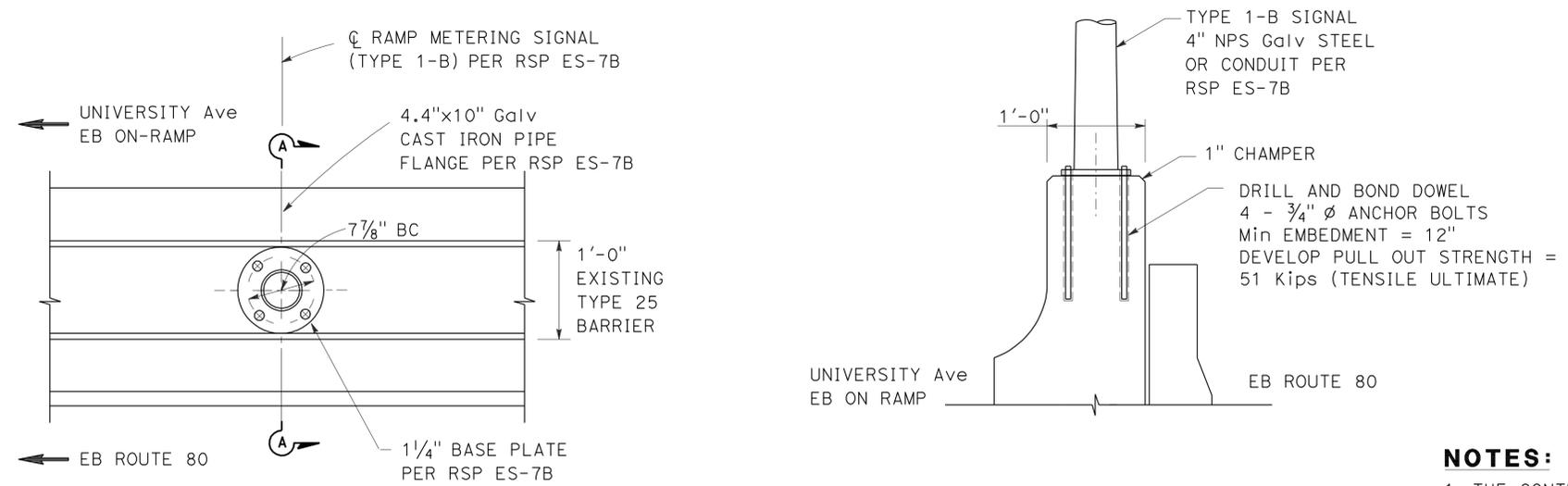
ELECTRICAL DETAILS
(No. 9 PULL BOX IN EXISTING MEDIAN BARRIER)

NO SCALE

E-41

APPROVED FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	222	290
			10/14/11		
REGISTERED CIVIL ENGINEER			DATE		
2-27-12			PLANS APPROVAL DATE		
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



UNIVERSITY Ave EB ON-RAMP

NOTES:

1. THE CONTRACTOR SHALL VERIFY TOP OF BARRIER WIDTH AND SUBMIT TO ENGINEER PRIOR TO DRILLING FOR DOWELS.
2. IN CASE WIDTH IS DIFFERENT THAN SHOWN, AN ALTERNATIVE BASE PLATE MAY BE REQUIRED.
3. IF REINFORCING IS ENCOUNTERED DURING DRILLING, CONTRACTOR MAY MOVE ENTIRE BOLT PATTERN ±6".

GENERAL NOTES:

1. DIMENSIONS AND DETAILS SHOWN ARE BASED ON FIELD MEASUREMENTS OR RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY EXACT DIMENSIONS BASED ON ACTUAL FIELD CONDITIONS DURING CONSTRUCTION.

DESIGN:

AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, DATED 2001, WITH INTERIMS TO 2006 CALTRANS STANDARD PLANS FOR ELECTRICAL SYSTEMS, AS MODIFIED BY THESE PLANS.

CONSTRUCTION:

2006 CALTRANS STANDARD SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS.

LOADING:

WIND LOADING: 100 mph

UNIT STRESSES:

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

*** FOUNDATION LOCATIONS & TYPE:**

* LOCATION OF SIGNALS ARE SHOWN ON MODIFY RAMP METERING SYSTEM PLAN SHEETS.

LOCATION	LOCATION SHEET	SIGNAL TYPE	FOUNDATION TYPE	FOUNDATION DETAILS SHEET
UNIVERSITY Ave EB ON-RAMP	E-6	1-B	IV-A (BARRIER MOUNTED W/DRILL AND BOND)	E-42
GILMAN WB ON-RAMP	E-7	23-4-100	I-A (BARRIER MOUNTED W/TRANSITION)	E-43
GILMAN EB ON-RAMP	E-8	23-4-100	I-B (BARRIER MOUNTED W/TRANSITION)	E-44
BUCHANAN EB ON-RAMP	E-11	1-B	III-B BRIDGE MOUNTED	E-49
CENTRAL EB ON-RAMP	E-13	18-4-100	II-A (SPREAD FOOTING W/ BARRIER TRANSITION)	E-45
CUTTING EB ON-RAMP	E-17	18-4-100	II-C (SPREAD FOOTING W/ BARRIER TRANSITION)	E-48
BARRETT WB ON-RAMP	E-18	28-5-100	II-B (SPREAD FOOTING)	E-46
EL PORTAL EB ON-RAMP	E-24	18-4-100	I-A (BARRIER MOUNTED W/TRANSITION)	E-43
POMONA WB ON-RAMP	E-39	1-B	III-A BRIDGE MOUNTED	E-50

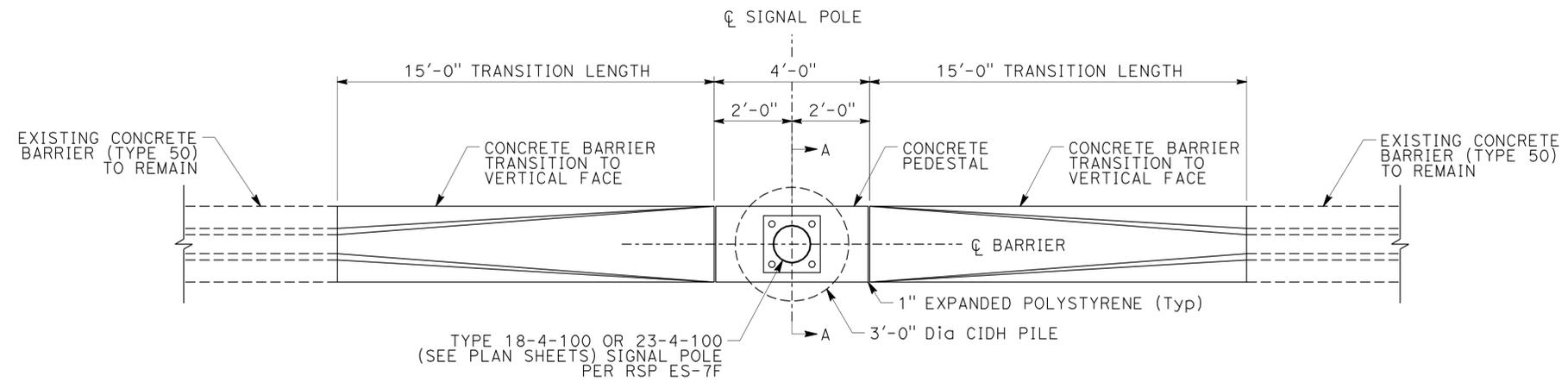
**ELECTRICAL DETAILS
(RAMP METER SIGNAL FOUNDATIONS)**

NO SCALE

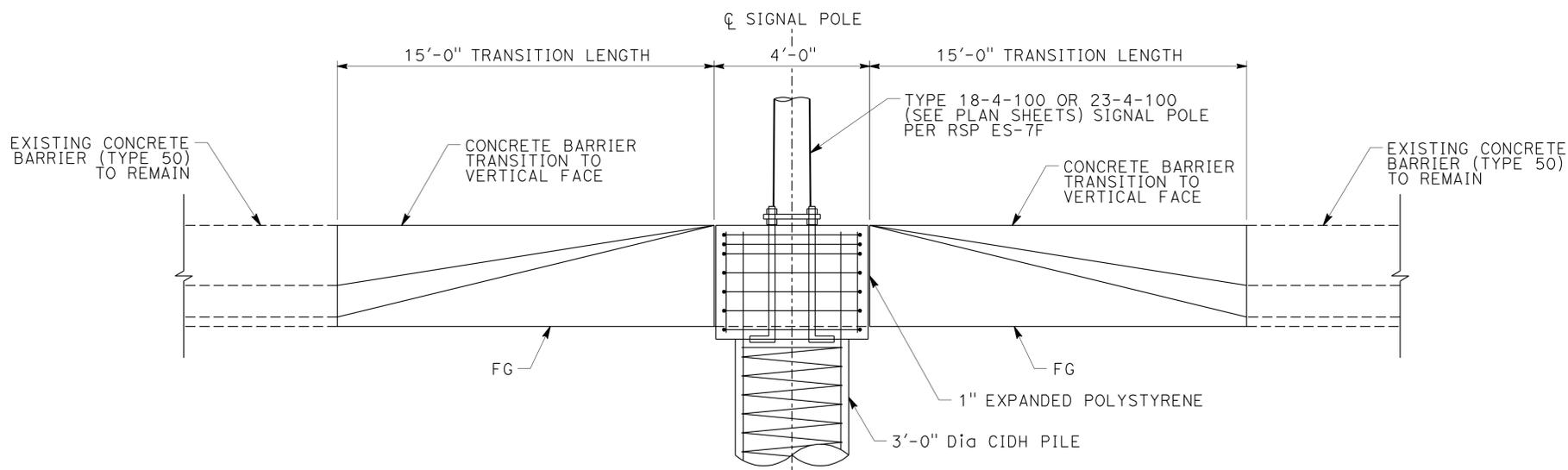
E-42

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT - FUNCTIONAL SUPERVISOR	REVISOR	DATE
	RANDAL DURRENBARGER	R. DOLE	10/14/11
	CHECKED BY	K. AKWABI	

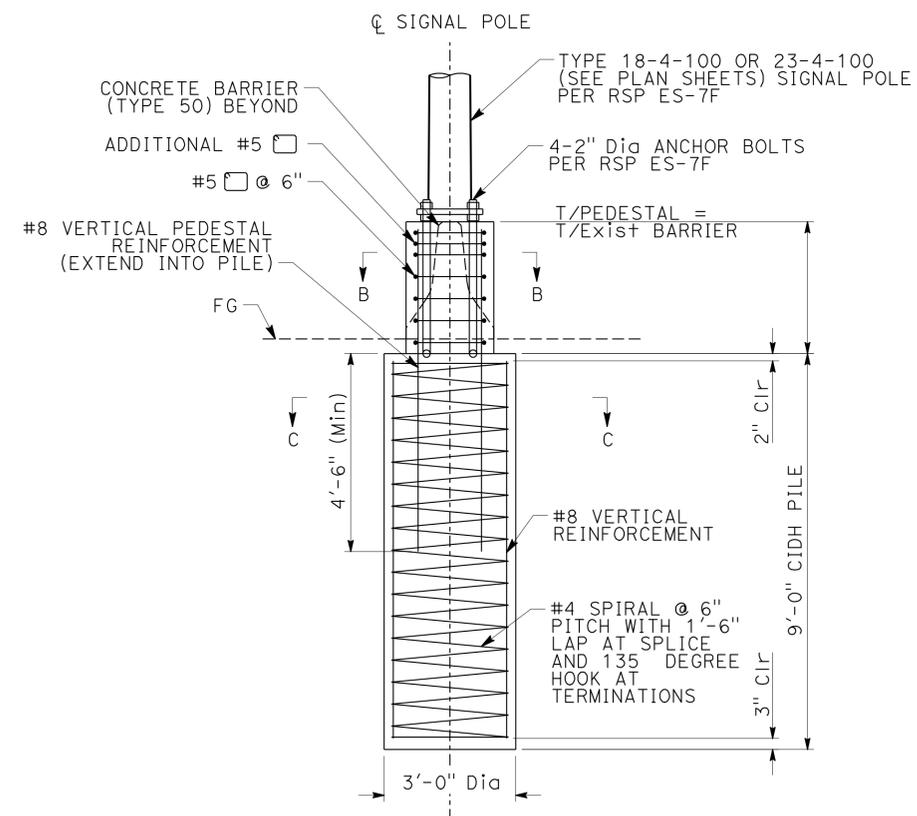
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	223	290
			10/14/11		
REGISTERED CIVIL ENGINEER			DATE		
2-27-12			PLANS APPROVAL DATE		
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



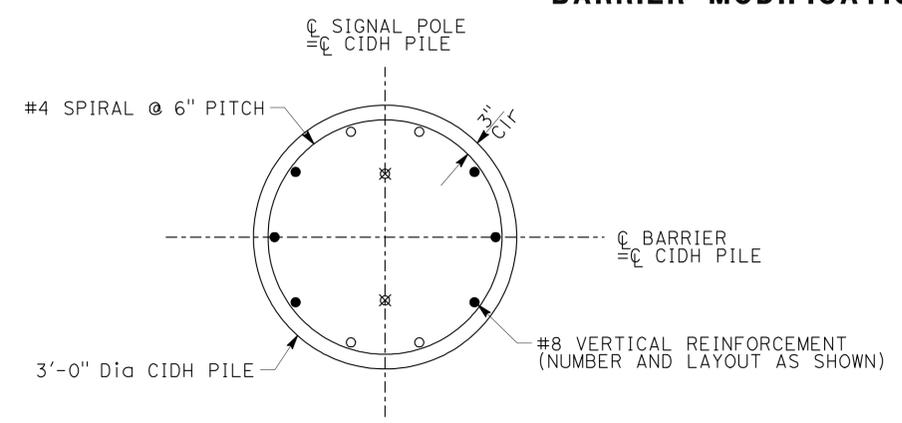
BARRIER MODIFICATION PLAN



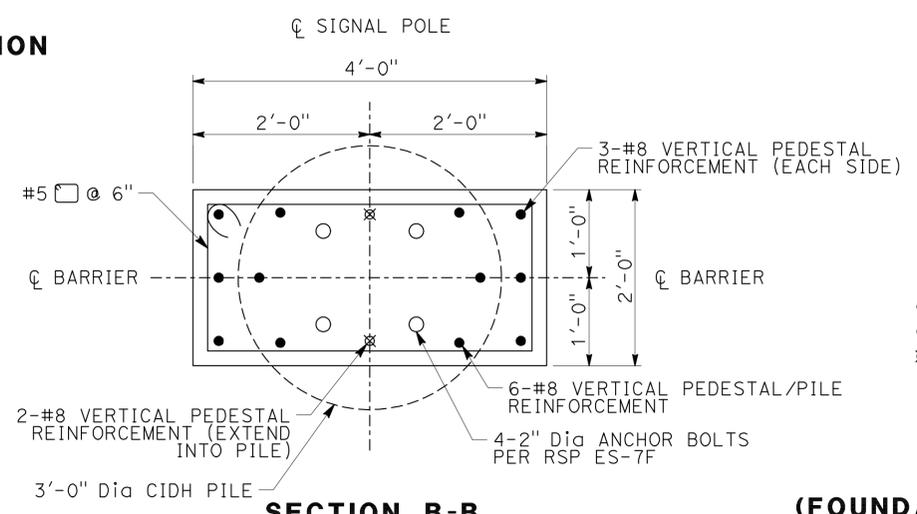
BARRIER MODIFICATION ELEVATION



SECTION A-A



SECTION C-C



SECTION B-B

- PEDESTAL/PILE REINFORCEMENT
- PEDESTAL REINFORCEMENT (EXTEND INTO PILE)
- ⊗ PILE REINFORCEMENT

ELECTRICAL DETAILS
(FOUNDATION TYPE I-A (BARRIER MOUNTED) (GILMAN WB ON-RAMP AND EL PORTAL EB ON-RAMP))
 NO SCALE
E-43

APPROVED FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
Caltrans	JCS	10/14/11
	REVISOR	DATE
	R. DOLE	K. AKWABI
	CALCULATED/DESIGNED BY	CHECKED BY
	RANDAL DURRENBARGER	

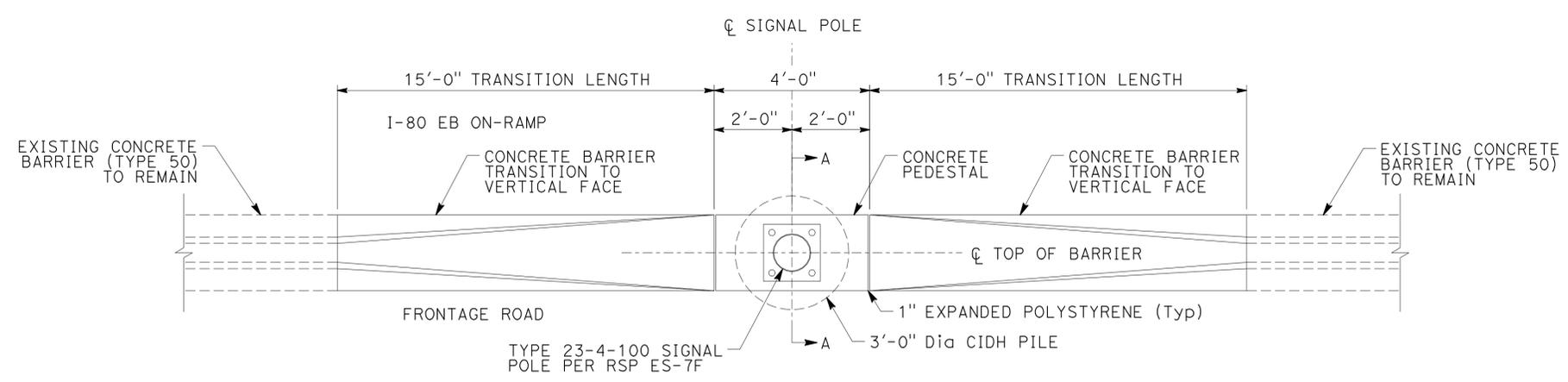
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	224	290

REGISTERED CIVIL ENGINEER		DATE
KARTHIK RAMANATHAN		10/14/11
No. 65553		
Exp. 9/30/13		
CIVIL		

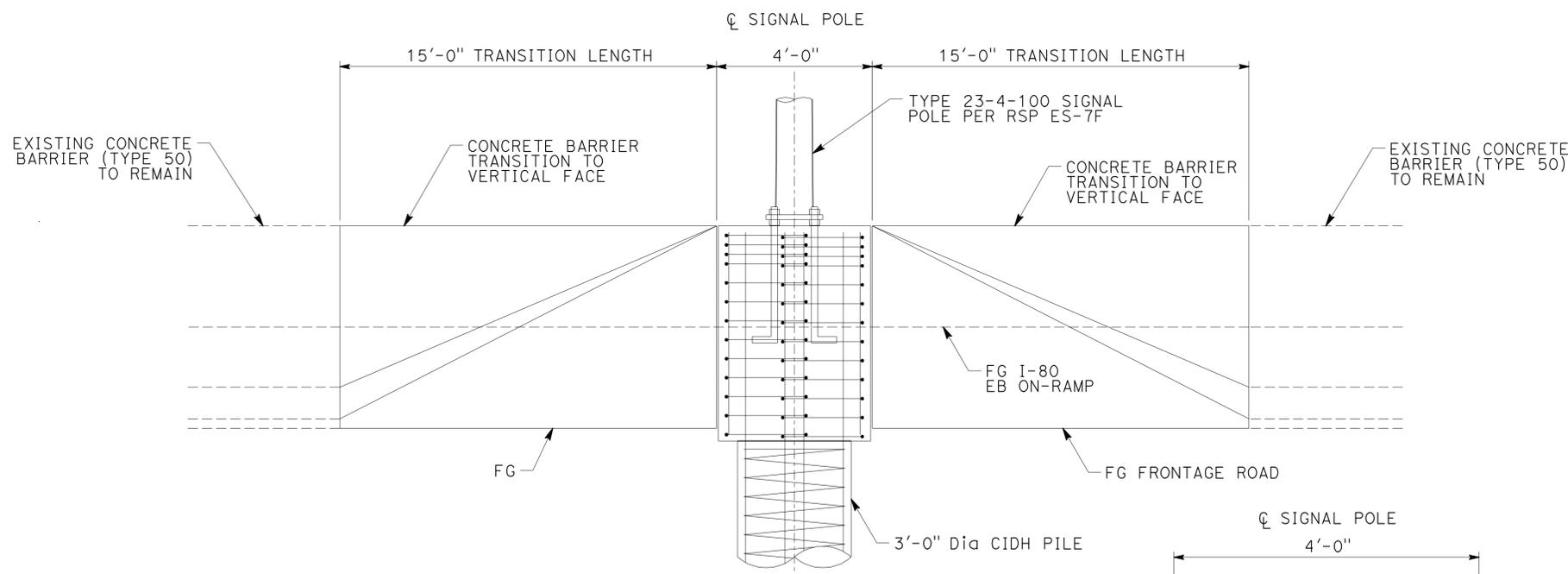
PLANS APPROVAL DATE	
2-27-12	

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.

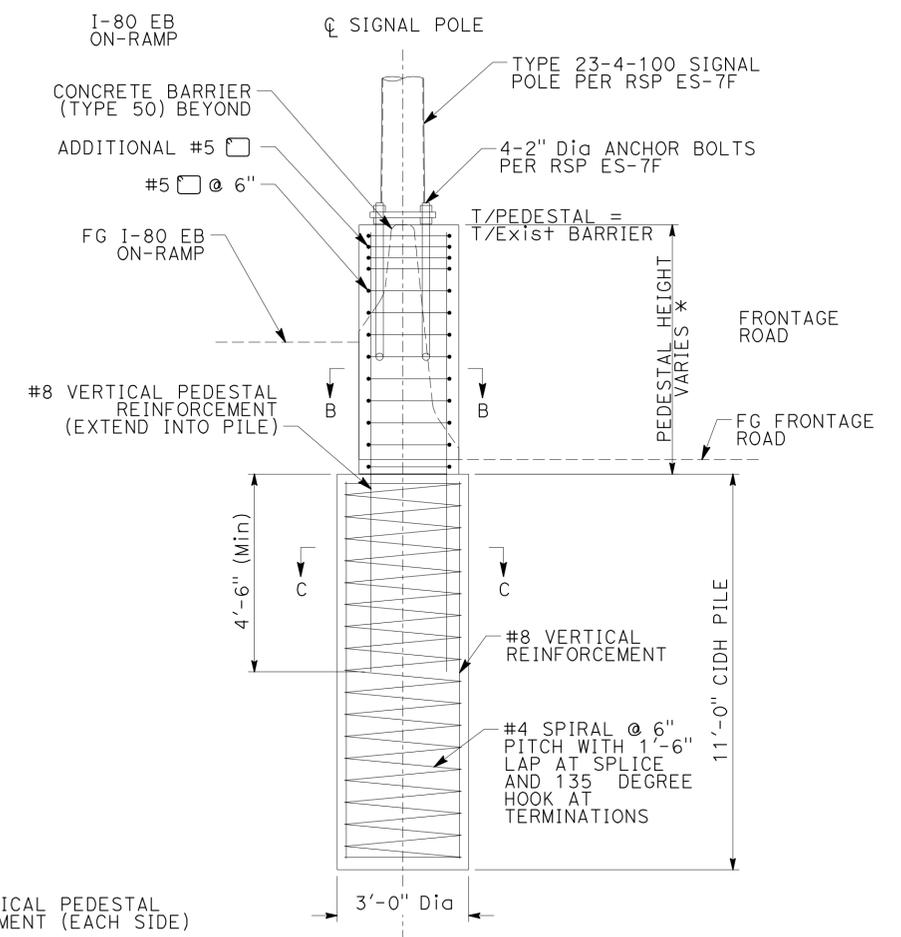
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095	ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612
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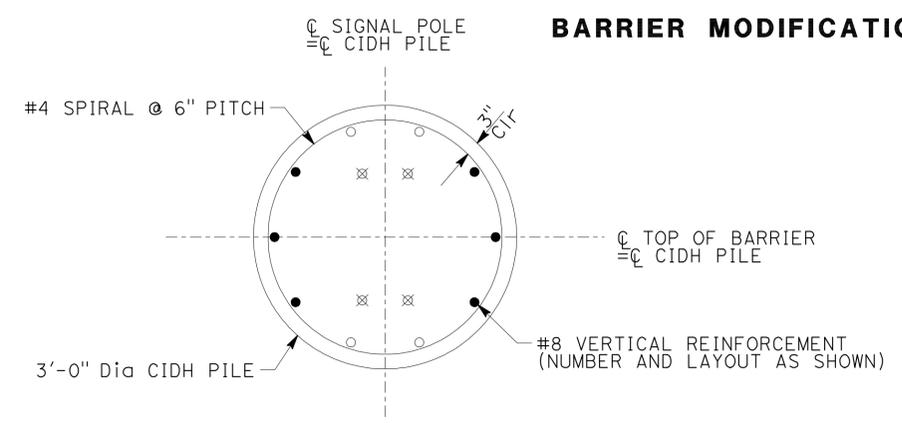
BARRIER MODIFICATION PLAN



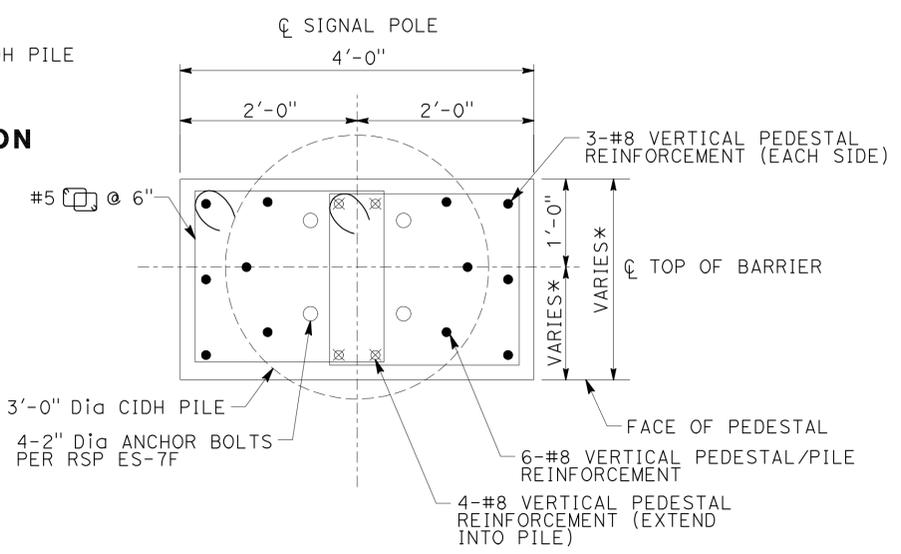
BARRIER MODIFICATION ELEVATION



SECTION A-A



SECTION C-C



SECTION B-B

- PEDESTAL/PILE REINFORCEMENT
- PEDESTAL REINFORCEMENT (EXTEND INTO PILE)
- ⊗ PILE REINFORCEMENT

* CONTRACTOR SHALL VERIFY BARRIER WIDTH AT FINAL SIGNAL POLE LOCATION PRIOR TO FABRICATION OF REINFORCEMENT

ELECTRICAL DETAILS
(FOUNDATION TYPE I-B (BARRIER MOUNTED))
(GILMAN EB ON-RAMP)
NO SCALE

E-44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

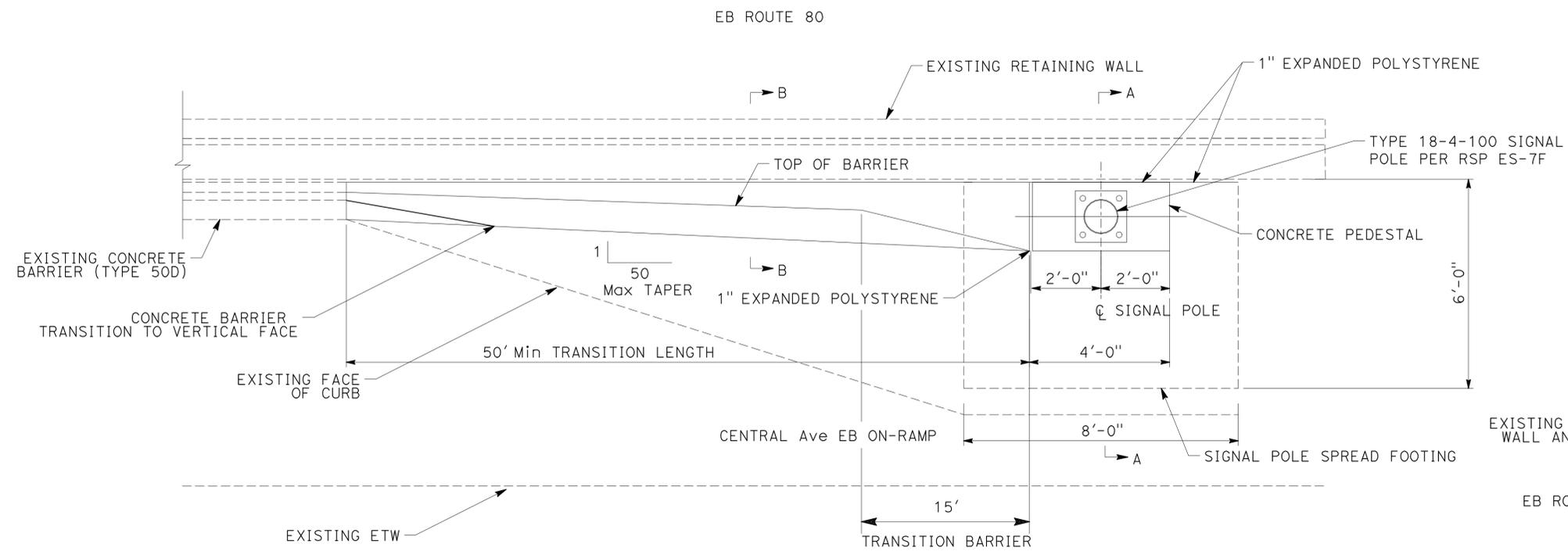
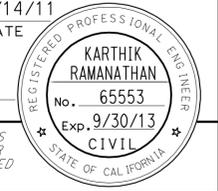
REVISOR: JCS
DATE: 10/14/11

DESIGNER: R. DOLE
CHECKER: K. AKWABI

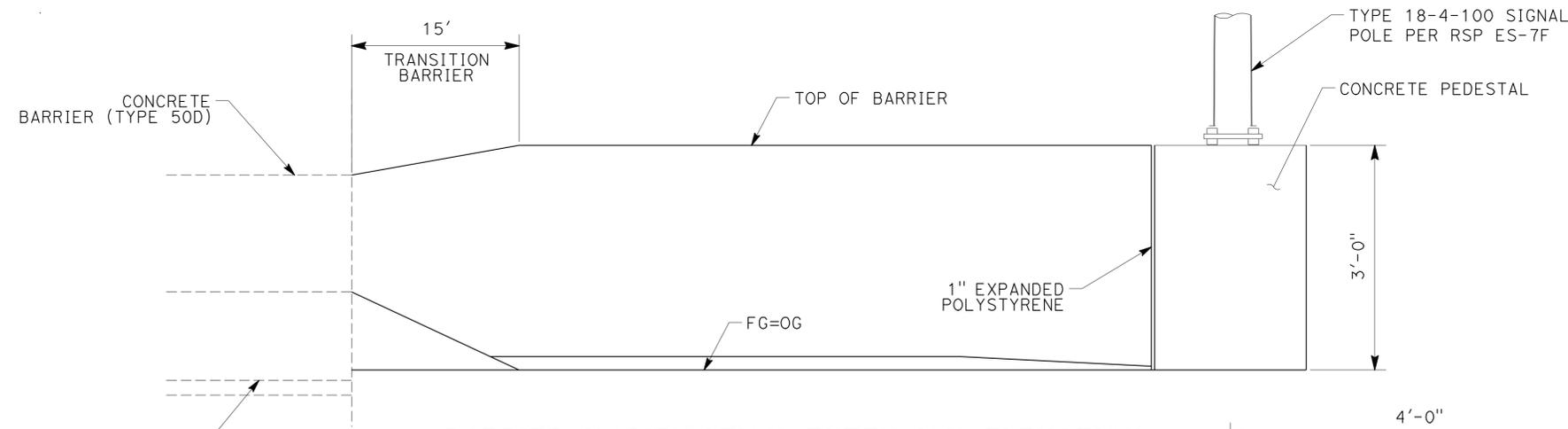
CONSULTANT SUPERVISOR: RANDAL DURRENBARGER

APPROVED FOR ELECTRICAL WORK ONLY.

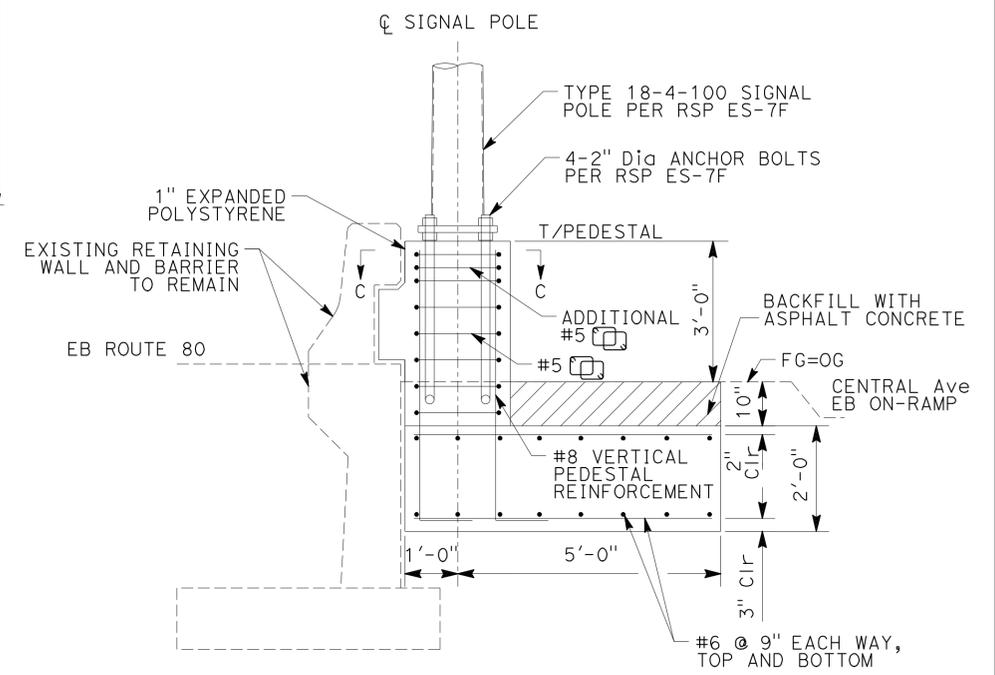
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala, CC	80	3.8/8.0, 0.0/13.5	225	290
			10/14/11		
REGISTERED CIVIL ENGINEER			DATE		
2-27-12			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



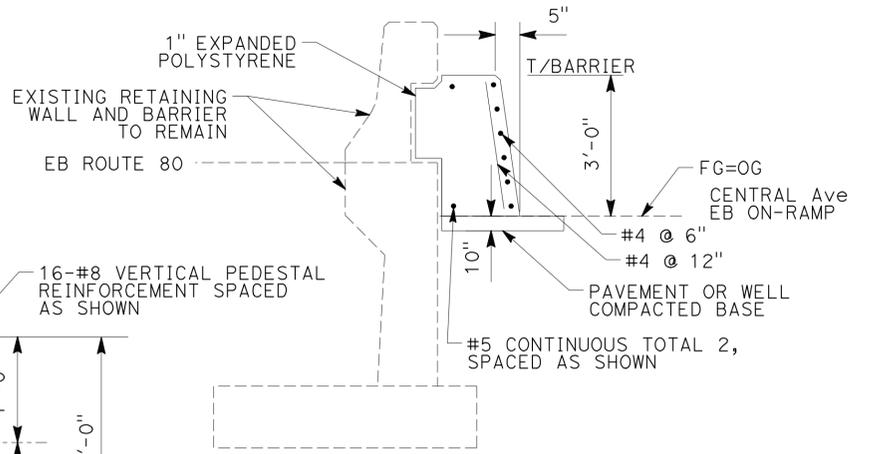
BARRIER MODIFICATION/EXTENSION PLAN



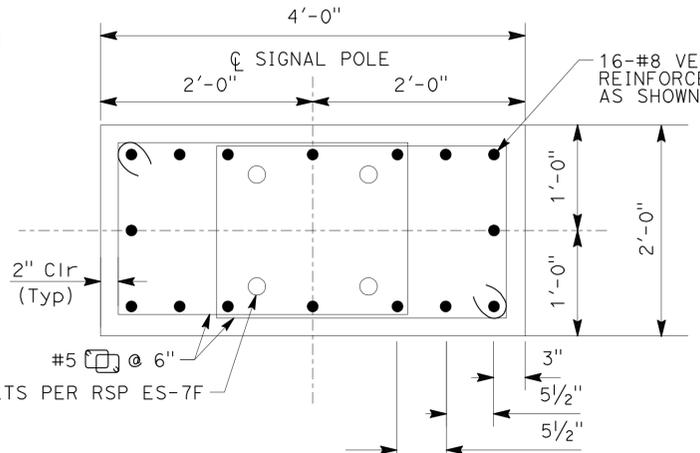
BARRIER MODIFICATION/EXTENSION ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

ELECTRICAL DETAILS
(FOUNDATION TYPE II-A (SPREAD FOOTING)
(CENTRAL EB ON-RAMP))

NO SCALE

E-45

FOR NOTES, SEE SHEET E-42.

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT: R. DOLE, K. AKWABI, RANDAL DURRENBARGER
 JCS, 10/14/11
 REVISIONS: 10/14/11
 USERNAME => s128843
 DGN FILE => 0400002043ua045.dgn

RELATIVE BORDER SCALE 1\"/>

UNIT 0727

PROJECT NUMBER & PHASE

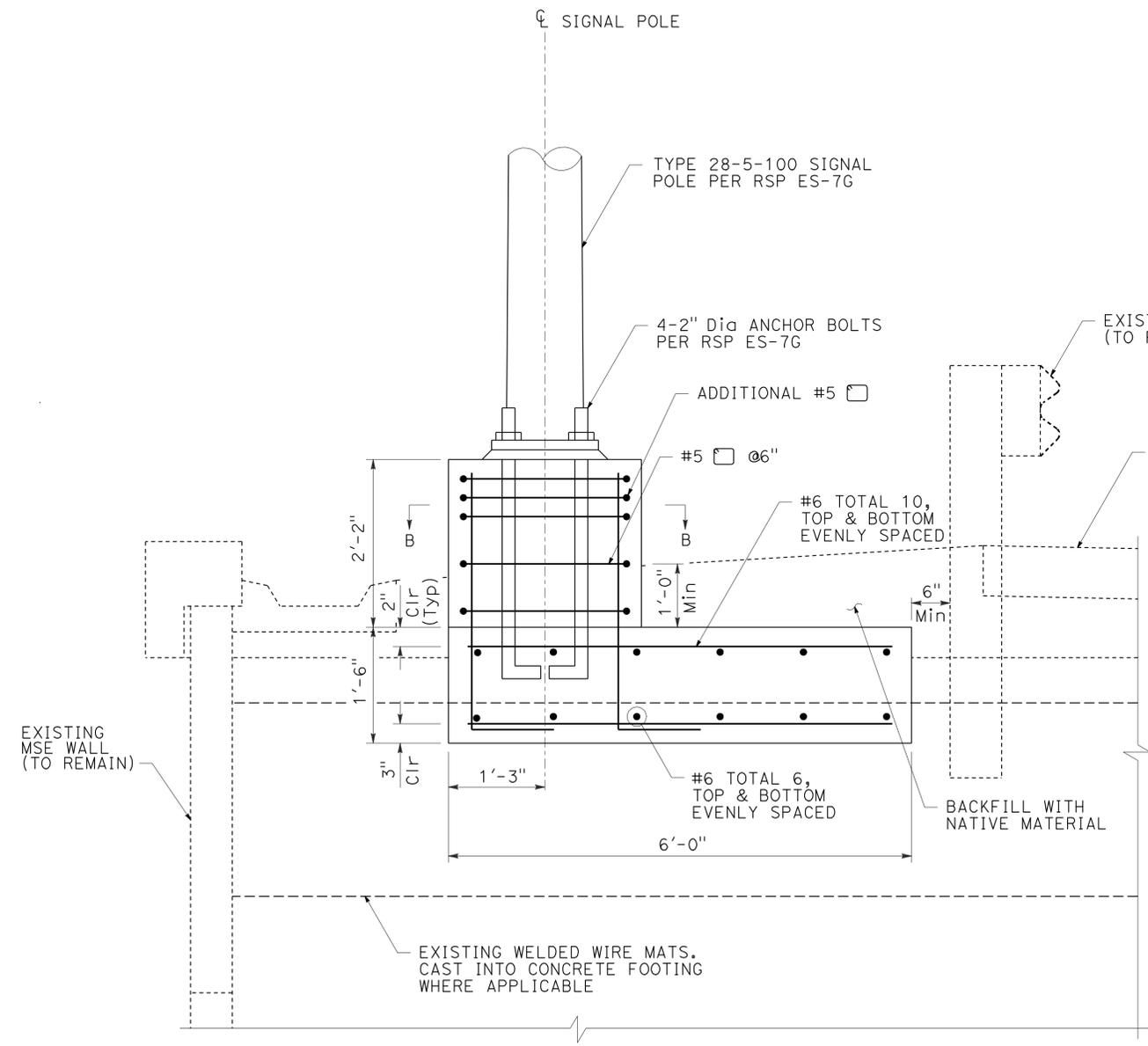
04000020431

DATE PLOTTED => 02-MAR-2012
 TIME PLOTTED => 15:04

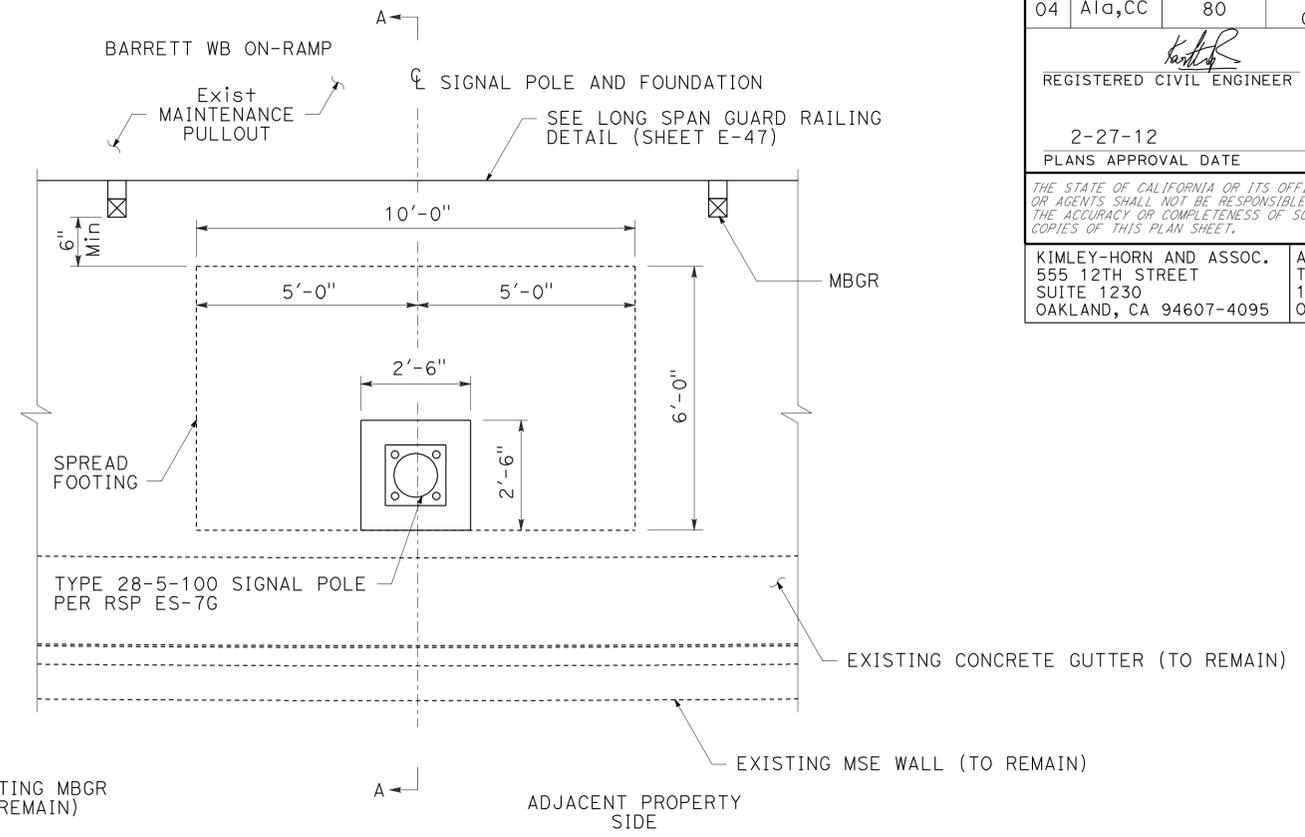
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	226	290
			REGISTERED CIVIL ENGINEER	DATE	
			10/14/11		
			2-27-12		
			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



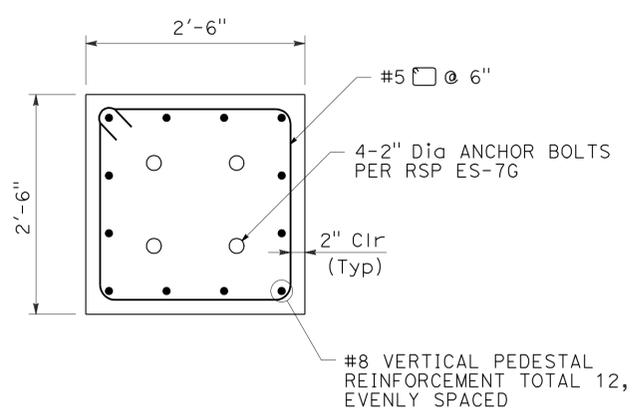
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Et Caltrans®
 CONSULTANT - FUNCTIONAL SUPERVISOR
 RANDAL DURRENBARGER
 CALCULATED/DESIGNED BY
 R. DOLE
 CHECKED BY
 K. AKWABI
 REVISED BY
 JCS
 DATE REVISED
 10/14/11



SECTION A-A



PLAN



SECTION B-B

NOTES:

1. ALL REINFORCING SHALL RECEIVE 2" CLR COVER UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO PROVIDE BRACING OF MSE WALL PANELS DURING EXCAVATION AND PLACEMENT OF SIGNAL POLE FOUNDATION.
3. EXISTING MSE WALL REINFORCEMENT IN CONFLICT WITH PROPOSED SIGNAL POLE FOUNDATION SHALL BE REMOVED AND SALVAGED OR PROTECTED IN PLACE DURING FOUNDATION EXCAVATION AND FORMING.
4. PRIOR TO PLACEMENT OF FOOTING TOP REINFORCEMENT, MSE WALL REINFORCEMENT SHALL BE RECONSTRUCTED TO ORIGINAL LENGTH AND LOCATION AND CAST INTO SIGNAL POLE FOUNDATION.

FOR NOTES, SEE SHEET E-42.

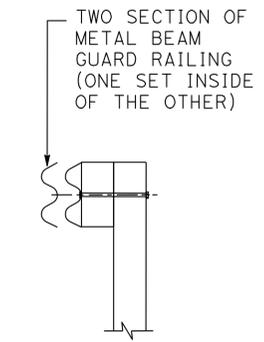
APPROVED FOR ELECTRICAL WORK ONLY

ELECTRICAL DETAILS
(FOUNDATION TYPE II-B (SPREAD FOOTING)
(BARRETT WB ON-RAMP))
 NO SCALE

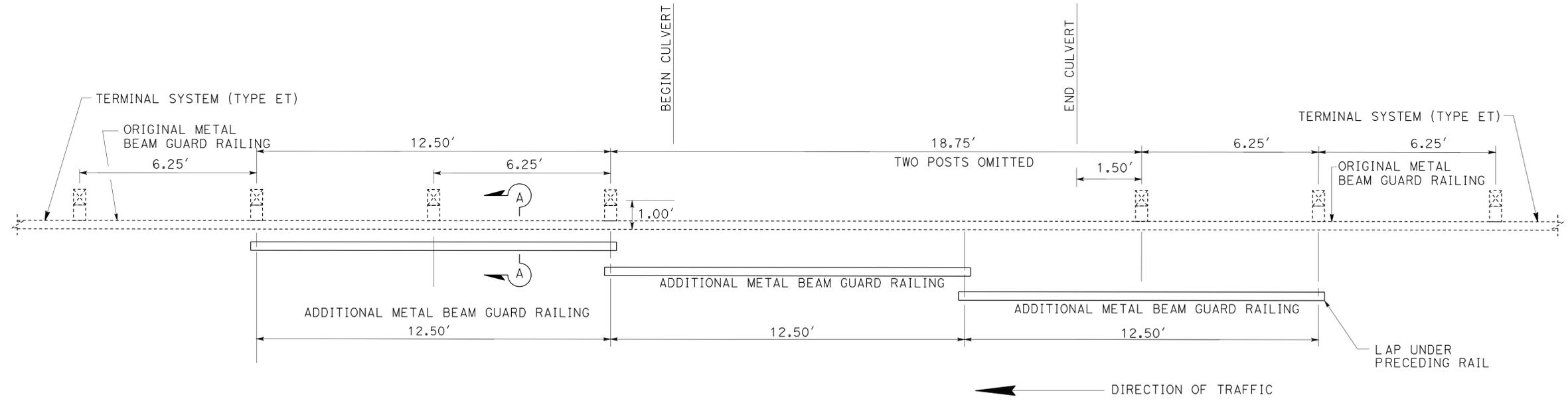
E-46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	227	290
			REGISTERED CIVIL ENGINEER	DATE	
			10/14/11		
			PLANS APPROVAL DATE		
			2-27-12		
<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>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	RANDAL DURRENBARGER			R. DOLE	
			CHECKED BY	REVISED BY	DATE
			K. AKWABI	JCS	10/14/11



SECTION A-A



LONG SPAN NESTED GUARD RAIL DETAIL

ELECTRICAL DETAILS
(LONG SPAN NESTED GUARD RAIL)
(BARRET WB ON-RAMP)

NO SCALE

E-47

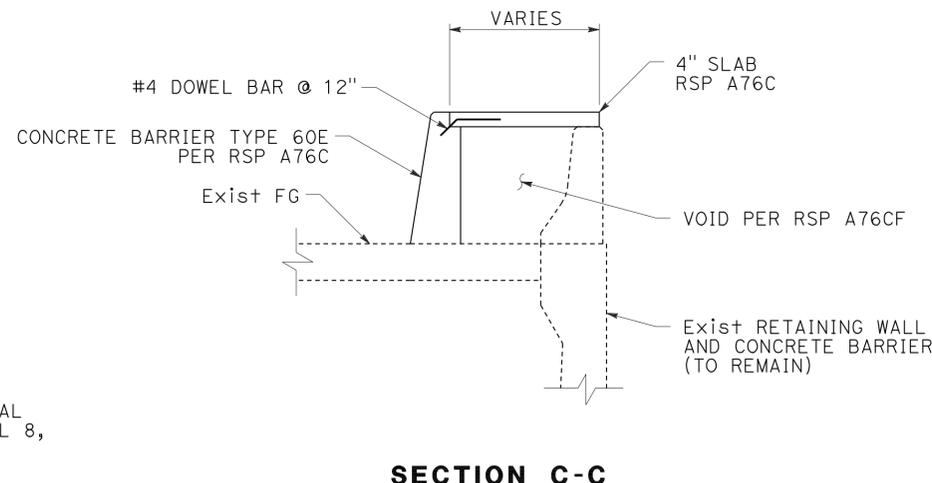
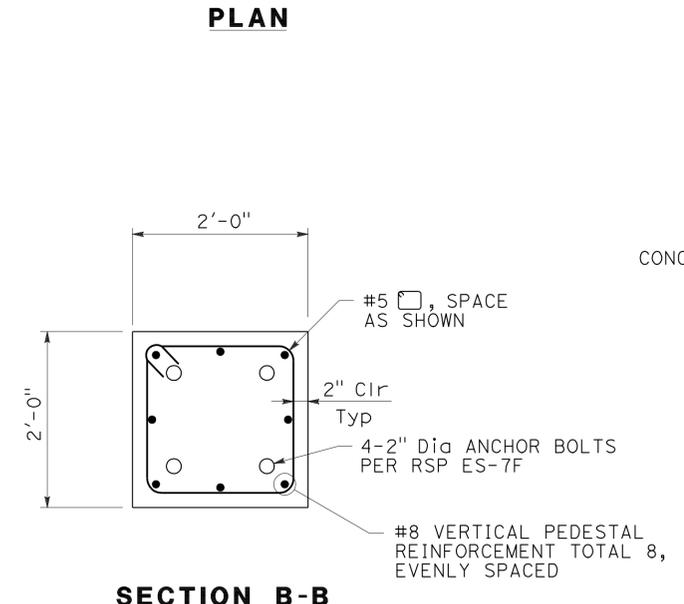
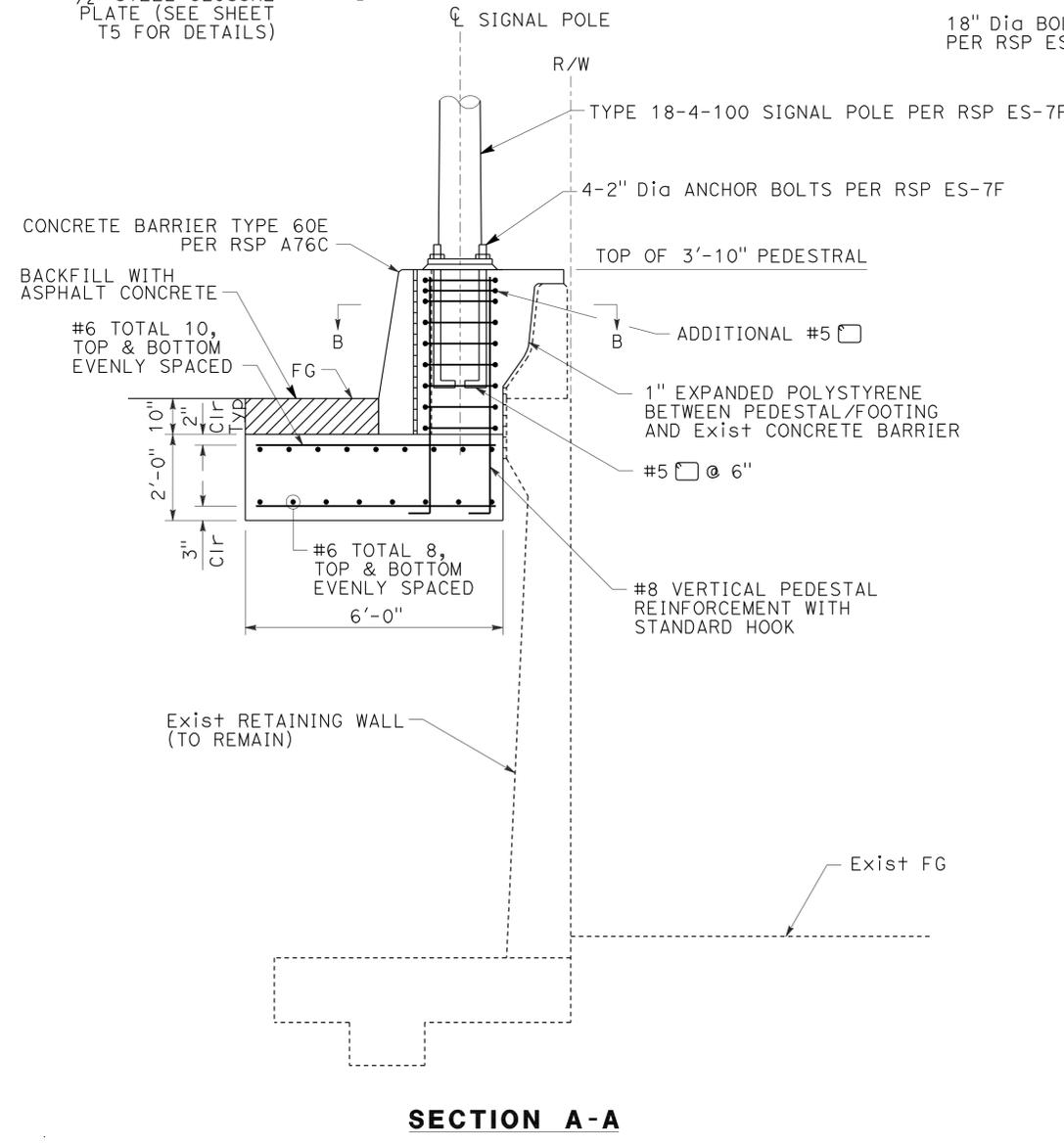
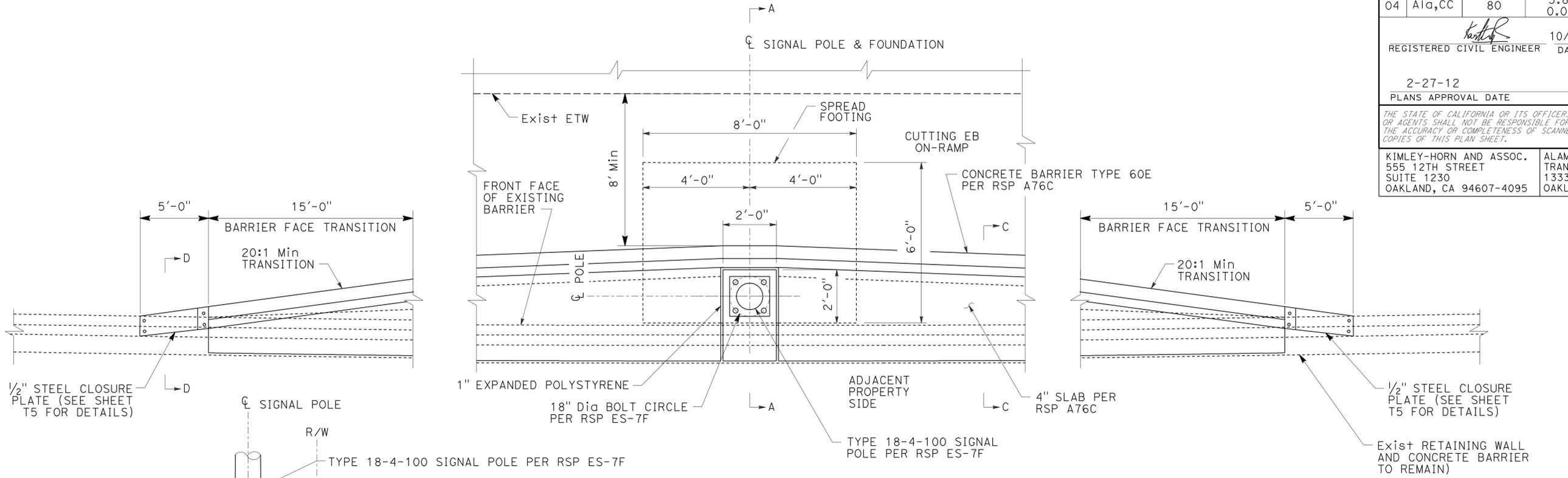
APPROVED FOR ELECTRICAL WORK ONLY.

LAST REVISION DATE PLOTTED => 02-MAR-2012 TIME PLOTTED => 15:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	228	290
			REGISTERED CIVIL ENGINEER	DATE	
			10/14/11		
			2-27-12	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.					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Et Caltrans®
 CONSULTANT SUPERVISOR: RANDAL DURRENBARGER
 CALCULATED/DESIGNED BY: K. AKWABI
 CHECKED BY: R. DOLE
 REVISED BY: JCS
 DATE REVISED: 10/14/11



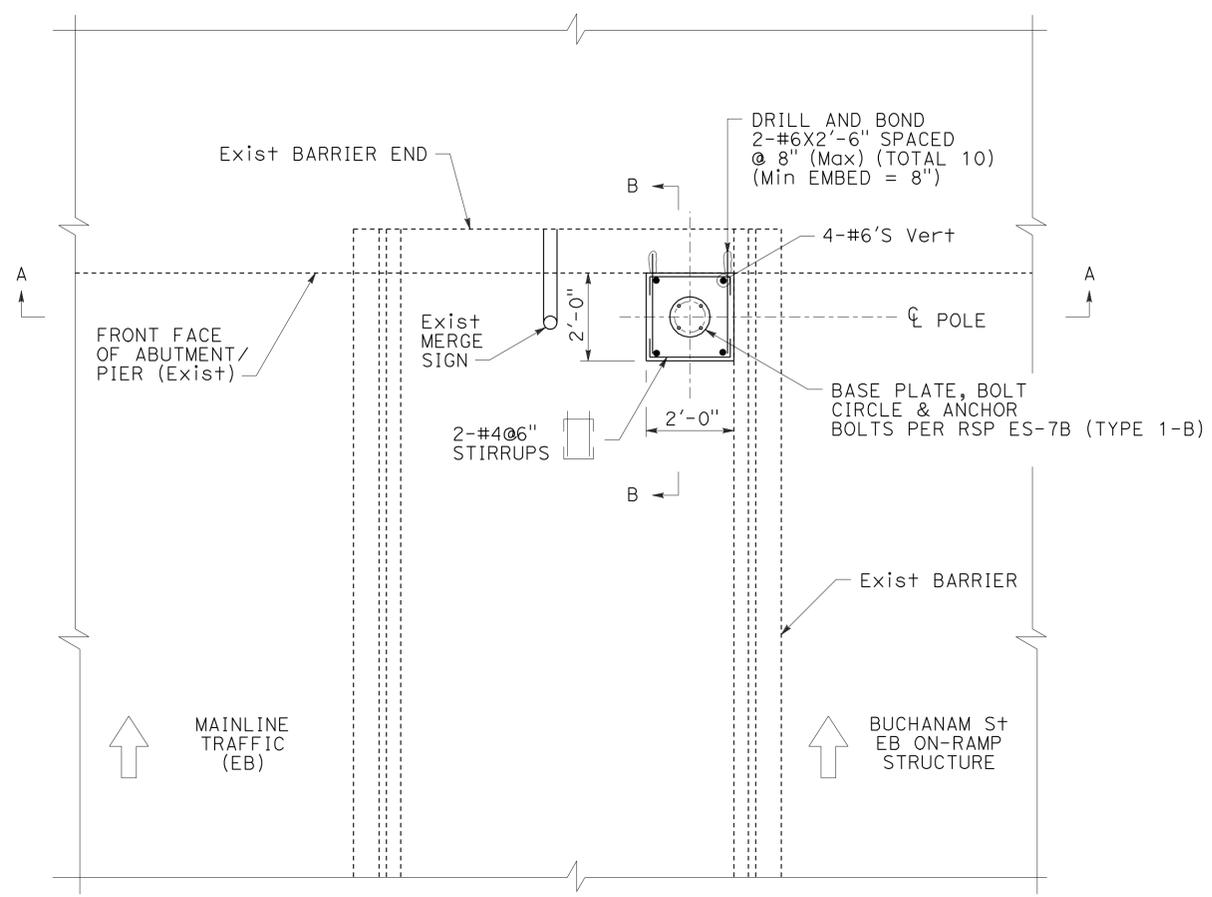
FOR NOTES, SEE SHEET E-42.

APPROVED FOR ELECTRICAL WORK ONLY

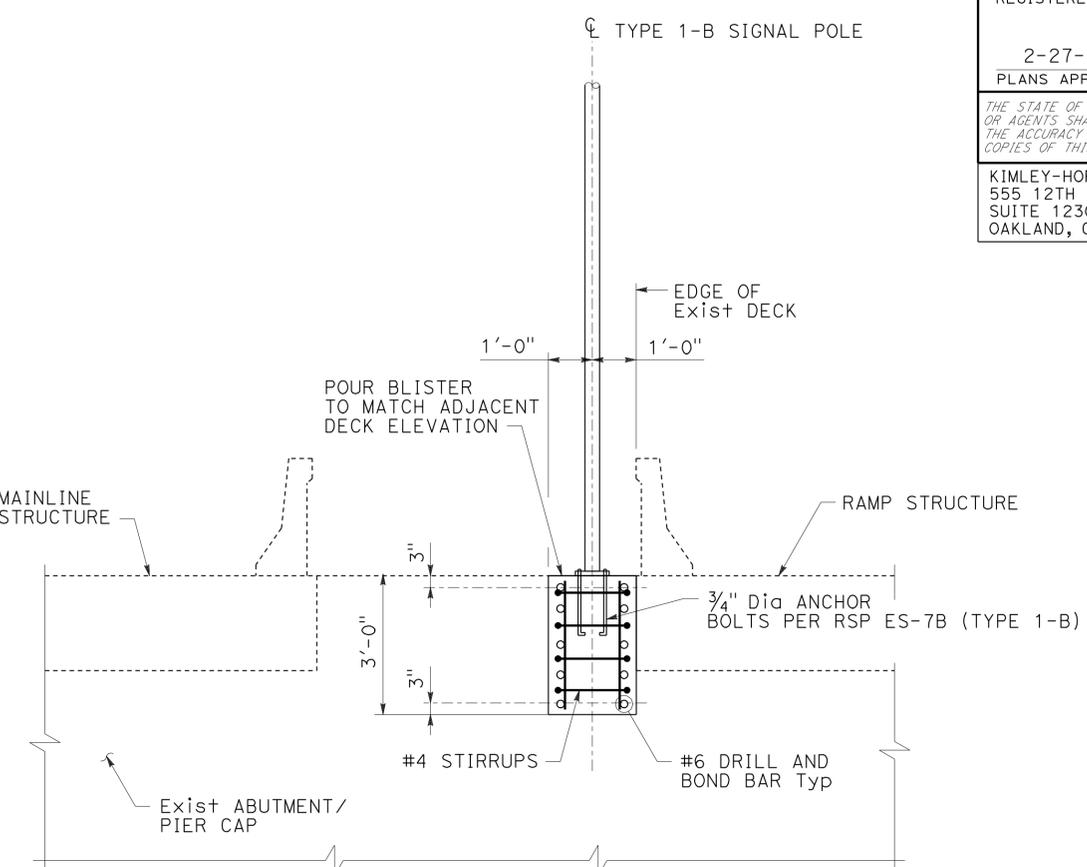
ELECTRICAL DETAILS
 (FOUNDATION TYPE II-C (SPREAD FOOTING)
 (CUTTING EB ON-RAMP))
 NO SCALE

E-48

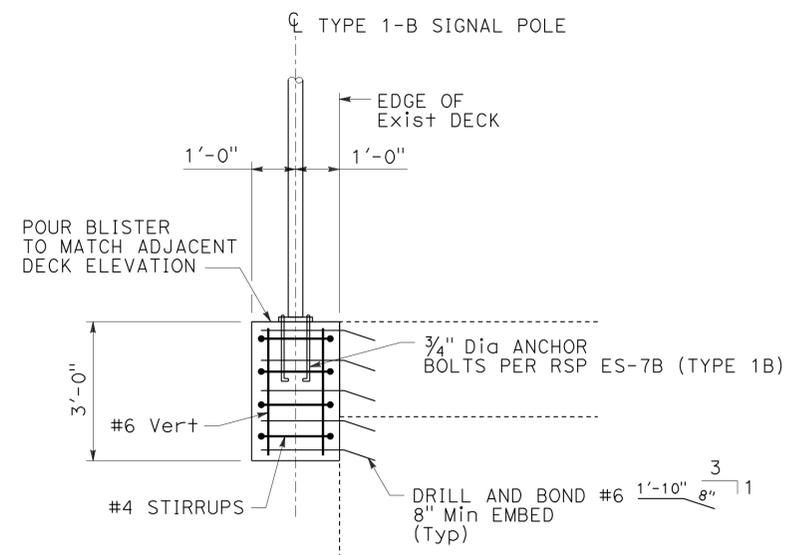
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	229	290
			REGISTERED CIVIL ENGINEER	DATE	
			10/14/11		
			2-27-12	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



PLAN



SECTION A-A



SECTION B-B

NOTES:

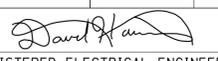
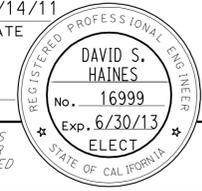
1. ALL REINFORCING SHALL RECEIVE 2" CLR COVER UNLESS NOTED OTHERWISE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'C = 3600 psi
3. ALL REINFORCING SHALL BE ASTM A615, GRADE 60

FOR NOTES, SEE SHEET E-42.

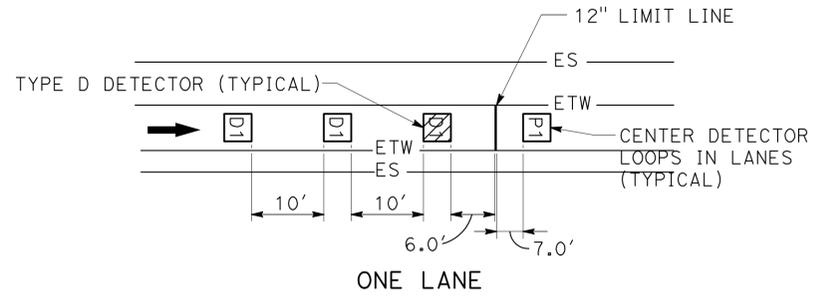
APPROVED FOR ELECTRICAL WORK ONLY

ELECTRICAL DETAILS
(FOUNDATION TYPE III-B (BRIDGE MOUNTED)
(BUCHANAN EB ON-RAMP))
 NO SCALE **E-49**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT - R. DOLE
 DESIGNED BY - K. AKWABI
 CHECKED BY -
 SUPERVISOR - RANDAL DURRENBARGER
 JCS
 REVISED BY
 DATE REVISED 10/14/11

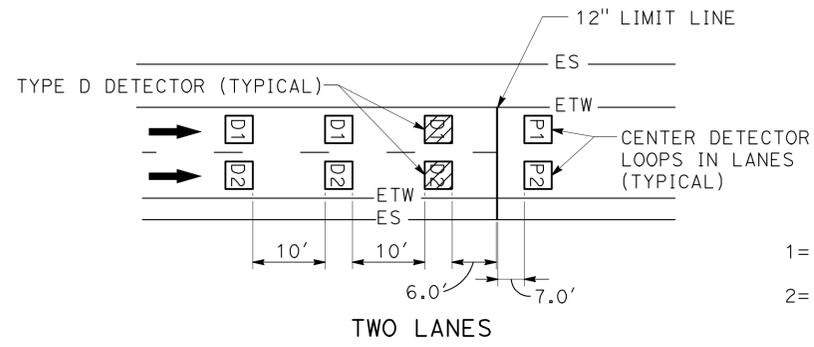
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	231	290
 REGISTERED ELECTRICAL ENGINEER			10/14/11 DATE		
2-27-12 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	REVISOR	DATE
	RANDAL DURRENBARGER	R. DOLE	10/14/11
		JCS	



RAMP METERING STATION NOTES:

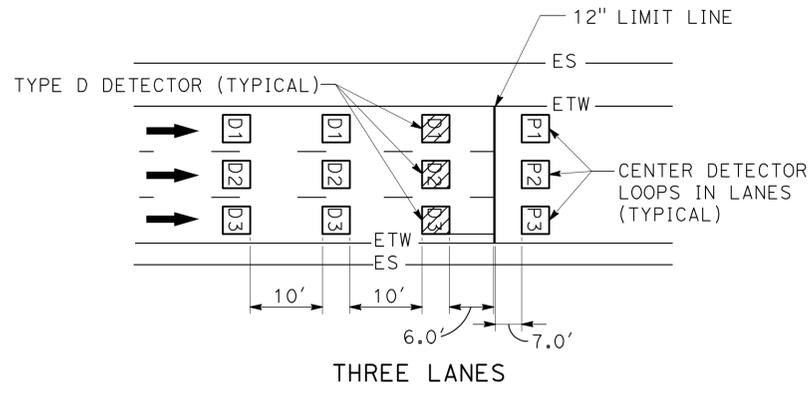
- SEE RSP ES-5A, ES-5B, AND ES-13A FOR ADDITIONAL DETAILS.
- DLC CONDUCTORS SHALL BE SPLICED TO THE LOOP CONDUCTORS IN THE NEAREST PULL BOX.
- ALL SPLICES SHALL BE TYPE "S" OR TYPE "ST" AS REQUIRED.



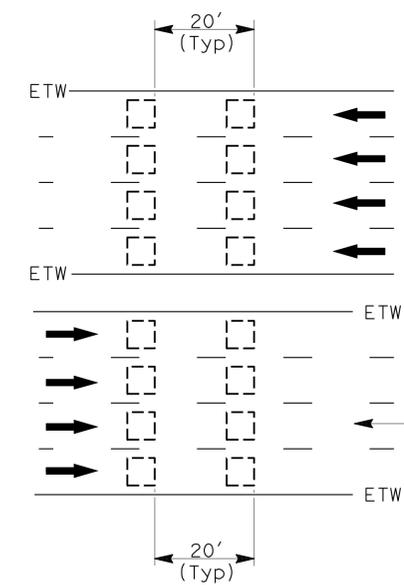
RAMP DETECTOR DESIGNATION:

- D= DEMAND DETECTOR
- P= PASSAGE DETECTOR
- Q= QUEUE DETECTOR
- F= OFFRAMP DETECTOR

- 1= FIRST LANE FROM LEFT
- 2= SECOND LANE FROM LEFT



**DETAIL "RM"
RAMP METER DETECTOR**



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 DETECTOR IN THE SAME LANE:

- 1= ENTERING DETECTOR
- 2= LEAVING DETECTOR

CENTER TYPE A DETECTOR LOOP IN LANE (Typ)

**DETAIL "TM"
FREEWAY MAINLINE DETECTOR**

**ELECTRICAL DETAILS
(RAMP METERING DETECTOR SPACING)**

NO SCALE

E-51

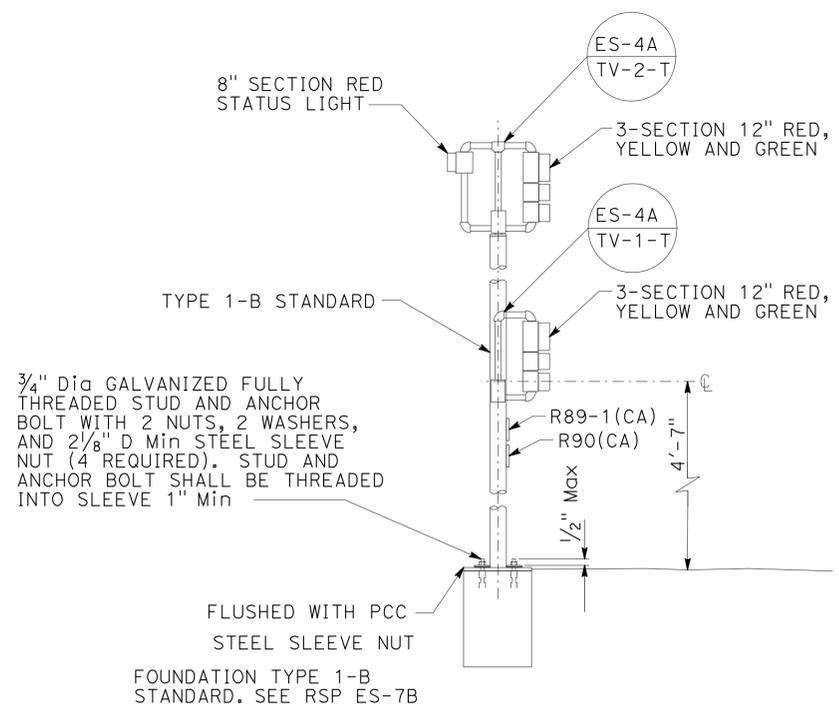
APPROVED FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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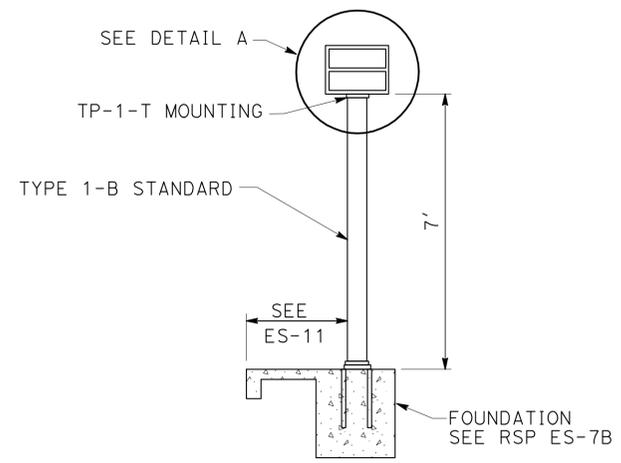
REGISTERED ELECTRICAL ENGINEER	DATE
<i>David Haines</i>	10/14/11
PLANS APPROVAL DATE	
2-27-12	

REGISTERED PROFESSIONAL ENGINEER	
DAVID S. HAINES	
No. 16999	
Exp. 6/30/13	
ELECT	
STATE OF CALIFORNIA	

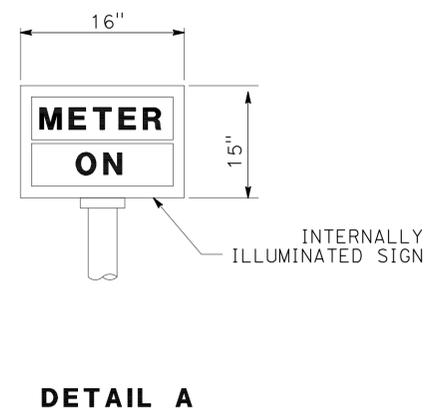
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095	ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612
---	--



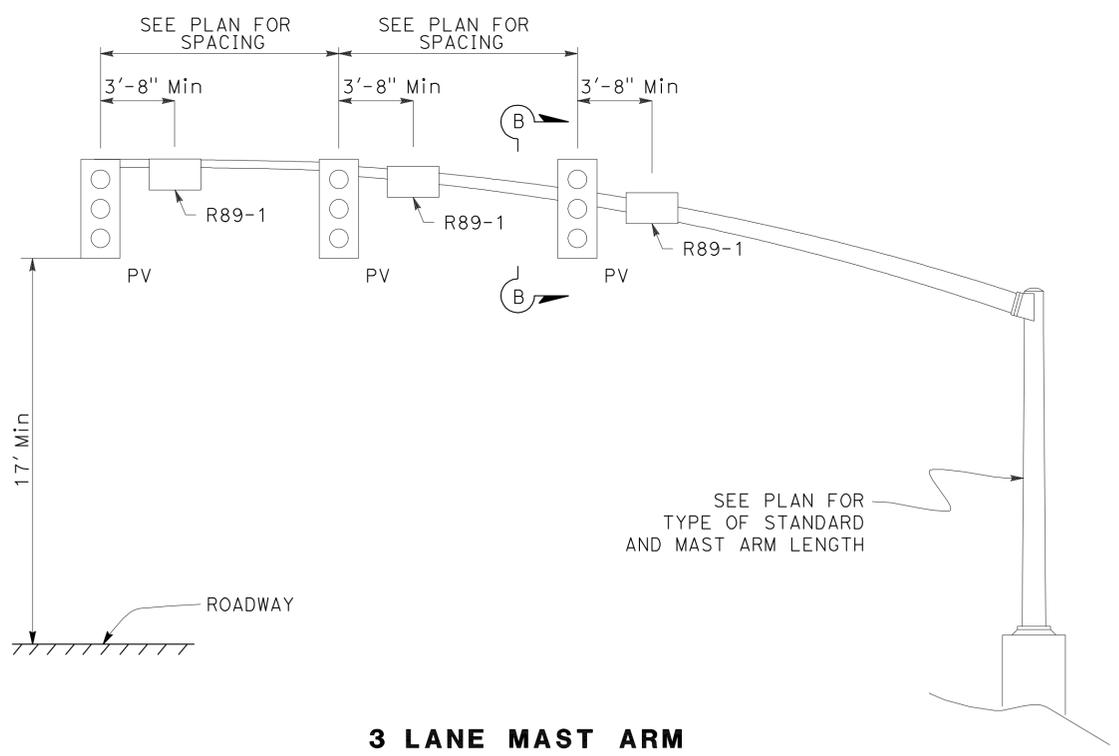
**DETAIL "SIG"
RAMP METER SIGNAL, POLE MOUNTED**



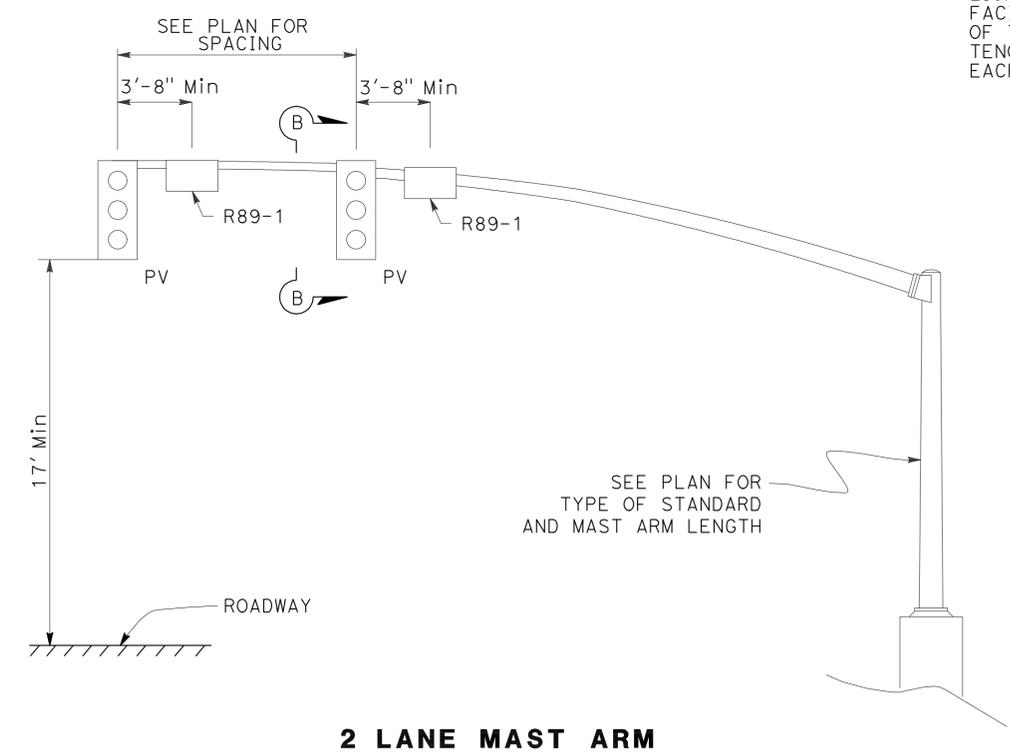
METER ON SIGN DETAIL



DETAIL A

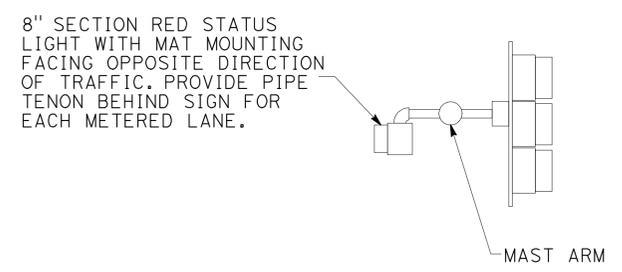


3 LANE MAST ARM



2 LANE MAST ARM

**DETAIL "MA"
SIGNALS MOUNTED ON MAST ARM DETAIL**



SECTION B-B

**ELECTRICAL DETAILS
(RAMP METERING SIGNALS AND
METER ON SIGNALS)**

NO SCALE

E-52

APPROVED FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT: R. DOLE
 SUPERVISOR: RANDAL DURRENBARGER
 DESIGNED BY: JCS
 CHECKED BY: K. AKWABI
 DATE: 10/14/11

USERNAME => s128843
 DGN FILE => 0400002043u052.dgn

RELATIVE BORDER SCALE IS IN INCHES
 0 1 2 3

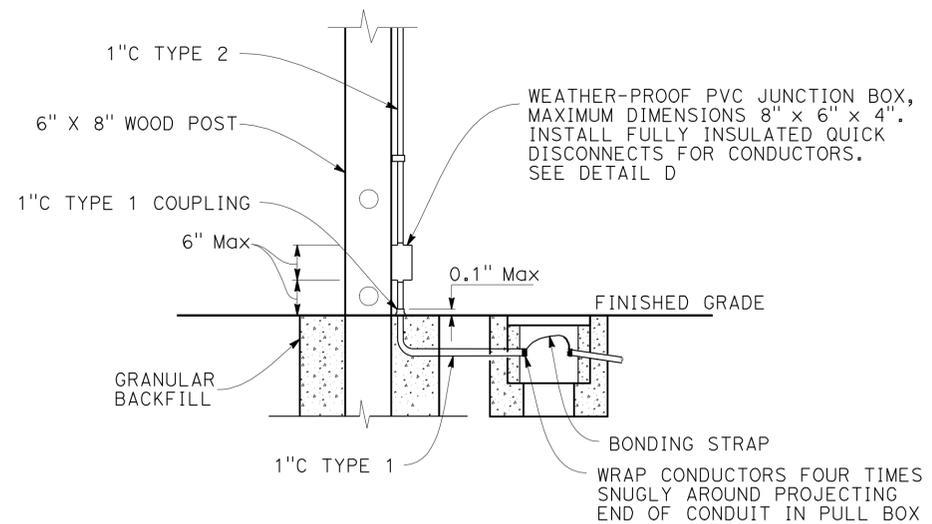
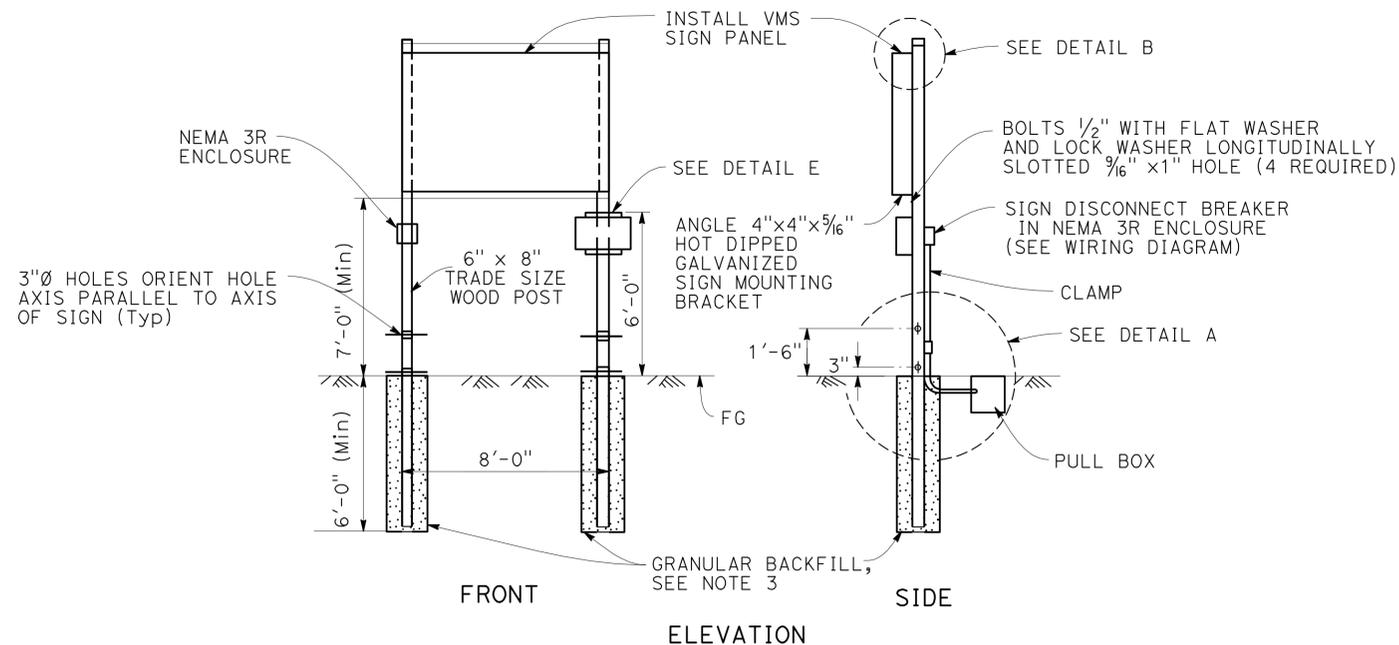
UNIT 0727

PROJECT NUMBER & PHASE

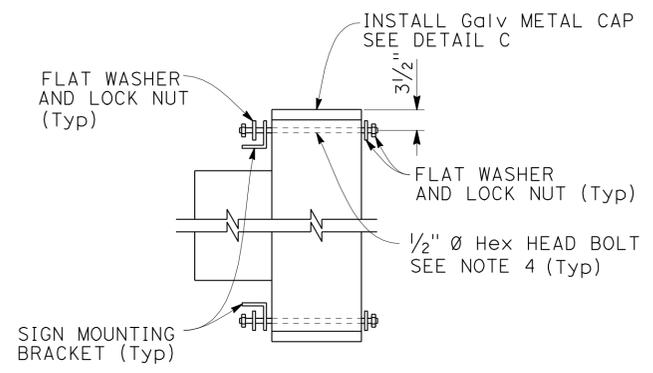
04000020431

LAST REVISION: 08-22-11
 DATE PLOTTED => 02-MAR-2012
 TIME PLOTTED => 15:05

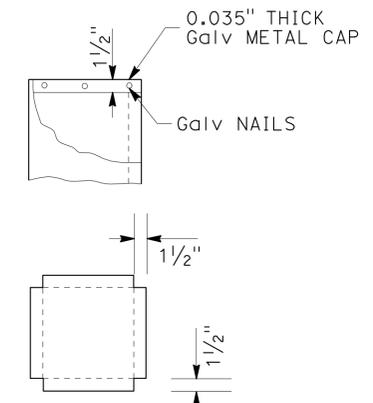
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	233	290
<i>M. Now</i> DATE 12/20/11			REGISTERED PROFESSIONAL ENGINEER Mahmood Noii No. 13717 Exp. 6-30-13 STATE OF CALIFORNIA		
2-27-12 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



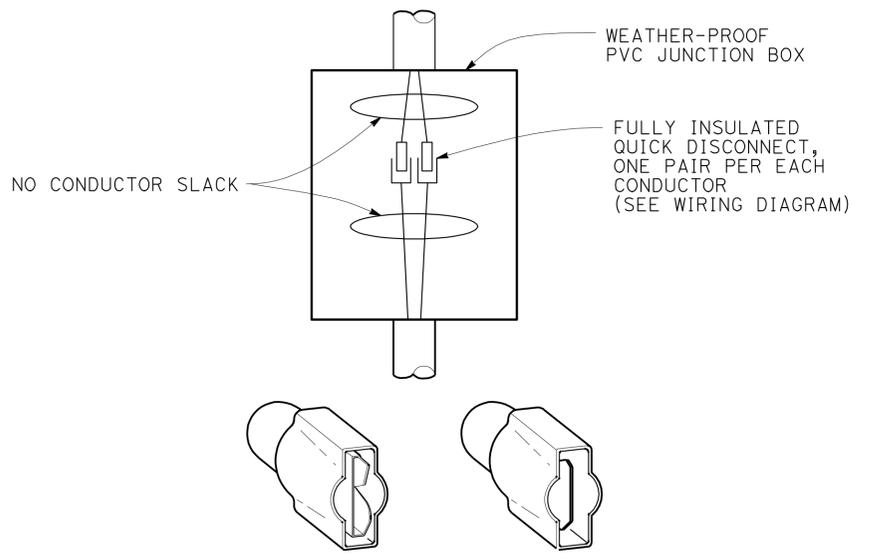
**DETAIL A
CONDUIT BREAKAWAY**



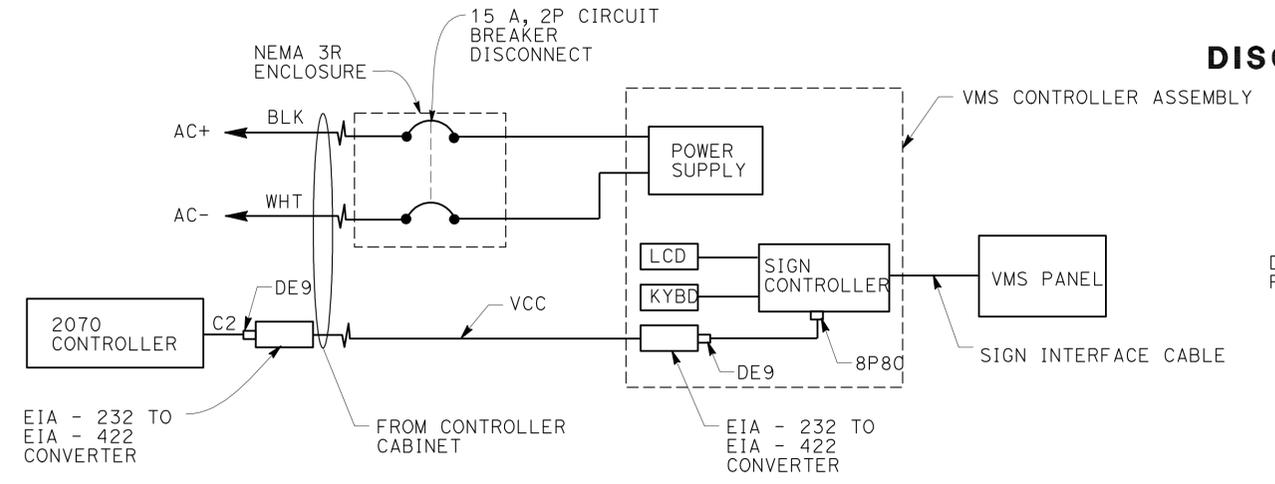
DETAIL B



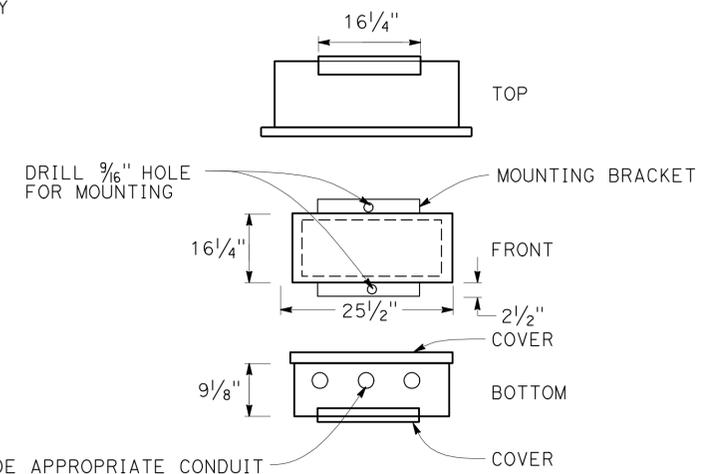
**DETAIL C
Galv METAL CAP
(MATCH THE DIMENSIONS OF POST TOP)**



**DETAIL D
DISCONNECTS FOR POWER CONDUCTORS**



VMS WIRING DIAGRAM



**DETAIL E
EMS CONTROLLER ASSEMBLY**

GENERAL NOTES:

- DESIGN:**
AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, DATED 2001
- CONSTRUCTION:**
STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DATED JULY 1999 AND MAY 2006
STANDARD PLANS
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DATED MAY 2006 AND CURRENT REVISED PLANS
- LOADING:**
WIND LOADING:
40 psf APPLIED LOAD COMBINATIONS PER 3.9 AASHTO SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, DATED 2001

STANDARD PLANS DATED MAY 2006:

- | | |
|------|---|
| A10A | ACRONYMS AND ABBREVIATIONS (A-L) |
| A10B | ACRONYMS AND ABBREVIATIONS (M-Z) |
| RS1 | ROADSIDE SIGNS
TYPICAL INSTALLATION DETAIL No. 1 |
| RS2 | ROADSIDE SIGNS
TYPICAL INSTALLATION DETAIL No. 2 |

NOTES:

- FOR DETAILS NOT SHOWN, SEE "2006 STANDARD PLANS" AND "2006 REVISED STANDARD PLANS".
- FOR SIGN LOCATION SEE "PROJECT PLANS".
- DIAMETER OF POST HOLES SHALL BE AT LEAST 2'-6".
- REFER TO VMS MANUFACTURER TO VERIFY BOLT HOLE LAYOUT AND LENGTH.

**ELECTRICAL DETAILS
(VMS WITH SIGN CONTROL ASSEMBLY)**

NO SCALE

E-53

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT: R. DOLE, K. AKWABI, RANDAL DURRENBARGER
 CALCULATED/DESIGNED BY: [blank], CHECKED BY: [blank]
 REVISED BY: JCS, DATE REVISED: 10/14/11
 USERNAME => s121614, DGN FILE => 0400002043u053.dgn
 BORDER LAST REVISED 7/2/2010



UNIT 0727

PROJECT NUMBER & PHASE

04000020431

LAST REVISION: 12-20-11 DATE PLOTTED => 23-MAY-2012 TIME PLOTTED => 09:33

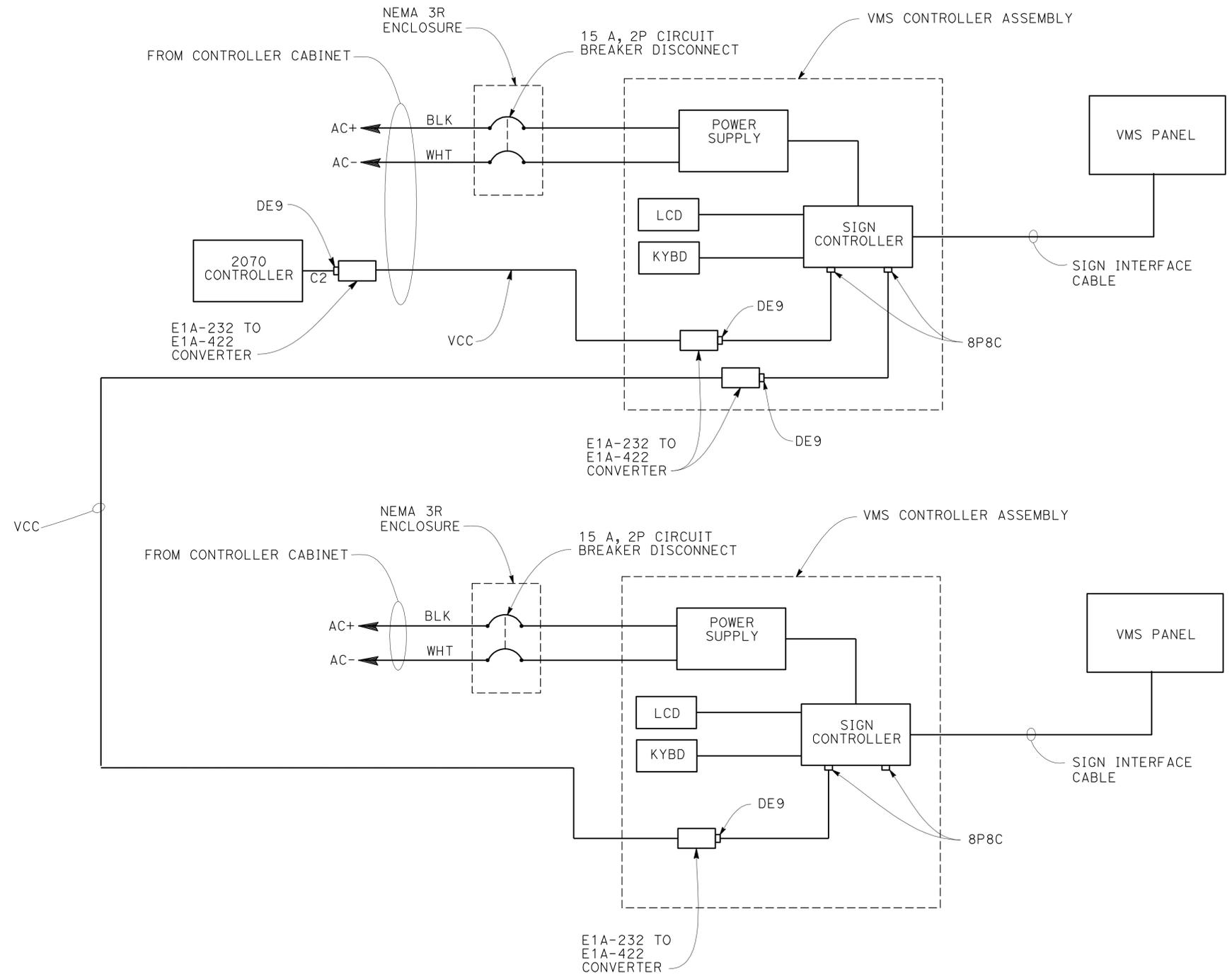
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	234	290

10/14/11
 REGISTERED ELECTRICAL ENGINEER DATE
 2-27-12
 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.

KIMLEY-HORN AND ASSOC.
 555 12TH STREET
 SUITE 1230
 OAKLAND, CA 94607-4095

ALAMEDA COUNTY
 TRANSPORTATION COMMISSION
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



TWO VMS WIRING INSTALLATION DIAGRAM

**ELECTRICAL DETAILS
(TWO VMS WIRING INSTALLATION DIAGRAM)**

NO SCALE

E-54

FOR SYMBOLS AND ABBREVIATIONS,
SEE SHEET E-1.

APPROVED FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT - FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	RANDAL DURRENBARGER	JCS	10/14/11
	CHECKED BY	REVISOR	DATE
	K. AKWABI	JCS	10/14/11

USERNAME => s128843
DGN FILE => 0400002043ua054.dgn

RELATIVE BORDER SCALE IS IN INCHES

UNIT 0727

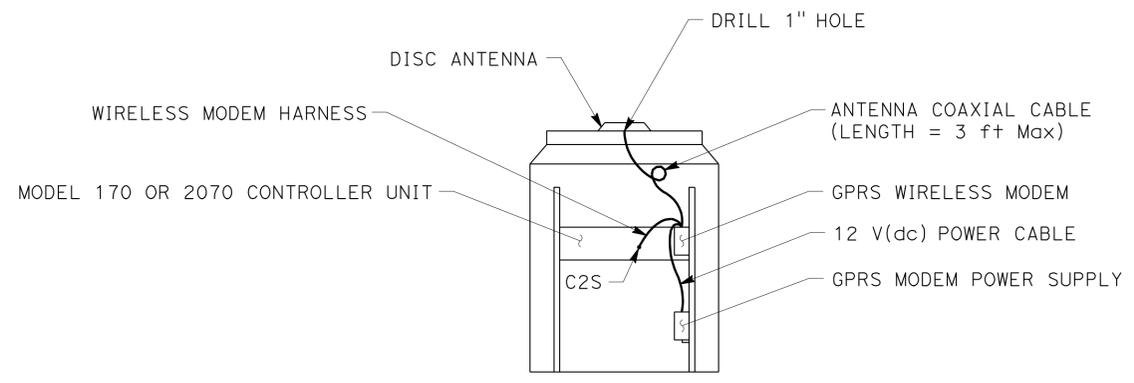
PROJECT NUMBER & PHASE

04000020431

DATE PLOTTED => 02-MAR-2012
TIME PLOTTED => 15:05

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	235	290
			10/14/11		
REGISTERED ELECTRICAL ENGINEER			DATE		
2-27-12			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>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT - FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	RANDAL DURRENBARGER	R. DOLE	JCS	10/14/11
		K. AKWABI		



REAR VIEW OF THE 334 MODEL CONTROLLER CABINET
**GPRS WIRELESS MODEM AND
 ANTENNA INSTALLATION DETAIL**

CONTRACTOR'S WORK IN THE CONTROLLER CABINET

1. PROVIDE THE GPRS MODEM AND WIRELESS MODEM HARNESS TO THE ENGINEER 30 WORKING DAYS PRIOR TO INSTALLATION. THE ENGINEER WILL RETURN THE PROGRAMMED MODEM, WITH PACKET DATA PROTOCOL CONTEXT AND ACCESS POINT NAME, AND HARNESS WITHIN 15 WORKING DAYS.
2. DRILL 1" HOLE THROUGH THE TOP OF THE CABINET. ATTACH THE ANTENNA ONTO THE CABINET WITH STICK PAD PROVIDED BY THE MANUFACTURER.
3. MOUNT THE MODEM UNIT ONTO THE CABINET REAR MOUNTING RAIL WITH MOUNTING BRACKET PROVIDED BY THE MANUFACTURER.
4. MOUNT THE MODEM 12 V(dc) POWER SUPPLY DIRECTLY ONTO THE CABINET.
5. CONNECT POWER CABLE TO 12 V(dc) POWER ADAPTER.
6. CONNECT THE ANTENNA COAXIAL CABLE TO THE MODEM.
7. CONNECT MODEM HARNESS BETWEEN THE MODEM AND THE MODEL 170 OR 2070 CONTROLLER UNIT AS SHOWN.
8. RECORD THE SERIAL NUMBER OF THE MODEM ON THE CHECKLIST SHEET.
9. IF TELEPHONE MODEM EXISTS, DISCONNECT EXISTING TELEPHONE MODEM FROM MODEL 170 OR 2070 CONTROLLER, DISCONNECT TELEPHONE MODEM POWER SUPPLY FROM CABINET POWER SOURCE, KEEP TELEPHONE MODEM AND ASSOCIATED POWER SUPPLY MOUNTED IN PLACE, AND KEEP TWO-WAY PAGER COMMUNICATION WIRES IN PLACE CONNECTED TO EXISTING TELEPHONE DEMARCATION CABINET.

**WIRELESS MODEM HARNESS
 INSTALLATION DETAILS**

1. CABLE PIN OUT DIAGRAM
 AMP 201360-2-ND DB9-P
 L _____ 2
 K _____ 3
 N _____ 5
 D
 H
 J _____ 1,4,6,7,8,9 N/C
 M

2. CONSTRUCT AND INSTALL COMMUNICATION CABLE. SEE SPECIAL PROVISIONS FOR CABLE TYPE AND OTHER INFORMATION.

FOR SYMBOLS AND ABBREVIATIONS,
 SEE SHEET E-1.

APPROVED FOR ELECTRICAL WORK ONLY.

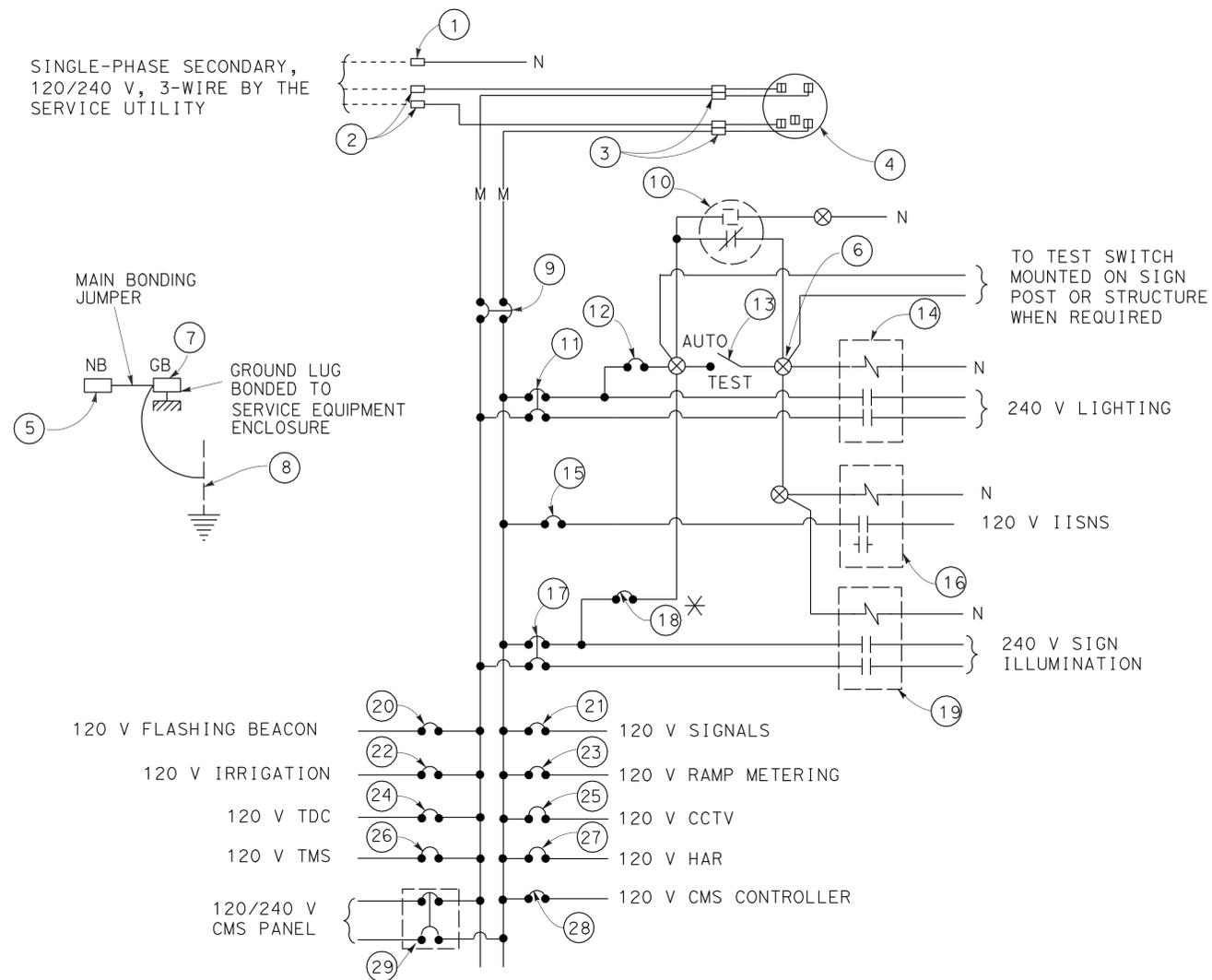
ELECTRICAL DETAILS
 (GENERAL PACKET RADIO SYSTEM
 WIRELESS MODEM INSTALLATION DETAILS)
 NO SCALE
E-55

LAST REVISION: 08-22-11 DATE PLOTTED => 02-MAR-2012 TIME PLOTTED => 15:05

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	236	290

REGISTERED ELECTRICAL ENGINEER *M. Noor* DATE 12/20/11
 PLANS APPROVAL DATE 2-27-12
 No. 13717
 Exp 6-30-13
 ELECT
 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.



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

TYPE III-A SERVICE (120/240 V) EQUIPMENT LEGEND

ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
①	NEUTRAL LUG	
②	LANDING LUG	
③	TEST BYPASS FACILITY	
④	METER SOCKET AND SUPPORT	
⑤	NEUTRAL BUS	
⑥	TERMINAL BLOCK	
⑦	GROUND BUS	
⑧	GROUNDING ELECTRODE	
⑨	100 A, 240 V, 2P, CB	MAIN BREAKER
⑩	PHOTOELECTRIC UNIT (NOTE 7)	
⑪	30 A, 240 V, 2P, CB	LIGHTING
⑫	15 A, 120 V, 1P, CB	LIGHTING CONTROL
⑬	15 A, 1P, TEST SWITCH	TEST SWITCH
⑭	30 A, 2PNO, CONTACTOR	
⑮	15 A, 120 V, 1P, CB	IISNS
⑯	30 A, 2PNO, CONTACTOR	
⑰	30 A, 240 V, 2P, CB	SIGN ILLUMINATION

ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
⑱*	15 A, 120 V, 1P, CB	SIGN ILLUMINATION CONTROL
⑲	30 A, 2PNO, CONTACTOR	
⑳	15 A, 120 V, 1P, CB	FLASHING BEACON
㉑	50 A, 120 V, 1P, CB	SIGNALS
㉒	20 A, 120 V, 1P, CB	IRRIGATION
㉓	30 A, 120 V, 1P, CB	RAMP METERING
㉔	15 A, 120 V, 1P, CB	TDC
㉕	30 A, 120 V, 1P, CB	CCTV
㉖	30 A, 120 V, 1P, CB	TMS
㉗	30 A, 120 V, 1P, CB	HAR
㉘	30 A, 120 V, 1P, CB	CMS CONTROLLER
㉙	30 A, 240 V, 2P, CB	CMS PANEL

* PROVIDE ITEM ⑱ WHEN BOTH CIRCUITS OF SIGN ILLUMINATION AND LIGHTING ARE USED. ITEM ⑱ IS NOT REQUIRED.

LEGEND:

(SEE RSP ES-1A & RSP ES-1C)

NOTES: (FOR SERVICE EQUIPMENT)

- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
- ITEM No. ① AND ⑤ SHALL BE ISOLATED FROM THE CABINET.
- METER SOCKETS SHALL BE 5 CLIP TYPE.
- SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
- UNLESS OTHERWISE NOTED, NO MORE THAN 14 CB CAN BE INSTALLED IN THE ENCLOSURE.
- PHOTOELECTRIC CONTROL SHALL BE TYPE II.

ELECTRICAL DETAILS
(SERVICE EQUIPMENT AND TYPICAL
WIRING DIAGRAM TYPE III-A SERIES)

NO SCALE

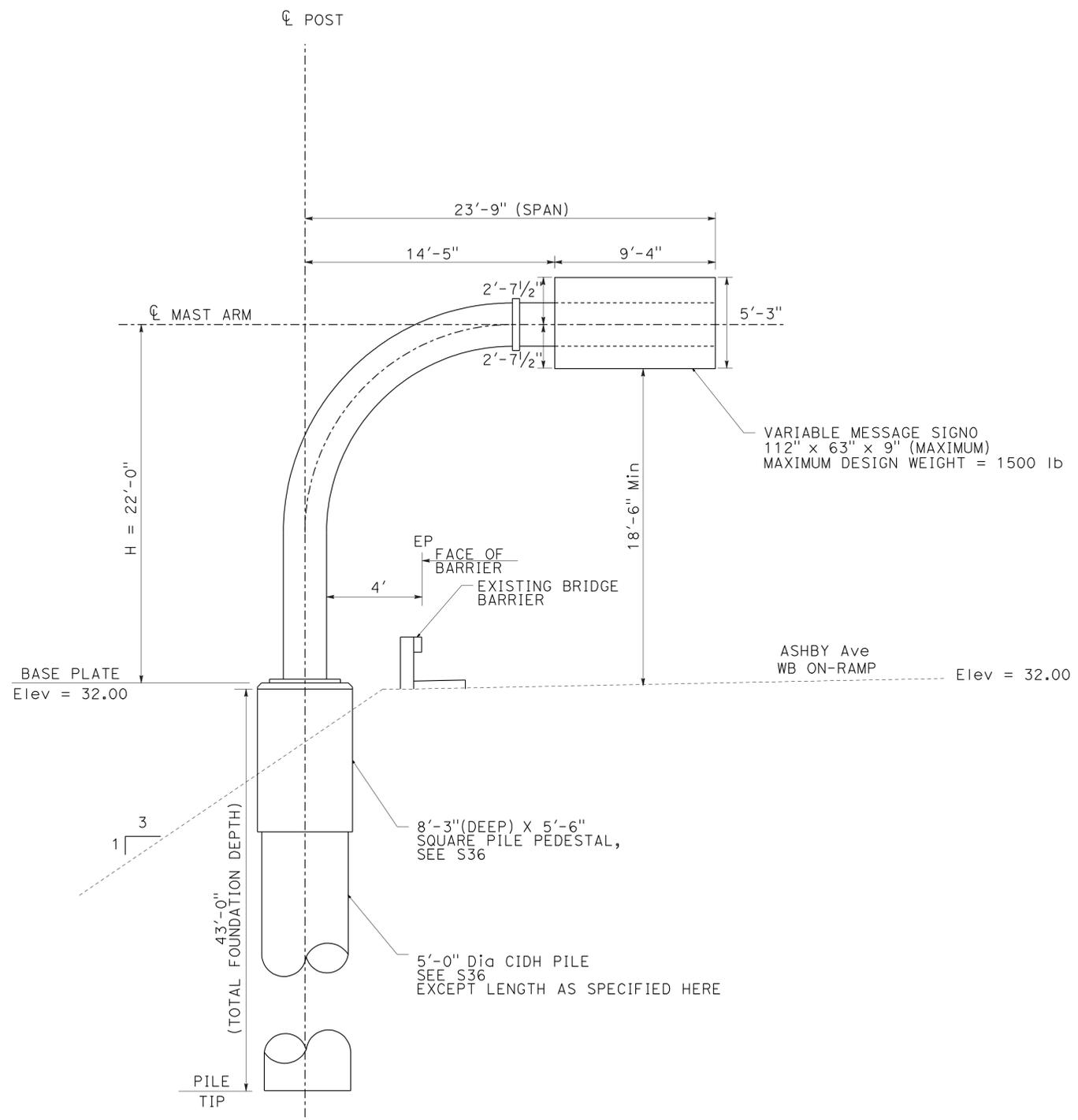
E-56

APPROVED FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT - FUNCTIONAL SUPERVISOR
 RANDAL DURRENBERGER
 R. DOLE
 K. AKWABI
 JCS
 10/14/11
 REVISIONS: 12-20-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT - FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
Caltrans	RANDAL DURRENBARGER	R. DOLE K. AKWABI	JCS	10/14/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0 0.0/13.5	237	290
			REGISTERED CIVIL ENGINEER	DATE	
			2-27-12	10/14/11	
			PLANS APPROVAL DATE		
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



- NOTES:**
1. MAST ARM AND POSTS SHALL BE IN ACCORDANCE WITH S31, POST TYPE IV AND S35.
 2. SEE VMS SIGN ATTACHMENT DETAILS ON SHEETS E-58 AND E-59.
 3. BASE PLATE ELEVATION SHOWN IS TO BOTTOM OF PLATE.
 4. ALL ELEVATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING AND CONSTRUCTING SIGN STRUCTURES.
 5. SIGN STRUCTURE SHOWN IS DESIGNED FOR THE CONFIGURATION, AREA, AND WEIGHT OF VMS SIGN AS SHOWN. ANY MODIFICATION TO THIS LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
 6. LOCATION OF SIGN STRUCTURE (TUBULAR) PER E-4 AND E-5.

**VMS ELEVATION AT ASHBY AVENUE
WB ON-RAMP**

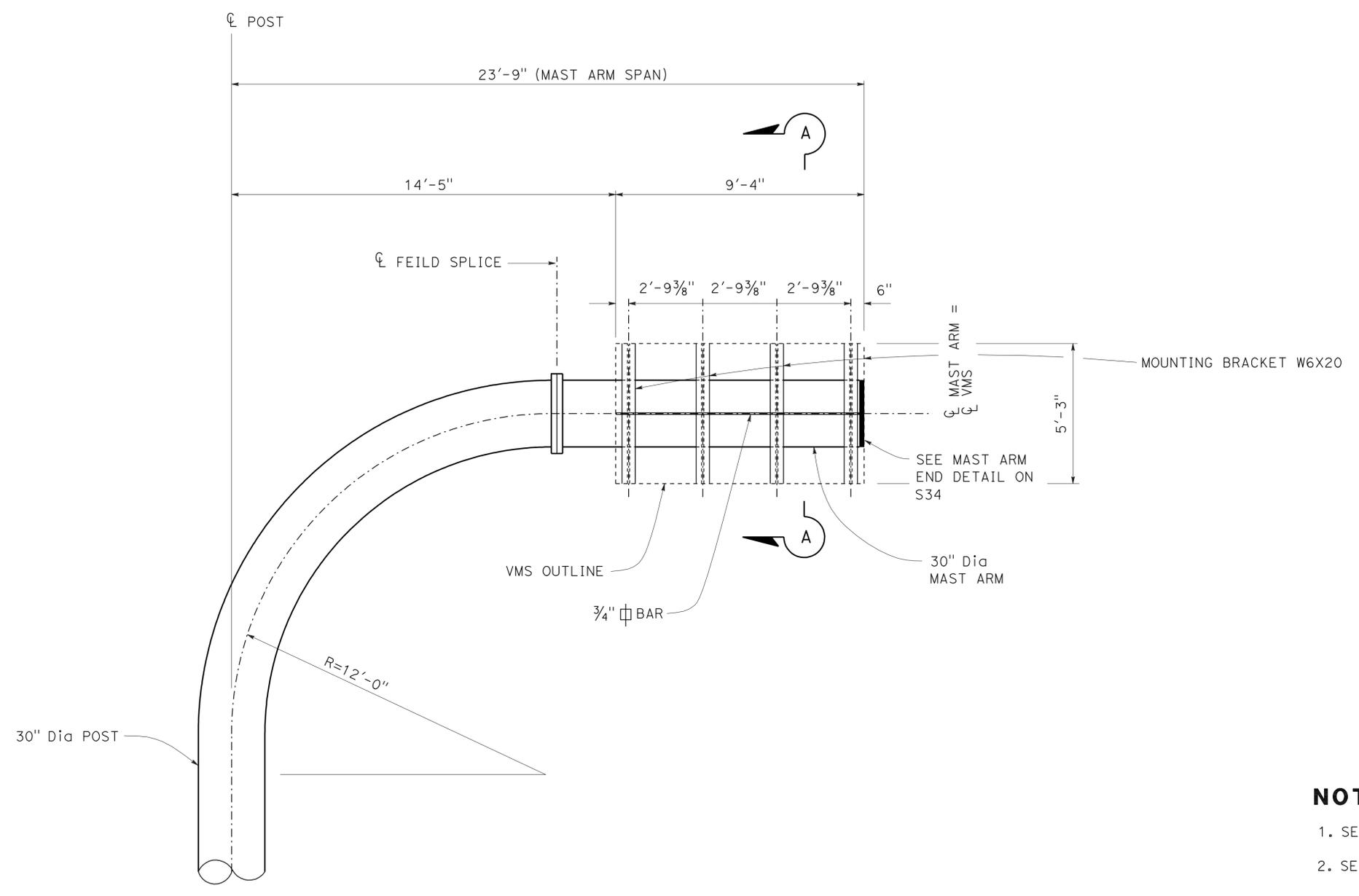
FOR SYMBOLS AND ABBREVIATIONS,
SEE SHEET E-1

APPROVED FOR ELECTRICAL WORK ONLY.

ELECTRICAL DETAILS
(VMS ELEVATION AT ASHBY AVENUE WB ON-RAMP)

NO SCALE
E-57

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0 0.0/13.5	238	290
			10/14/11		
REGISTERED CIVIL ENGINEER			DATE		
2-27-12			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>					
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VMS ATTACHMENT FRAMING ELEVATION

NOTES:

1. SEE SHEET E-57 FOR POST AND MAST ARM REQUIREMENTS.
2. SEE SHEET E-59 FOR SECTION 'A-A'.

FOR SYMBOLS AND ABBREVIATIONS
SEE SHEET E-1.

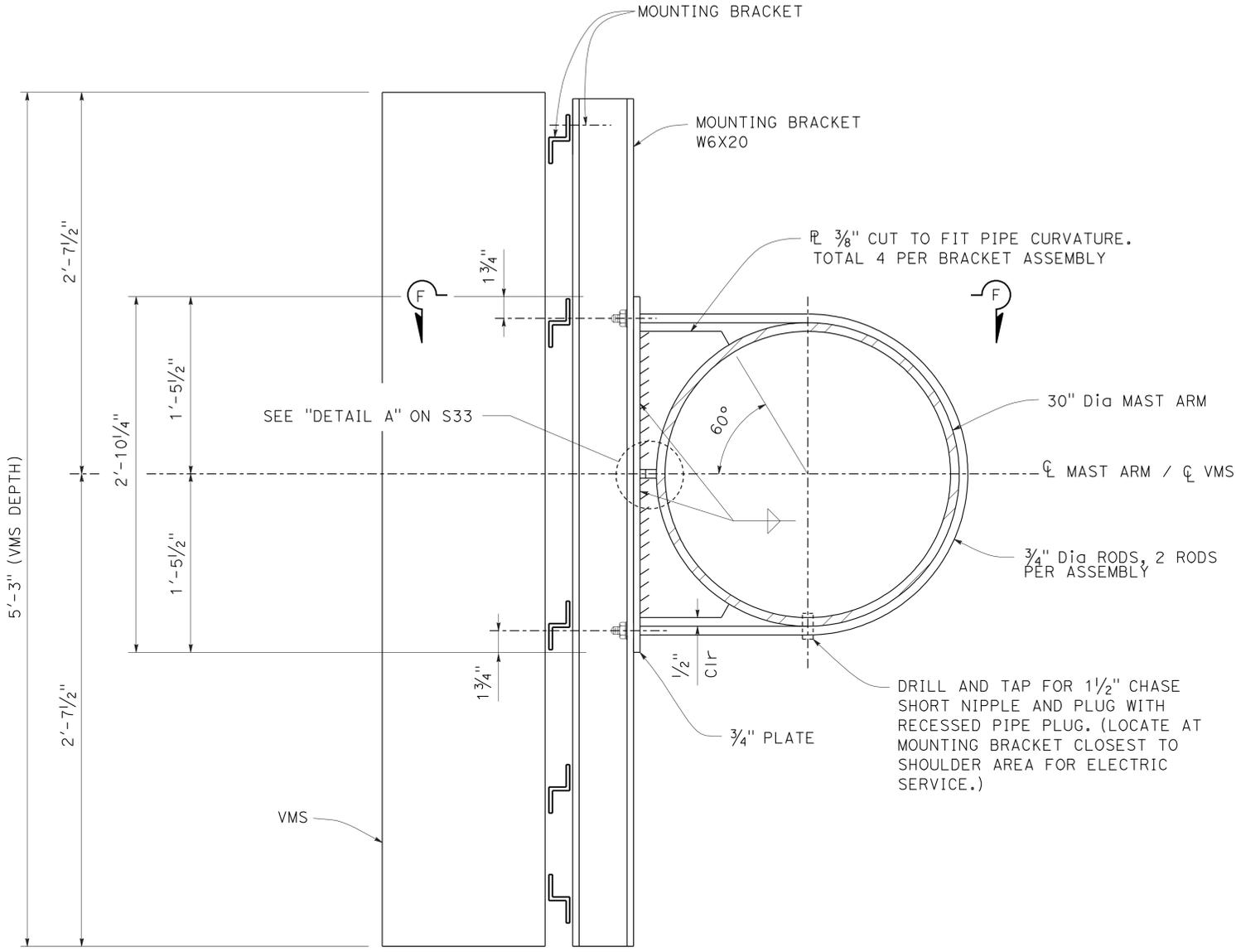
APPROVED FOR ELECTRICAL WORK ONLY.

**ELECTRICAL DETAILS
(VMS SIGN ATTACHMENT)**

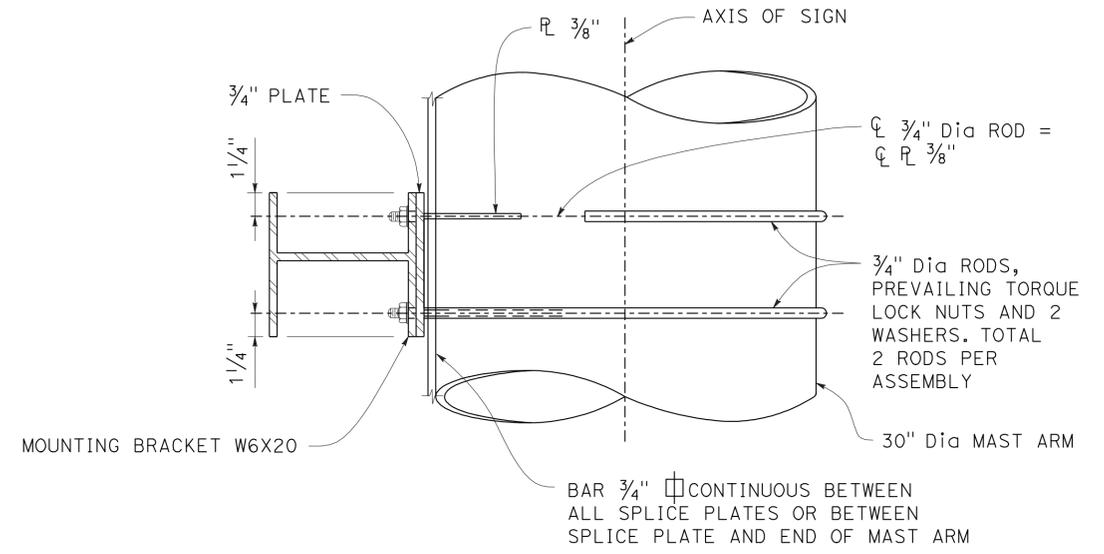
NO SCALE **E-58**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE	REVISION
	RANDAL DURRENBARGER	K. AKWABI	R. DOLE	10/14/11	JCS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0 0.0/13.5	239	290
			10/14/11		
REGISTERED CIVIL ENGINEER			DATE		
2-27-12			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>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



SECTION A-A



SECTION F-F

NOTE:

VMS ATTACHMENT FRAME SHALL BE GALVANIZED AFTER FABRICATION AND ASSEMBLY OF FRAME MEMBERS.

FOR SYMBOLS AND ABBREVIATIONS, SEE SHEET E-1.

APPROVED FOR ELECTRICAL WORK ONLY.

**ELECTRICAL DETAILS
VMS SIGN ATTACHMENT**

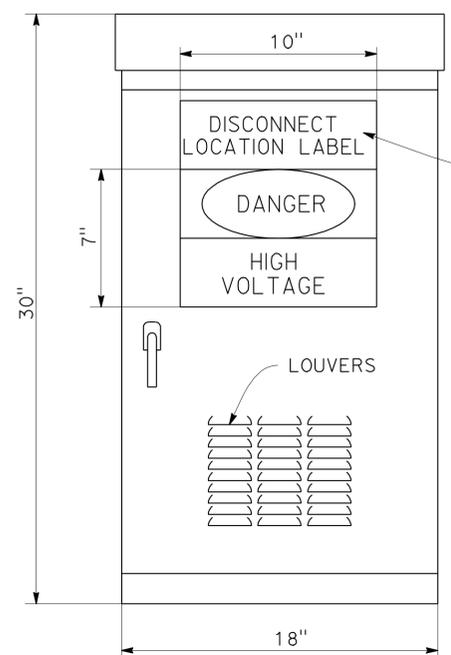
NO SCALE

E-59

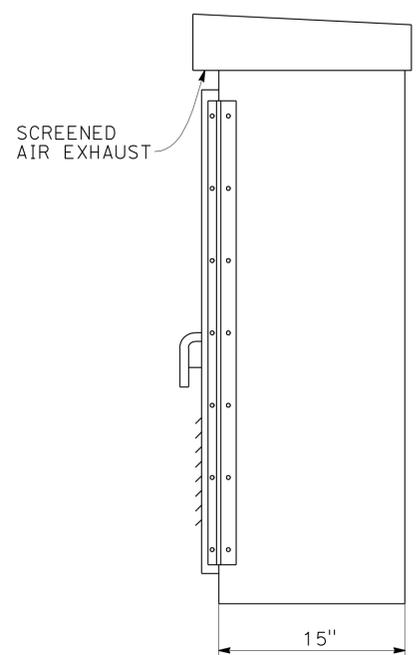
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	RANDAL DURRENBARGER	R. DOLE	K. AKWABI	JCS	10/14/11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT - FUNCTIONAL SUPERVISOR
 RANDAL DURRENBARGER
 CALCULATED-DESIGNED BY
 CHECKED BY
 R. DOLE
 K. AKWABI
 REVISED BY
 DATE REVISED
 JCS
 10/14/11

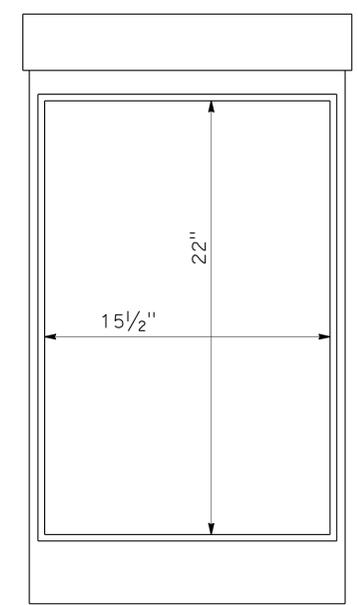
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0 0.0/13.5	240	290
			10/14/11		
			REGISTERED CIVIL ENGINEER	DATE	
			2-27-12	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095			ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



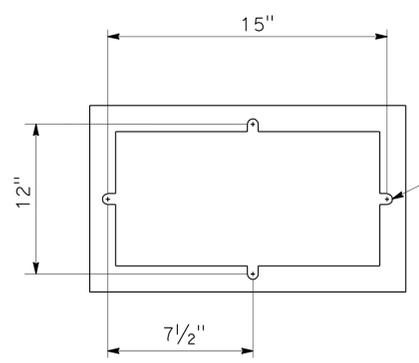
FRONT VIEW



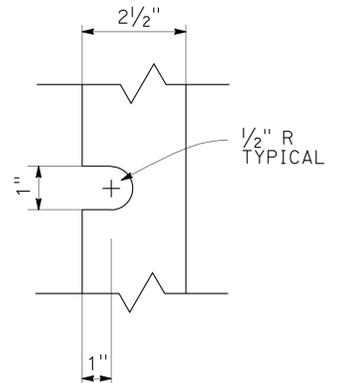
SIDE VIEW



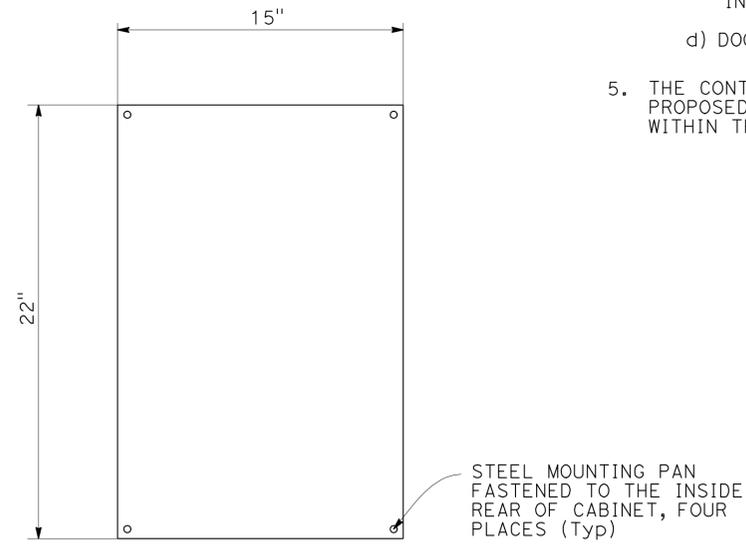
OPENING



PAD MOUNTING PATTERN



BOLT SLOT DETAIL



MOUNTING PAN

NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER REGARDING DISCONNECT LOCATION DESCRIPTION.
2. USE SILICON (GREY) TO SEAL GAP BETWEEN CABINET AND FOUNDATION.
3. SEE TRANSFORMER FOUNDATION DETAILS ON E-61.
4. TRANSFORMER CABINET:
 - a) MATERIAL SHALL BE ANODIZED ALUMINUM (1/8" THICK)
 - b) FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
 - c) VENTILATION LOUVERS SHALL BE LOCATED IN DOOR.
 - d) DOOR SHALL BE LOCKABLE WITH PADLOCK.
5. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS FOR PROPOSED METHOD OF MOUNTING TRANSFORMER WITHIN TRANSFORMER CABINET.

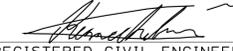
**ELECTRICAL DETAILS
 (TRANSFORMER CABINET)**

NO SCALE

E-60

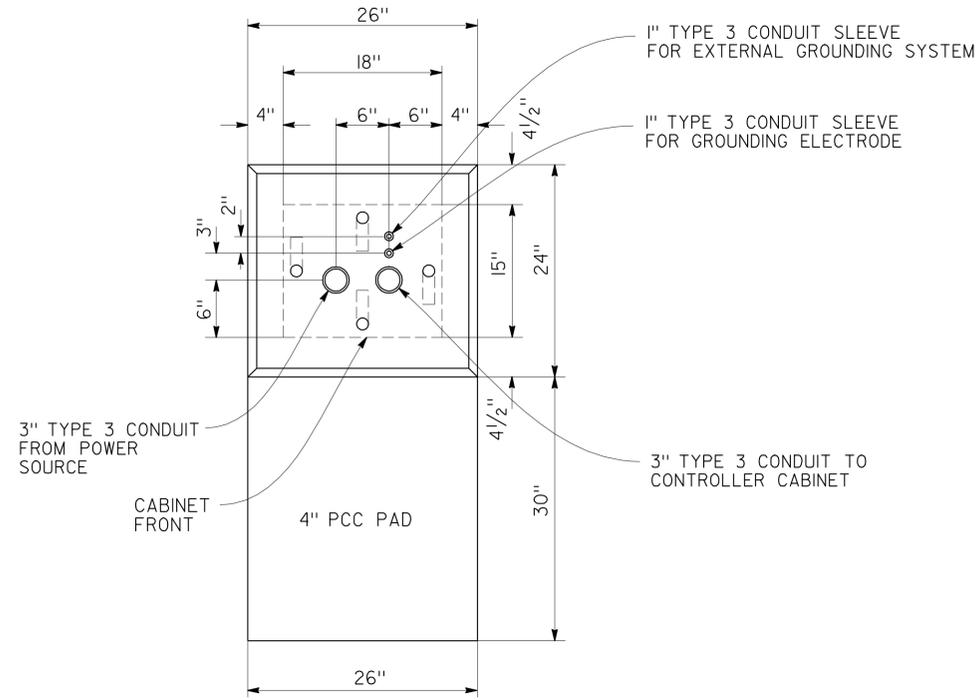
APPROVED FOR ELECTRICAL WORK ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	80	3.8/8.0, 0.0/13.5	241	290

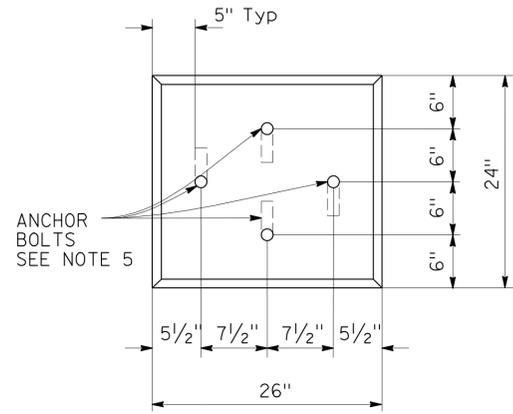
	10/14/11
REGISTERED CIVIL ENGINEER	DATE

2-27-12
PLANS APPROVAL DATE

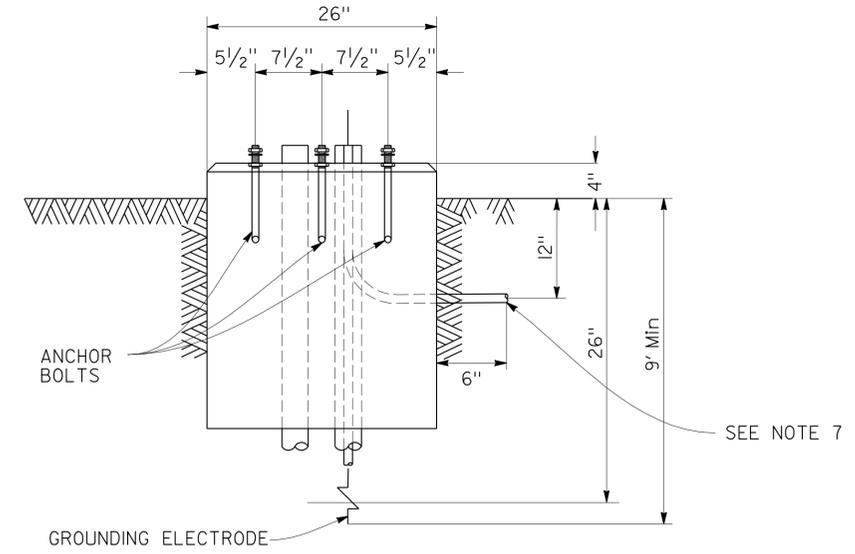
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KIMLEY-HORN AND ASSOC. 555 12TH STREET SUITE 1230 OAKLAND, CA 94607-4095	ALAMEDA COUNTY TRANSPORTATION COMMISSION 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612



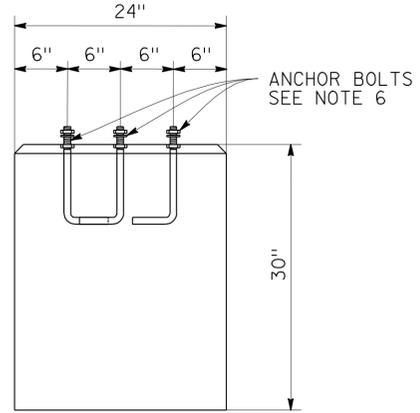
TOP VIEW



TOP VIEW PARTIAL



FRONT VIEW



SIDE VIEW PARTIAL

NOTES:

- FOUNDATIONS SHALL BE CLASS S (f'c = 3000 psi) CONCRETE.
- FOUNDATIONS SHALL INCLUDE A 5/8" X 9' GROUNDING ELECTRODE WHICH SHALL BE DRIVEN VERTICALLY INTO THE EARTH LEAVING A PROJECTION ABOVE THE FOUNDATION BETWEEN 2" MINIMUM AND 4".
- FOUNDATIONS SHALL BE LEVEL. LEVEL IS DEFINED AS HAVING A SLOPE OF LESS THAN 1/32" PER FOOT.
- 1#8 AWG GREEN BOND SHALL BE CONNECTED BETWEEN THE GROUNDING ELECTRODE IN THE TRANSFORMER CABINET AND THE GROUNDING LUG FOR THE CONTROLLER CABINET.
- ANCHOR BOLTS SHALL BE GALVANIZED STEEL, 3/4" X 1" X 5", COMPLETE WITH NUTS AND WASHERS.
- ANCHOR BOLTS SHALL PROJECT A MAXIMUM OF 2" ABOVE FOUNDATION.
- 1" TYPE 3 SLEEVE FOR EXTERNAL GROUNDING SYSTEM PLUGGED.

ELECTRICAL DETAILS
(TRANSFORMER CABINET FOUNDATION)

NO SCALE

E-61

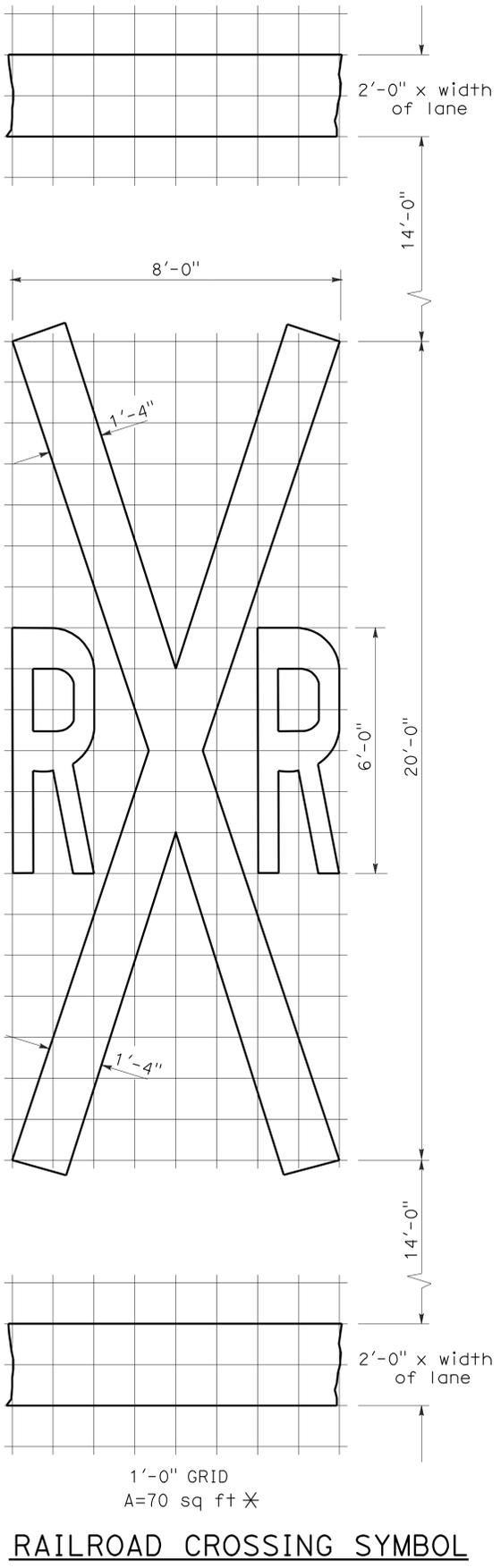
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	RANDAL DURRENBARGER	RANDAL DURRENBARGER	K. AKWABI	JCS	10/14/11

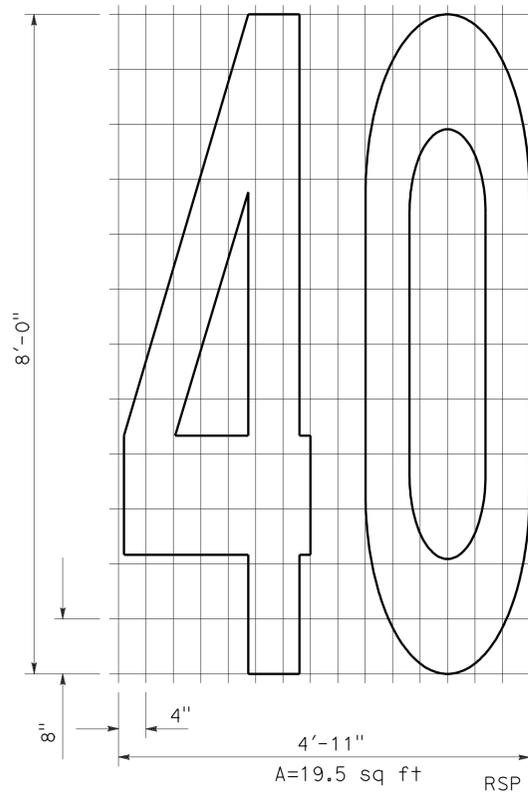
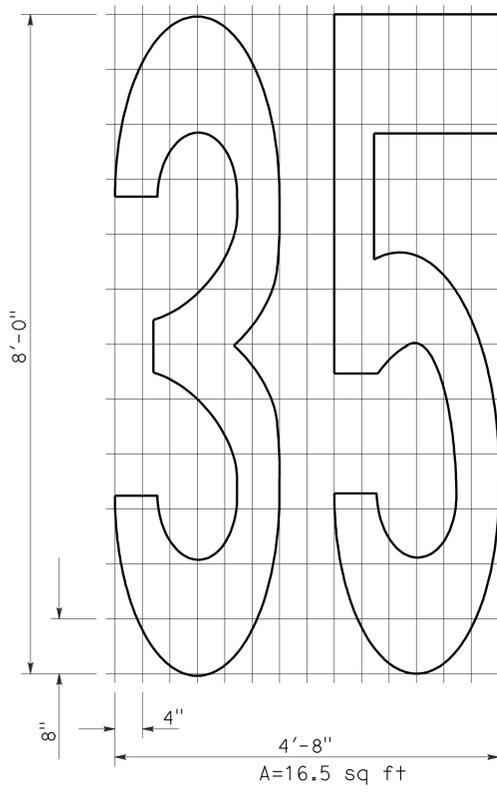
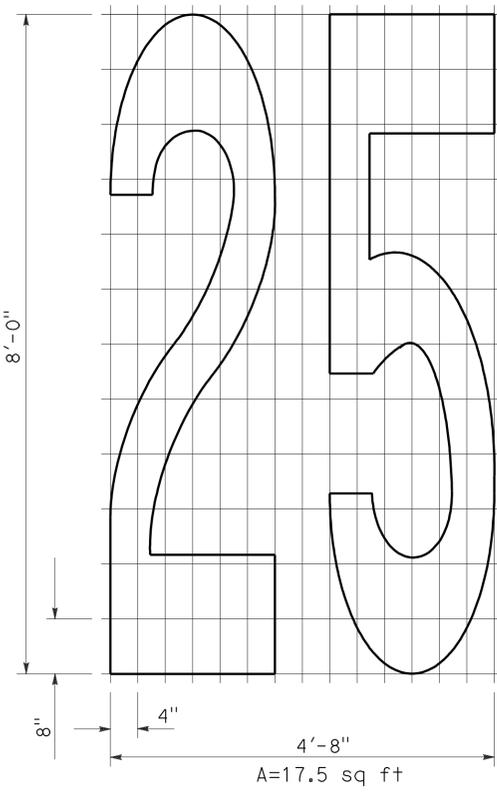
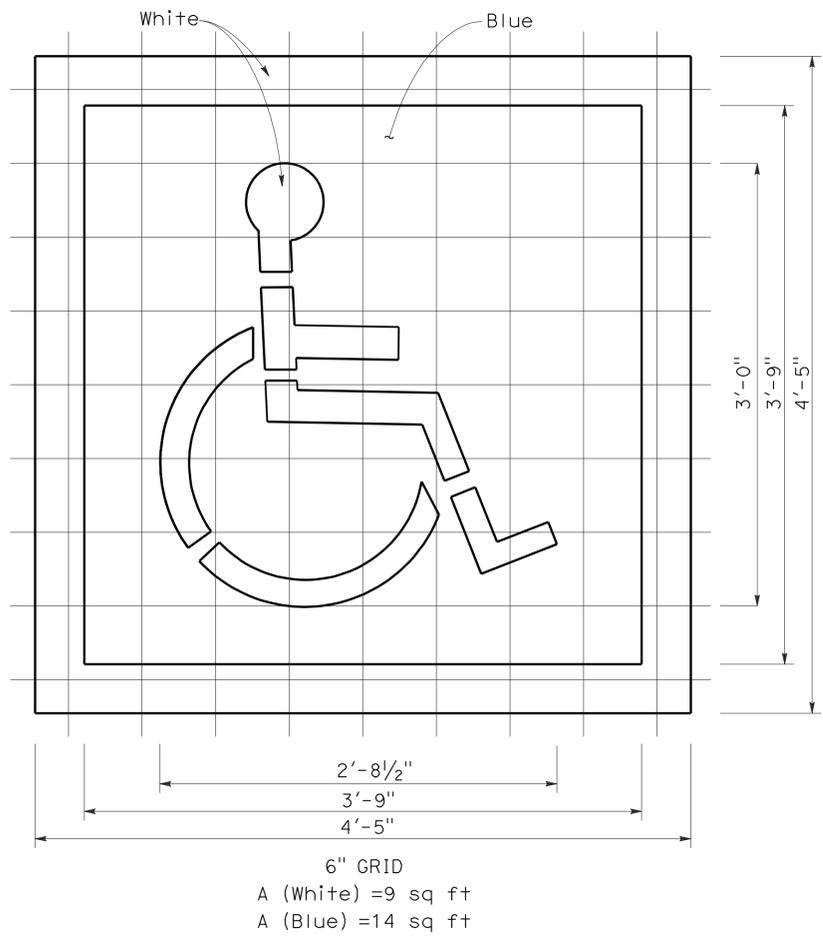
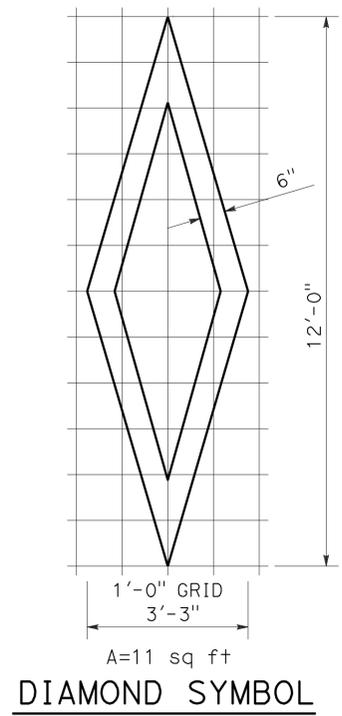
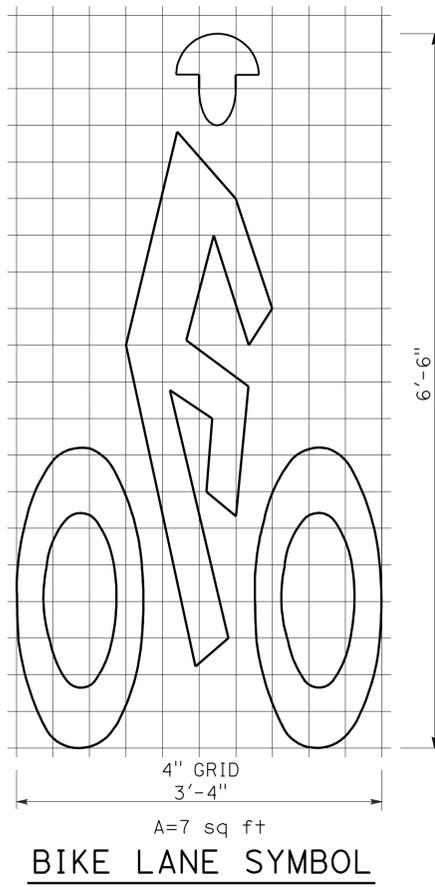
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	242	290

Donald E. Howe
 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.

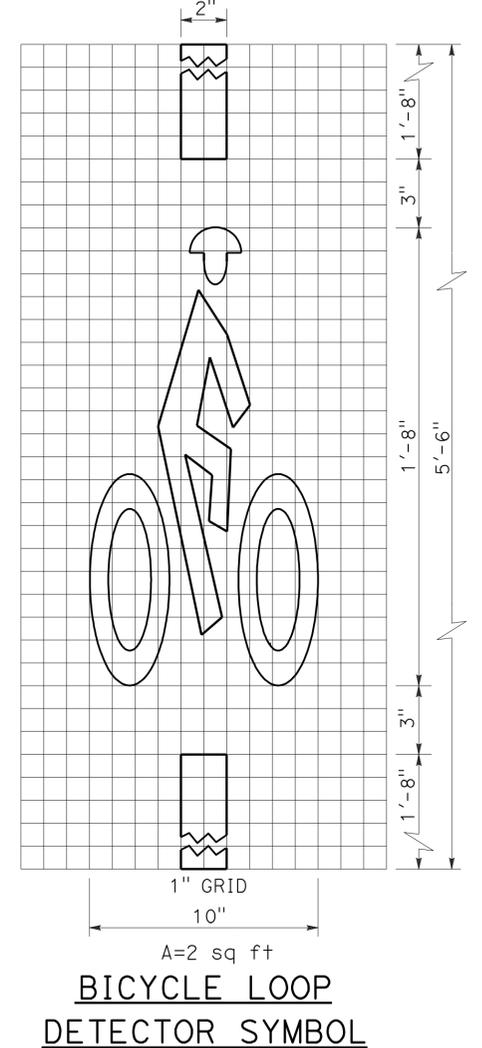
To accompany plans dated 2-27-12



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



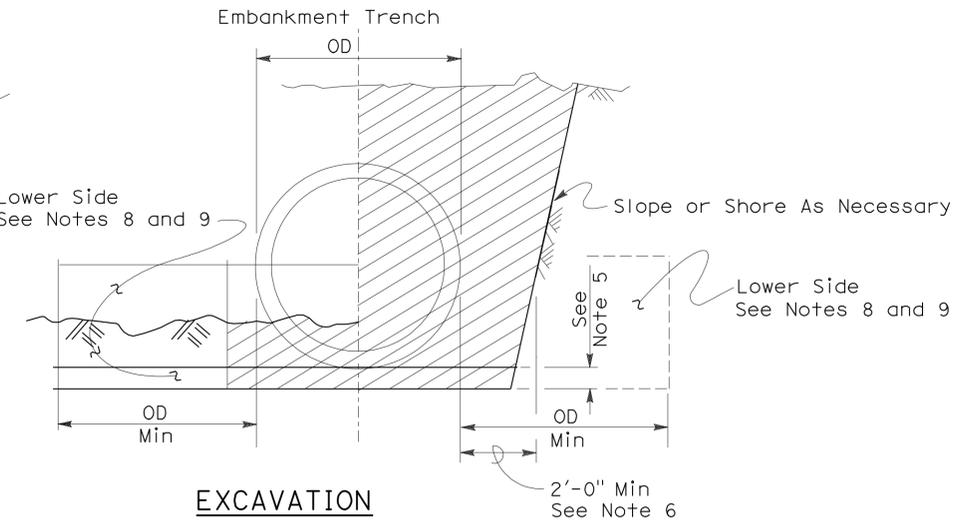
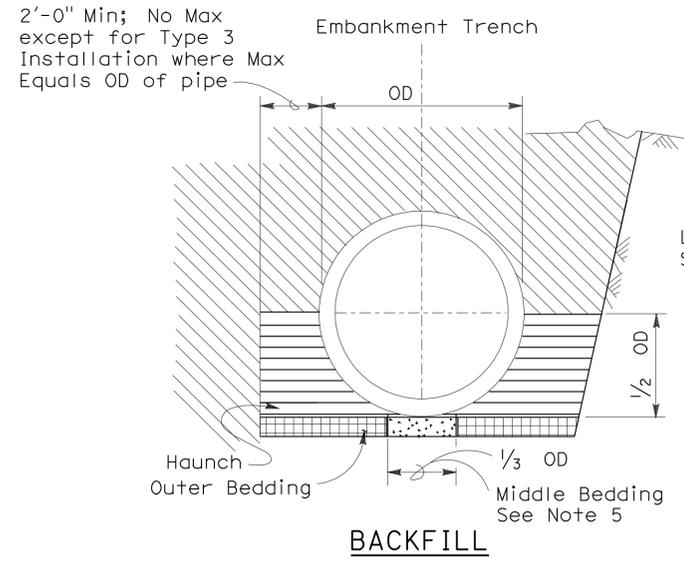
NUMERALS



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

2006 REVISED STANDARD PLAN RSP A24C



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

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

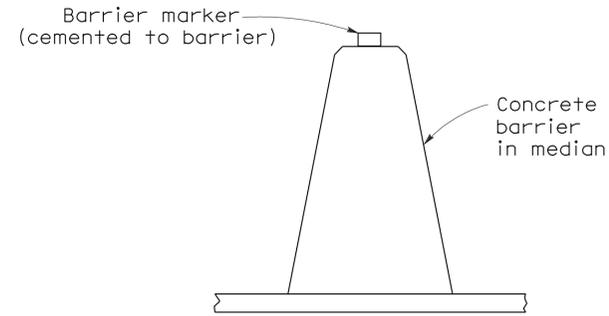
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	244	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

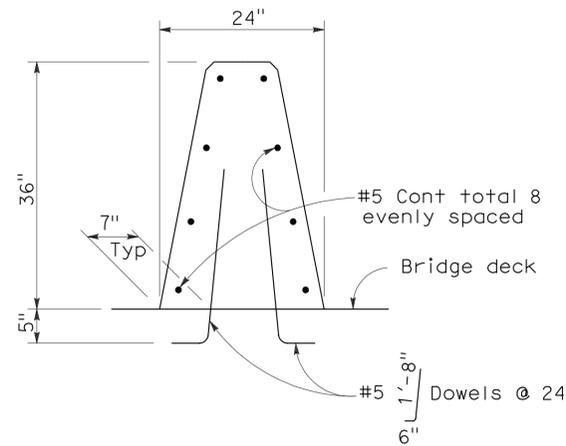
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To accompany plans dated 2-27-12



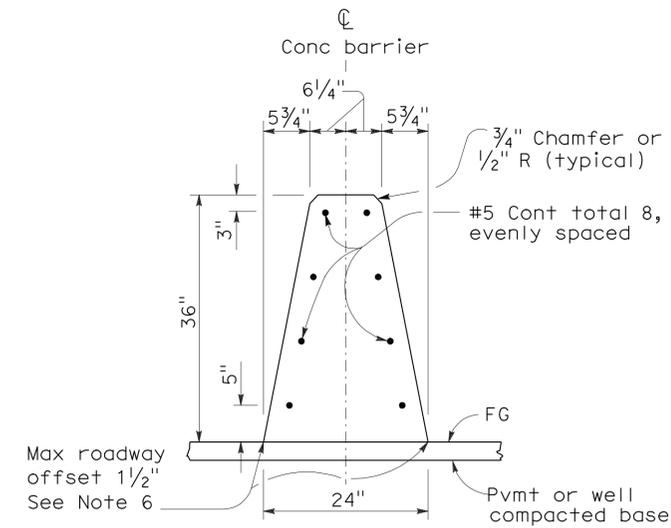
CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8



CONCRETE BARRIER TYPE 60A

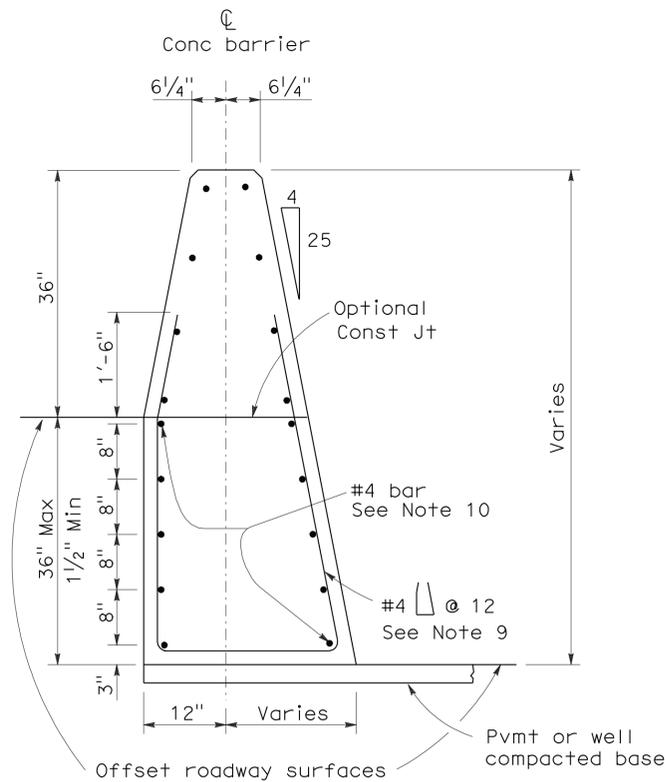
Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60

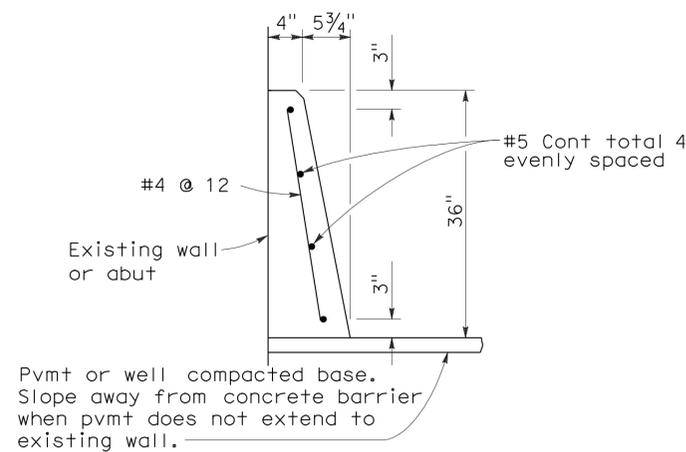
NOTES:

- 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

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

2006 REVISED STANDARD PLAN RSP A76A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	245	290

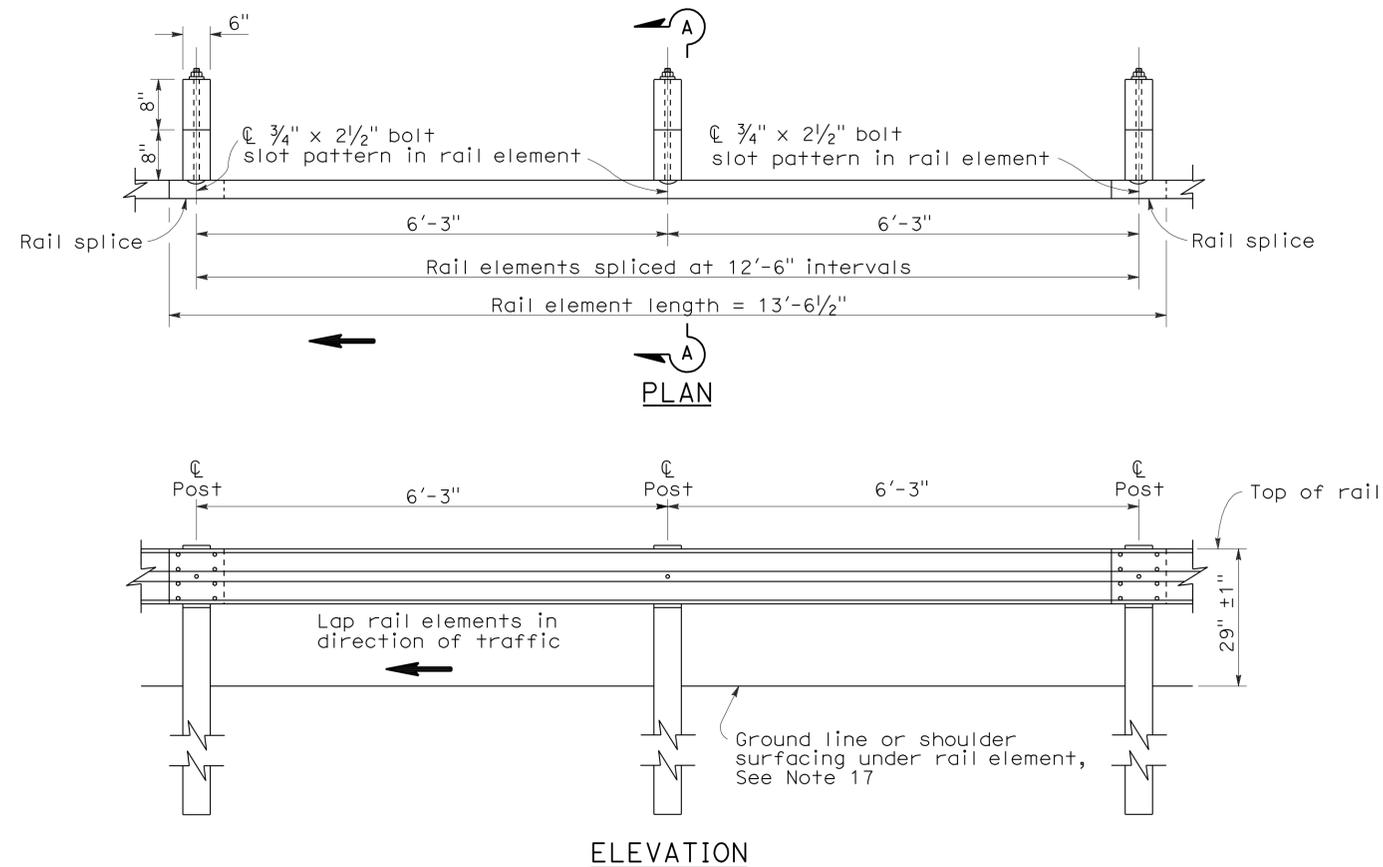
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

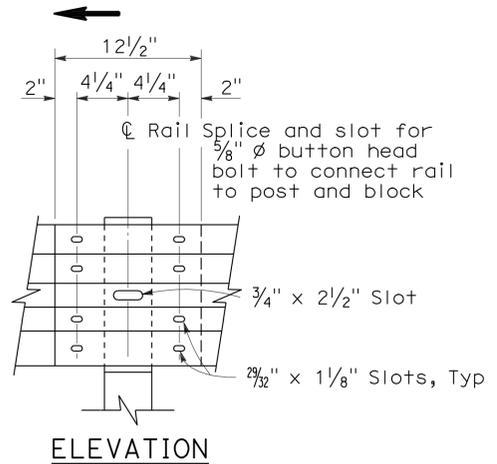
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To accompany plans dated 2-27-12

2006 REVISED STANDARD PLAN RSP A77A1

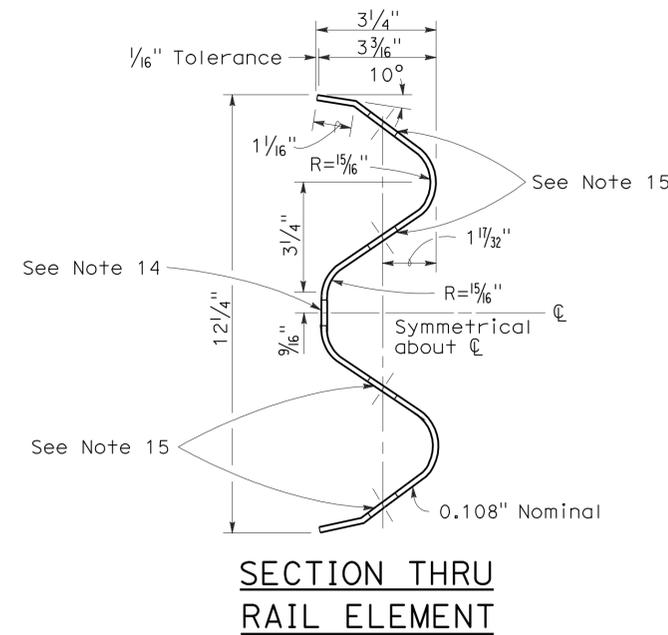


METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS

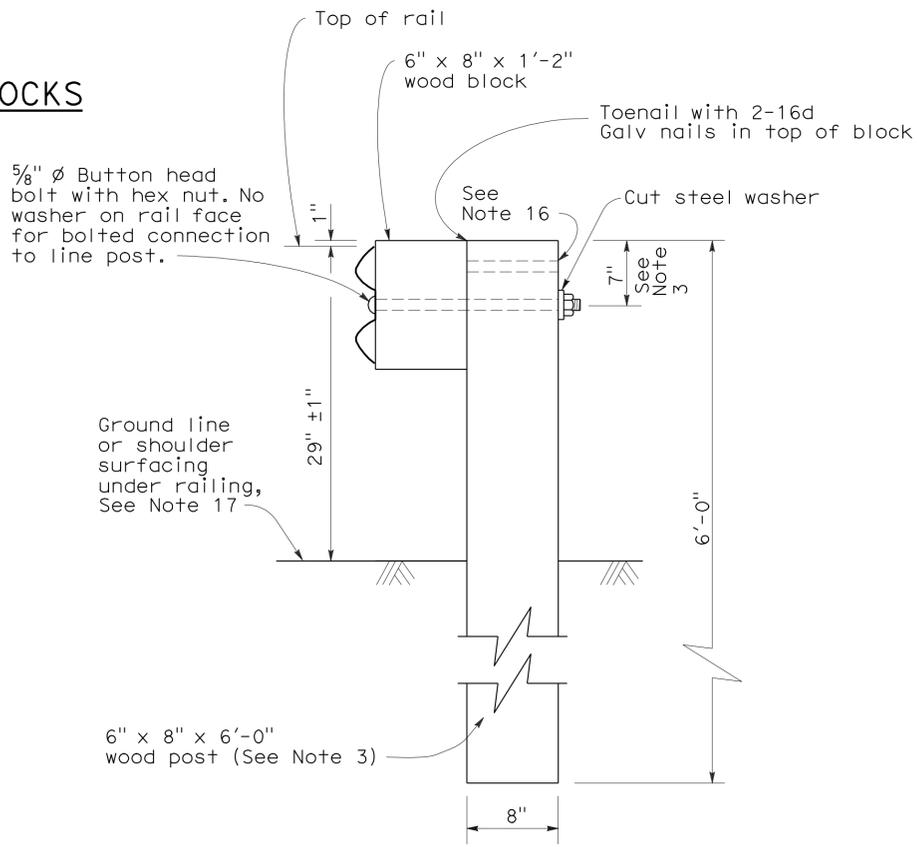


RAIL ELEMENT SPLICE DETAIL

- 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 THRU RAIL ELEMENT



**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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	246	290

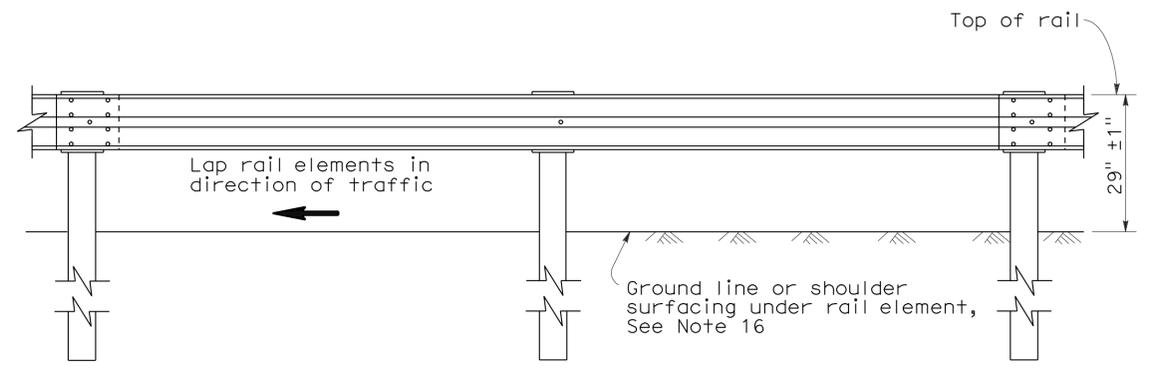
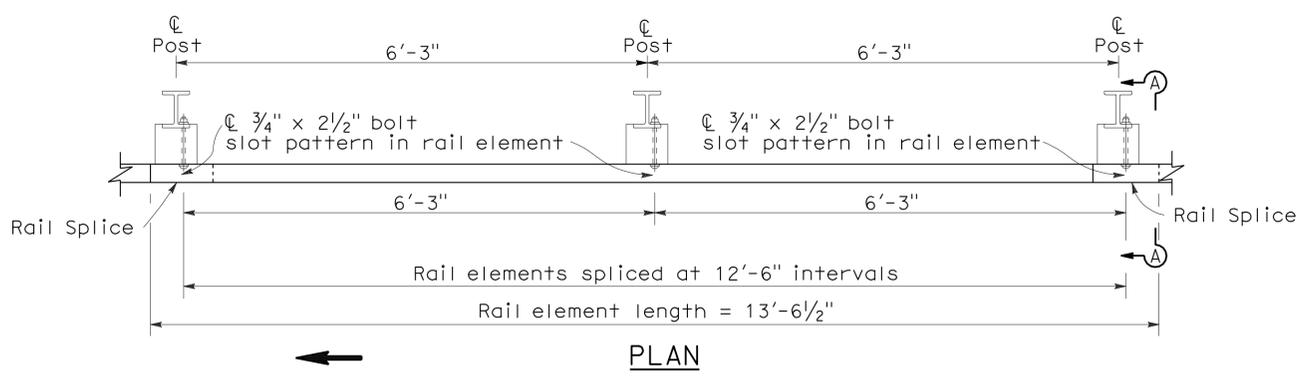
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

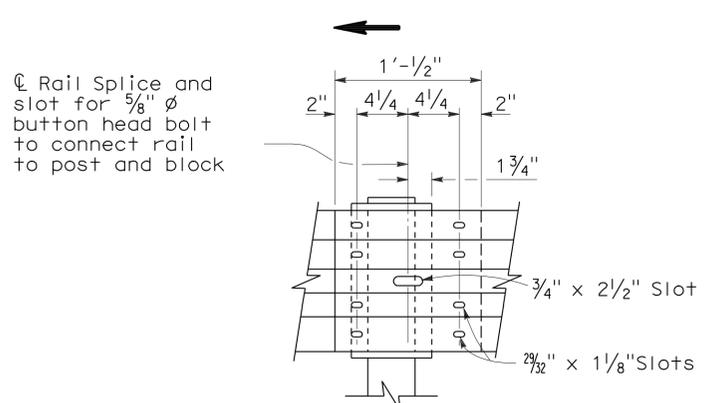
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To accompany plans dated 2-27-12

2006 REVISED STANDARD PLAN RSP A77A2

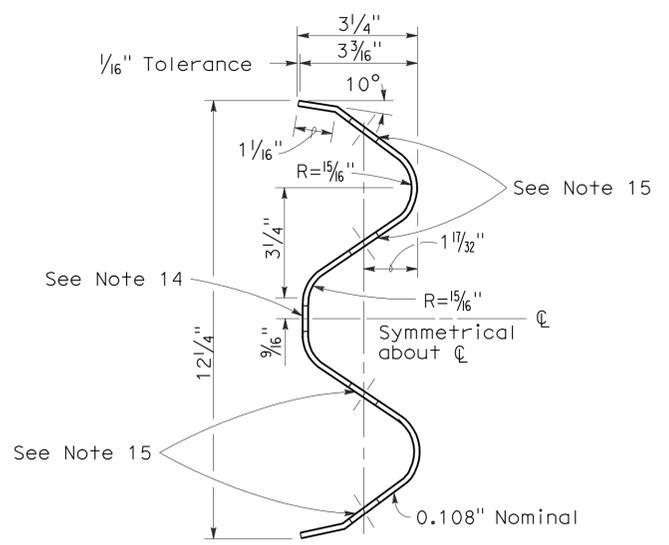


**METAL BEAM GUARD RAILING WITH STEEL POSTS
AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS**

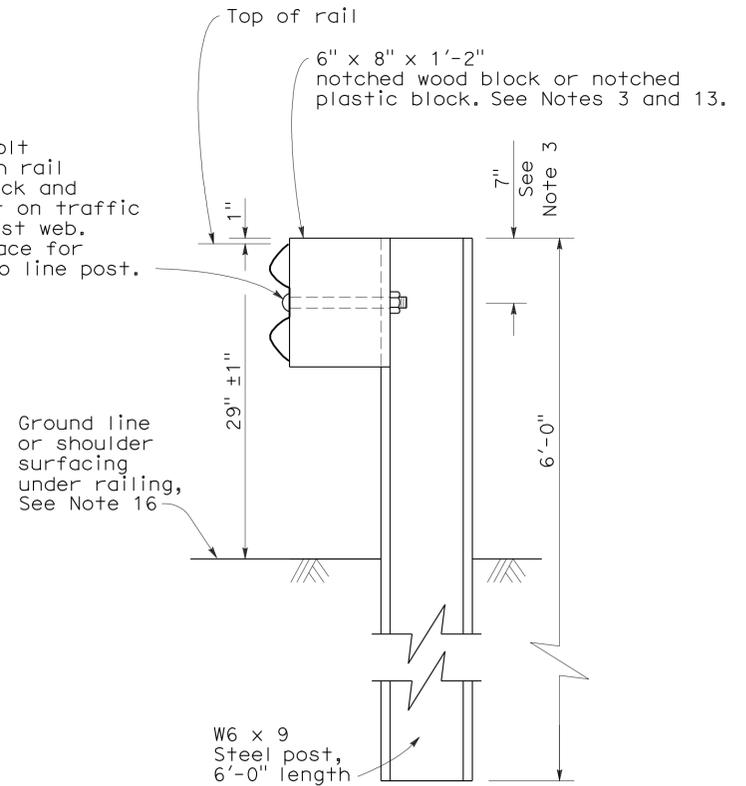


**ELEVATION
RAIL ELEMENT SPLICE DETAIL**

- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{29}{32}$ " x $1\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " 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 THRU
RAIL ELEMENT**



**SECTION A-A
TYPICAL STEEL LINE
POST INSTALLATION**

See Note 4

NOTES:

- For details of wood post installations, see Standard Plan A77A1.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
- For details of steel posts and notched wood blocks used to construct guard railing, see Standard Plan A77C2.
- 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 dike positioning and guard railing delineation details, see Standard Plan A77C4.
- Direction of adjacent traffic indicated by \rightarrow .
- Notched face of block faces steel post.
- 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".
- Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
STANDARD RAILING SECTION
(STEEL POST WITH NOTCHED
WOOD OR NOTCHED
RECYCLED PLASTIC BLOCK)**

NO SCALE

RSP A77A2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A2
DATED MAY 1, 2006 - PAGE 42 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77A2

To accompany plans dated 2-27-12

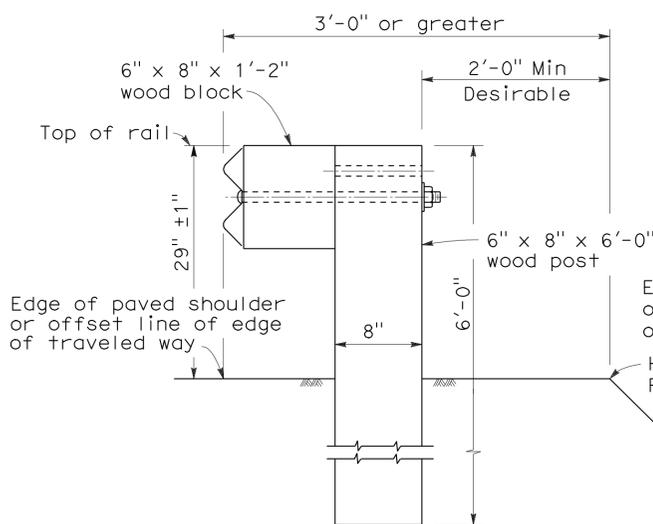
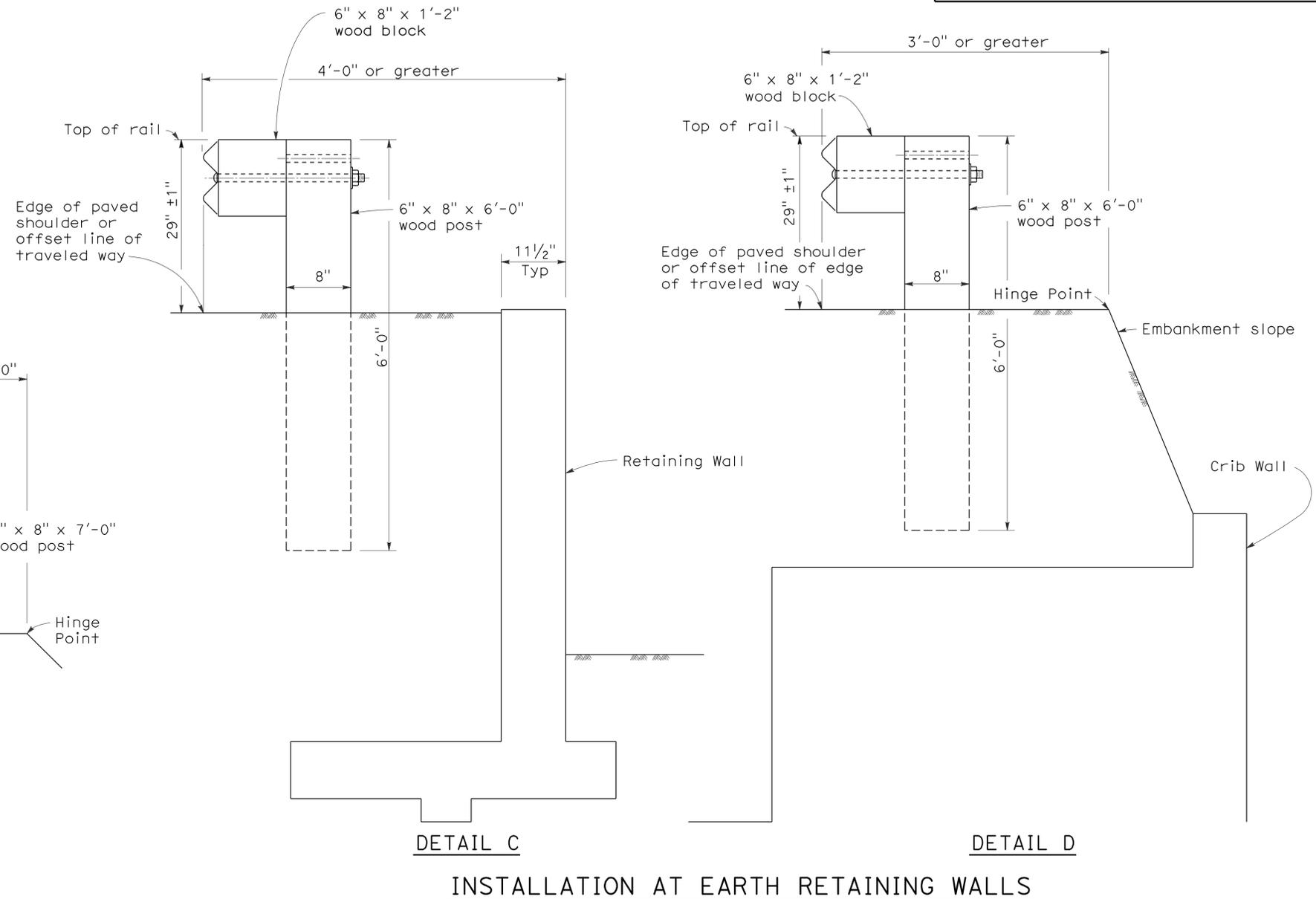
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	247	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

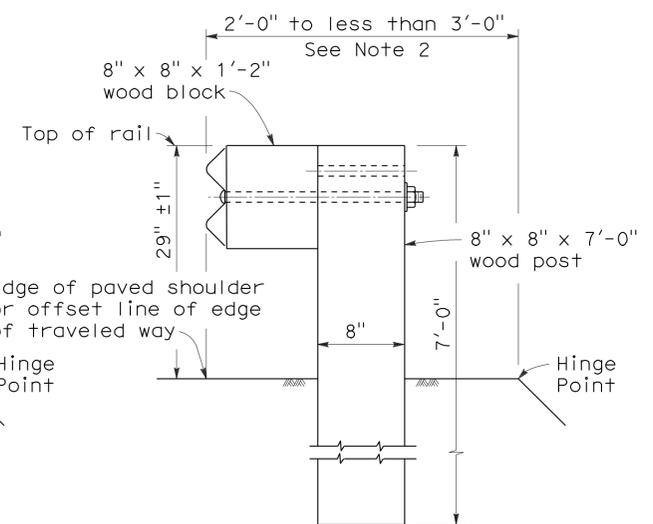
May 20, 2011
PLANS APPROVAL DATE

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

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DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

DETAIL C
INSTALLATION AT EARTH RETAINING WALLS
DETAIL D

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 9 steel post, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 9 steel post, 7'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING
TYPICAL LINE POST
EMBEDMENT AND
HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77C3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77C3
DATED MAY 1, 2006 - PAGE 46 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C3

2006 REVISED STANDARD PLAN RSP A77C3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	248	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

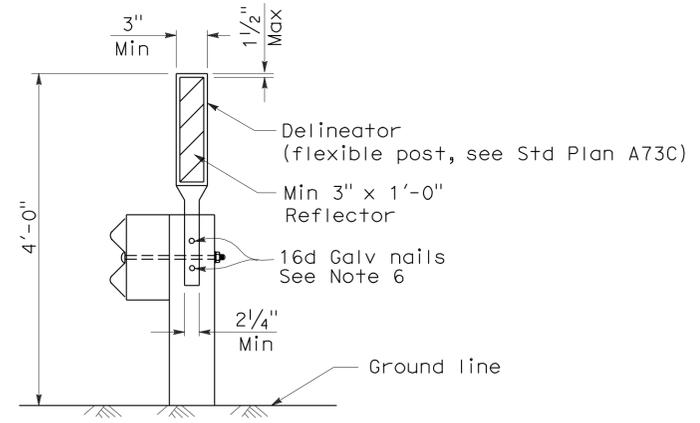
May 20, 2011
PLANS APPROVAL DATE

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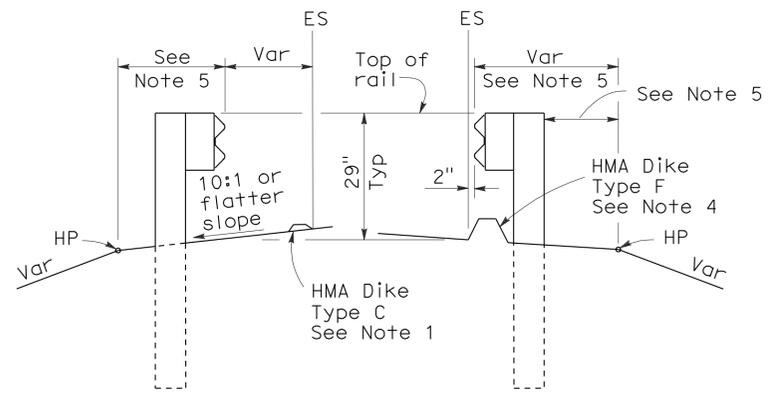
To accompany plans dated 2-27-12

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

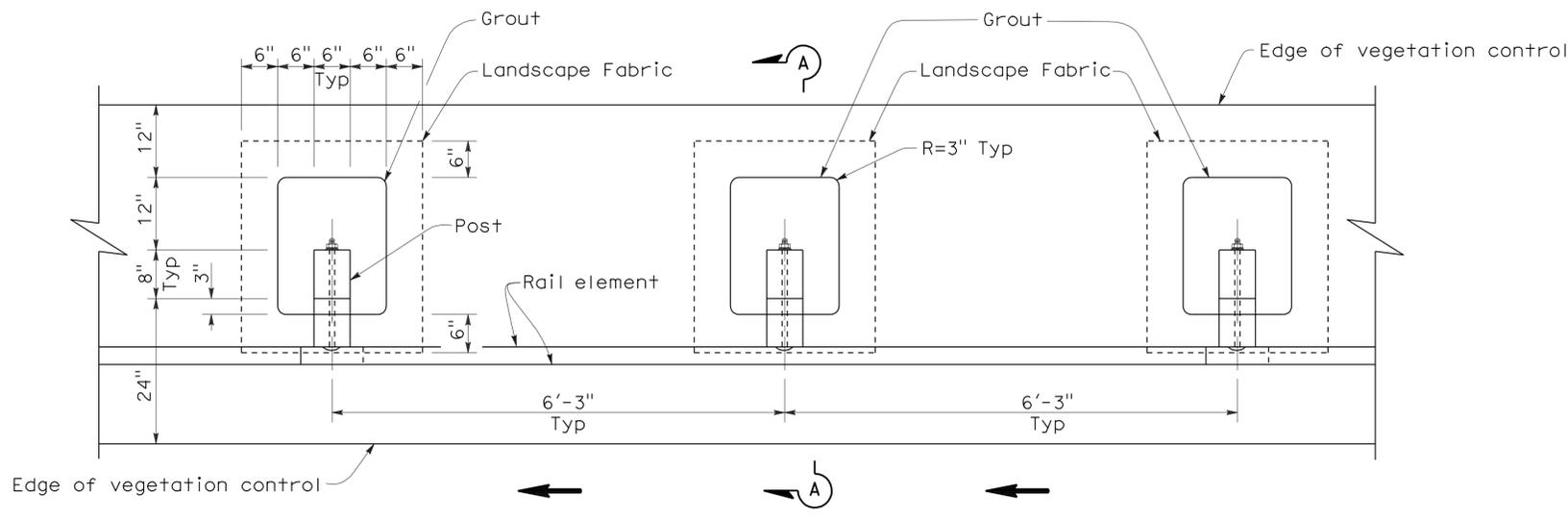
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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Randell D. Hiatt
REGISTERED CIVIL ENGINEER

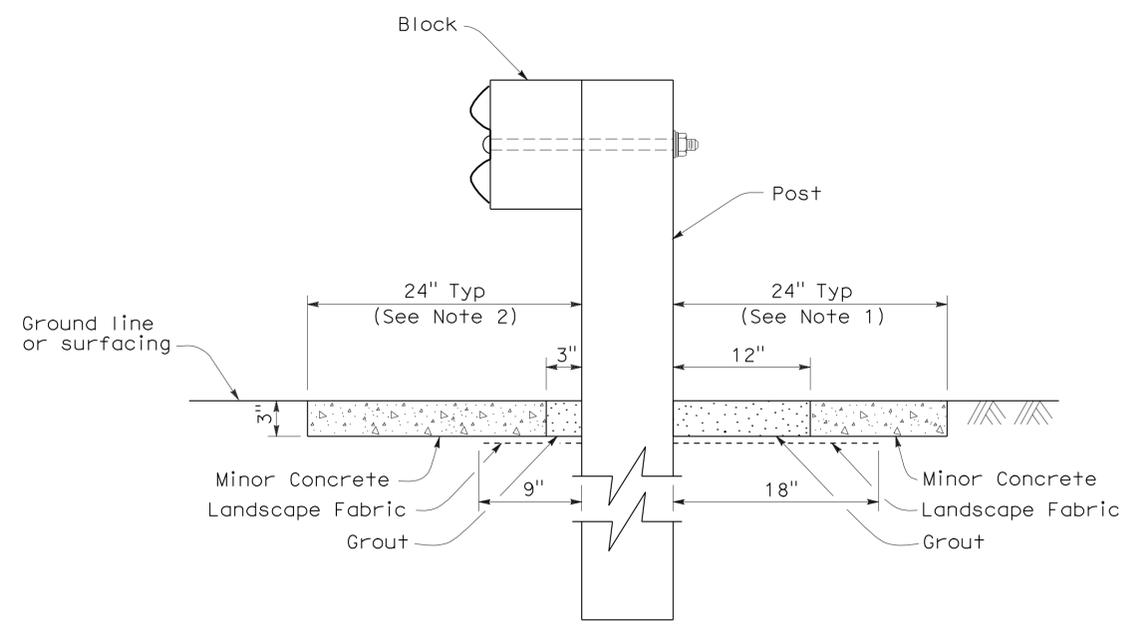
October 20, 2006
PLANS APPROVAL DATE

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To accompany plans dated 2-27-12



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

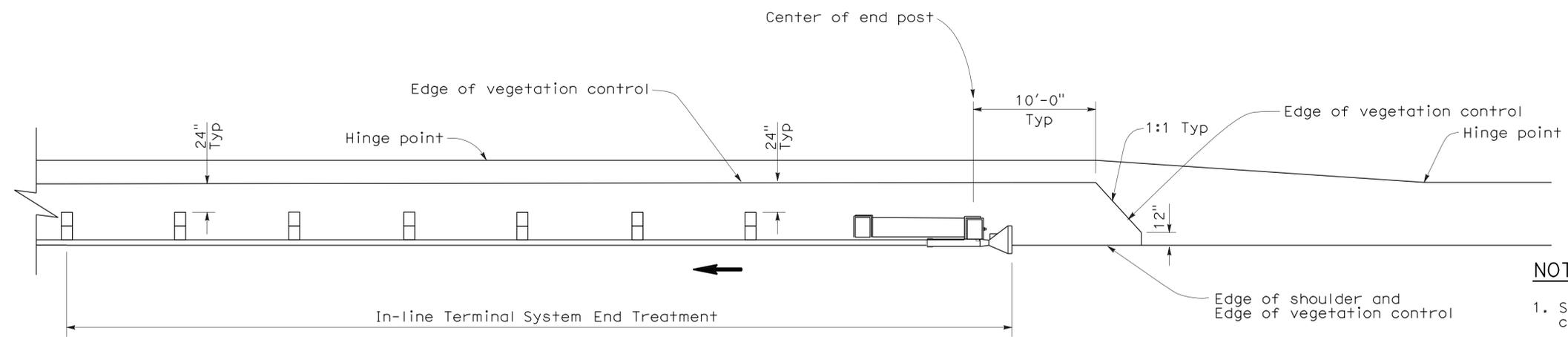
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	250	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

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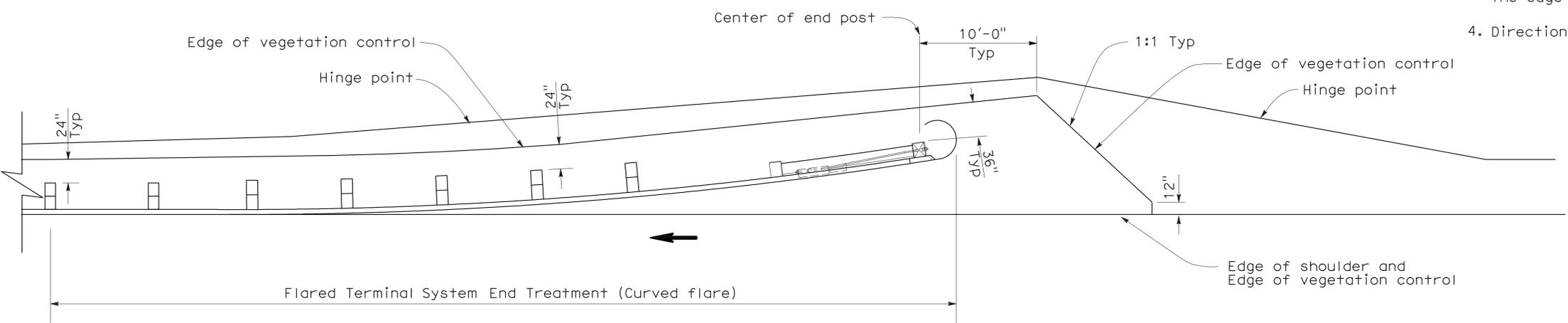
To accompany plans dated 2-27-12



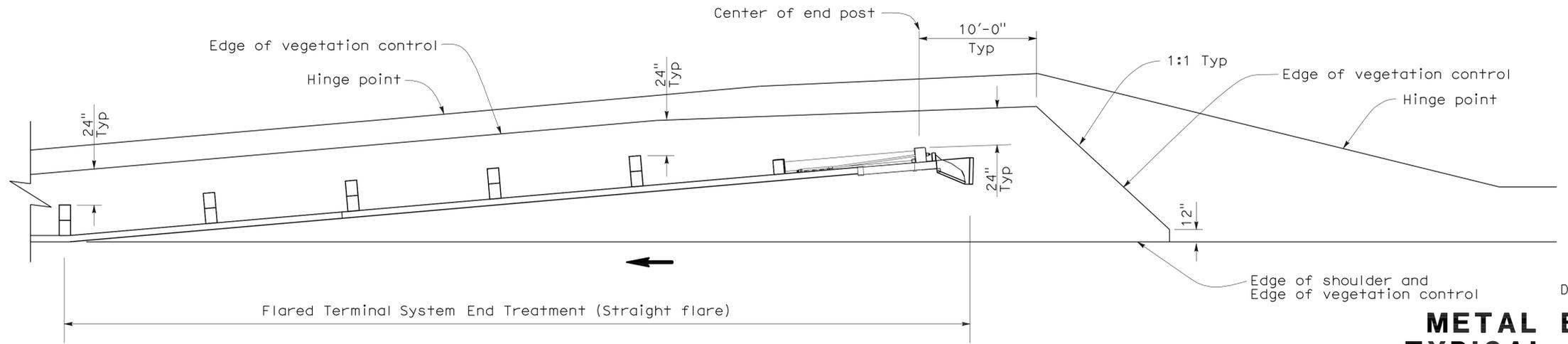
PLAN

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.

2006 NEW STANDARD PLAN NSP A77C6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	251	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

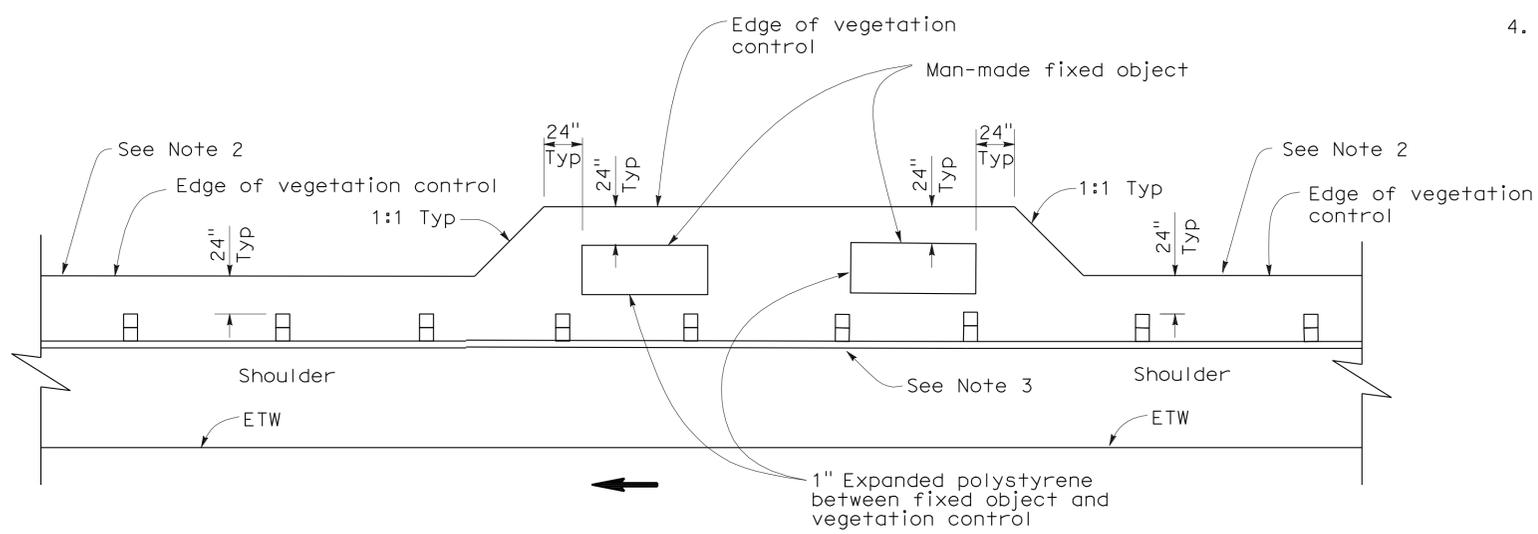
October 20, 2006
PLANS APPROVAL DATE

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To accompany plans dated 2-27-12

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
FIXED OBJECT(S) ON SHOULDER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE
NSP A77C8 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C8

2006 NEW STANDARD PLAN NSP A77C8

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
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 ←.

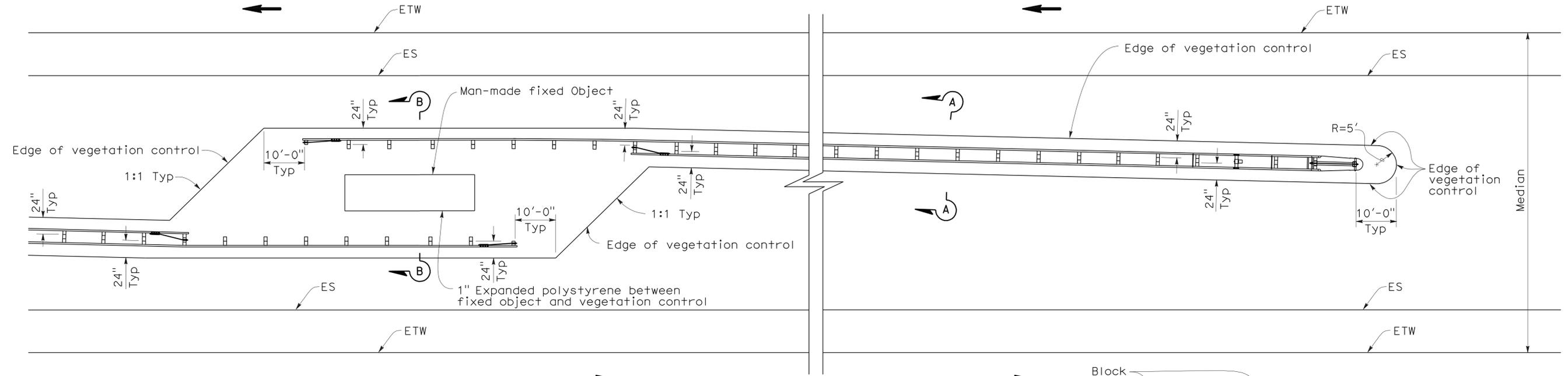
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	252	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

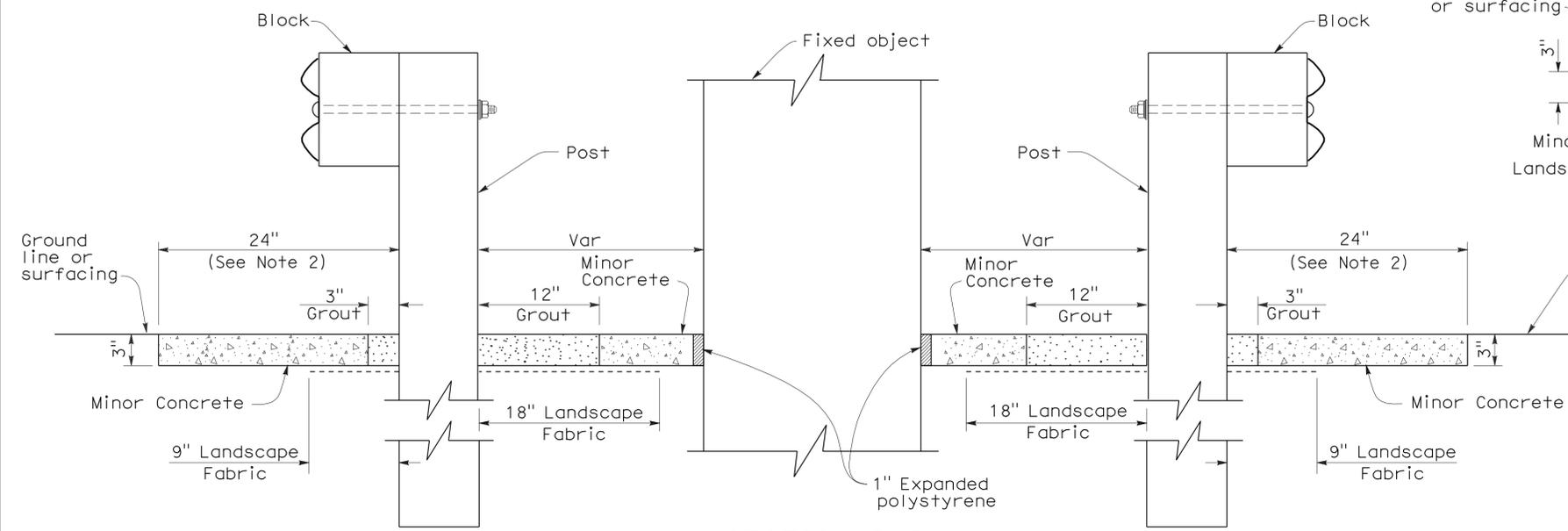
October 20, 2006
PLANS APPROVAL DATE

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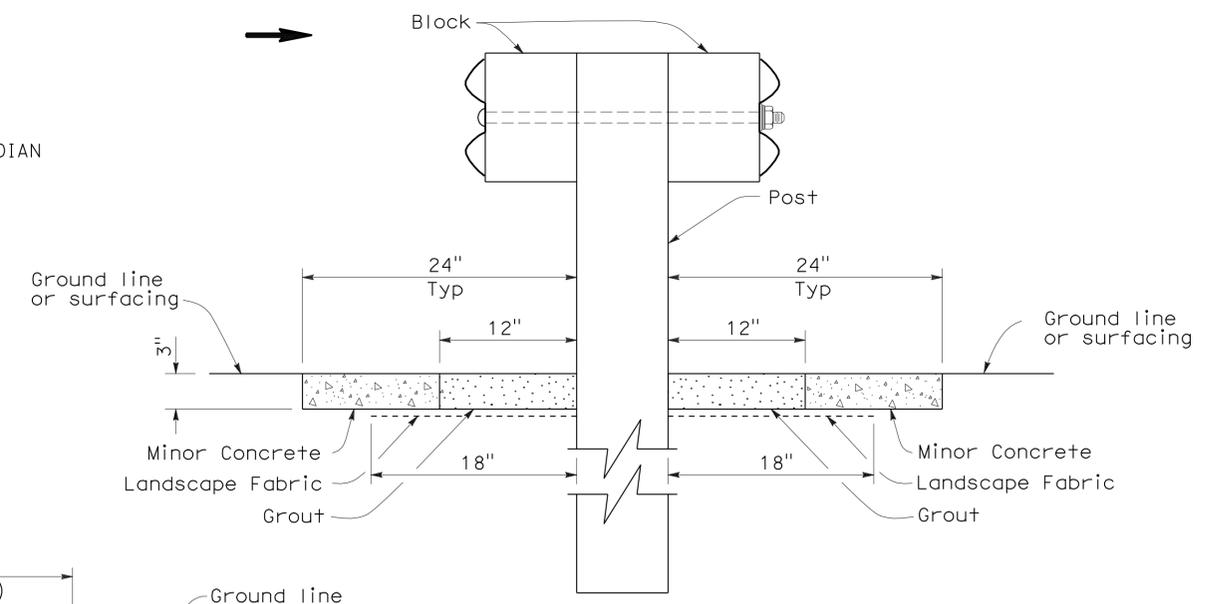
To accompany plans dated 2-27-12



PLAN
FIXED OBJECT(S) IN MEDIAN



SECTION B-B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE
NSP A77C9 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C9

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
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 ←.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	253	290

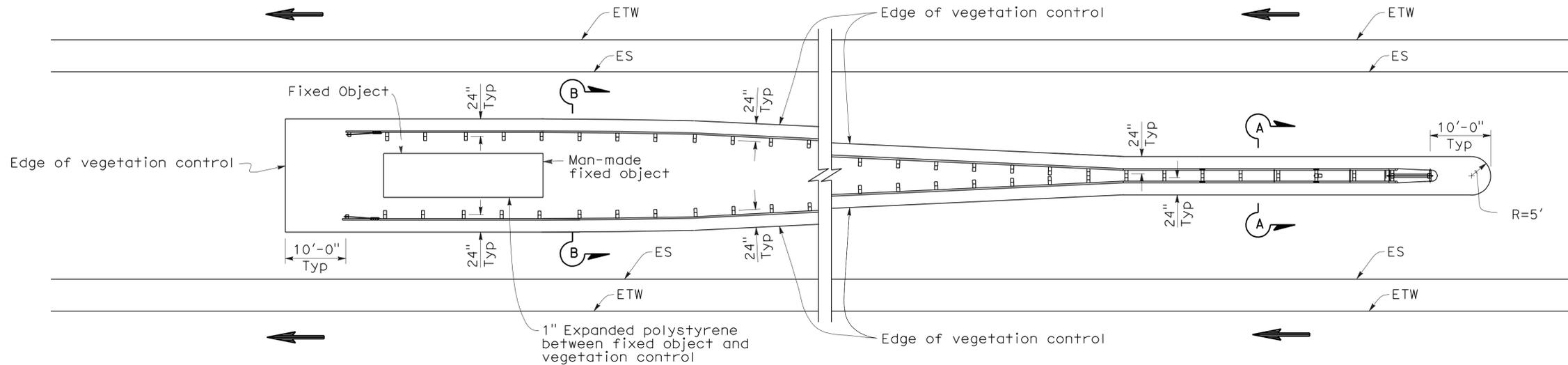
Randell D. Hiatt
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October 20, 2006
PLANS APPROVAL DATE

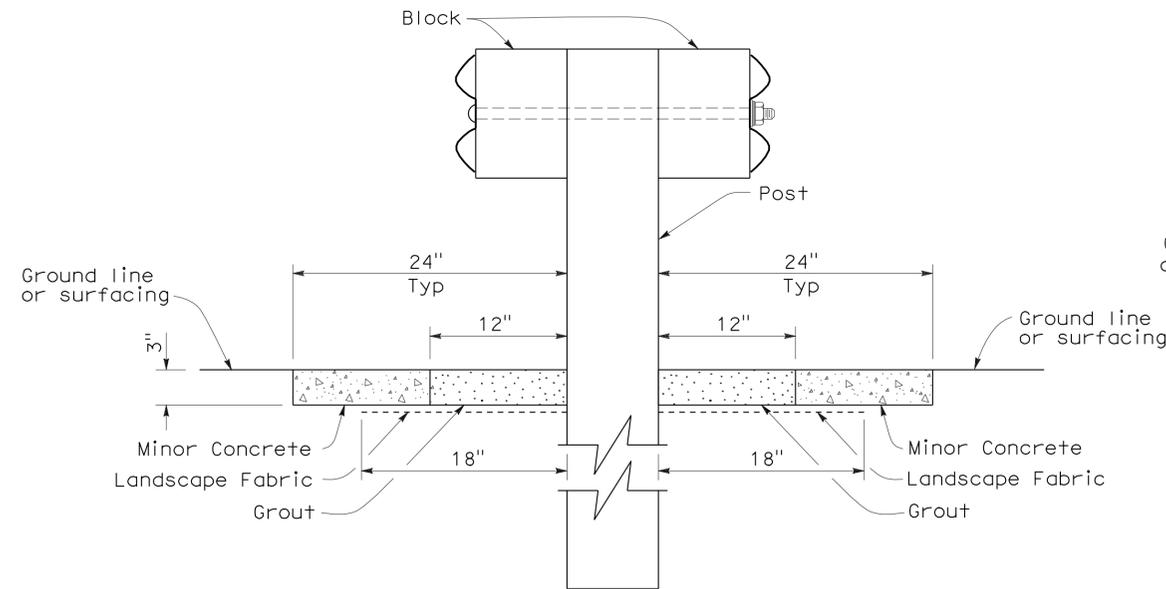
Randell D. Hiatt
No. C50200
Exp. 6-30-07
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STATE OF CALIFORNIA

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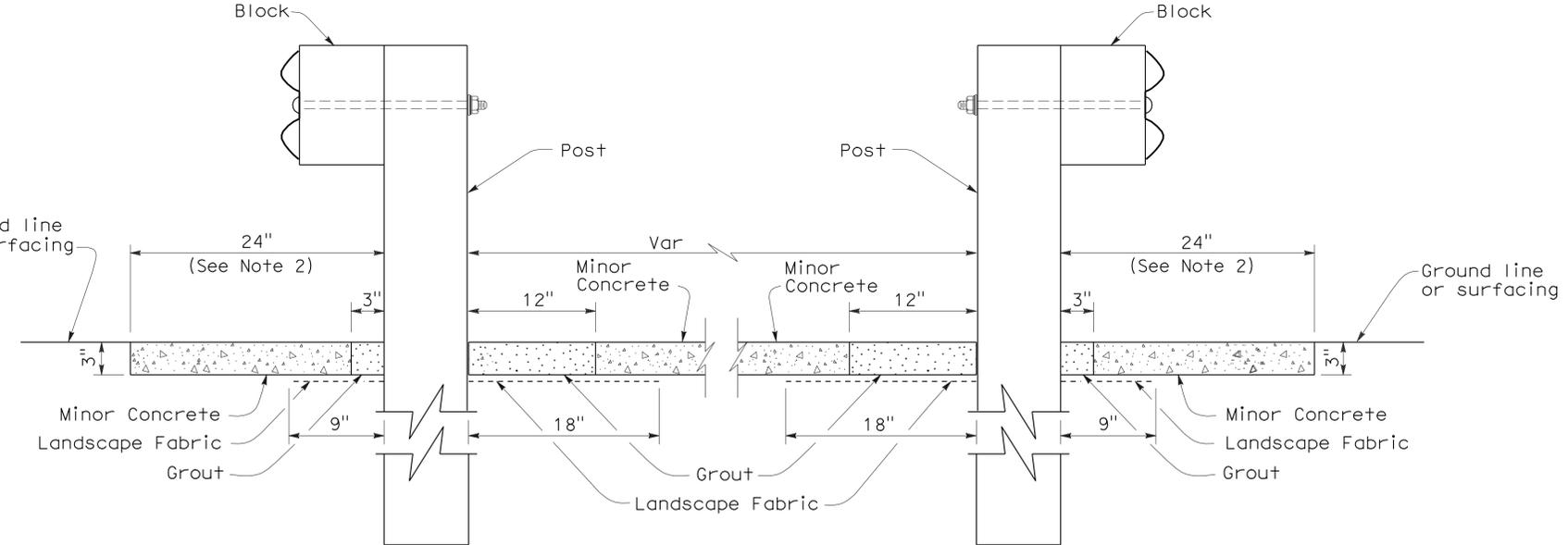
To accompany plans dated 2-27-12



PLAN
FIXED OBJECT(S) BETWEEN SEPARATE ROADBEDS
(ONE-WAY TRAFFIC)



SECTION A-A



SECTION B-B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE

NSP A77C10 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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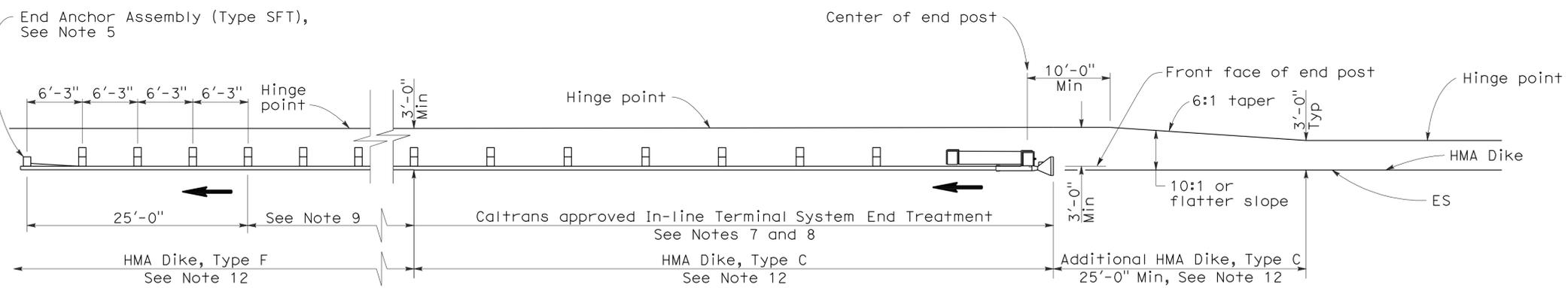
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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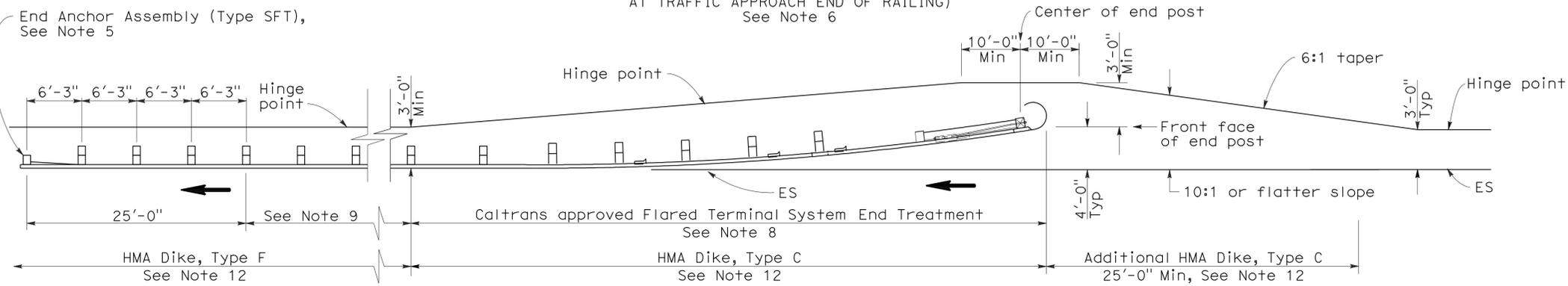
To accompany plans dated 2-27-12

2006 REVISED STANDARD PLAN RSP A77E1



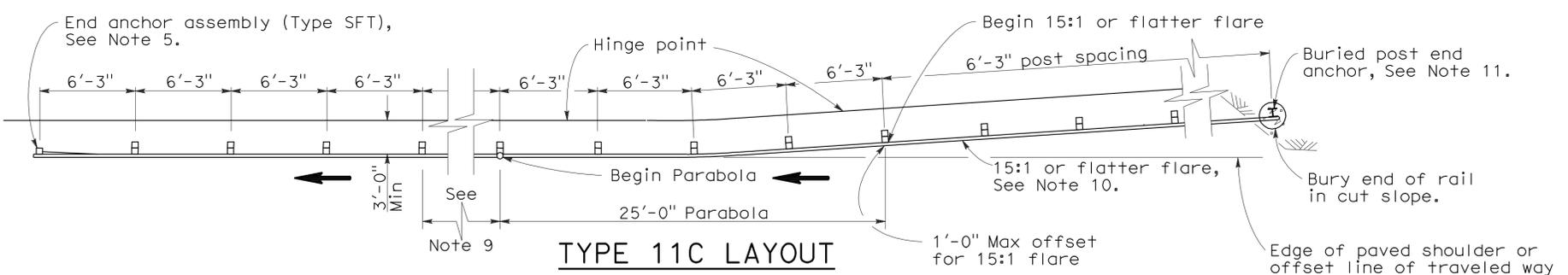
TYPE 11A LAYOUT

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



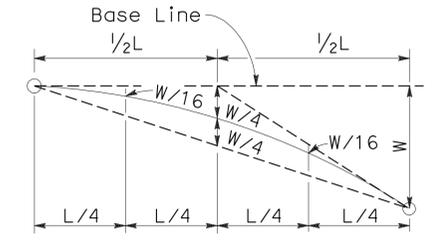
TYPE 11B LAYOUT

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

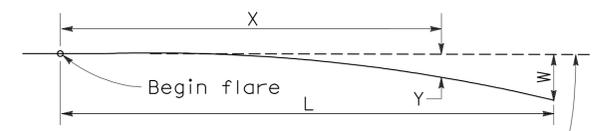


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

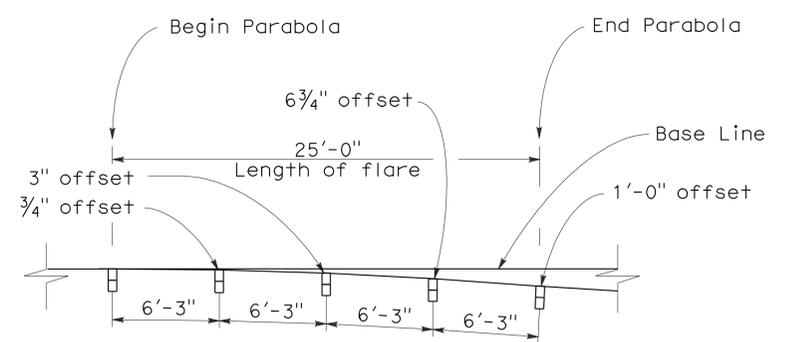


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	255	290

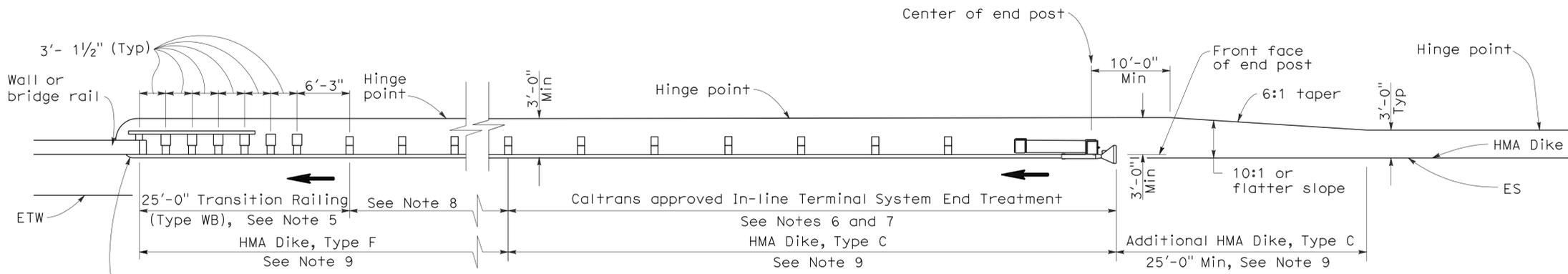
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
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No. C50200
Exp. 6-30-09
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STATE OF CALIFORNIA

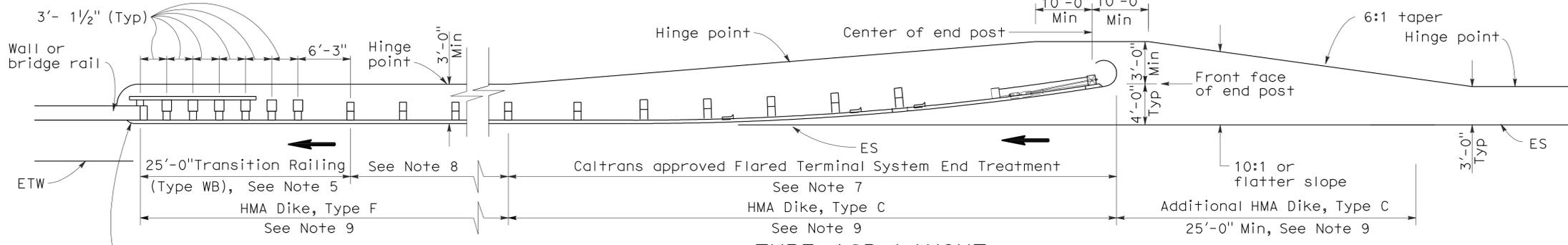
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To accompany plans dated 2-27-12



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.

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

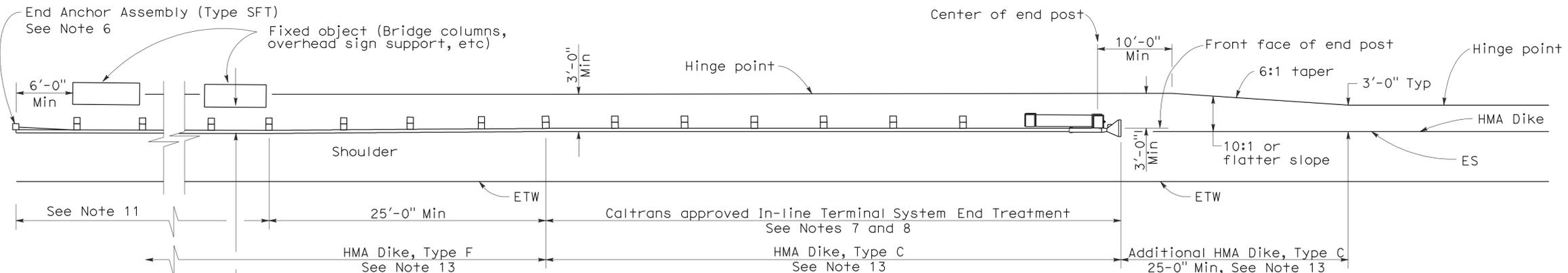
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala, CC	80	3.8/8.0, 0.0/13.5	256	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

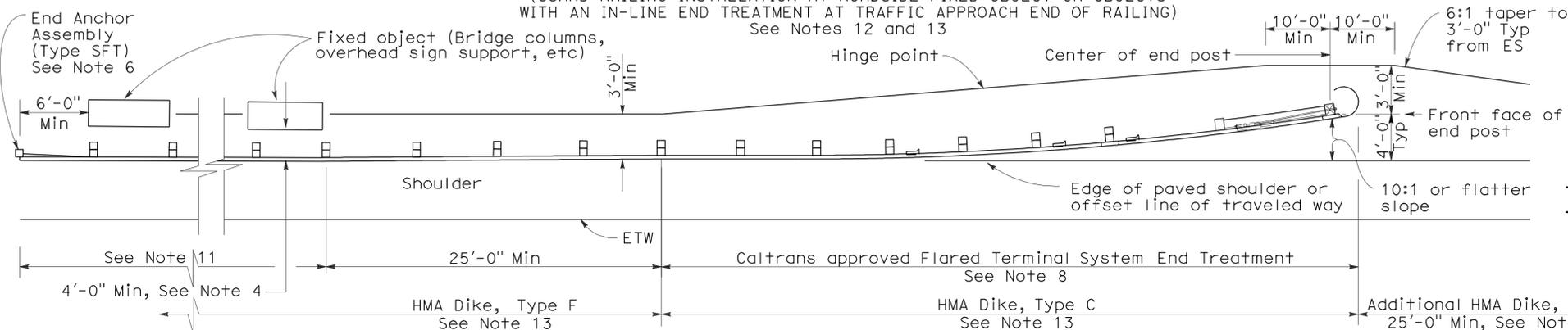
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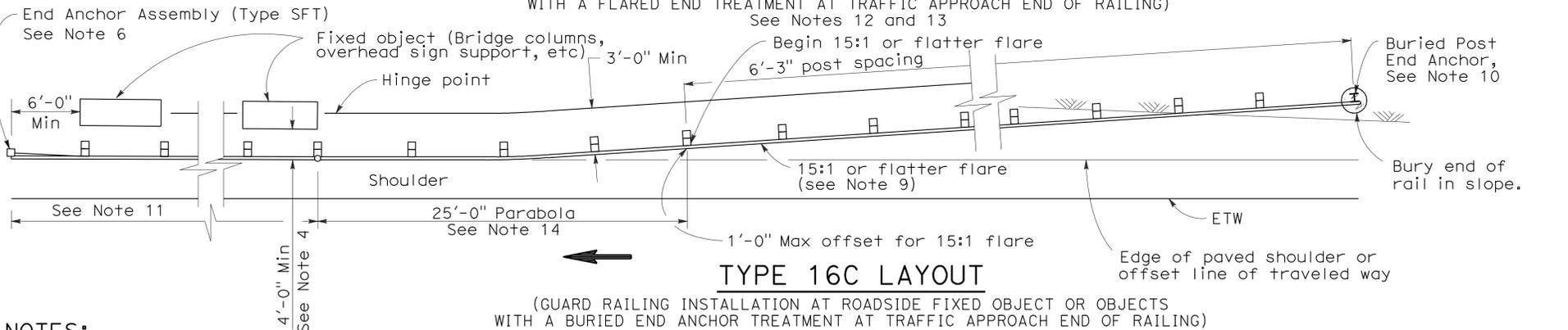
TYPE 16A LAYOUT

(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



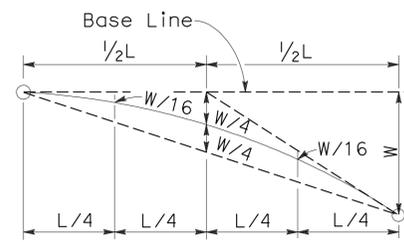
TYPE 16B LAYOUT

(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

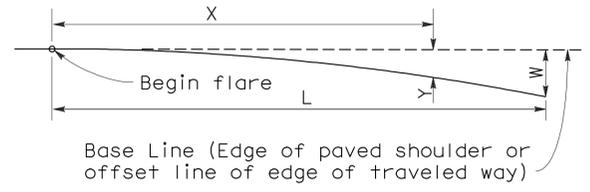


TYPE 16C LAYOUT

(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

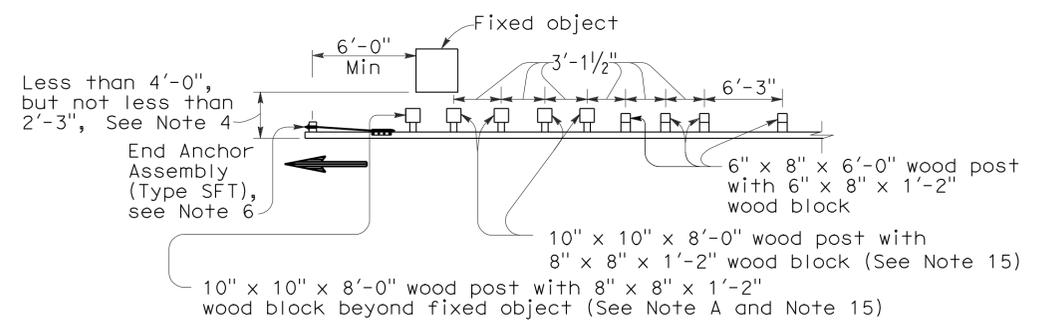


Base Line (Edge of paved shoulder or offset line of edge of traveled way)
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

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,CC	80	3.8/8.0, 0.0/13.5	257	290

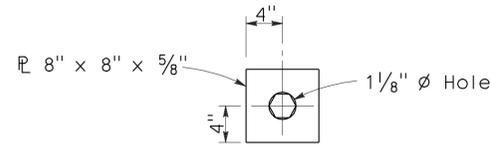
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

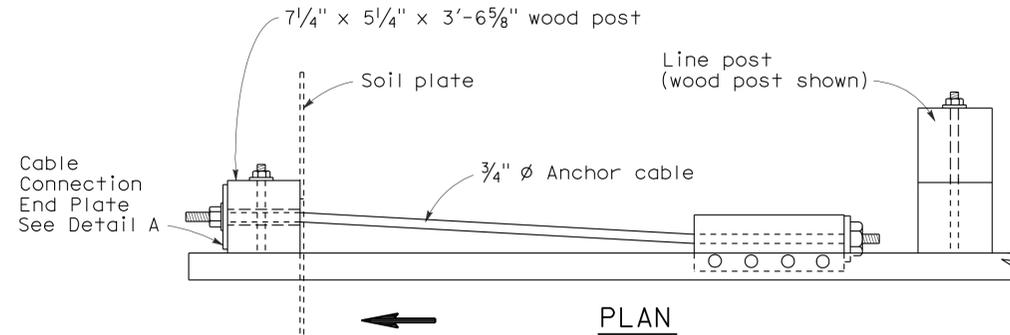
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To accompany plans dated 2-27-12

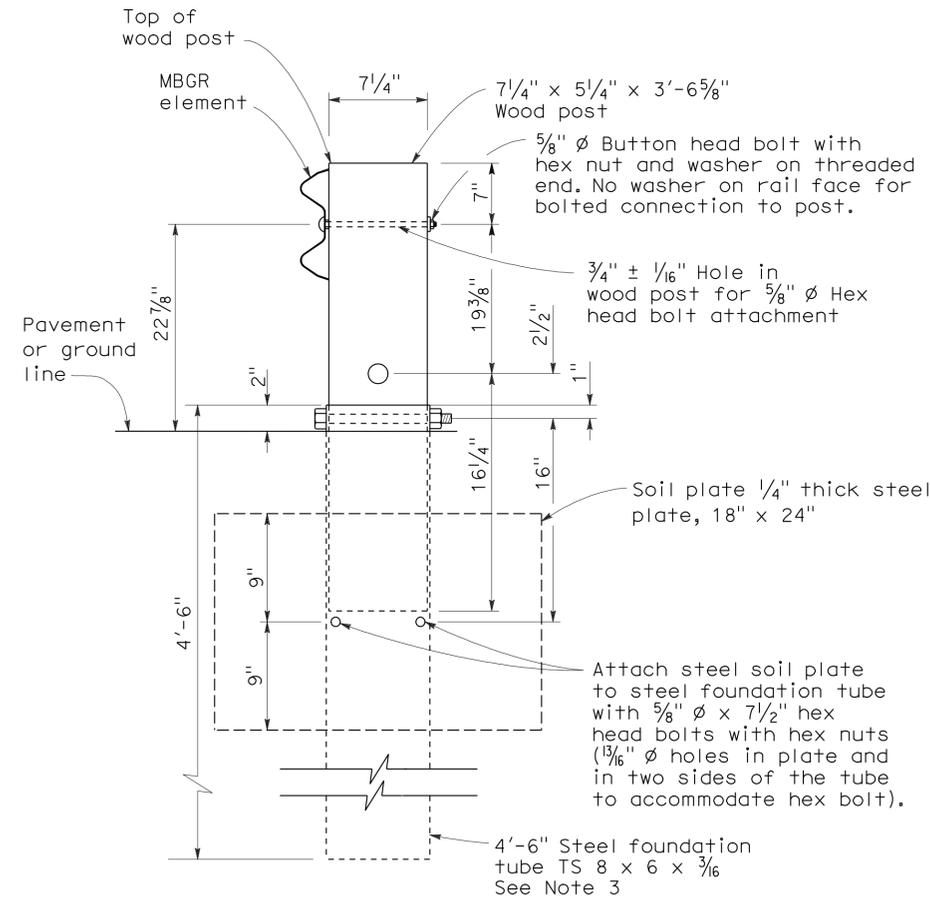
2006 REVISED STANDARD PLAN RSP A77H1



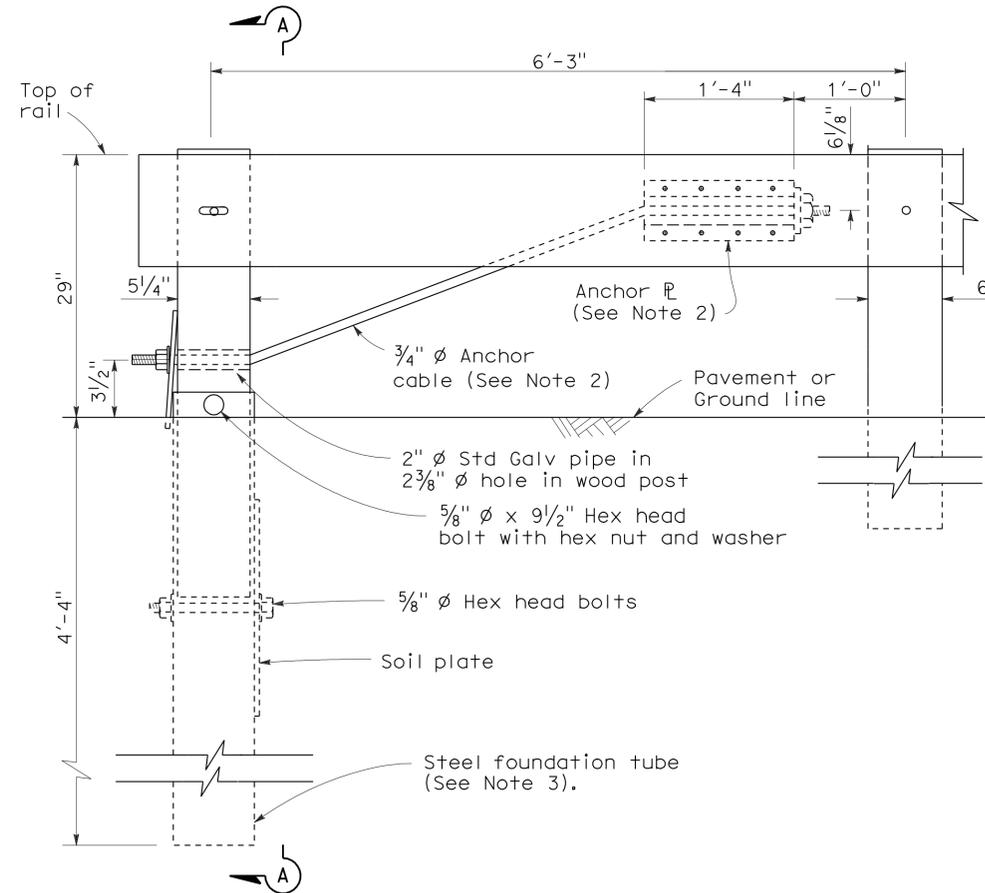
DETAIL A
CABLE CONNECTION
END PLATE



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.

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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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	258	290

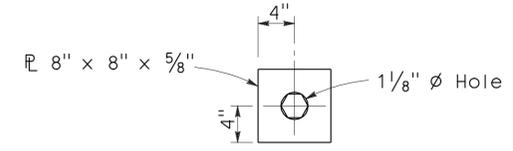
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May 20, 2011
PLANS APPROVAL DATE

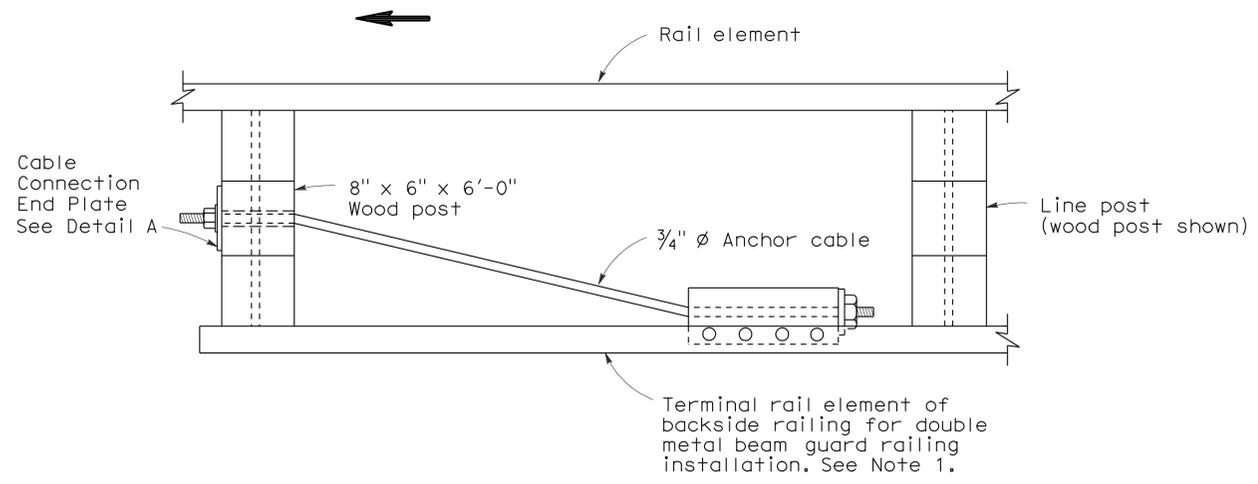
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Exp. 6-30-11
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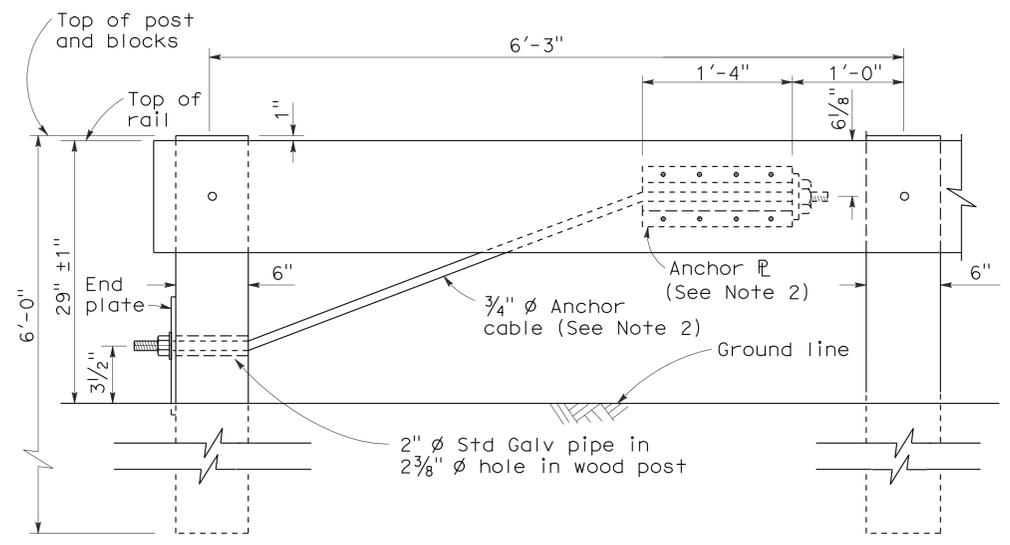
To accompany plans dated 2-27-12



DETAIL A
CABLE CONNECTION
END PLATE



PLAN



ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1

NOTES:

1. See Standard Plan A77F3 and Standard Plan A77G1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4 inch cable, see Standard Plan A77H3.
3. Direction of traffic indicated by →.

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DEPARTMENT OF TRANSPORTATION

METAL RAILING
RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77H2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H2
DATED MAY 1, 2006 - PAGE 68 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77H2

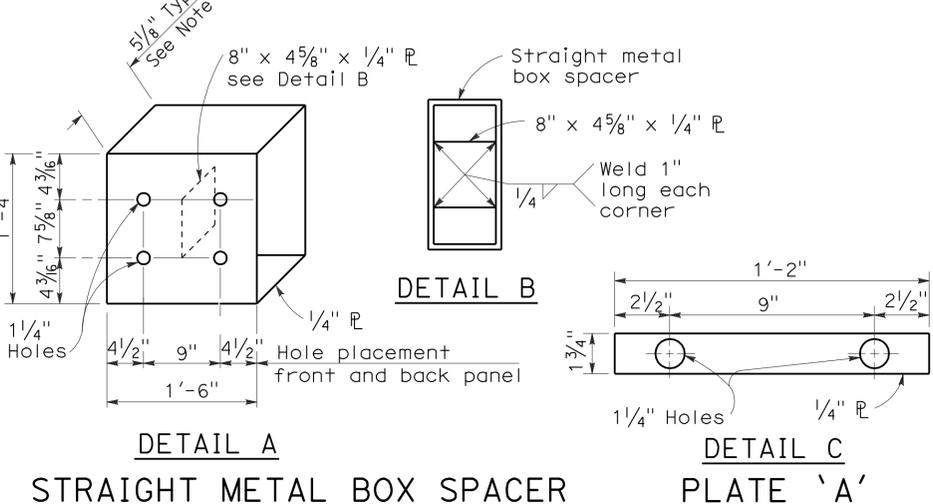
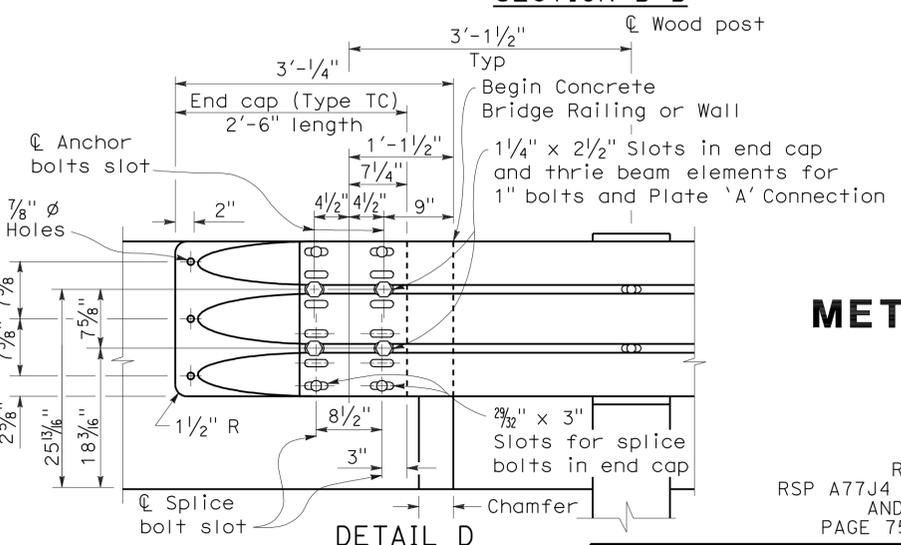
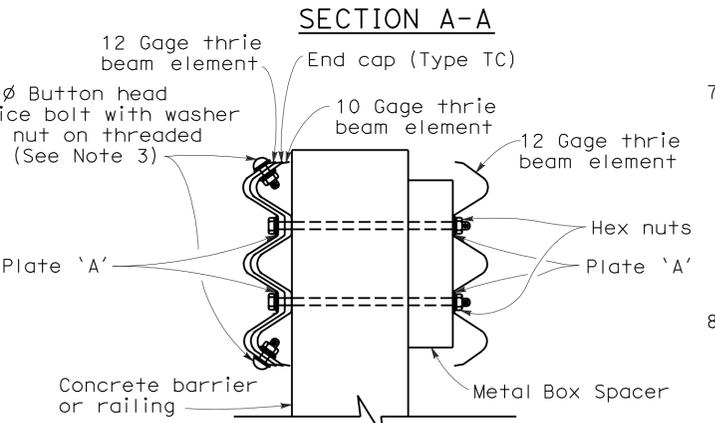
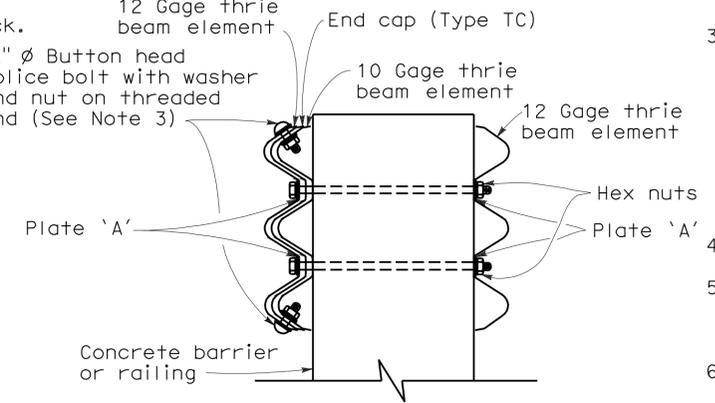
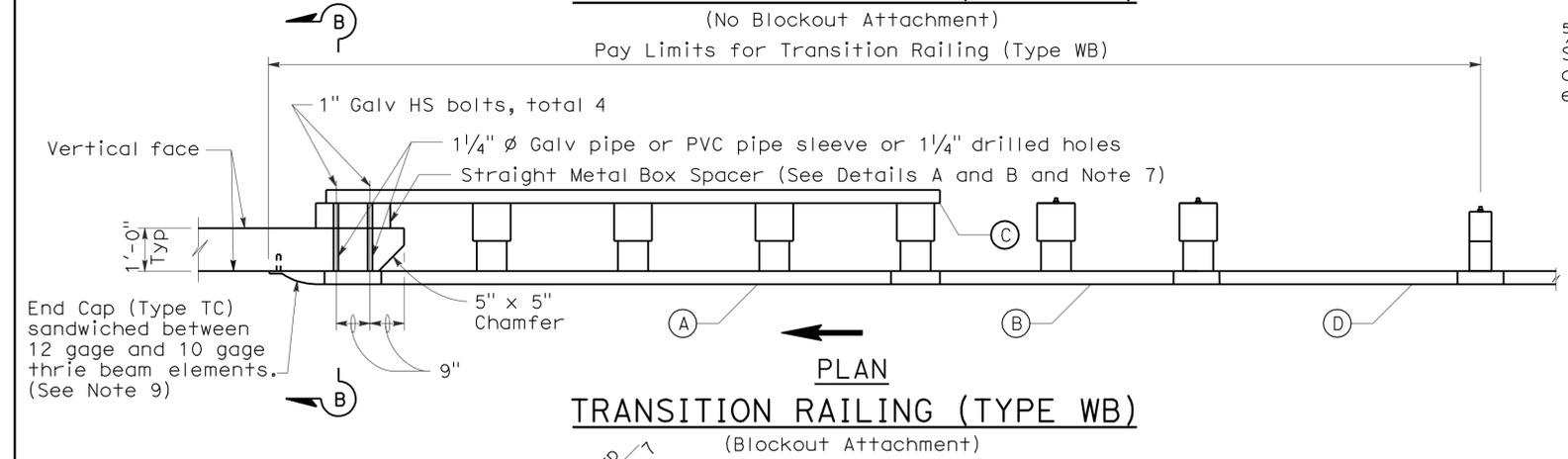
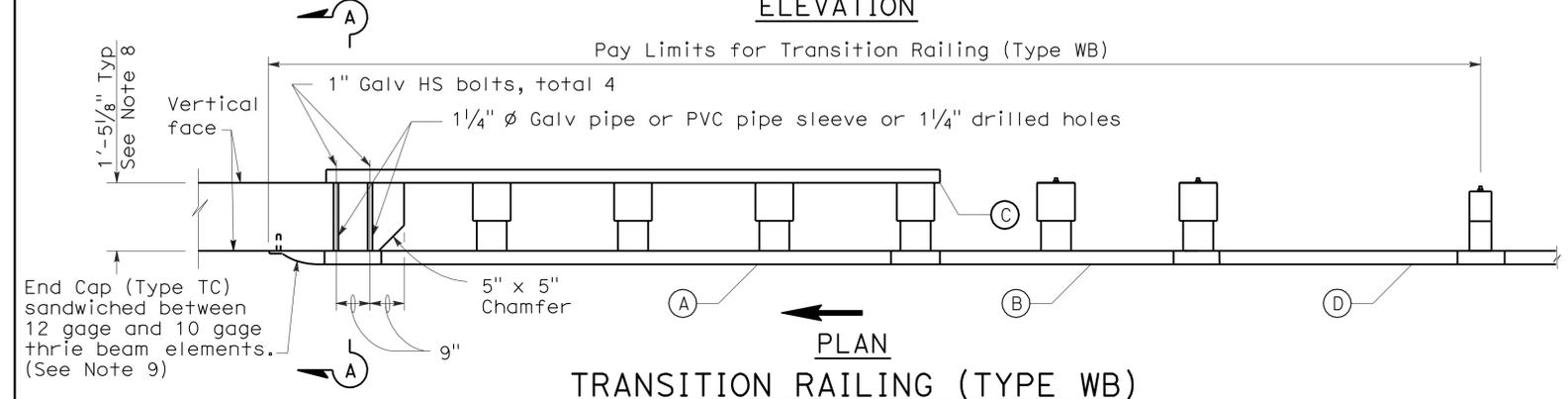
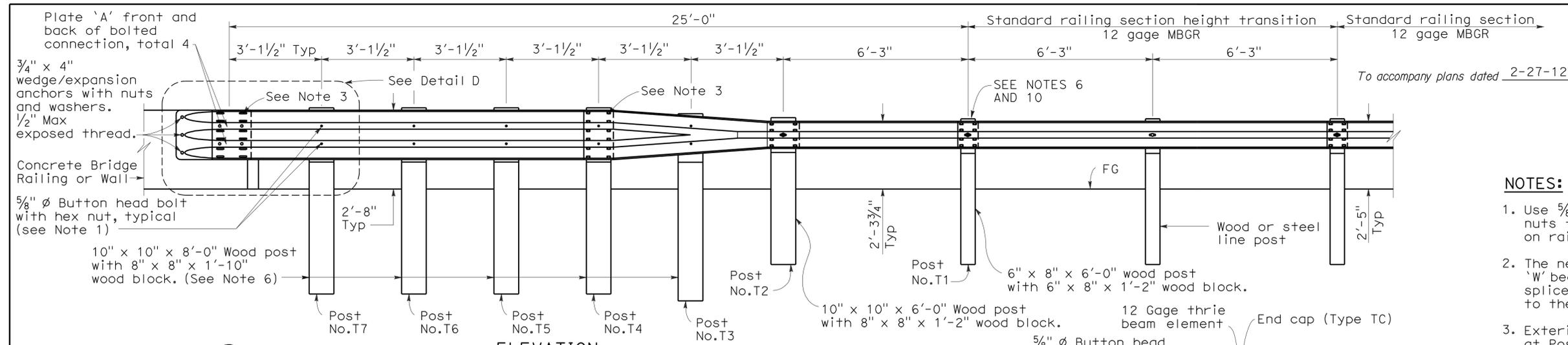
2006 REVISED STANDARD PLAN RSP A77H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	259	290

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

May 20, 2011
 PLANS APPROVAL DATE

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

- NOTES:**
- Use 5/8" Ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 - The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 - Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 7/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" Ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
 - Direction of adjacent traffic indicated by →.
 - The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 - Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing with height transition ratio of 120:1 or an approved Caltrans end treatment attached to Post No. T1.
 - The depth of the metal box spacer varies from the 5/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 - Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T4 through No. T7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 - End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.
 - Conform standard railing section height to 2'-3 3/4" at Post No. T1 using height transition ratio of 120:1.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
 TRANSITION RAILING
 (TYPE WB)**
 NO SCALE
 RSP A77J4 DATED MAY 20, 2011 SUPERSEDES
 RSP A77J4 DATED JUNE 5, 2009, RSP A77J4 DATED JUNE 6, 2008
 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
 PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J4

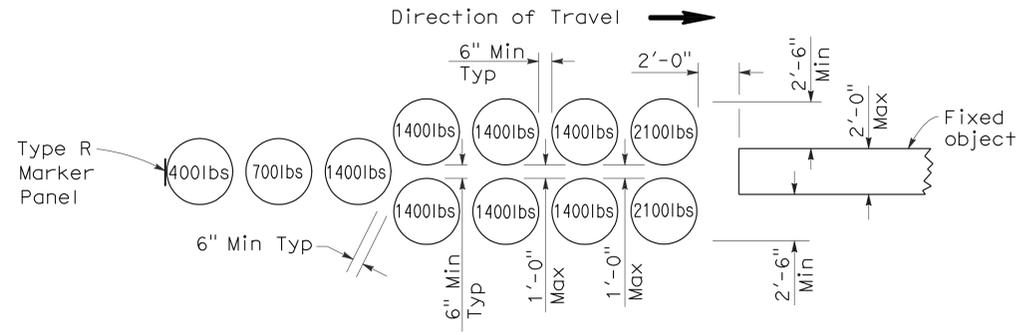
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	260	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

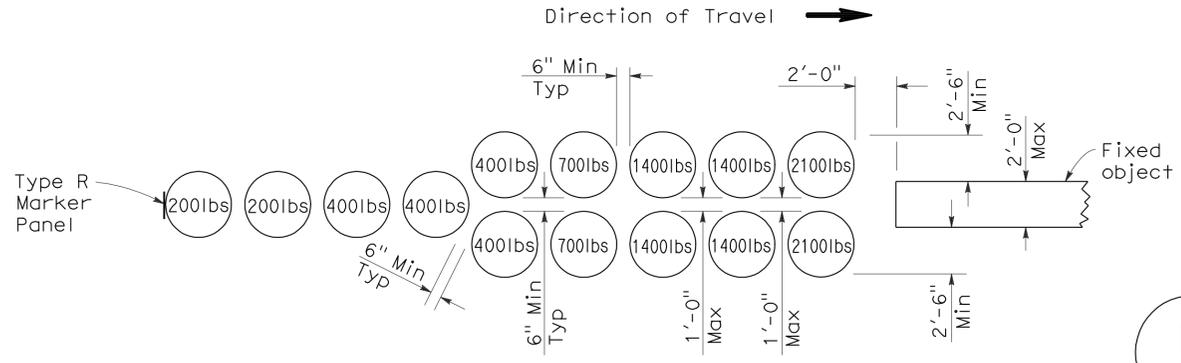
June 6, 2008
PLANS APPROVAL DATE

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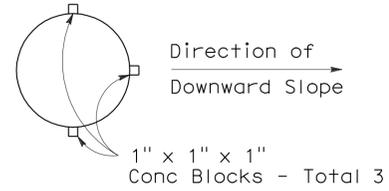
To accompany plans dated 2-27-12



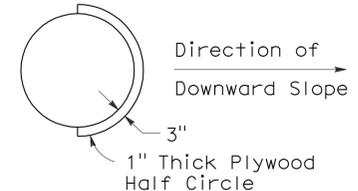
Direction of Travel →
ARRAY 'U11'
Approach speed less than 45 mph



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

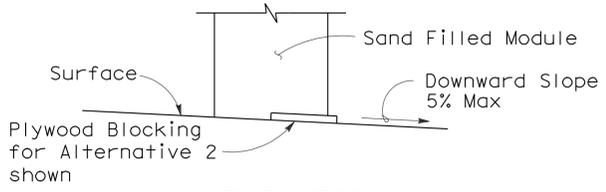


ALTERNATIVE 1

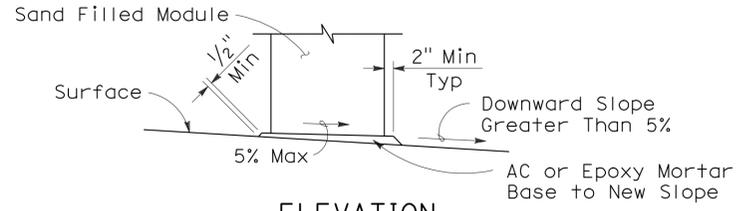


ALTERNATIVE 2

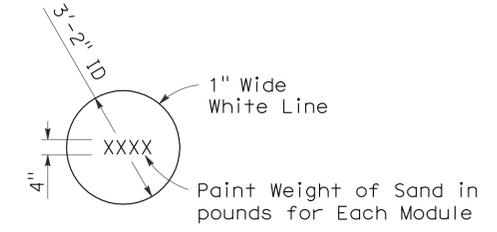
PLAN



ELEVATION
BRIDGE DECK MODULE BLOCKING DETAILS
(See Note 6)



ELEVATION
SLOPED SEAT DETAIL
(See Note 4)



PAINTING DETAIL
(See Note 5)

NOTES:

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

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

NO SCALE

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

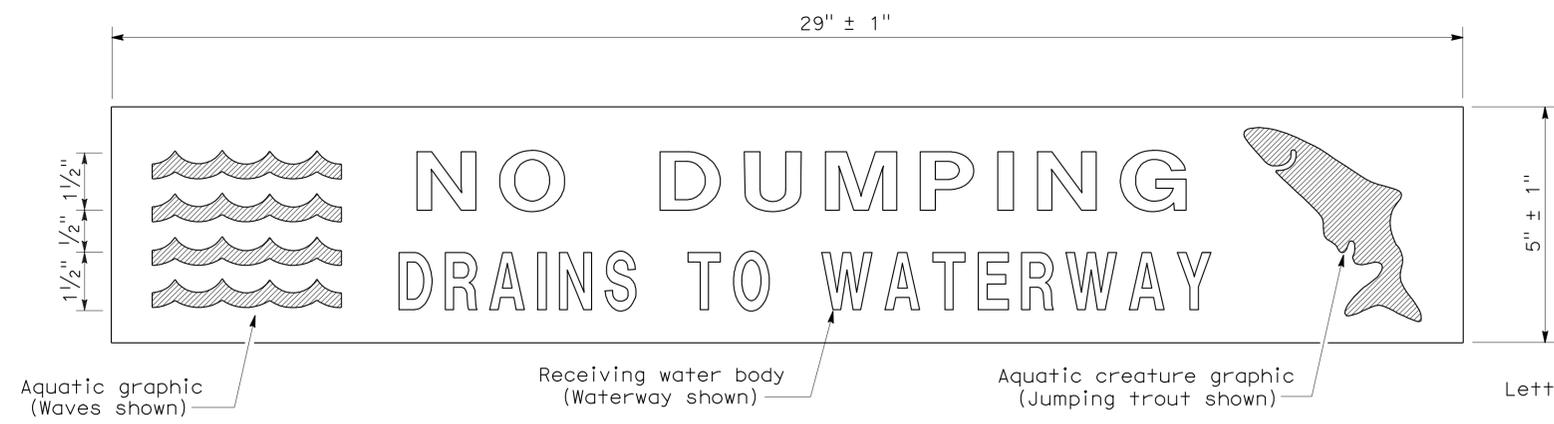
REVISED STANDARD PLAN RSP A81A

2006 REVISED STANDARD PLAN RSP A81A

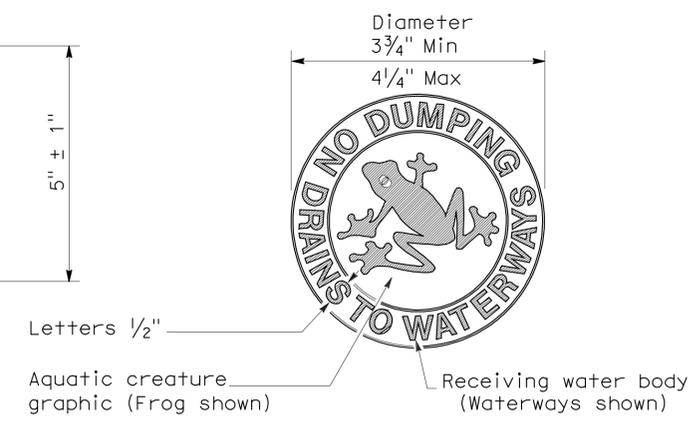
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	261	290

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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To accompany plans dated 2-27-12



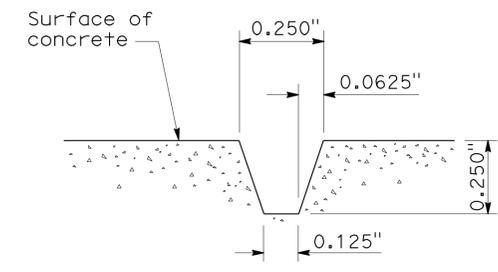
PLAN
DRAINAGE INLET MARKER
(PREFABRICATED THERMOPLASTIC)



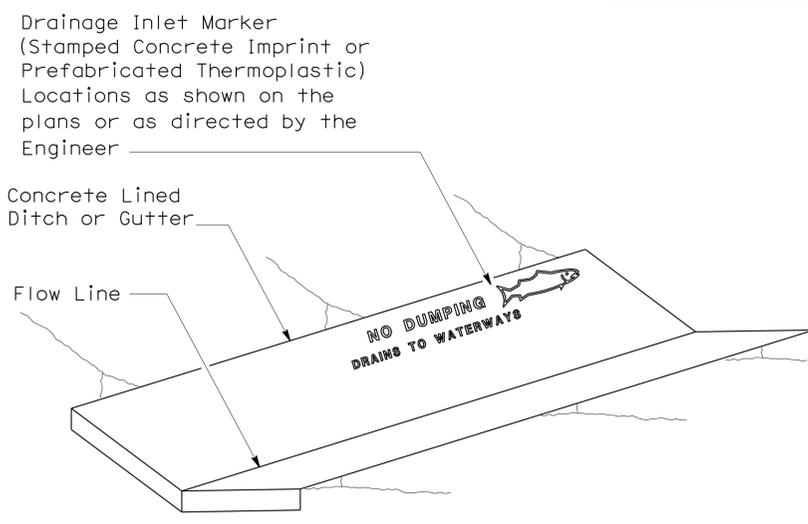
PLAN
DRAINAGE INLET MARKER
(MEDALLION)



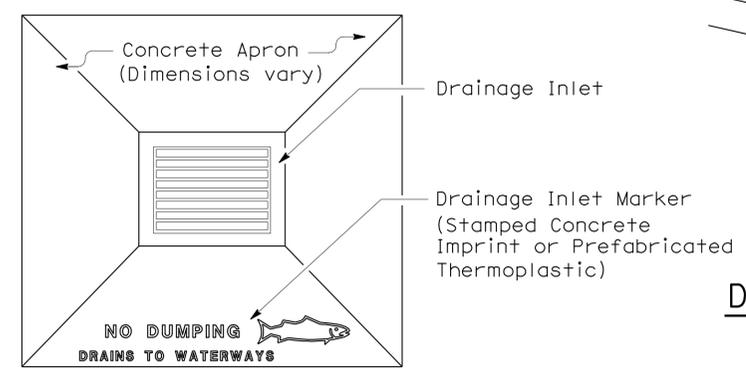
PLAN
DRAINAGE INLET MARKER
(STAMPED CONCRETE IMPRINT)



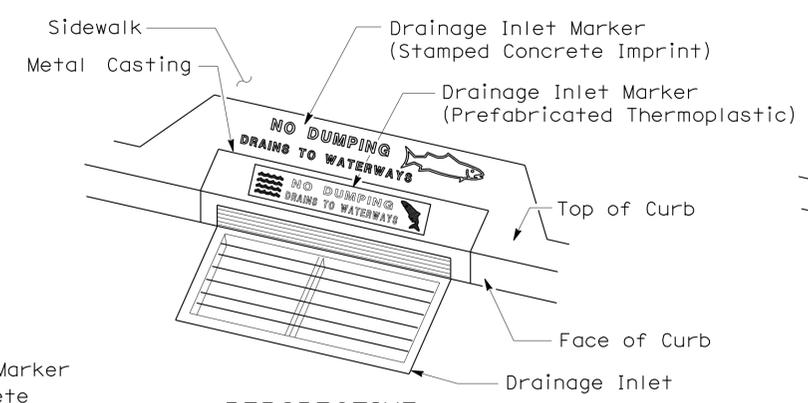
SECTION A-A
STAMPED CONCRETE
IMPRINT DETAIL



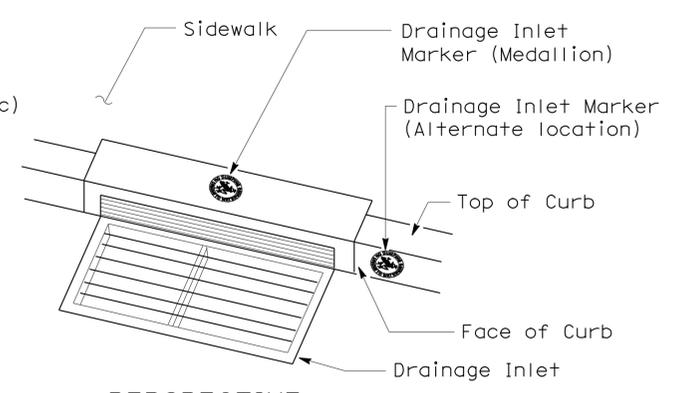
PERSPECTIVE
DRAINAGE INLET MARKER ON
CONCRETE LINED DITCH



PLAN
DRAINAGE INLET MARKER ON
DRAINAGE INLET APRON



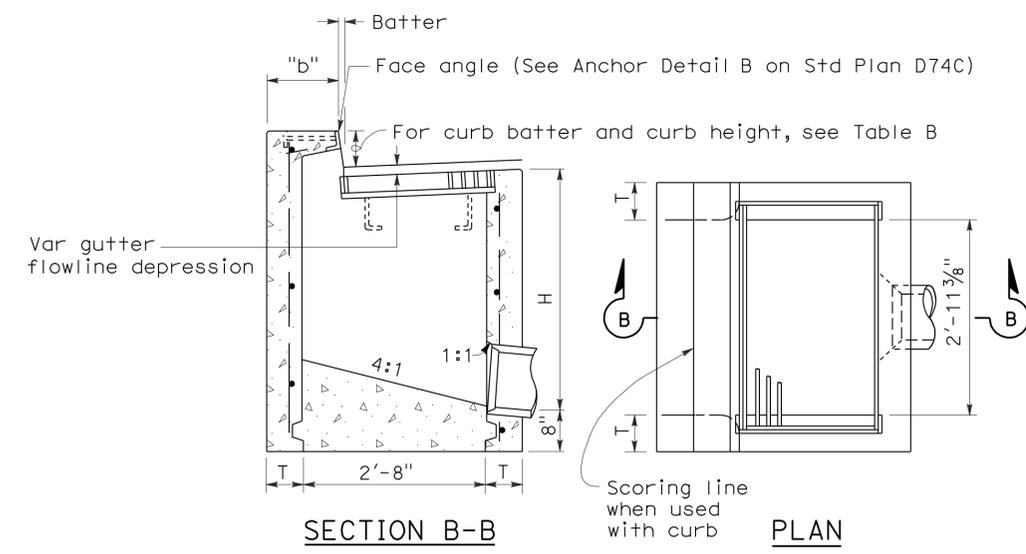
PERSPECTIVE
DRAINAGE INLET MARKER ON
DRAINAGE INLET



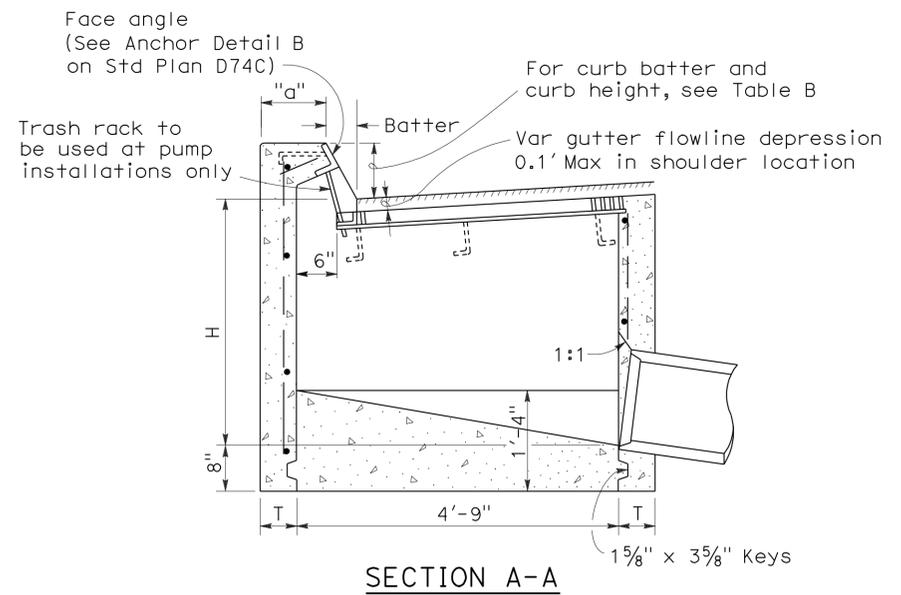
PERSPECTIVE
DRAINAGE INLET MARKER (MEDALLION)
ON DRAINAGE INLET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLET MARKERS
NO SCALE
NSP D71 DATED APRIL 3, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

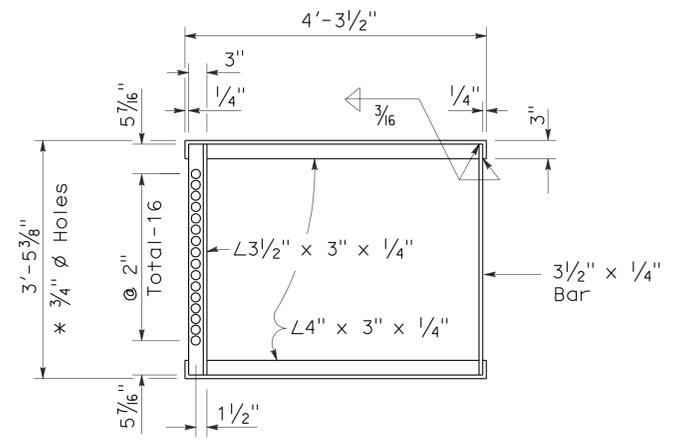
To accompany plans dated 2-27-12



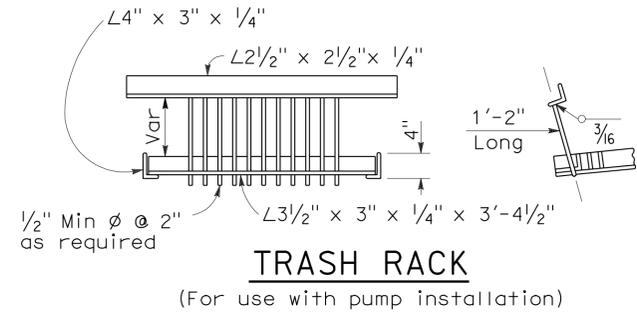
TYPE GO



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

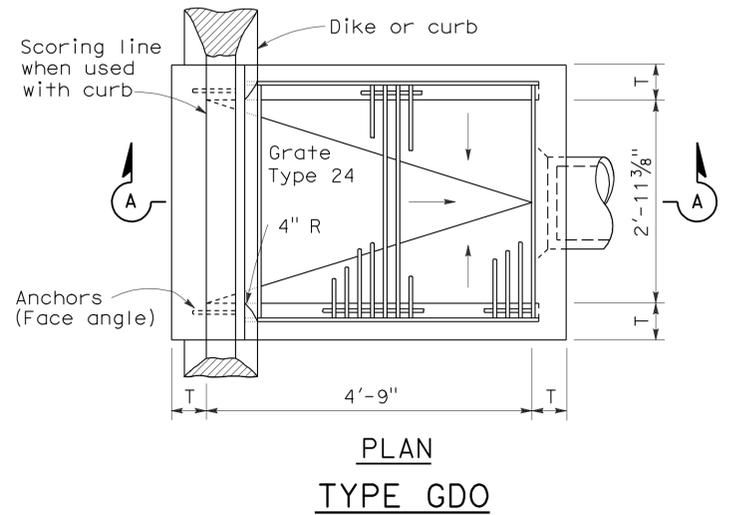
Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.

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.



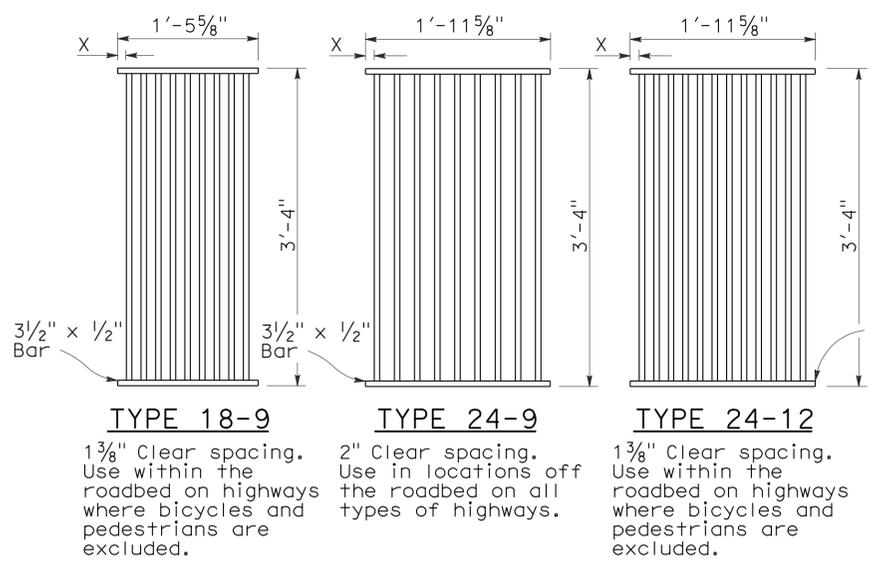
PLAN
TYPE GDO

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLETS
NO SCALE

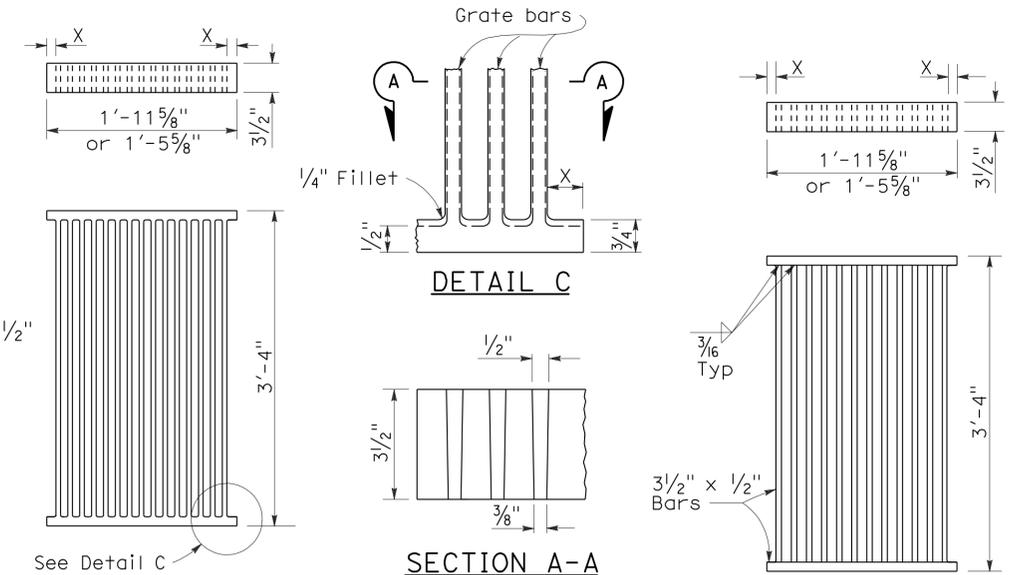
2006 REVISED STANDARD PLAN RSP D74B



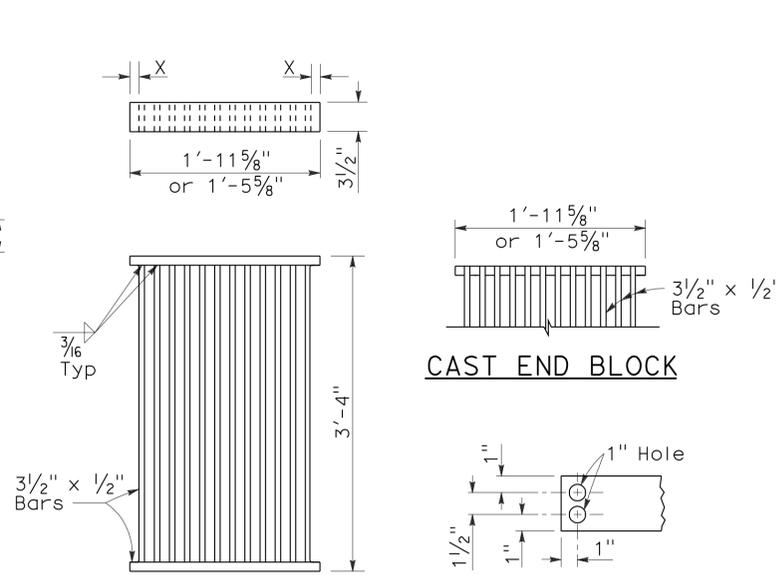
To accompany plans dated 2-27-12



RECTANGULAR GRATE DETAILS
(See table below)

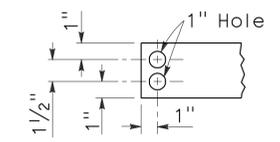


ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE

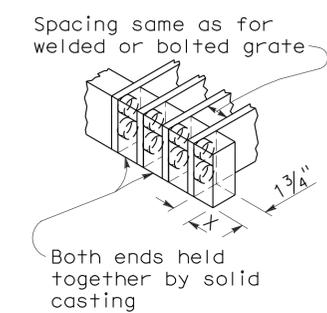


ALTERNATIVE WELDED GRATE

CAST END BLOCK



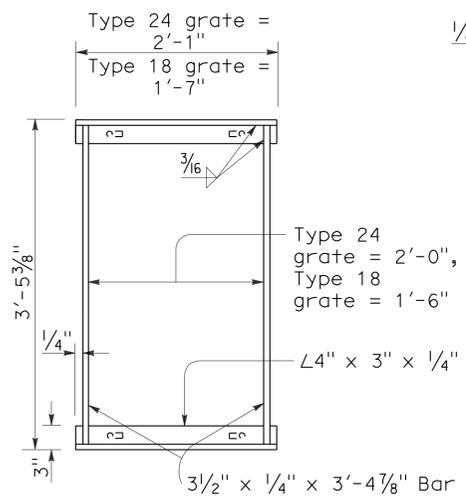
END OF BAR



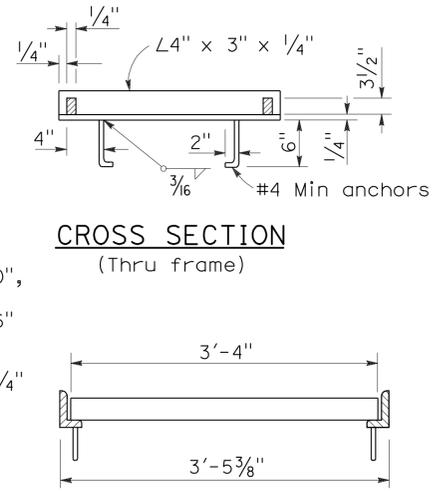
ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

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).

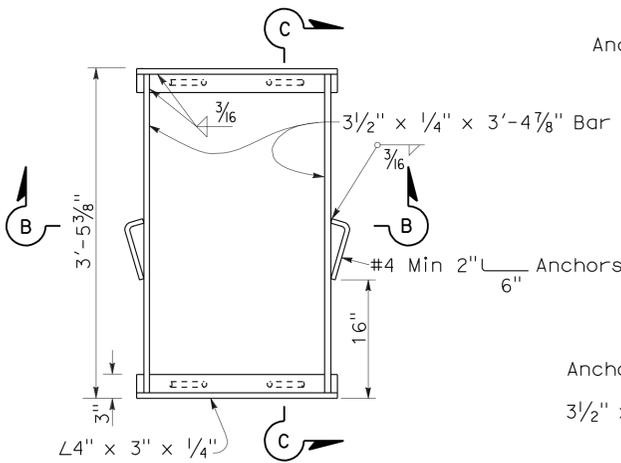


TYPICAL FRAME



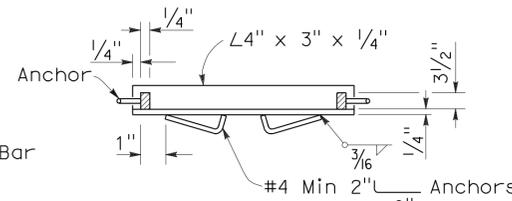
CROSS SECTION
(Thru frame)

LONGITUDINAL SECTION
(Thru frame and grate)

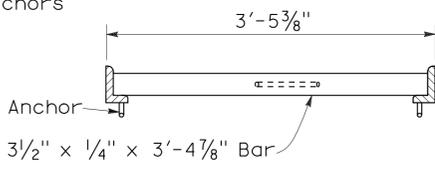


TYPICAL FRAME

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



SECTION B-B



SECTION C-C

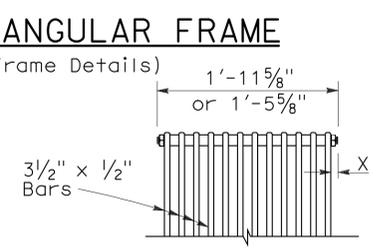
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

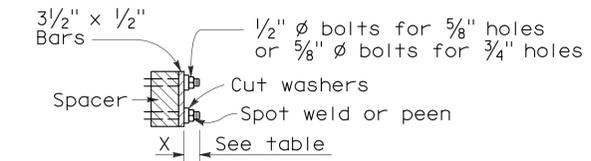
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

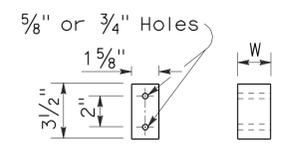


BOLTED END BLOCK

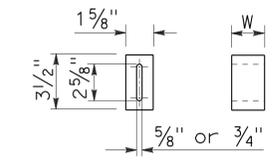


BOLTING DETAIL

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)

2006 REVISED STANDARD PLAN RSP D77A

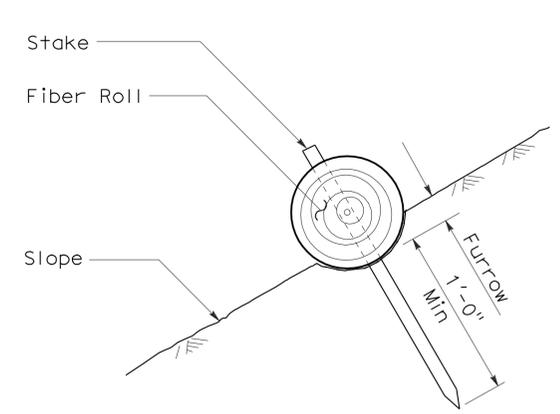
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	264	290

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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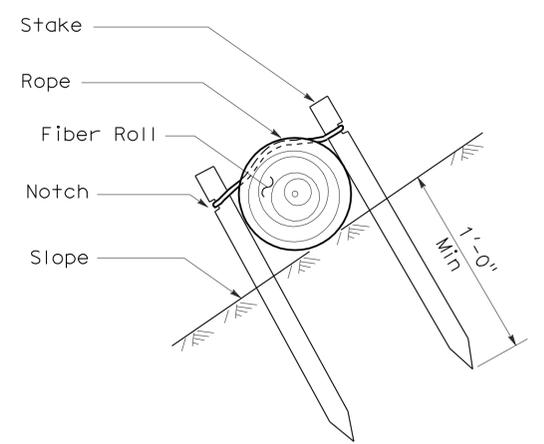
To accompany plans dated 2-27-12

NOTES:

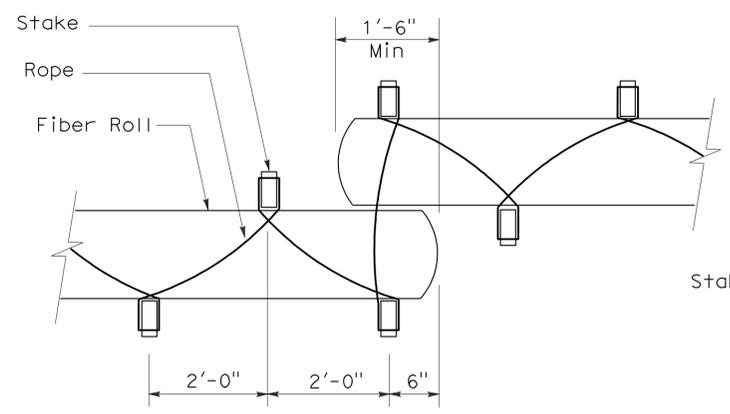
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



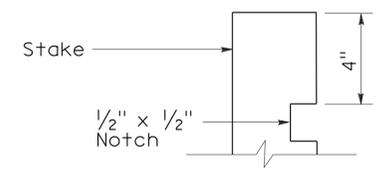
SECTION
FIBER ROLL
(TYPE 1)



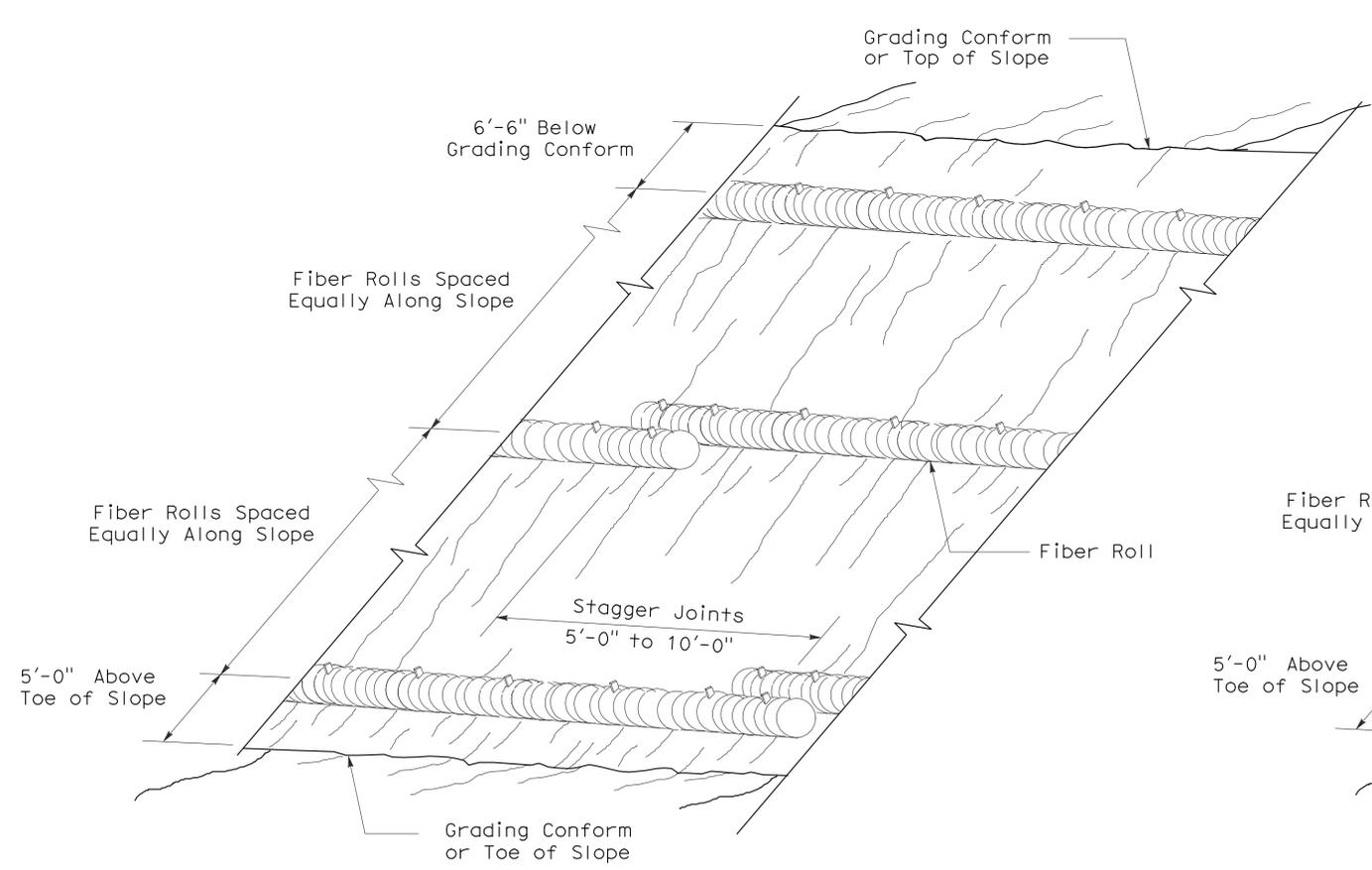
SECTION



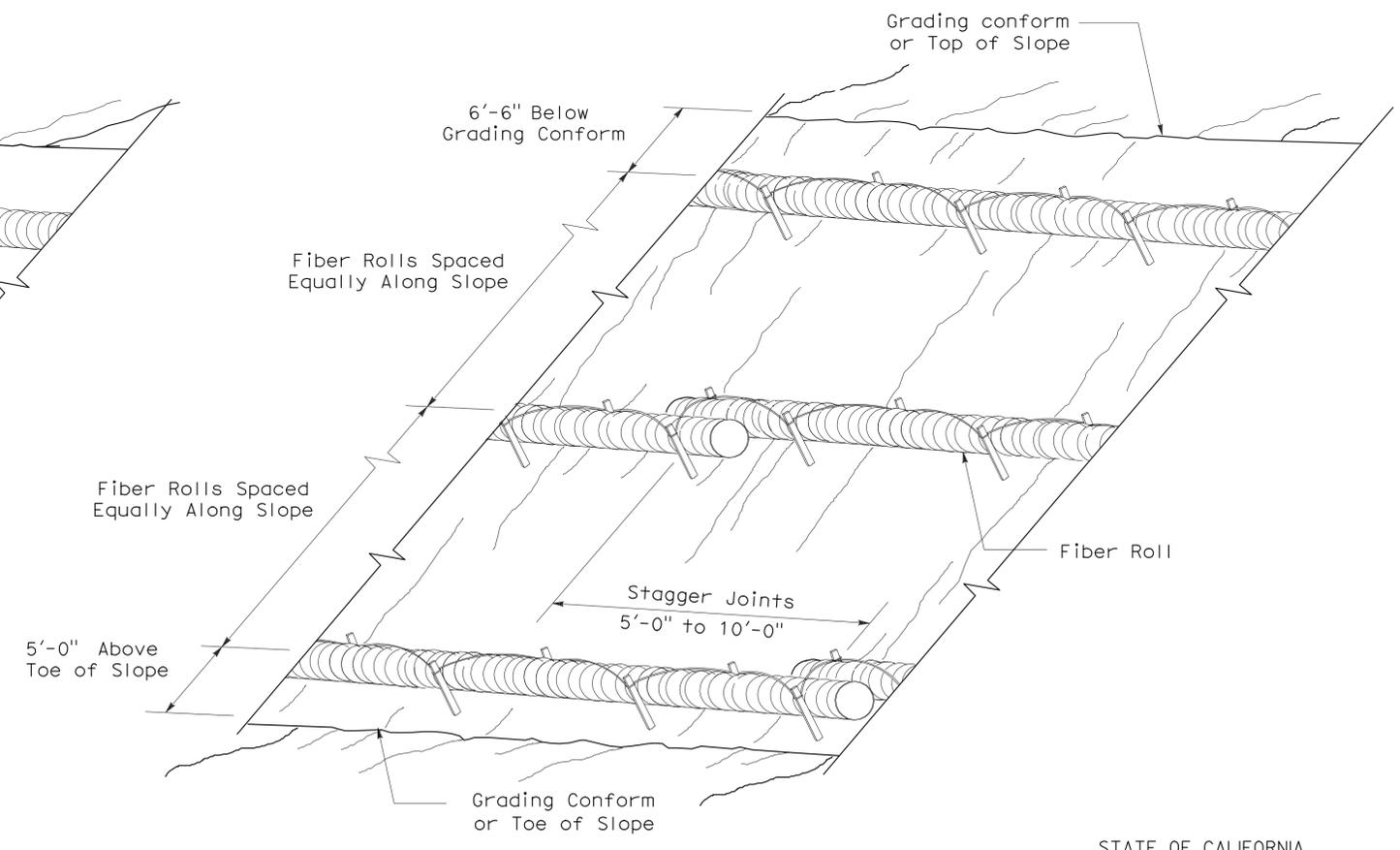
PLAN



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)

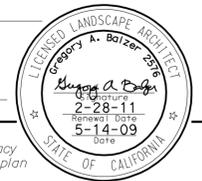
NO SCALE

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

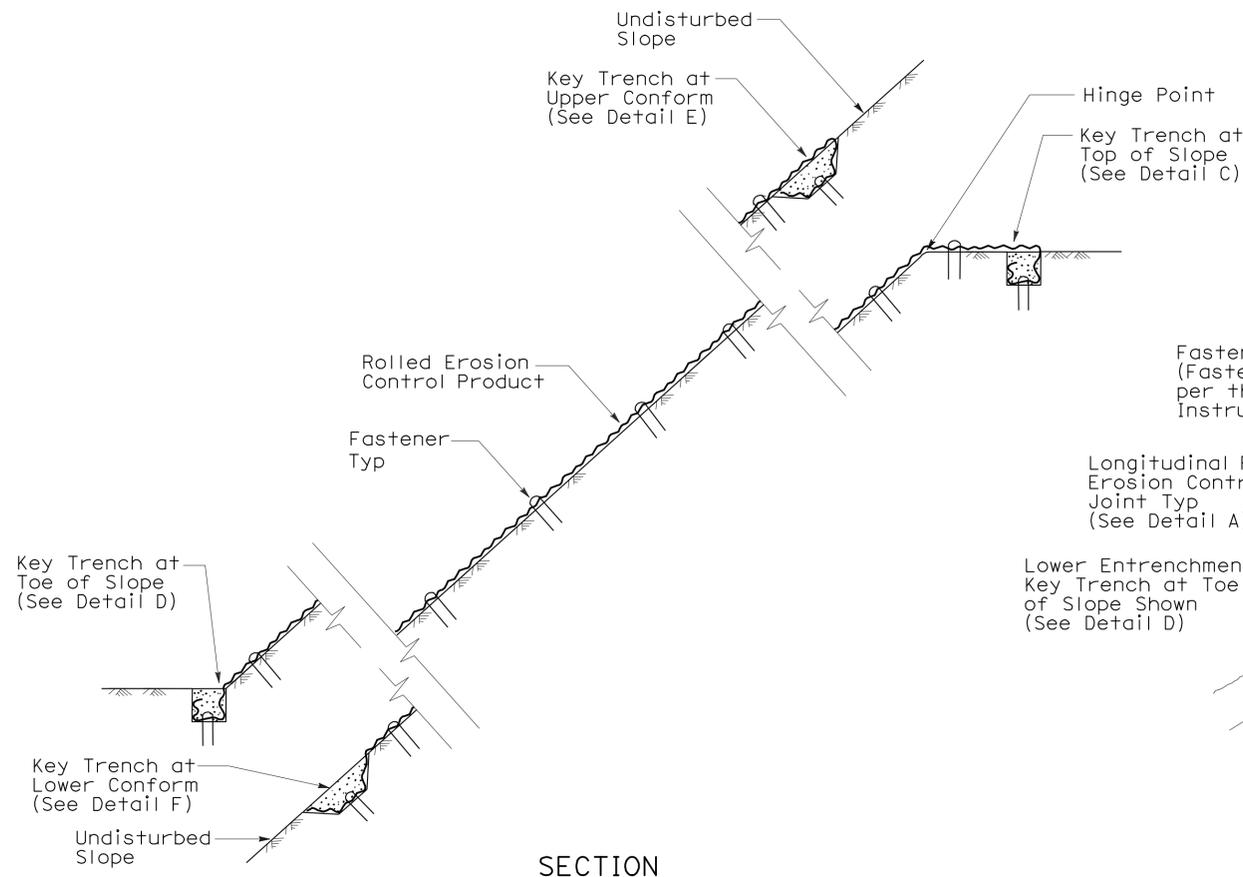
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	265	290

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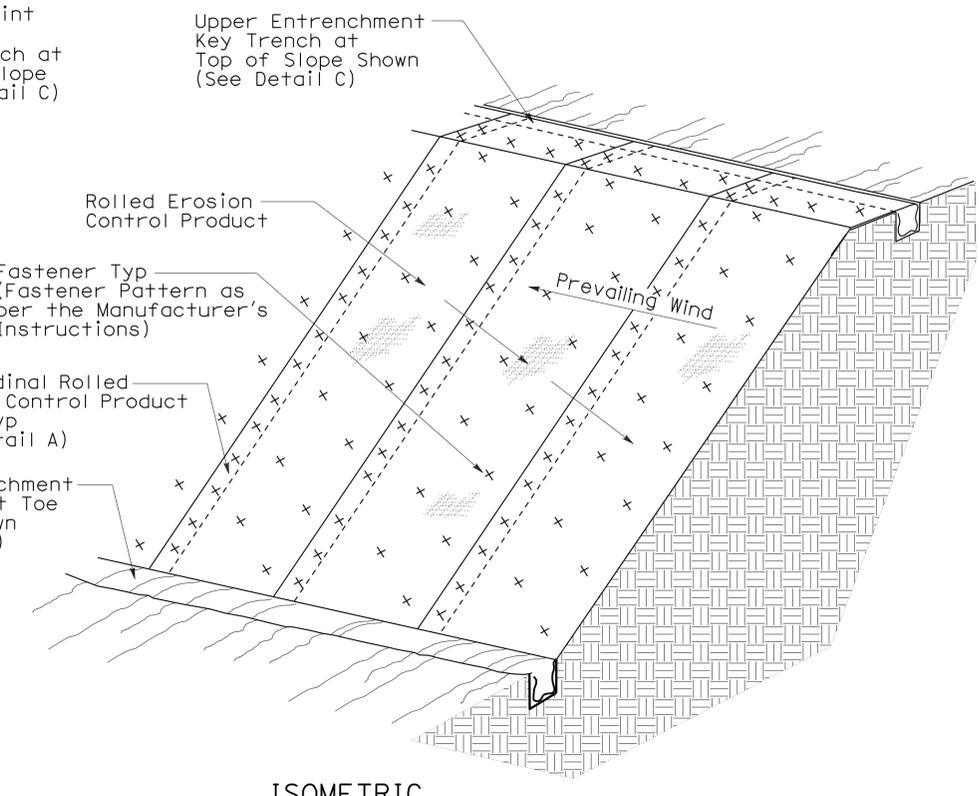


To accompany plans dated 2-27-12

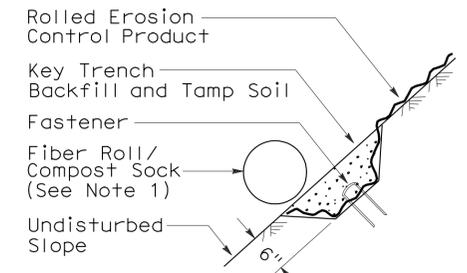
- NOTE:**
1. Fiber Roll/Compost Sock shown for reference purposes only.
 2. If transverse rolled erosion control product joints are required on slopes, see Detail B.



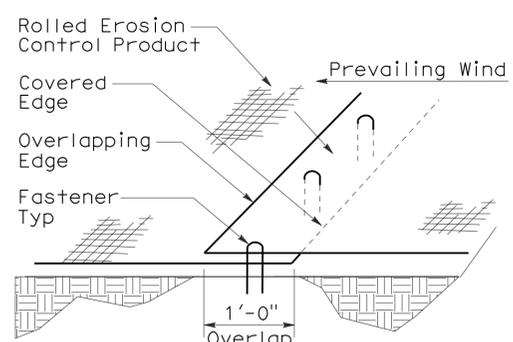
SECTION
ROLLED EROSION CONTROL PRODUCT
ON SLOPE WITH VARIOUS KEY ENTRENCHMENTS



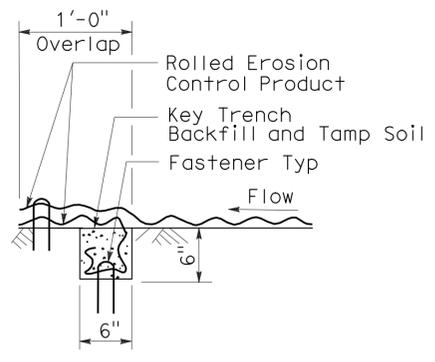
ISOMETRIC
ROLLED EROSION CONTROL PRODUCT
ON SLOPE



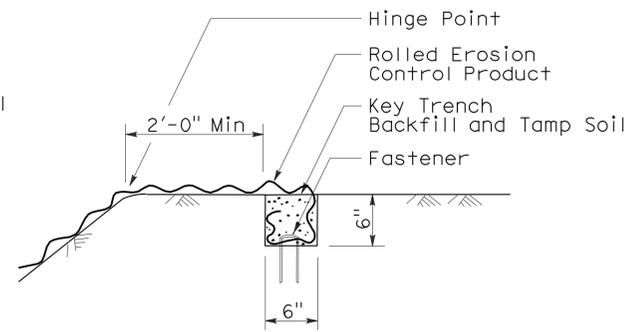
SECTION
DETAIL F
KEY TRENCH AT
LOWER CONFORM



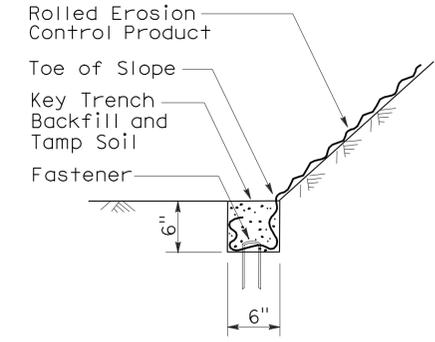
PERSPECTIVE
DETAIL A
LONGITUDINAL ROLLED EROSION
CONTROL PRODUCT JOINT



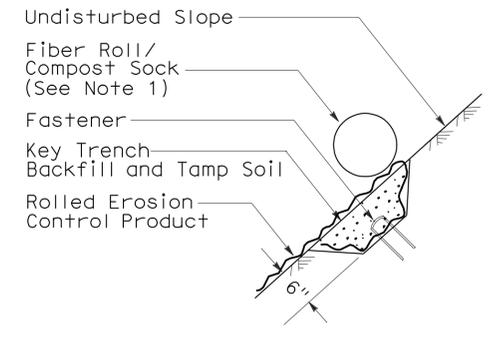
SECTION
DETAIL B
TRANSVERSE ROLLED EROSION
CONTROL PRODUCT JOINT



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,CC	80	3.8/8.0, 0.0/13.5	266	290

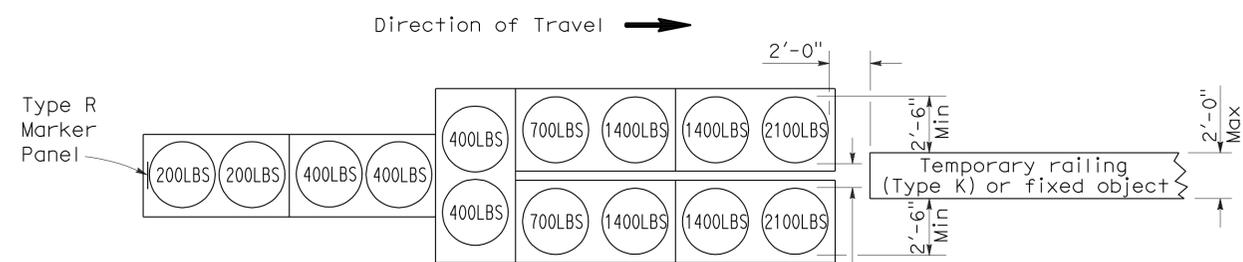
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

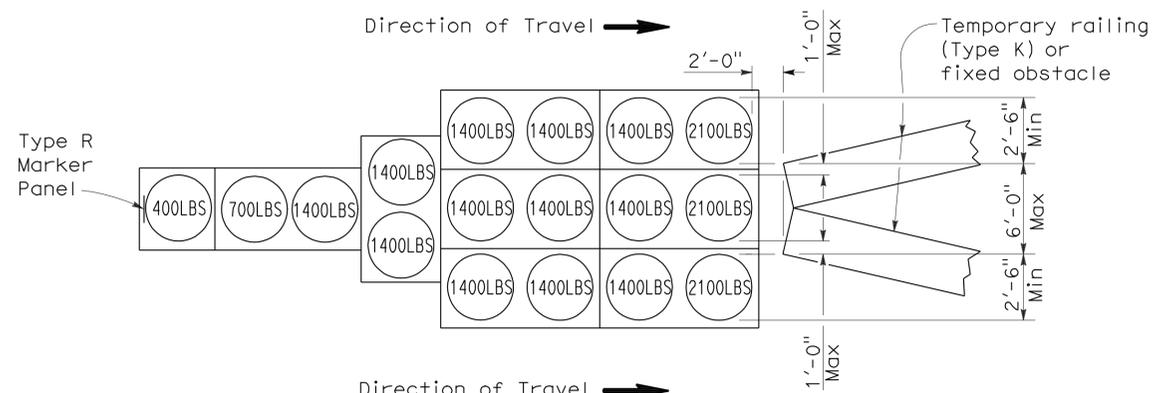
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 2-27-12



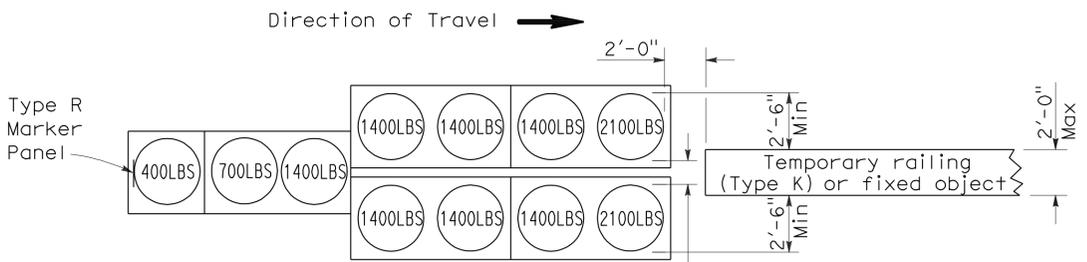
ARRAY 'TU14'

Approach speed 45 mph or more



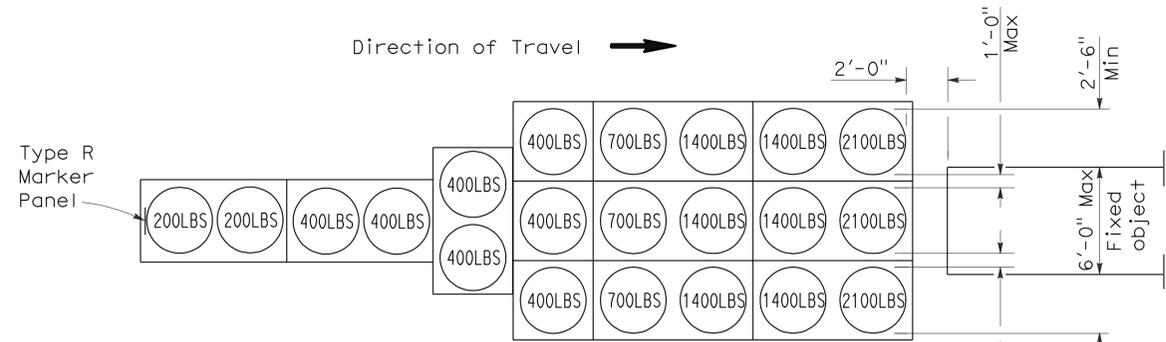
ARRAY 'TU17'

Approach speed less than 45 mph



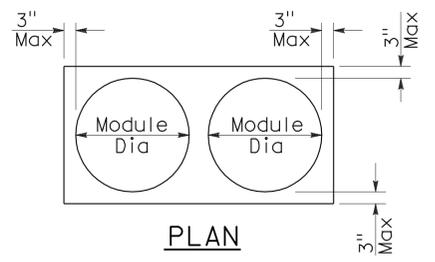
ARRAY 'TU11'

Approach speed less than 45 mph

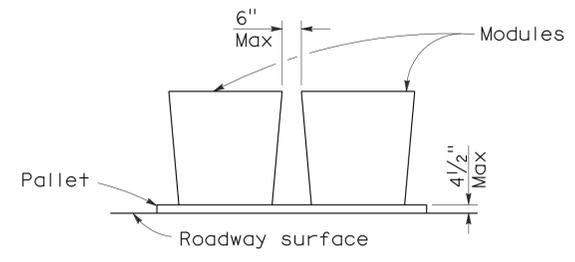


ARRAY 'TU21'

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,CC	80	3.8/8.0, 0.0/13.5	267	290

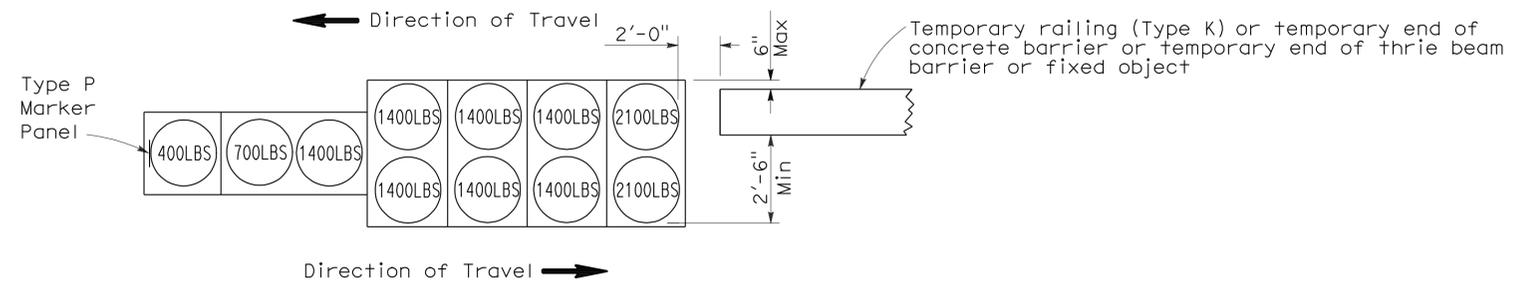
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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.

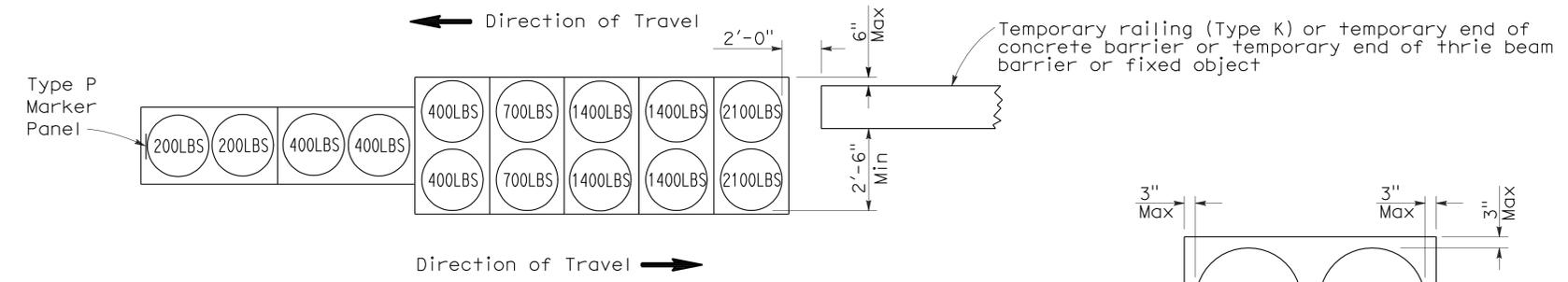


To accompany plans dated 2-27-12



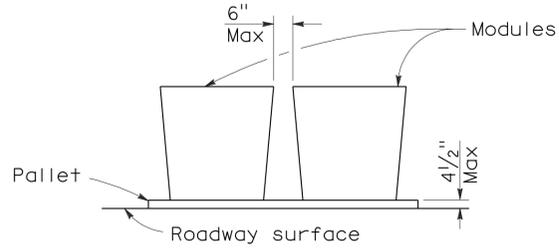
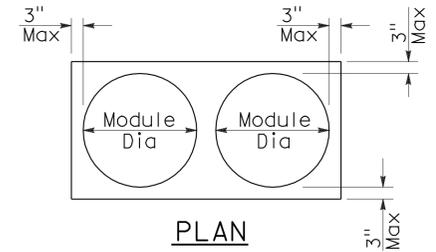
ARRAY 'TB11'

Approach speed less than 45 mph



ARRAY 'TB14'

Approach speed 45 mph or more



CRASH CUSHION PALLET DETAIL
See Note 7

NOTES:

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

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

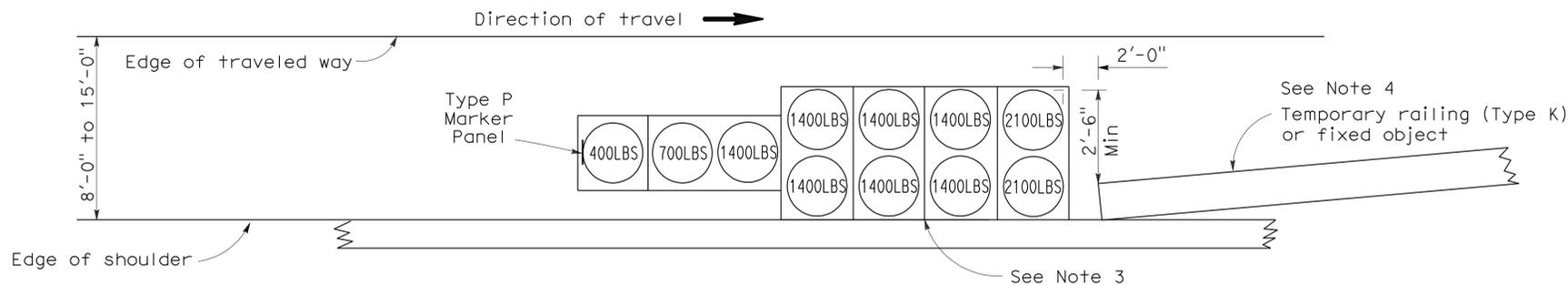
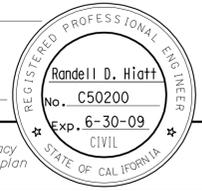
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	268	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

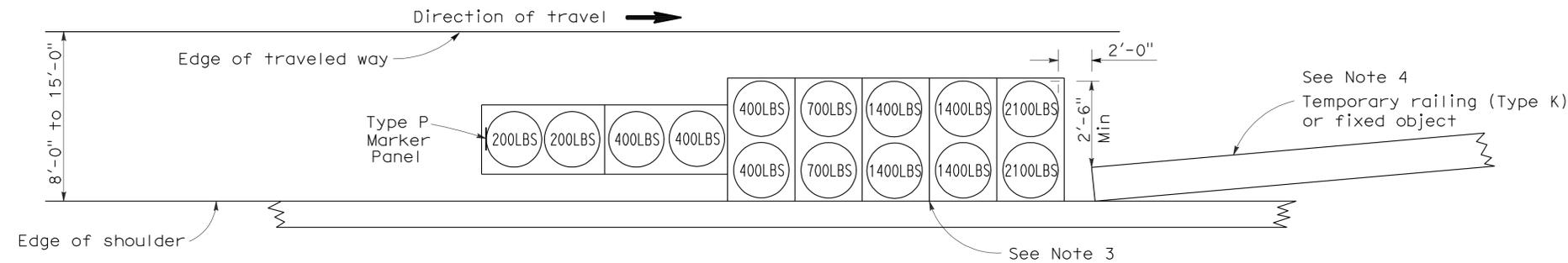
June 6, 2008
PLANS APPROVAL DATE

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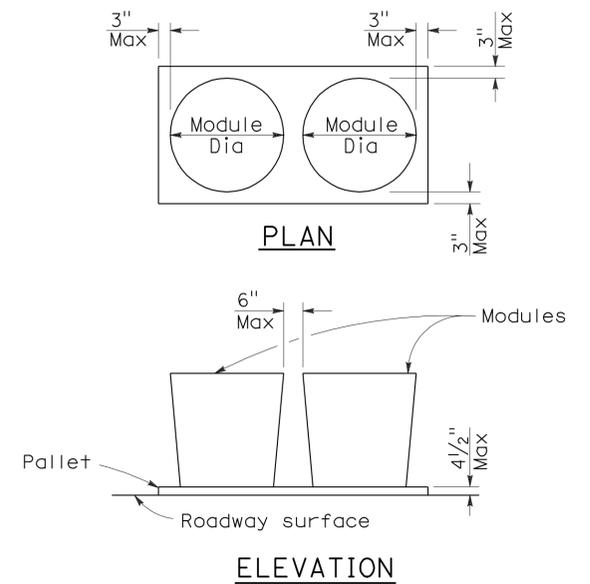
To accompany plans dated 2-27-12



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:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

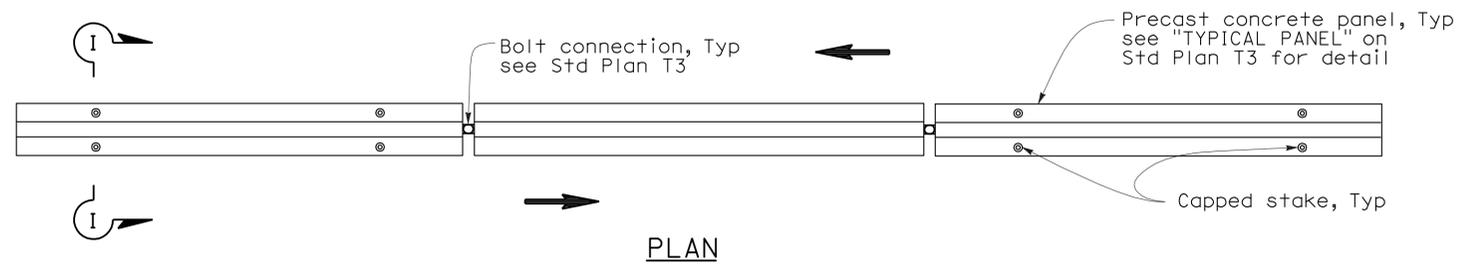
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	269	290

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

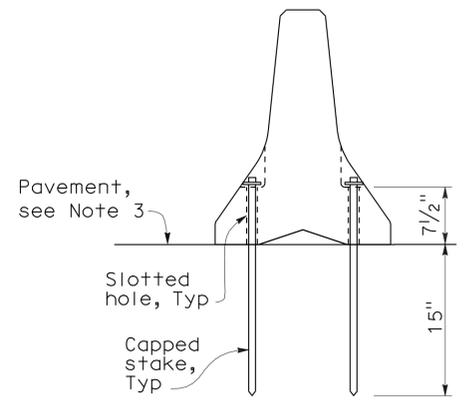
May 20, 2011
PLANS APPROVAL DATE

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To accompany plans dated 2-27-12



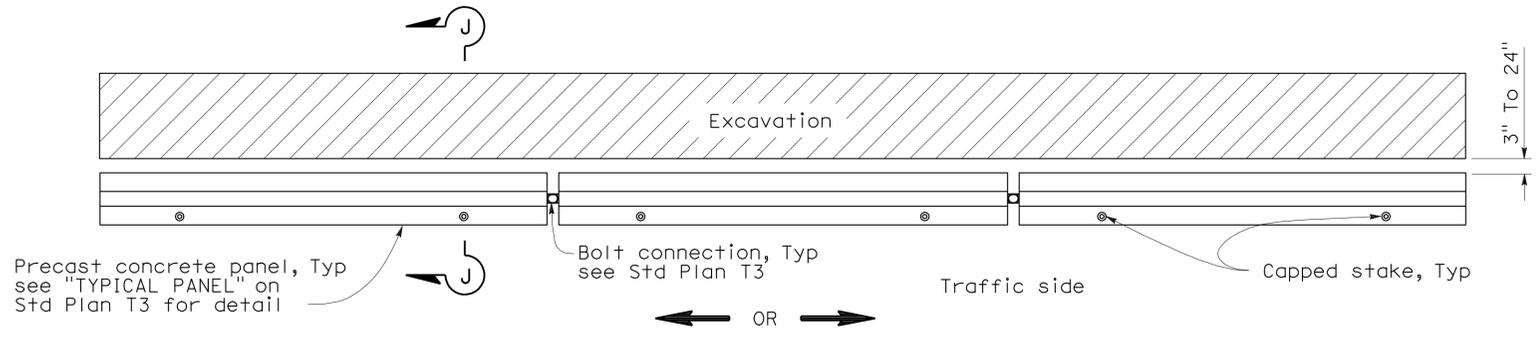
RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC
See Note 1



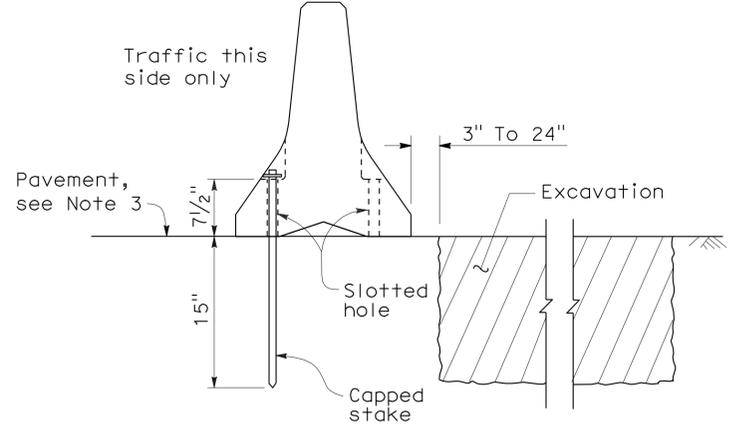
SECTION I-I

NOTES:

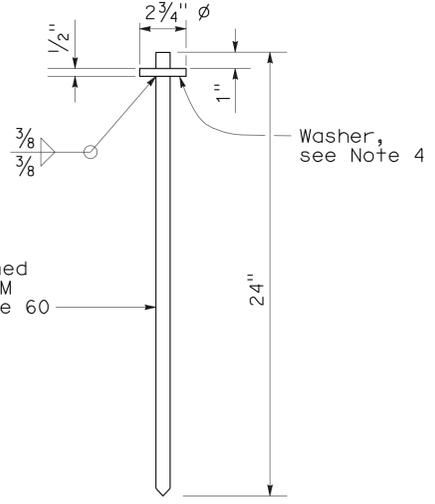
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of 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

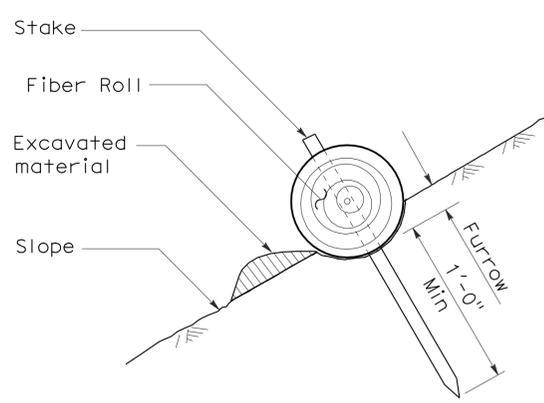
NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T3A

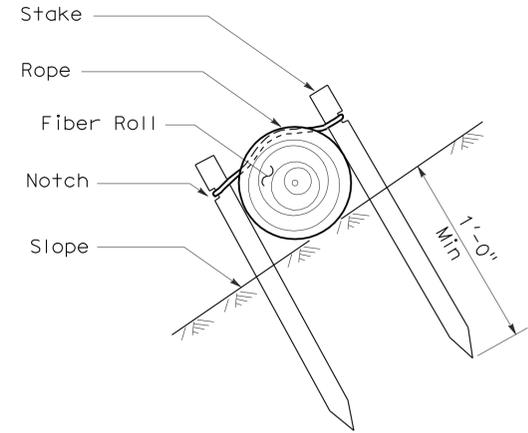
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	271	290

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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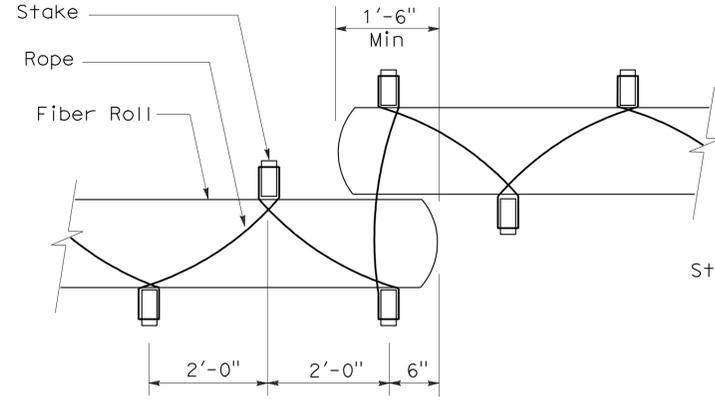
To accompany plans dated 2-27-12



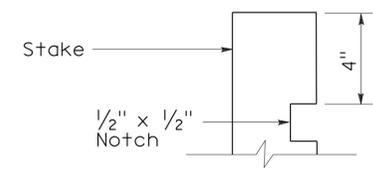
SECTION
TEMPORARY FIBER ROLL (TYPE 1)



SECTION
TEMPORARY FIBER ROLL (TYPE 2)

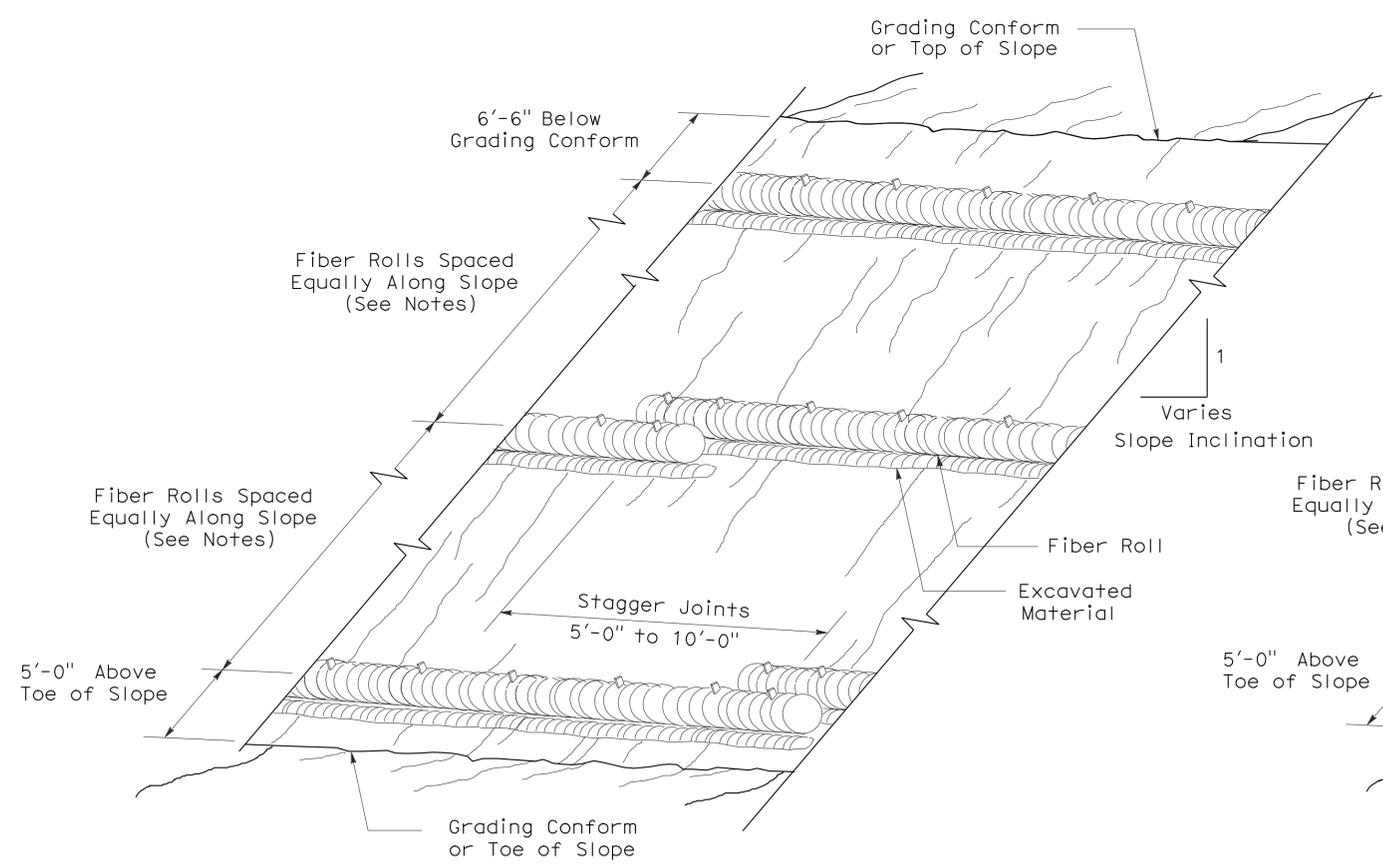


PLAN

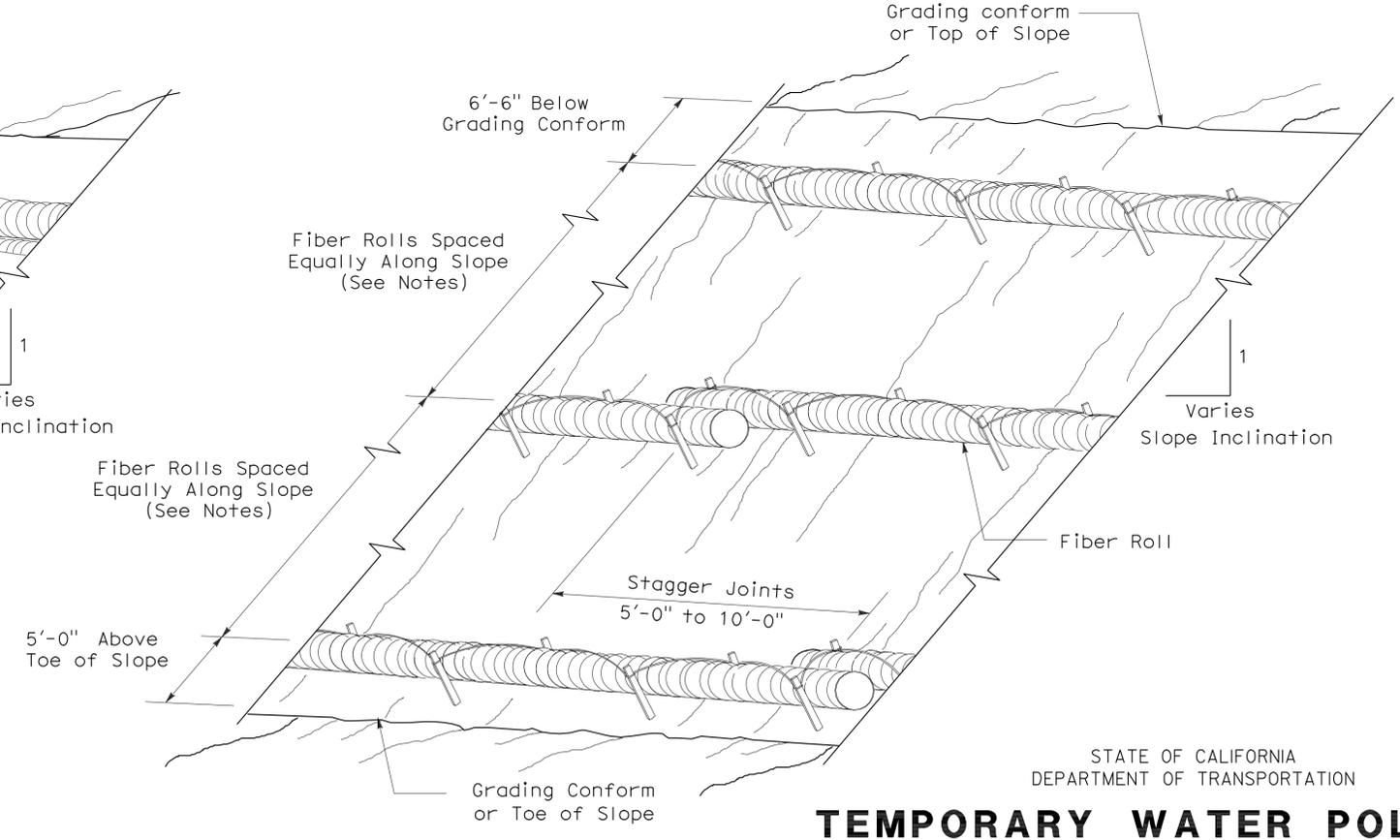


ELEVATION
STAKE NOTCH DETAIL

- 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

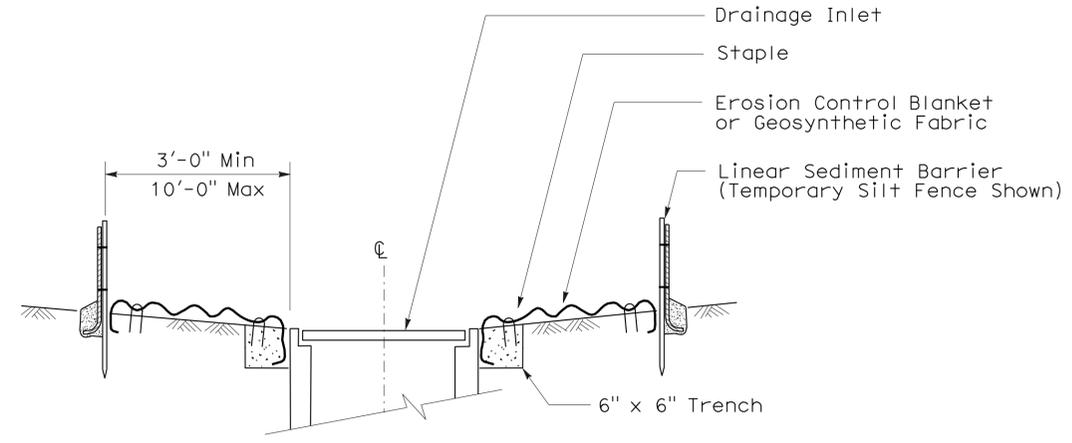
2006 REVISED STANDARD PLAN RSP T56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	272	290

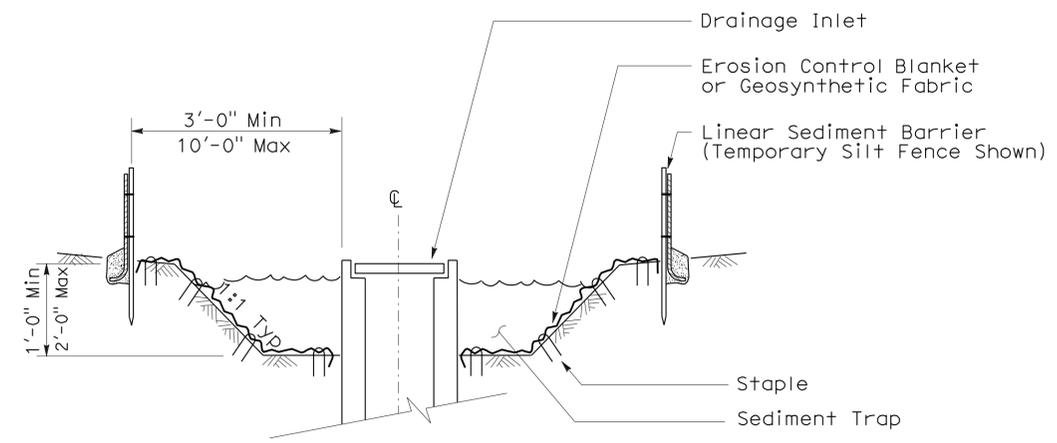
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS Approval DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 2-27-12

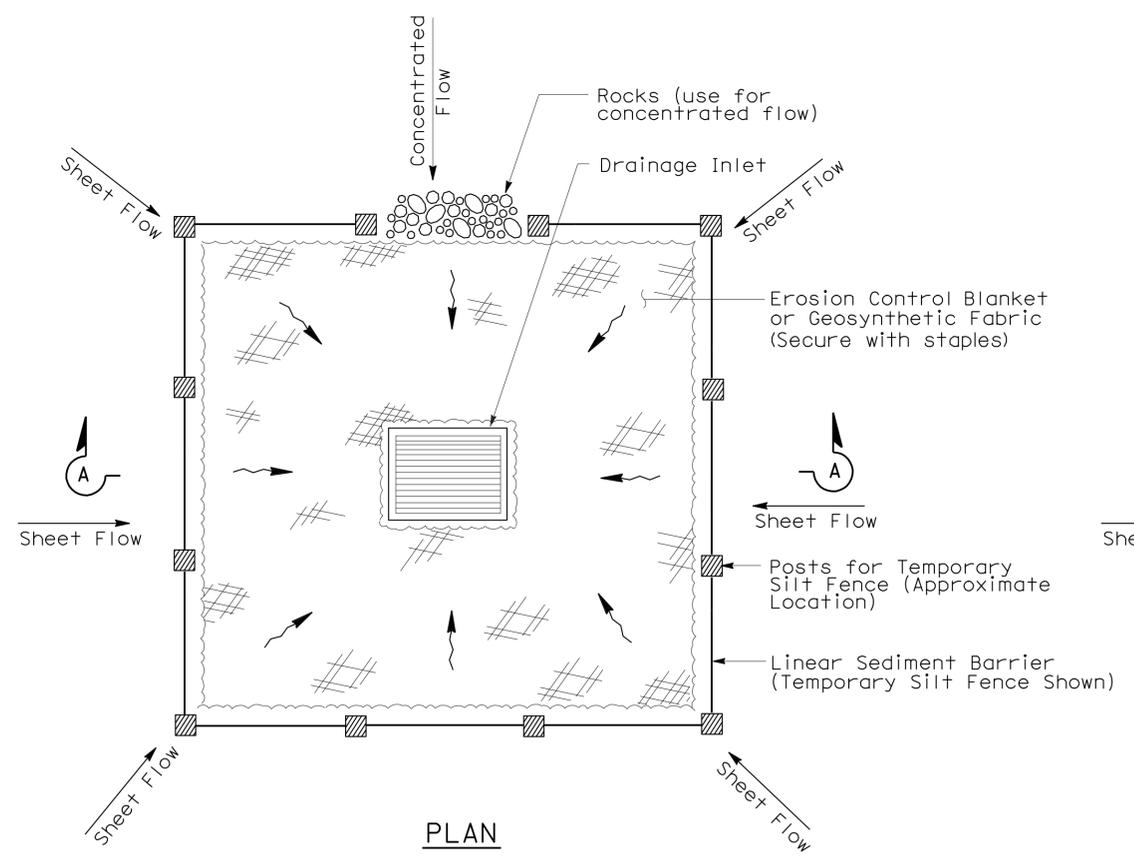
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



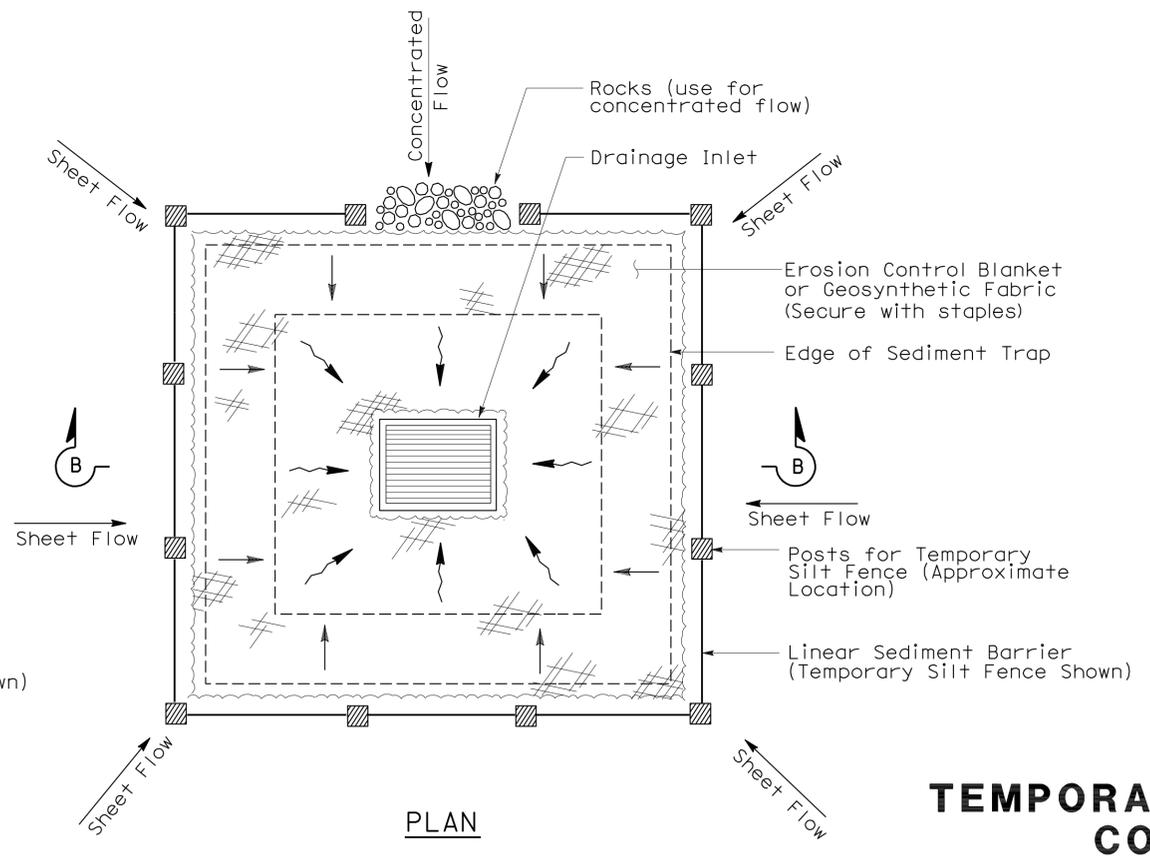
SECTION A-A



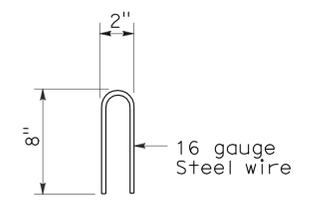
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



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

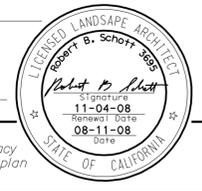


STAPLE DETAIL

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.

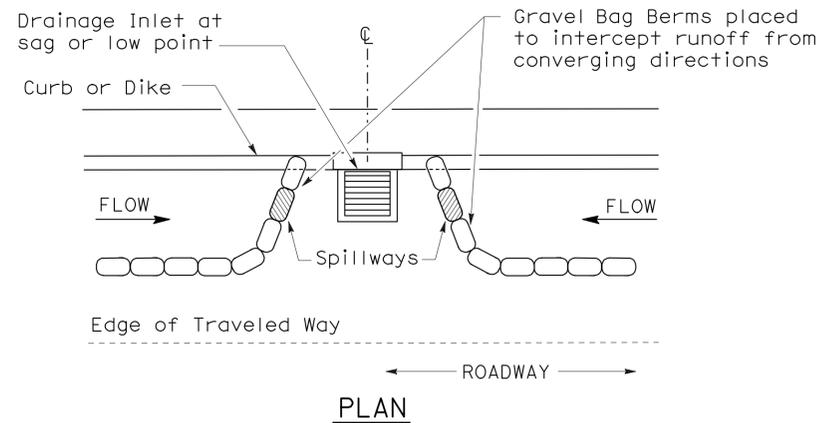
2006 NEW STANDARD PLAN NSP T61



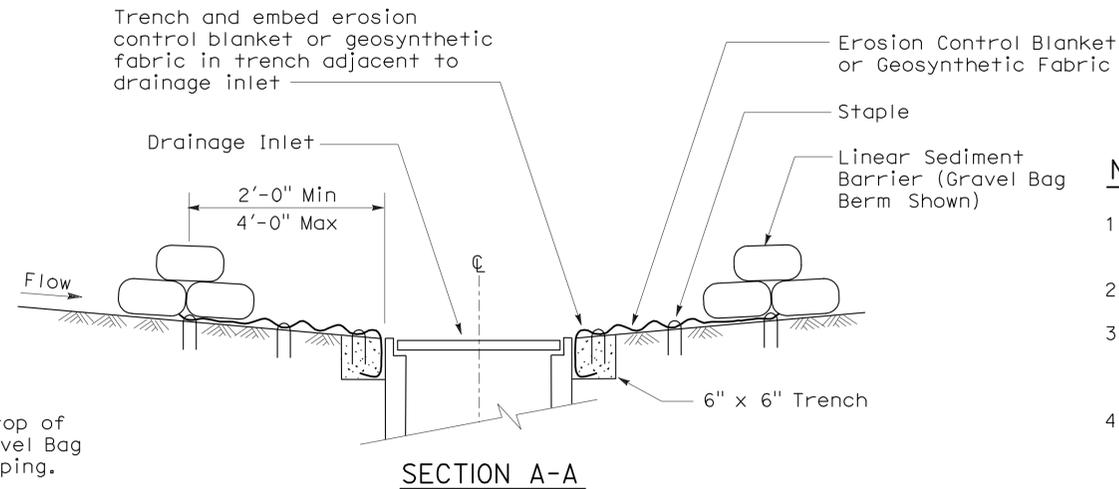
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

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



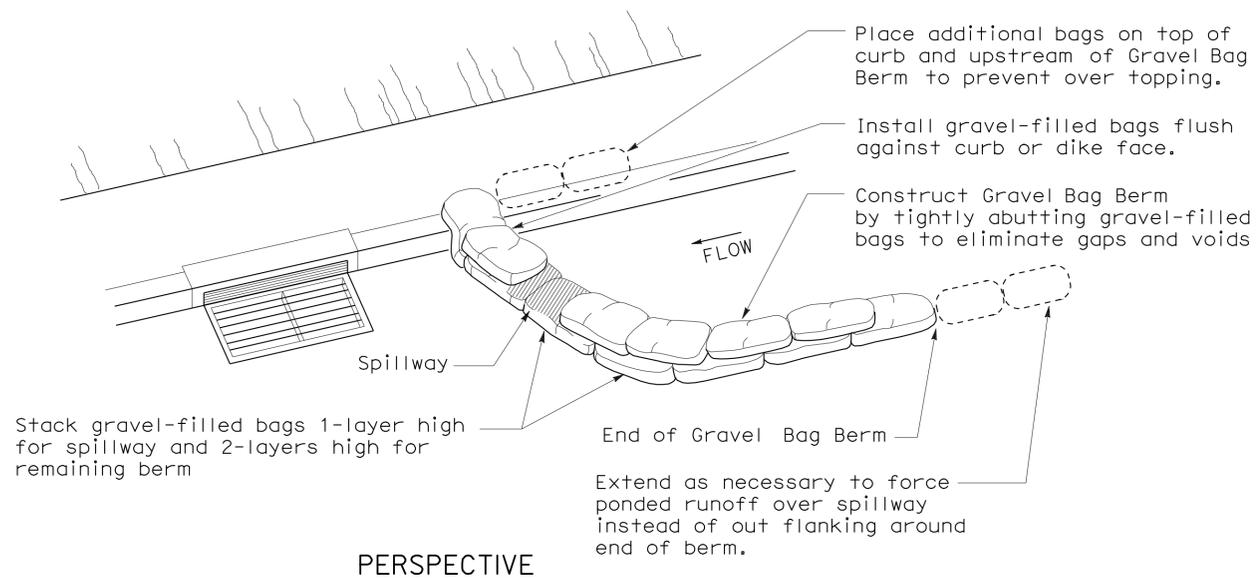
CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)



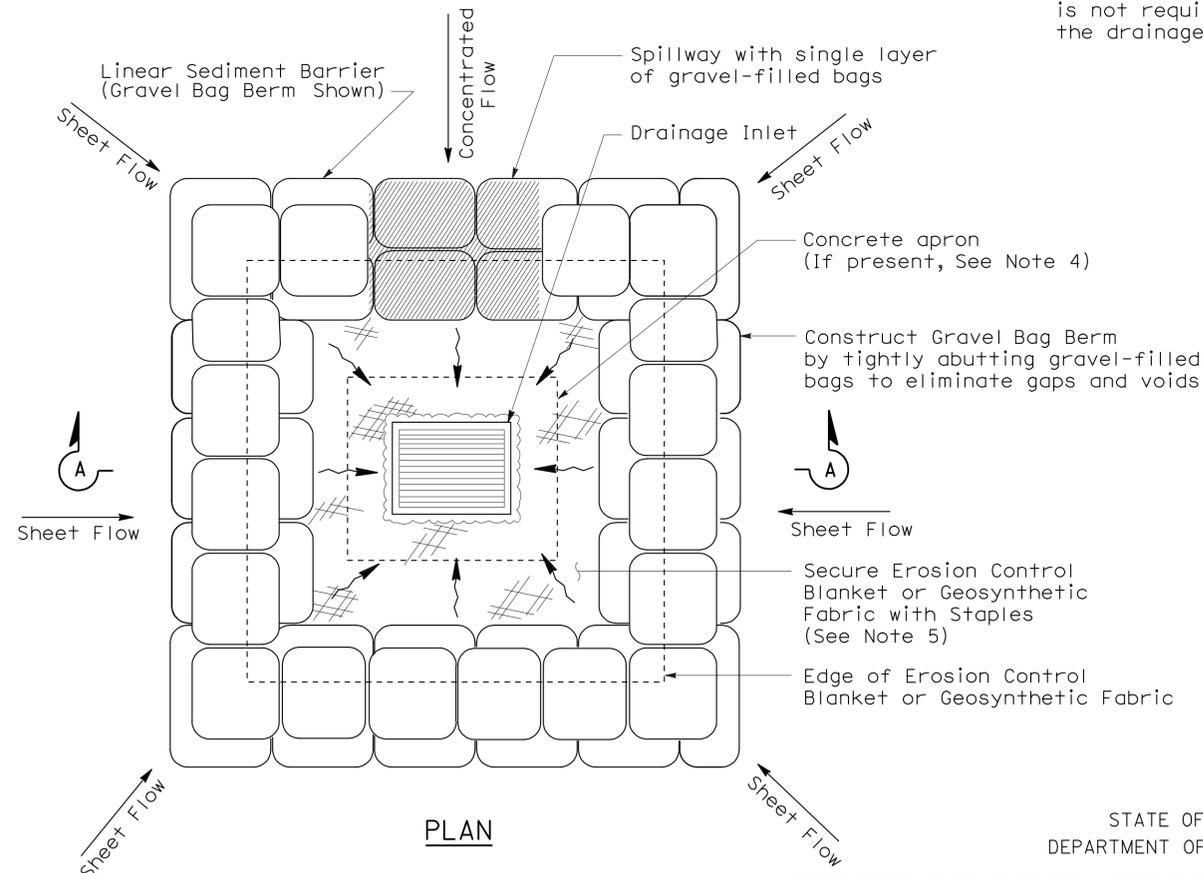
SECTION A-A

NOTES:

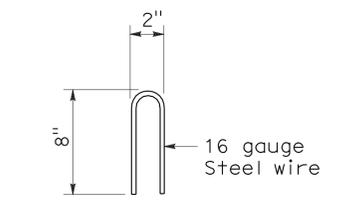
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



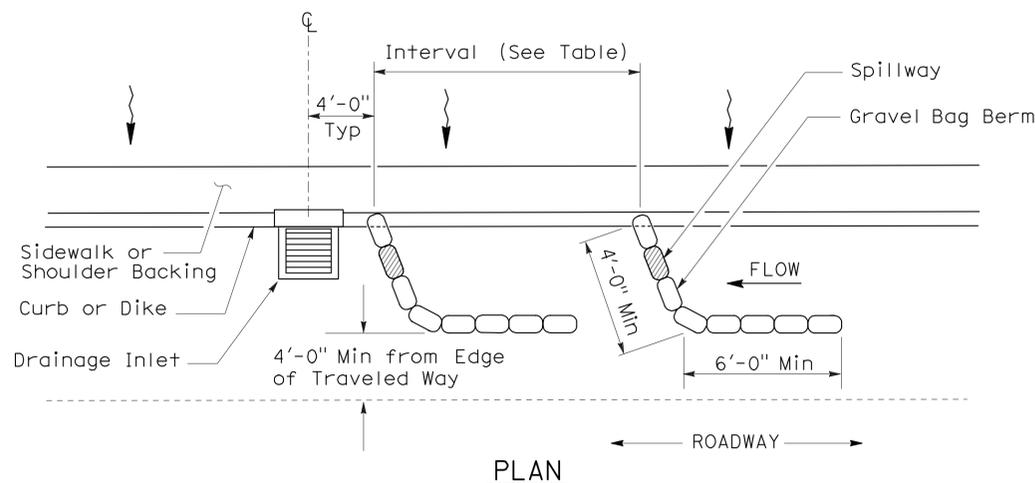
PERSPECTIVE



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL



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.

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'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	274	290

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

August 15, 2008
 PLANS APPROVAL DATE

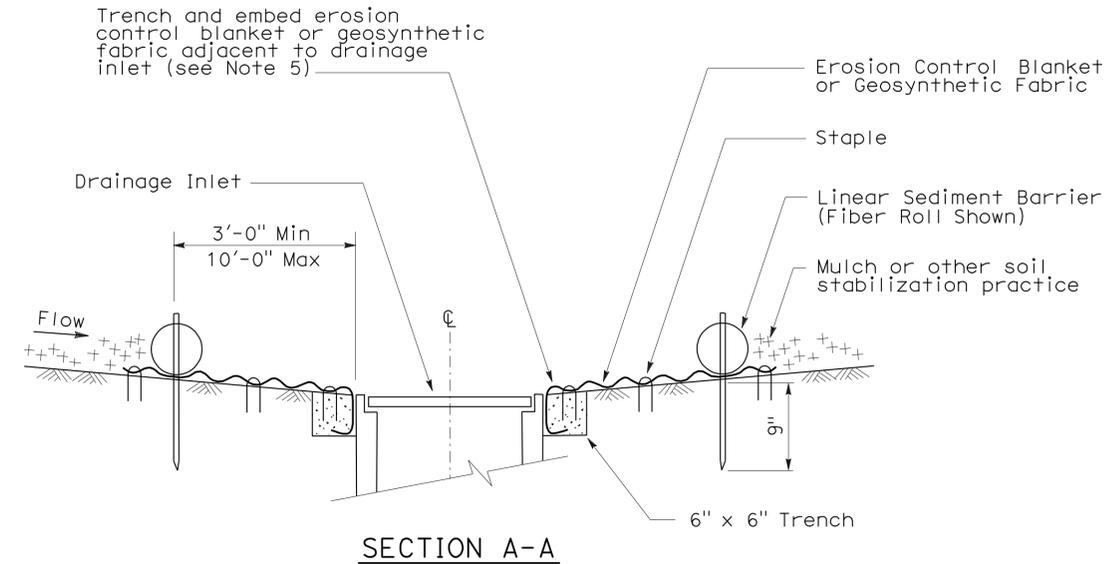
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STATE OF CALIFORNIA
 LICENSED LANDSCAPE ARCHITECT
 Robert B. Schott
 Signature
 11-04-08
 Renewal Date
 08-11-08
 date

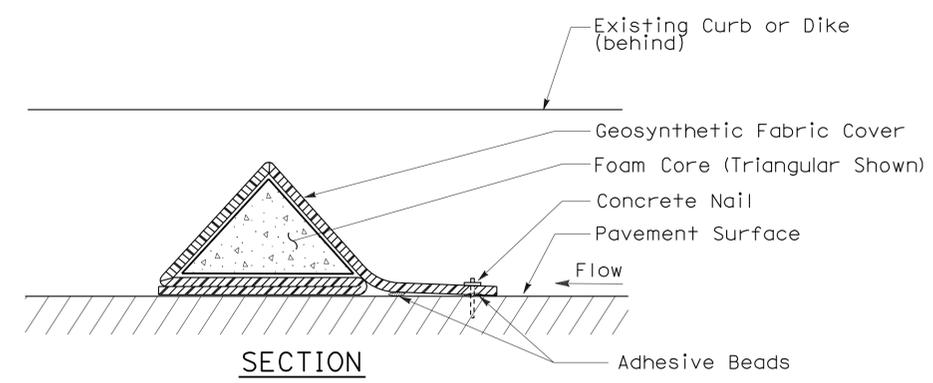
To accompany plans dated 2-27-12

NOTES:

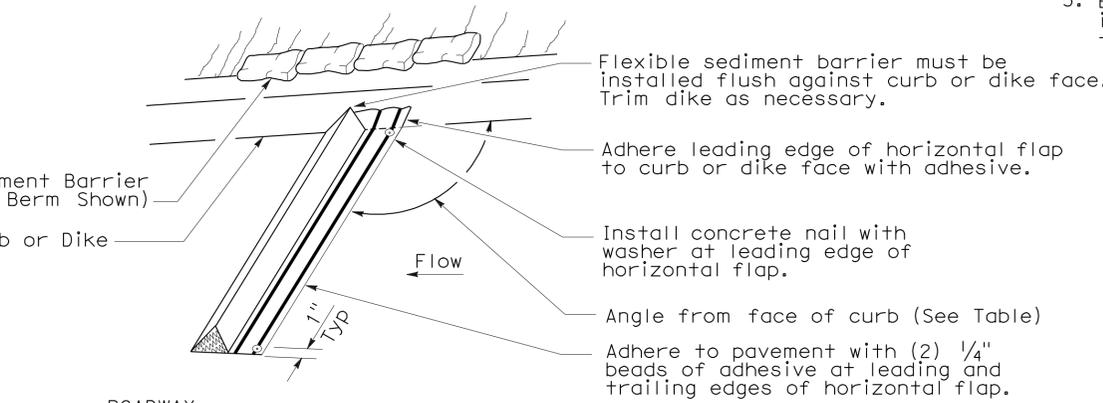
- See Standard Plan T51 for Temporary Silt Fence.
- Dimensions may vary to fit field conditions.
- Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
- Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



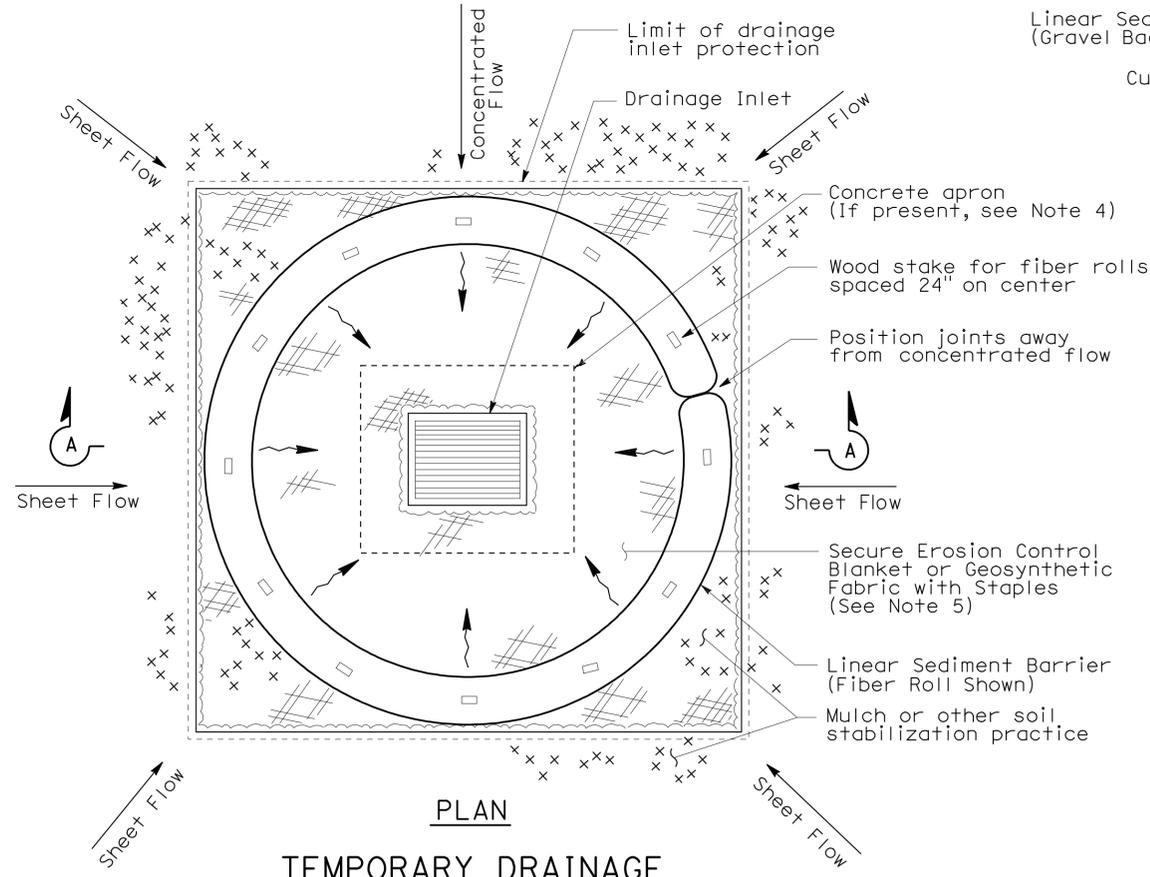
SECTION A-A



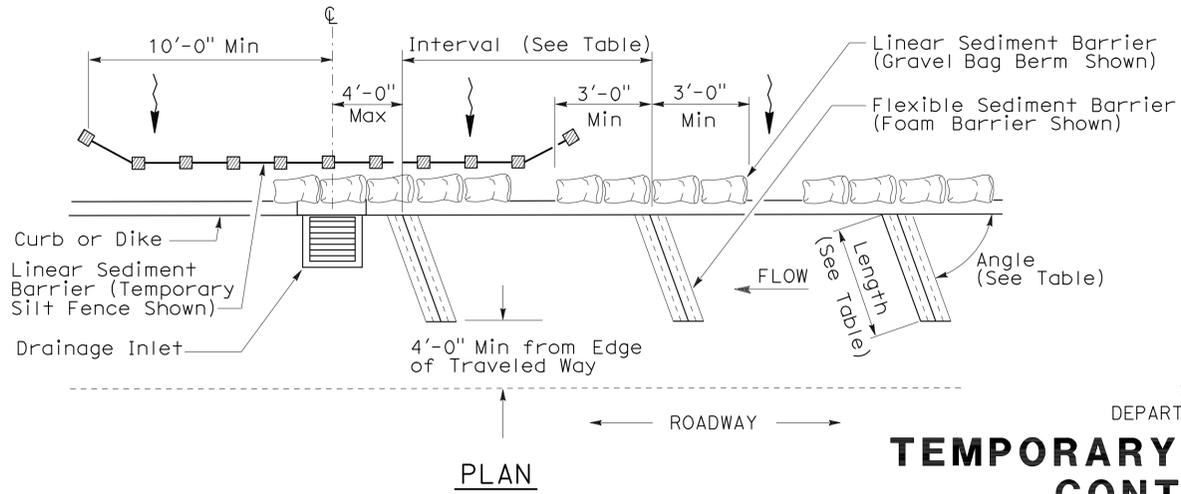
SECTION
 FLEXIBLE SEDIMENT BARRIER DETAIL
 (FOAM BARRIER SHOWN)



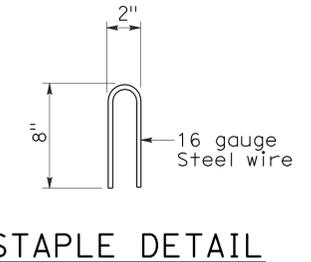
PERSPECTIVE



PLAN
 TEMPORARY DRAINAGE
 INLET PROTECTION (TYPE 4A)



PLAN
 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

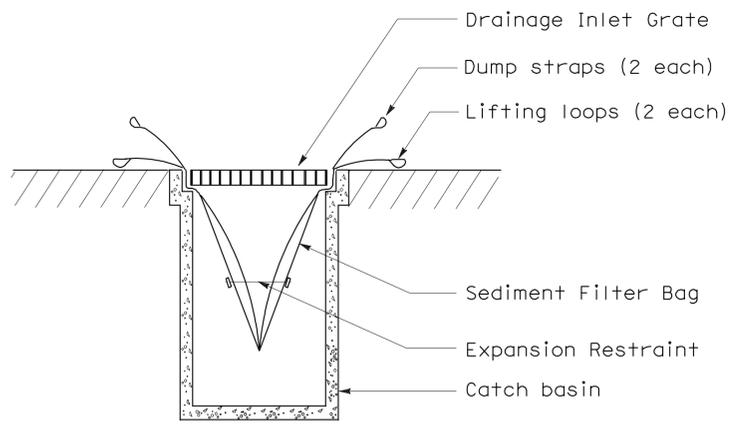
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	275	290

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

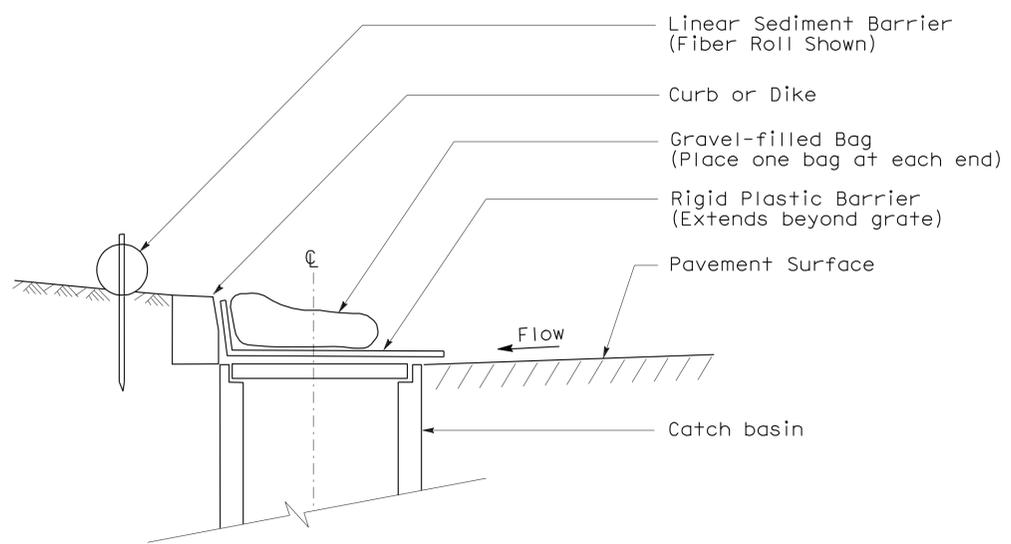
August 15, 2008
 PLANS APPROVAL DATE

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

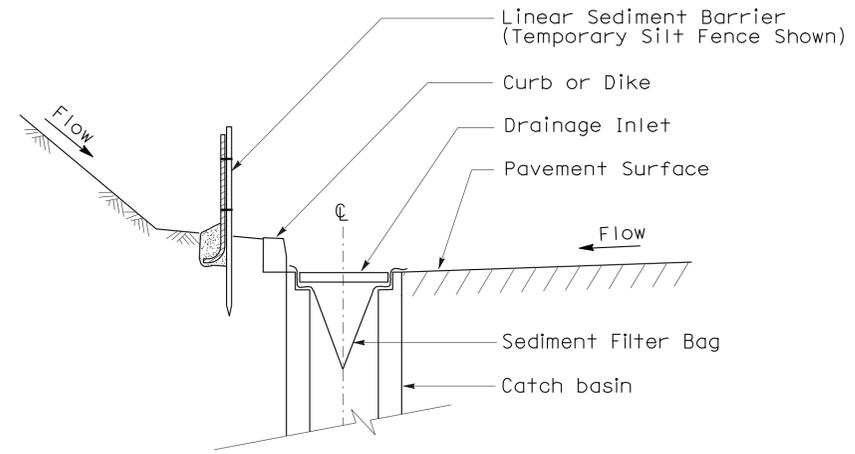
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



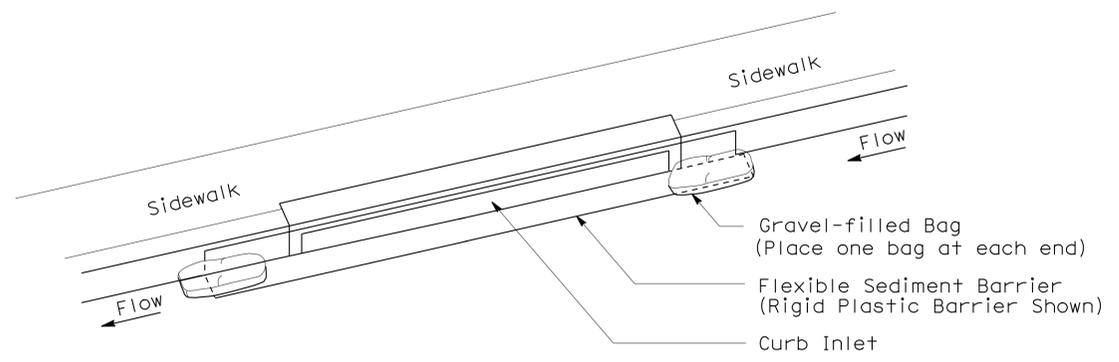
SECTION B-B
SEDIMENT FILTER BAG DETAIL



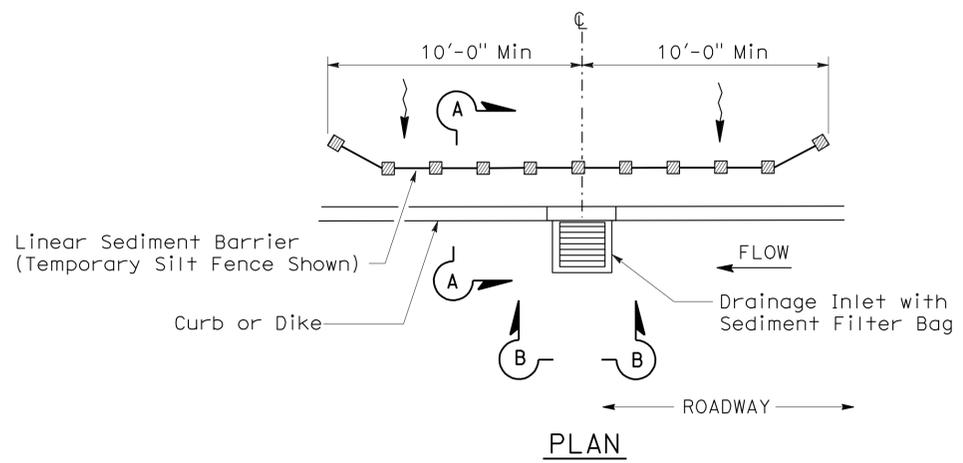
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



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.

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.

2006 NEW STANDARD PLAN NSP T64

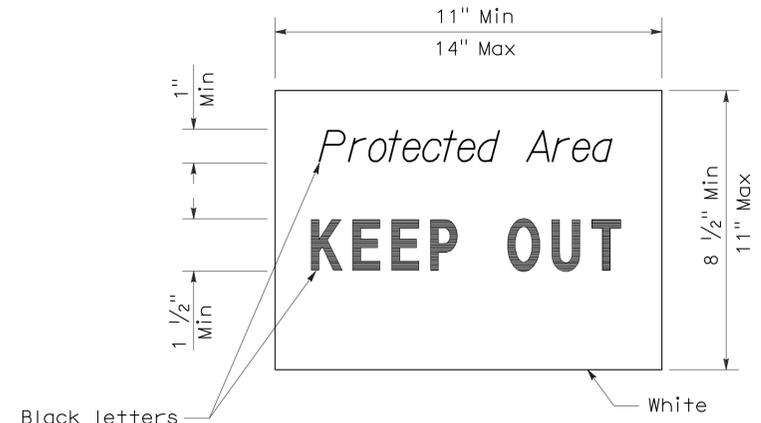
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	276	290

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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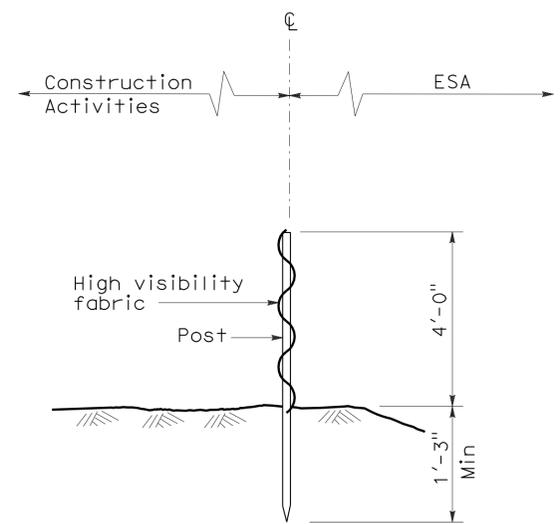
To accompany plans dated 2-27-12

NOTE:

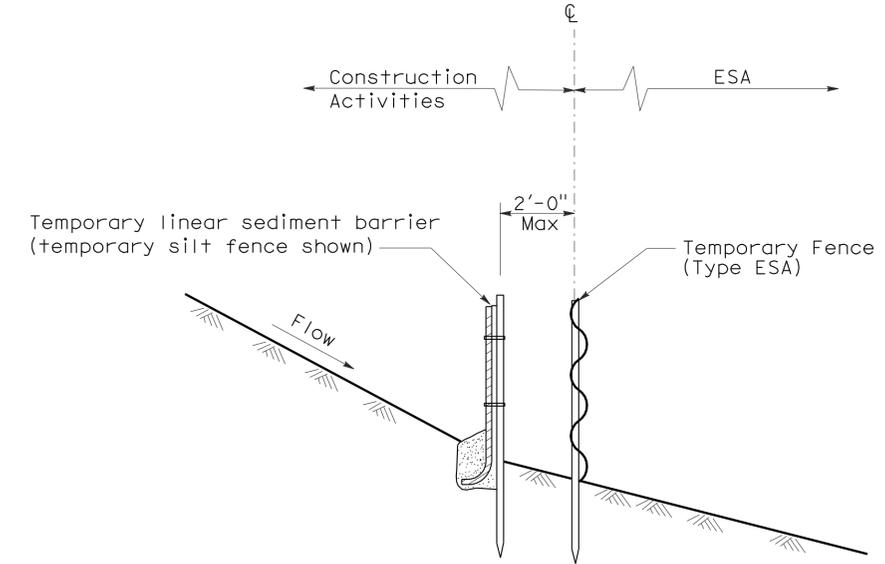
1. Temporary silt fence and temporary straw bale barrier shown for reference purposes only.



SIGN DETAIL

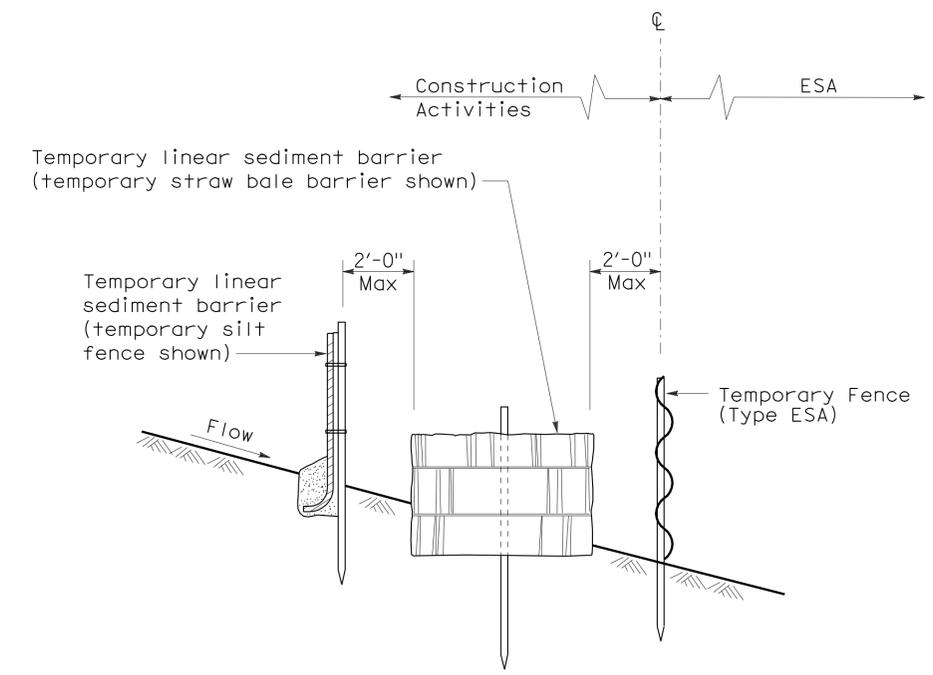


**SECTION
TEMPORARY FENCE (TYPE ESA)**



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

(See Note 1)



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

(See Note 1)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

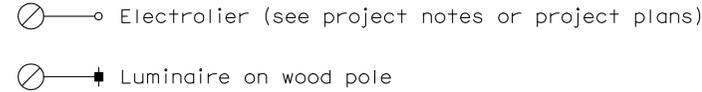
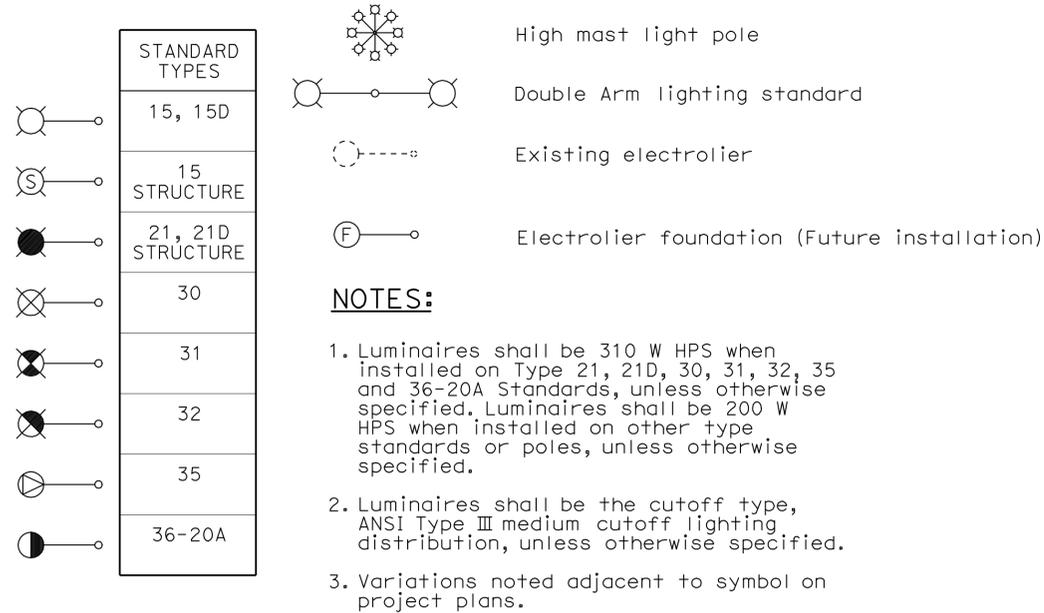
**TEMPORARY WATER POLLUTION
CONTROL DETAILS
[TEMPORARY FENCE (TYPE ESA)]**

NO SCALE

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

2006 NEW STANDARD PLAN NSP T65

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,CC	80	3.8/8.0, 0.0/13.5	277	290

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

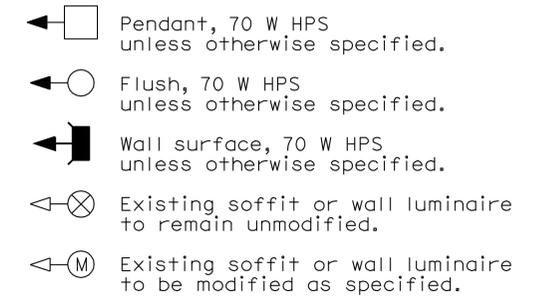
October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 2-27-12

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,CC	80	3.8/8.0, 0.0/13.5	278	290

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

To accompany plans dated 2-27-12

CONDUIT

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

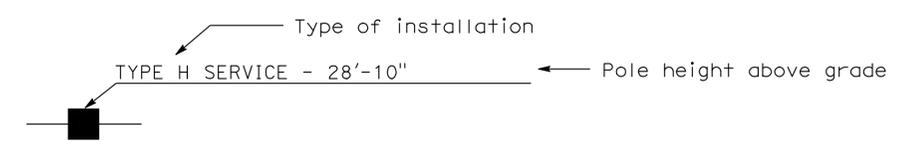
SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

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

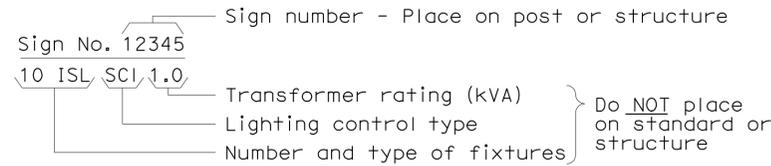
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

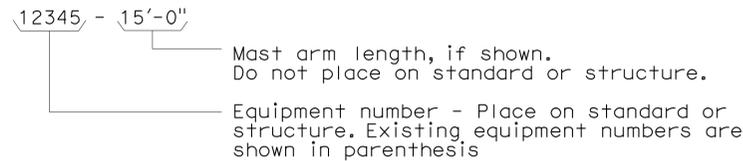
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

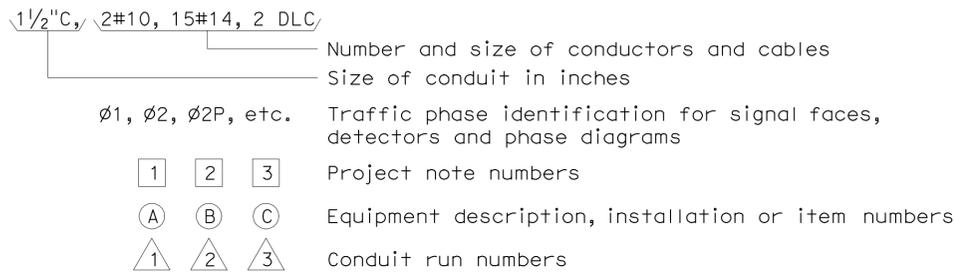
ILLUMINATED SIGN IDENTIFICATION NUMBER:



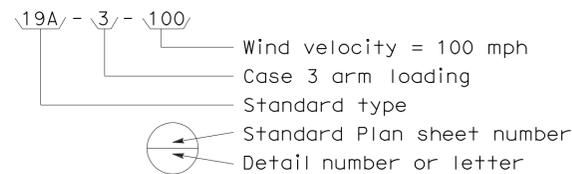
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



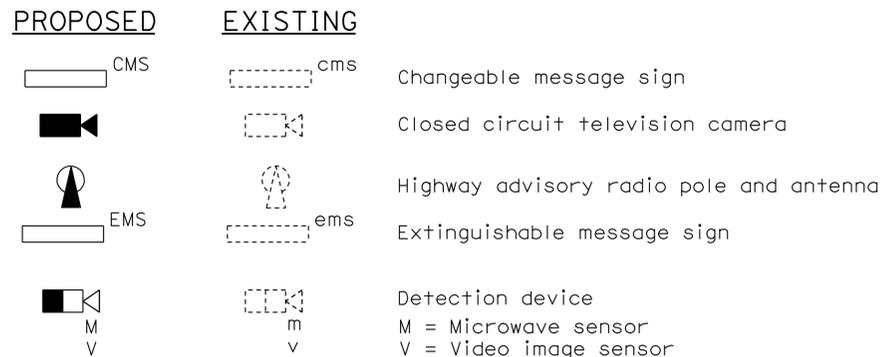
CONDUIT AND CONDUCTOR IDENTIFICATION:



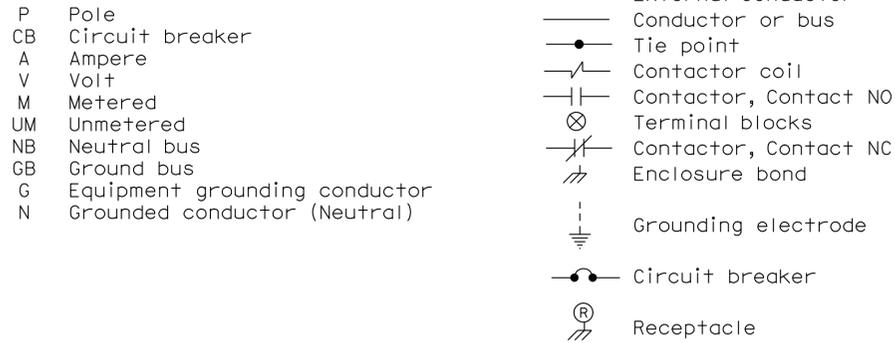
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



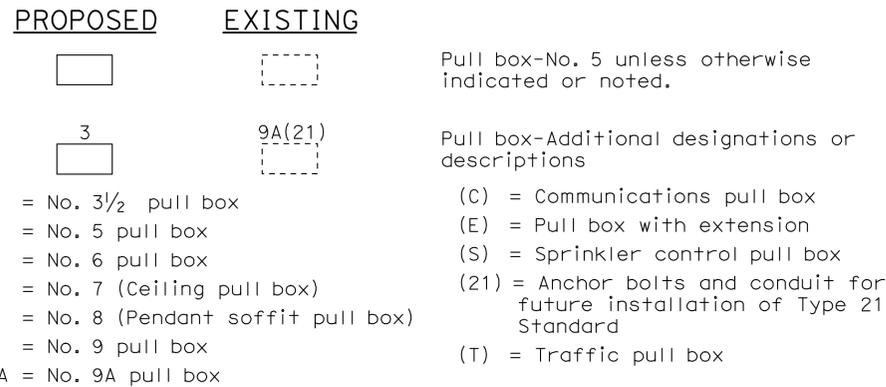
MISCELLANEOUS EQUIPMENT



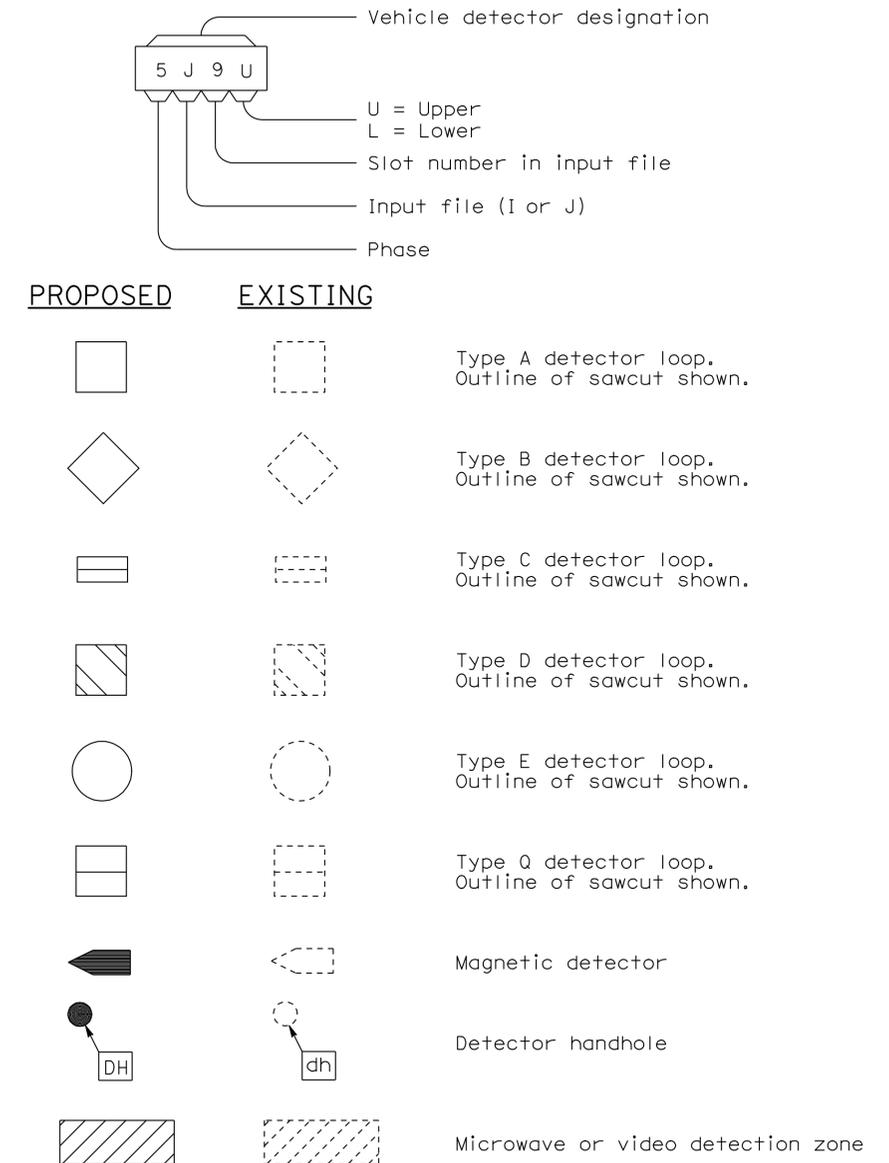
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	280	290

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007
 PLANS APPROVAL DATE

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

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of $\frac{1}{16}$ ".
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)."

To accompany plans dated 2-27-12

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

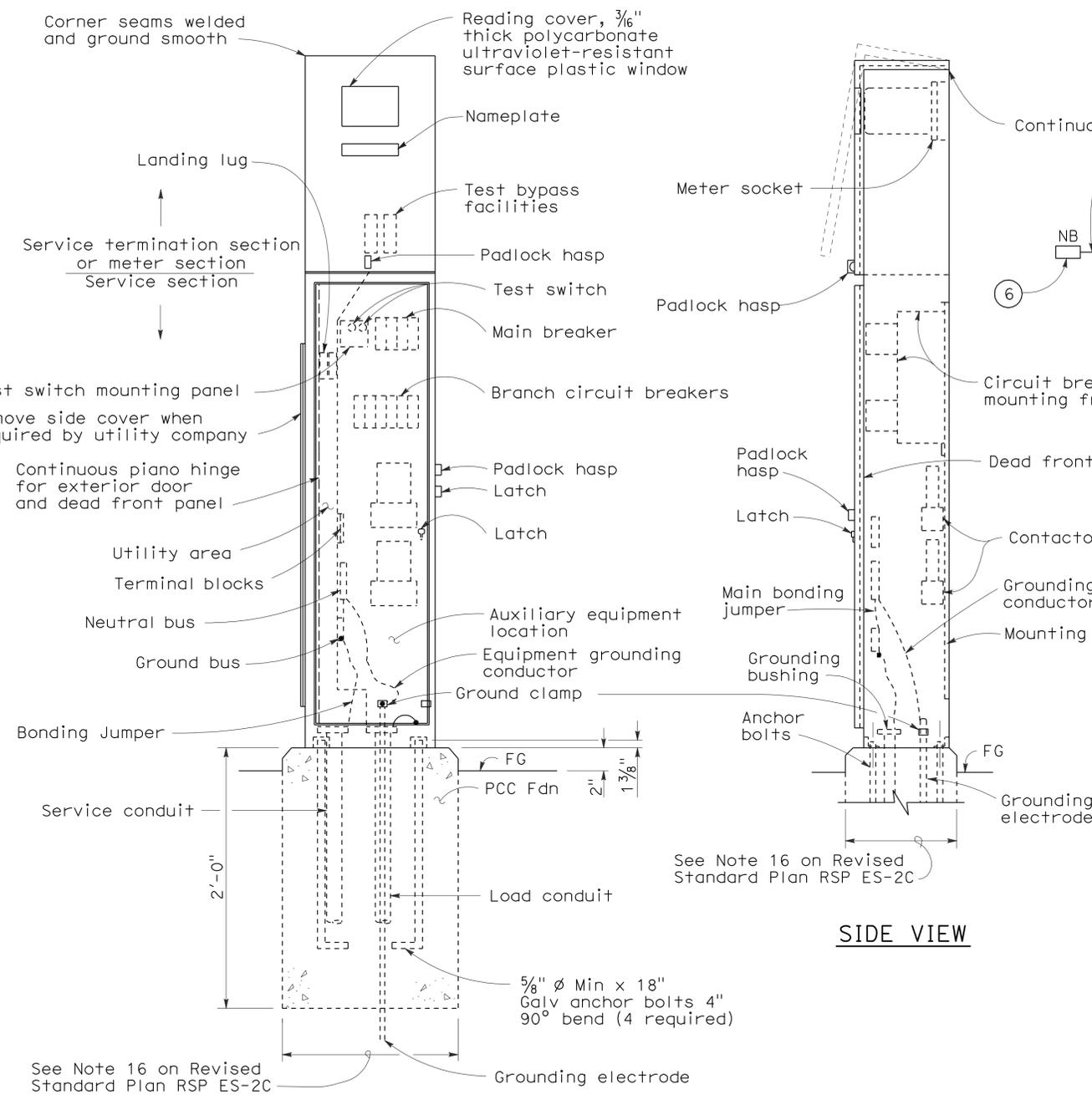
**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT NOTES
TYPE III SERIES)**

NO SCALE

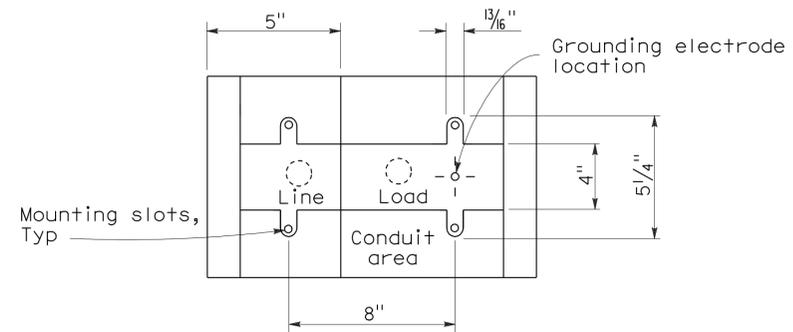
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C
DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2C

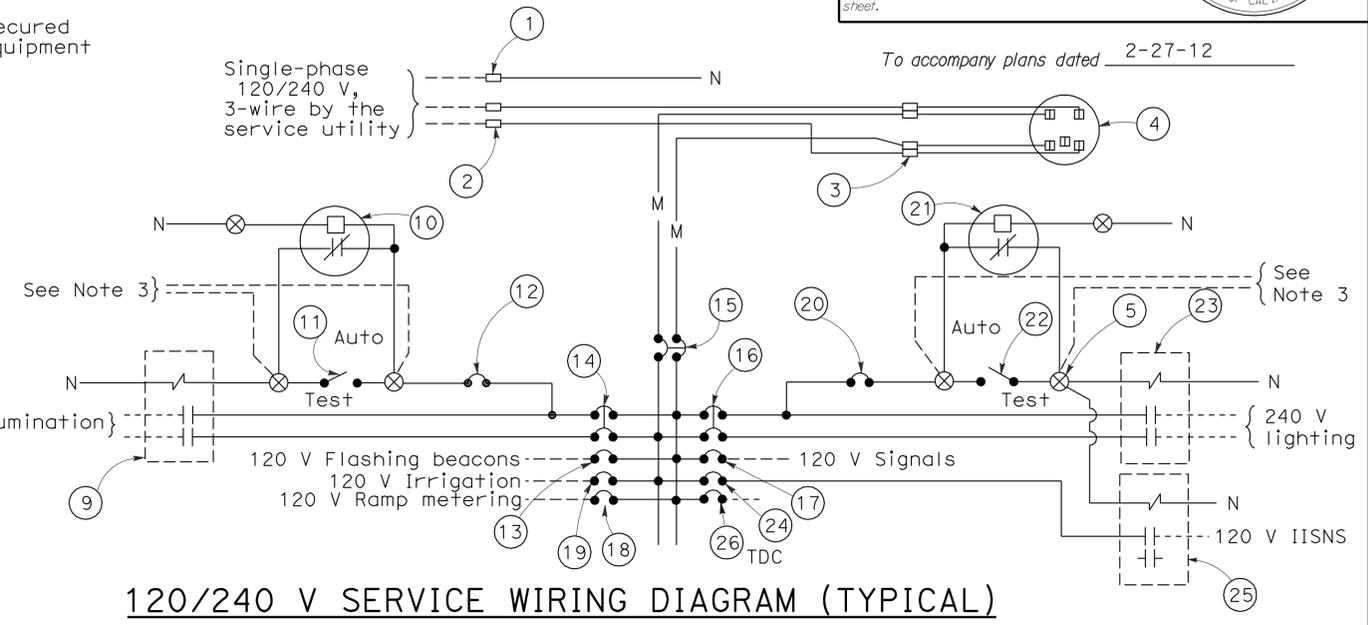
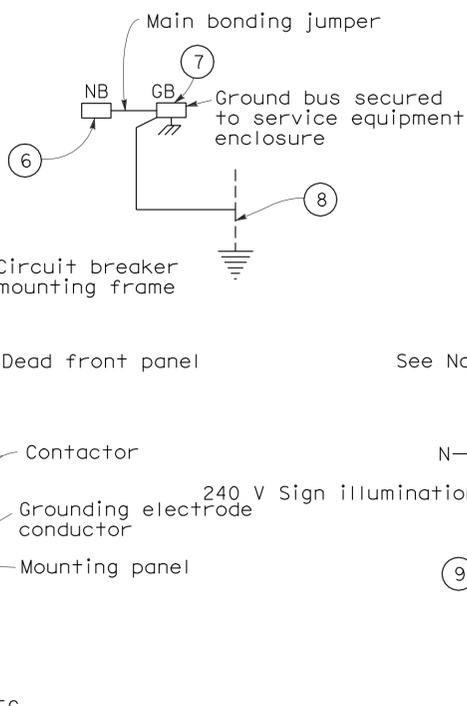
2006 REVISED STANDARD PLAN RSP ES-2C



TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)



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

NO SCALE

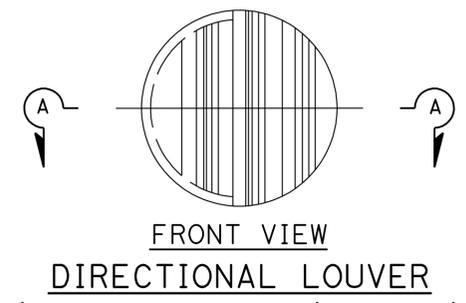
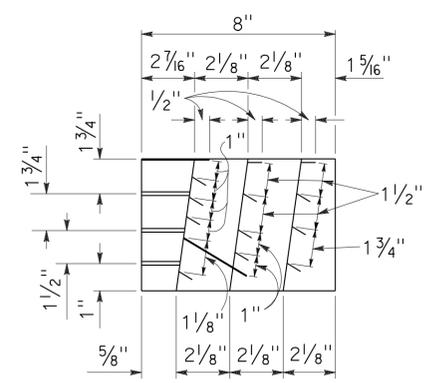
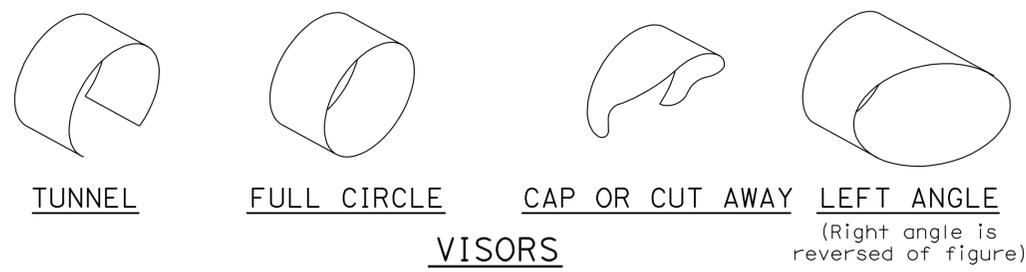
RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D
 DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-2D

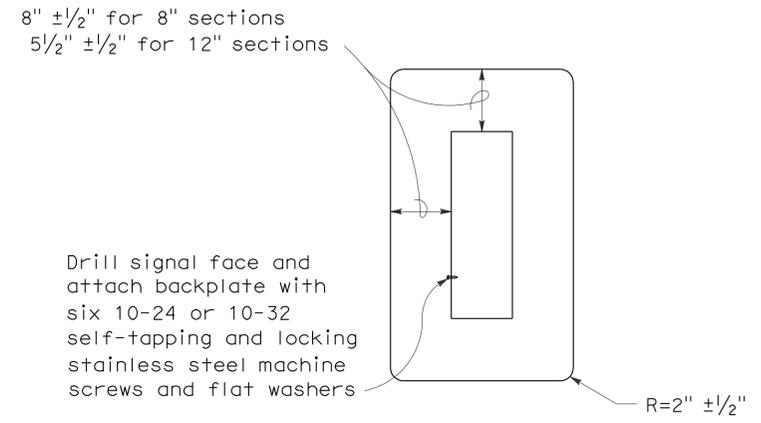
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	282	290

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

To accompany plans dated 2-27-12



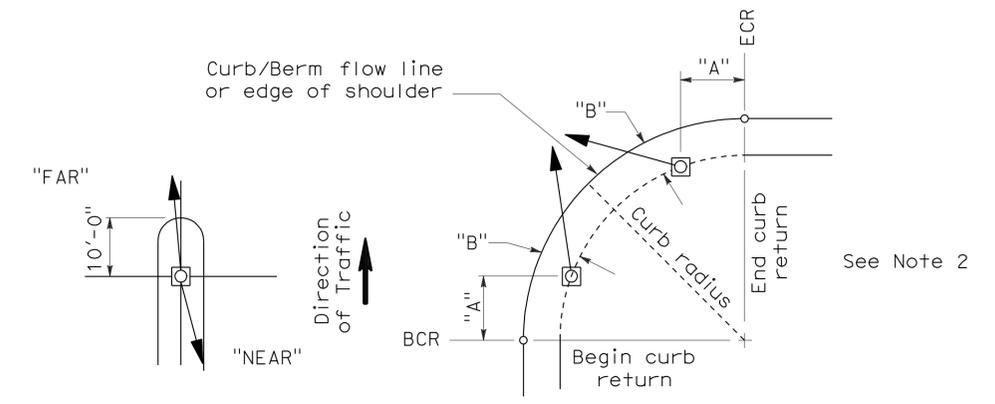
Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.



8" AND 12" SECTIONS

BACKPLATE

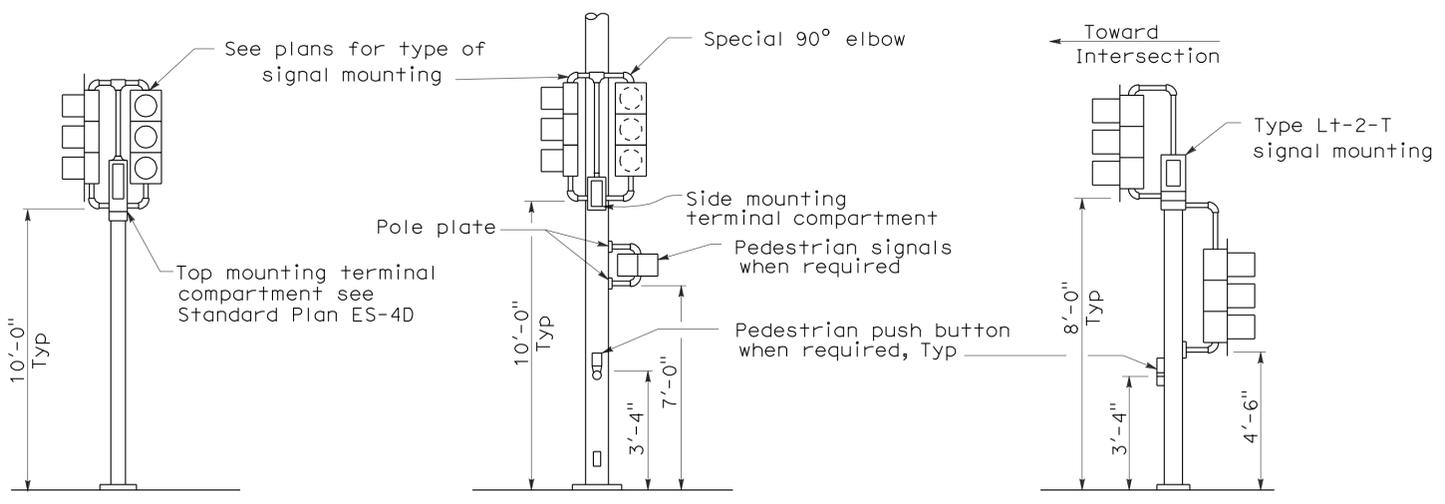
1/16" minimum thickness
 3001-14 aluminum, or plastic when specified



NOTES:

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

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



TOP MOUNTED SIGNALS (TV)

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

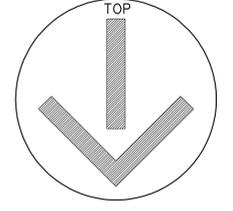
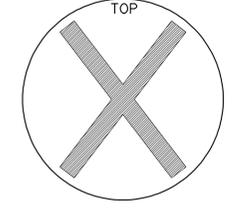
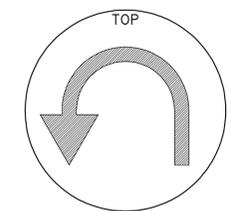
SIDE MOUNTED SIGNALS (SV AND SP)

Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL

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

TYPICAL SIGNAL INSTALLATIONS



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

NO SCALE

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

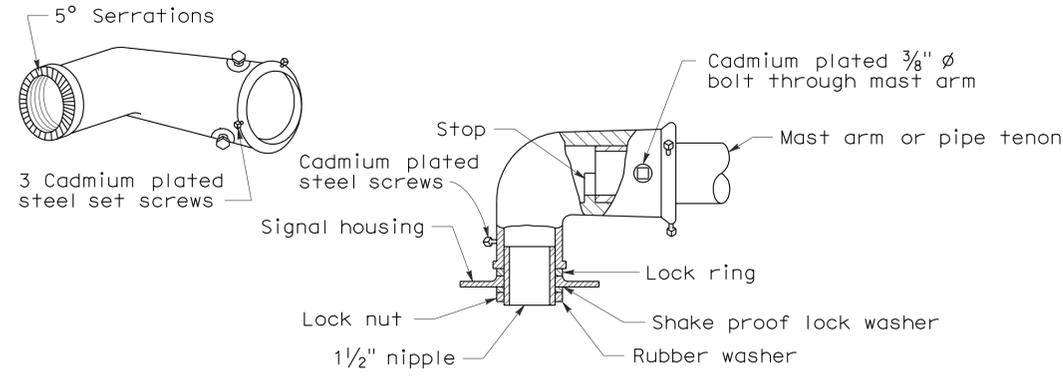
REVISED STANDARD PLAN RSP ES-4C

2006 REVISED STANDARD PLAN RSP ES-4C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	283	290

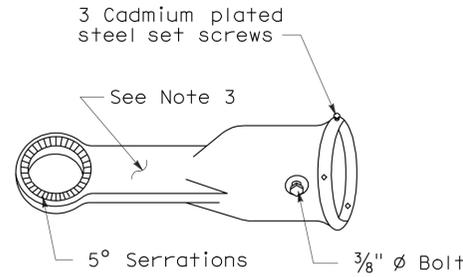
Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

To accompany plans dated 2-27-12



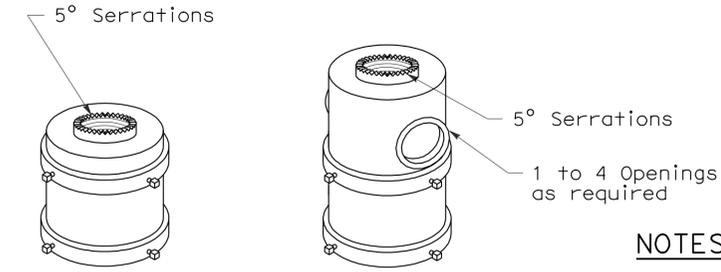
MAST ARM MOUNTING - TYPE "MAT"

For 2 NPS pipe, see Note 1.



MAST ARM MOUNTING - TYPE "MAS"

For 2 NPS pipe. See Note 1.



For one mounting For multiple mountings

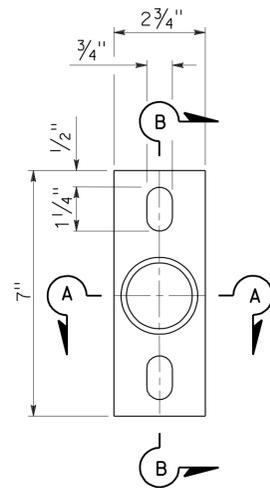
TOP MOUNTINGS

For 4 NPS pipe, see Note 2.

NOTES:

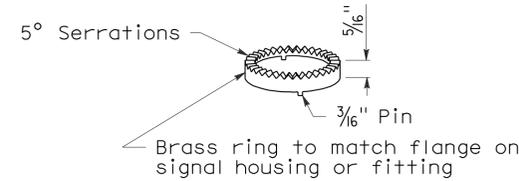
- After mast arm signal has been plumbed and secured, drill 7/16" hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated 3/8" ø galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast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

SIGNAL SLIP FITTERS



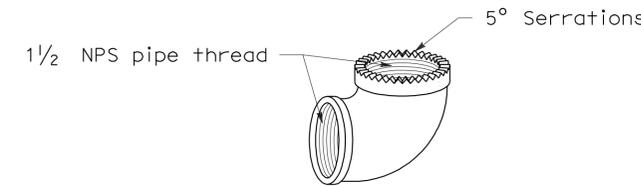
POLE PLATE

For side mountings



LOCK RING

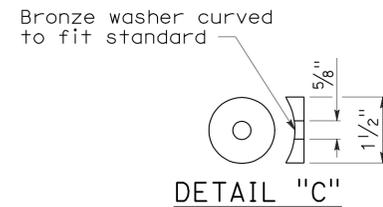
Use where locking ring is not integral with signal housing or fitting.



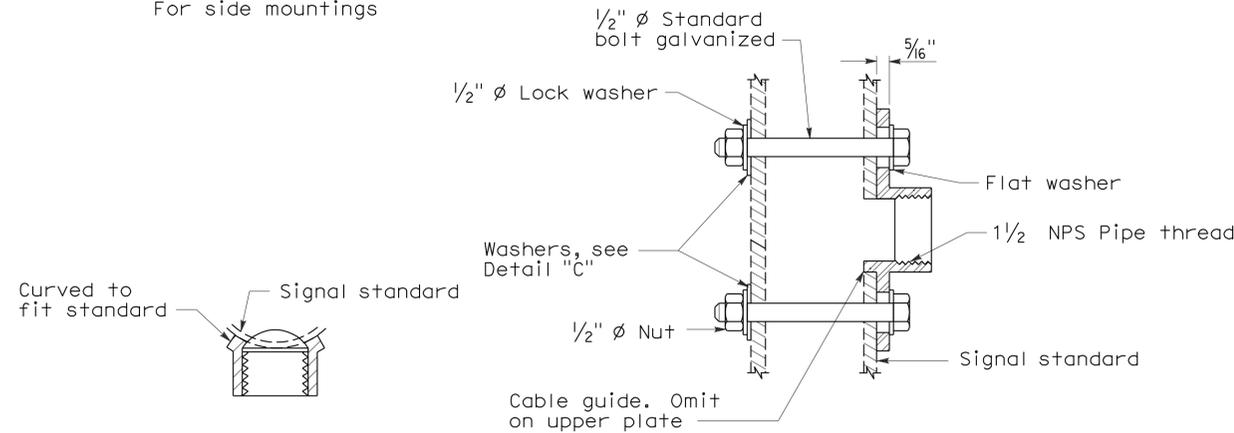
SPECIAL 90° ELBOW

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

MISCELLANEOUS MOUNTING HARDWARE

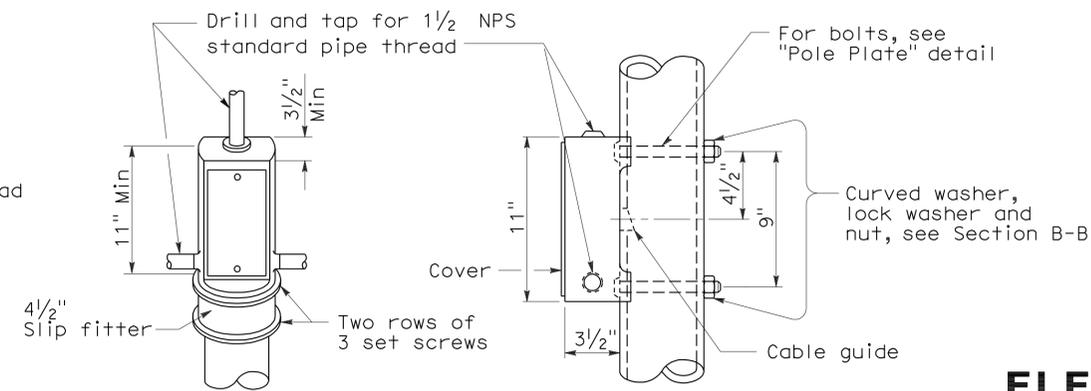


DETAIL "C"



SECTION A-A

SECTION B-B



TOP MOUNTING

SIDE MOUNTING

TERMINAL COMPARTMENTS

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-4D

2006 REVISED STANDARD PLAN RSP ES-4D

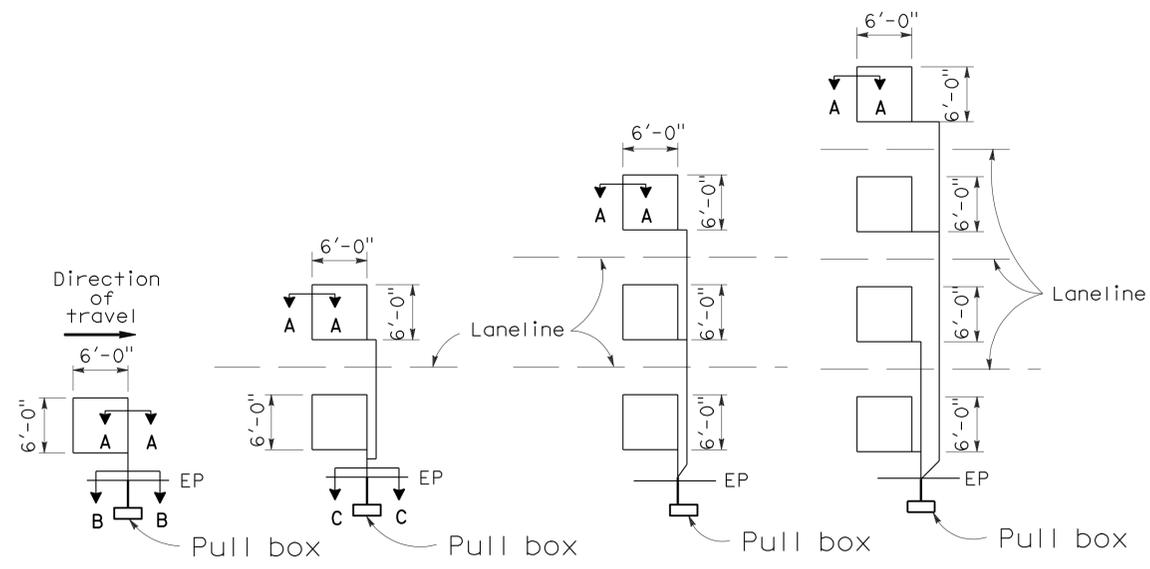
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	284	290

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

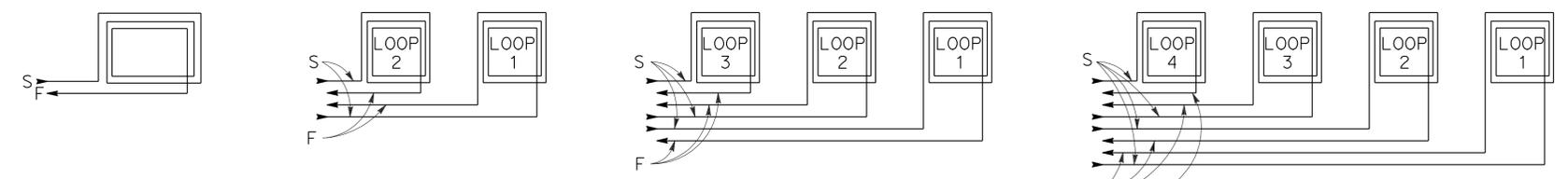
LOOP INSTALLATION PROCEDURE

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



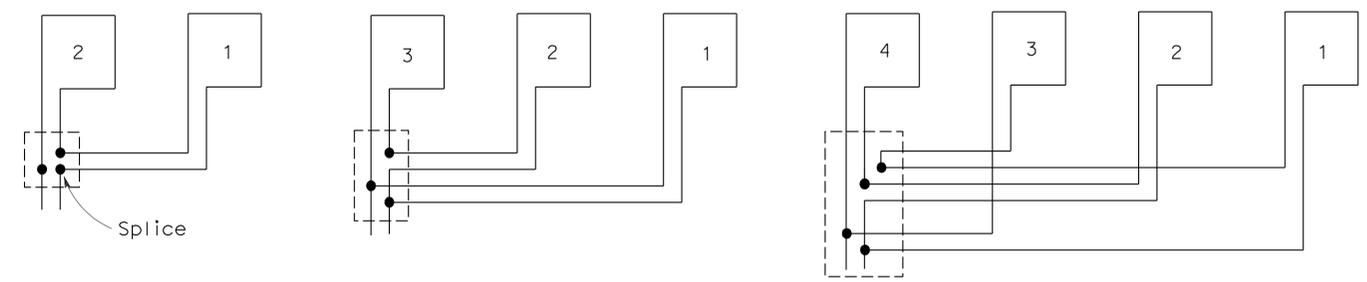
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION
SAWCUT DETAILS

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



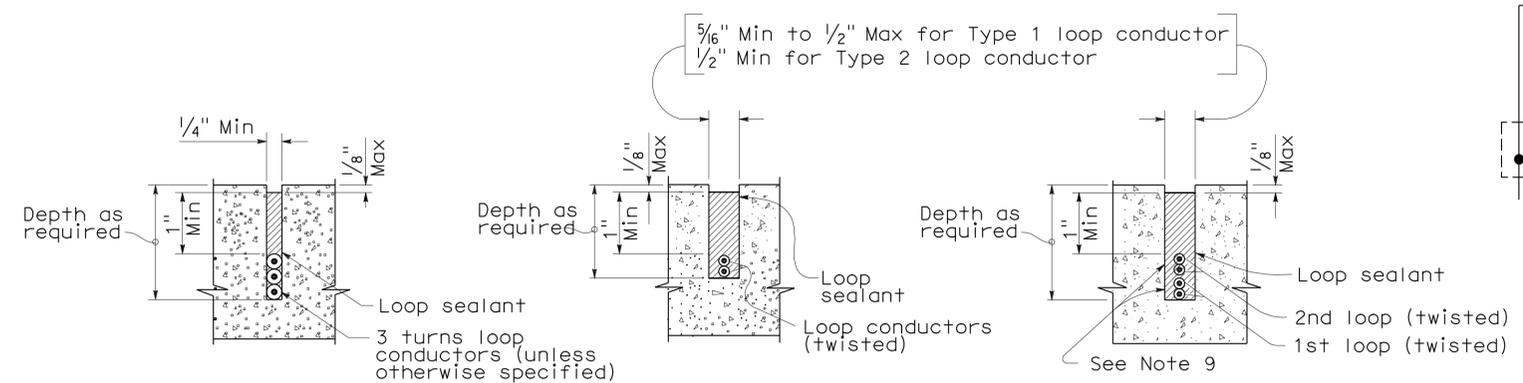
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

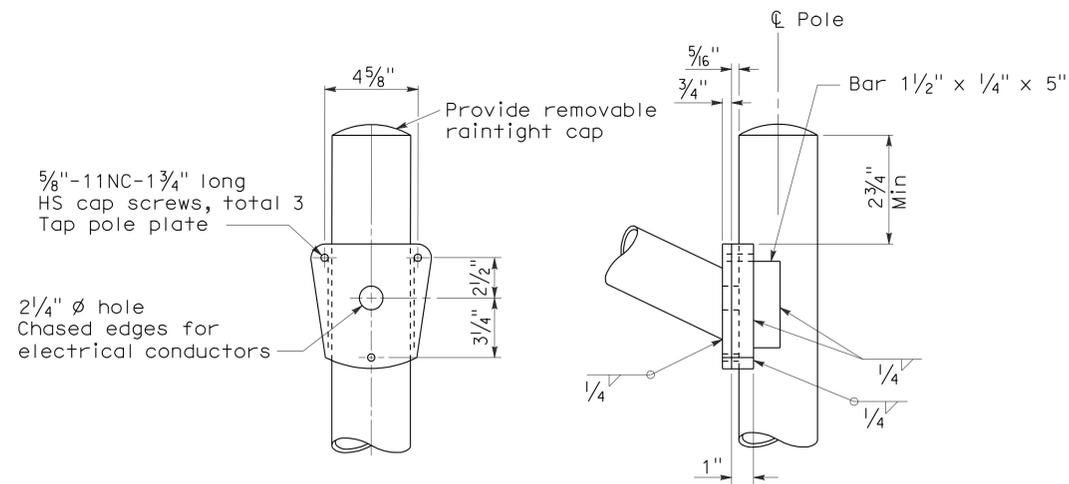
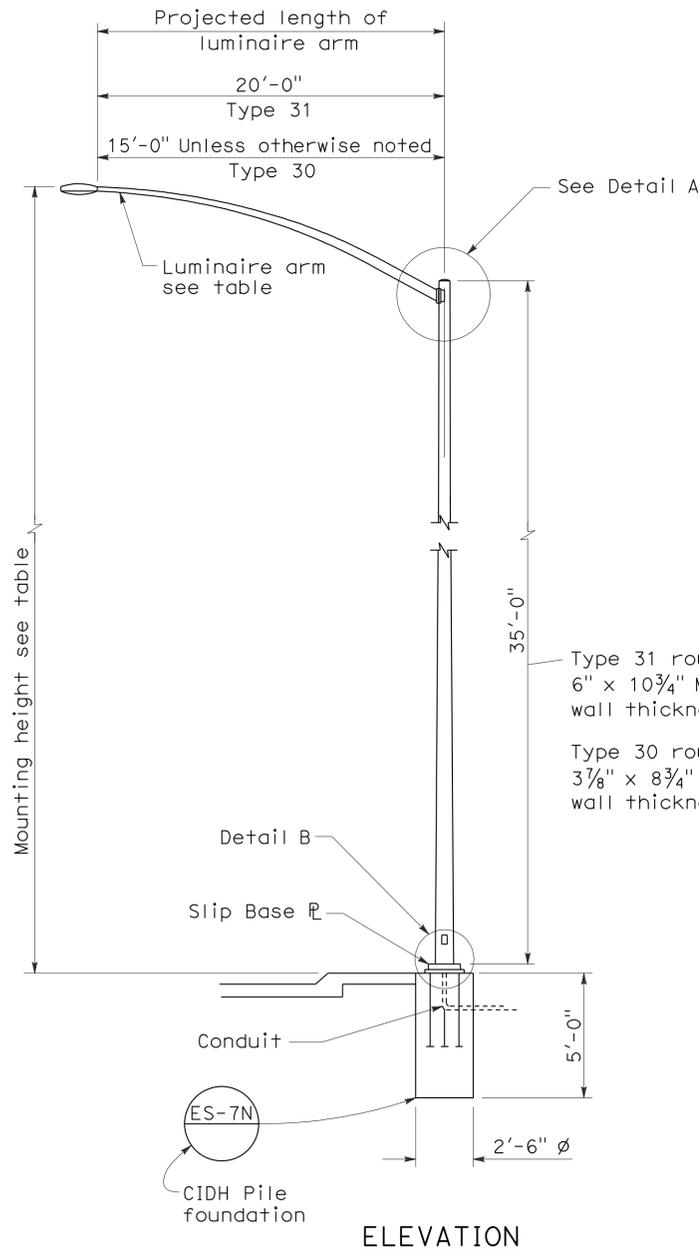
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A
DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-5A

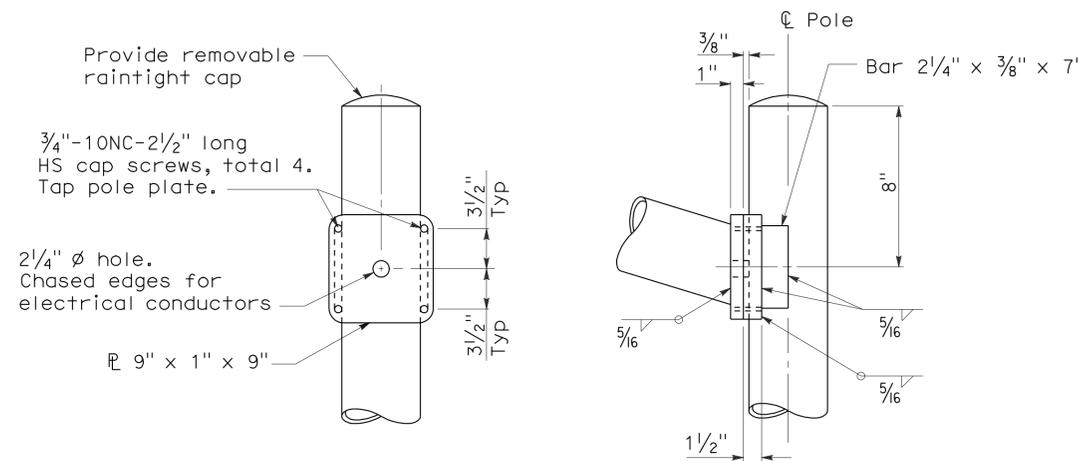
LUMINAIRE ARM DATA

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"±

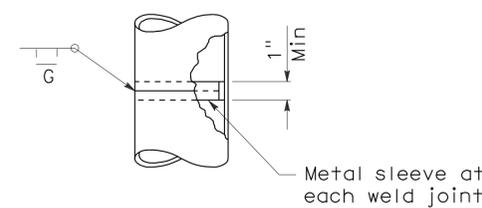
* Type 30 - arm length 6'-0" - 15'-0" maximum
 ** Type 31 - arm lengths 20'-0"



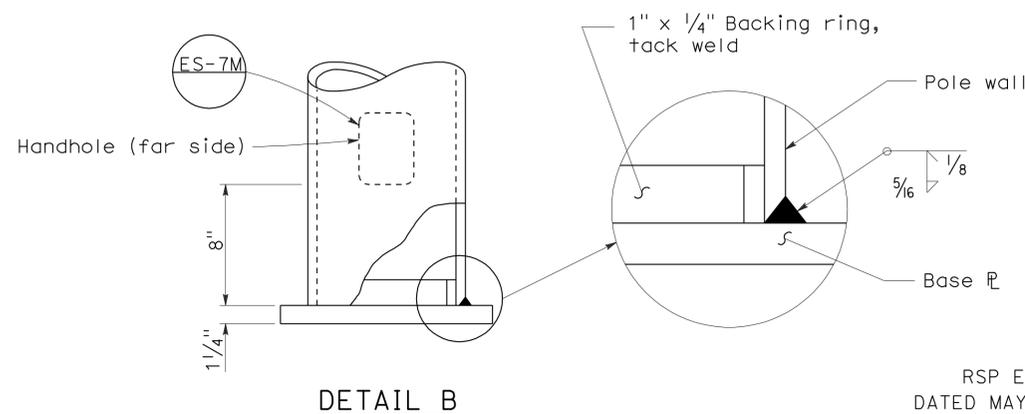
DETAIL A - TYPE 30



DETAIL A - TYPE 31



POLE SPLICE



DETAIL B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	285	290

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 January 18, 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 2-27-12

NOTES:

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING STANDARD
 TYPES 30 AND 31)**

NO SCALE

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

REVISED STANDARD PLAN RSP ES-6E

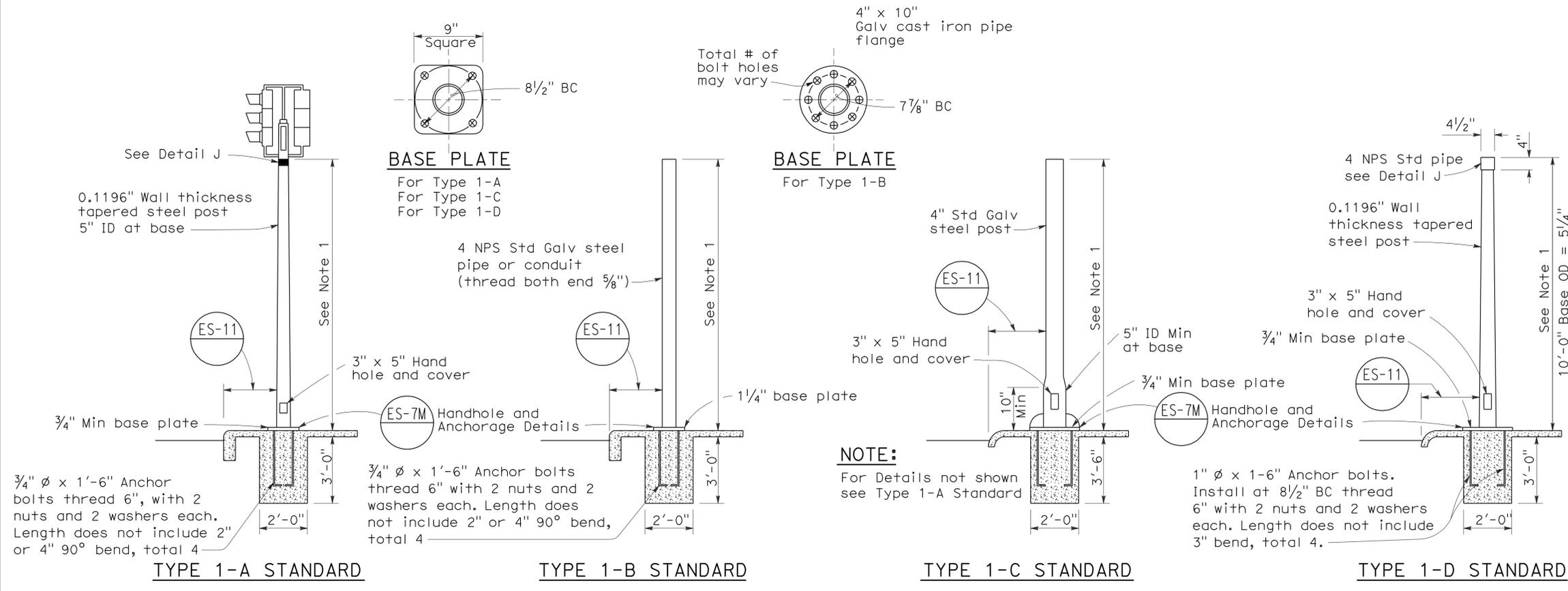
2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	286	290

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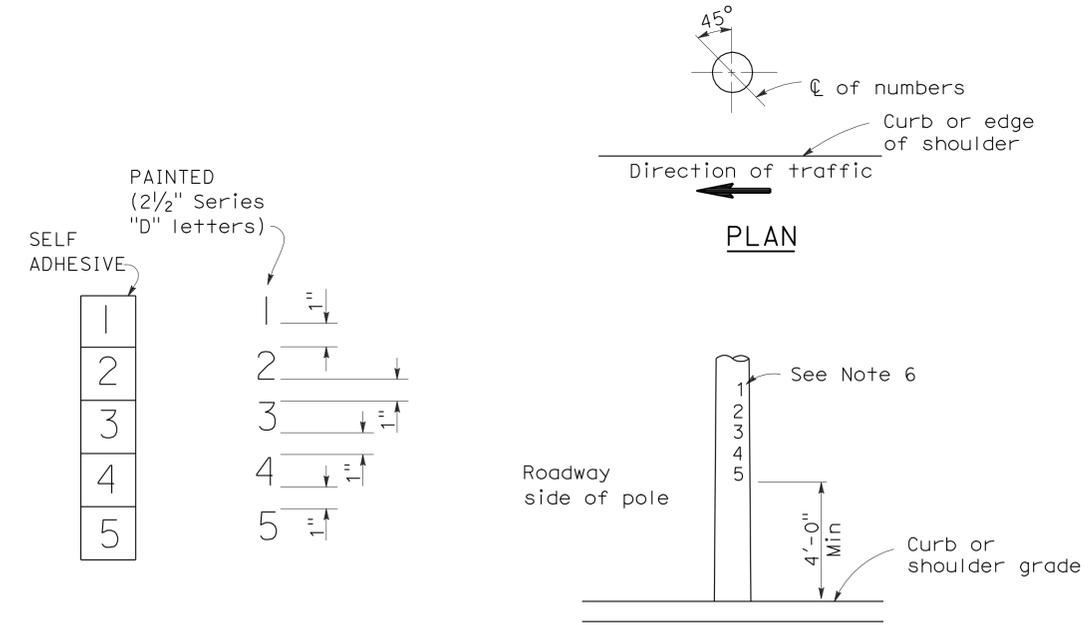
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 2-27-12

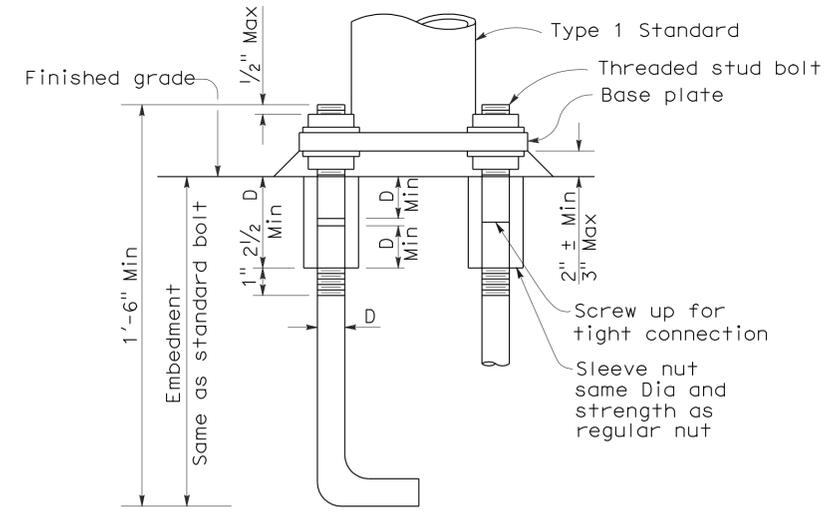


- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward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

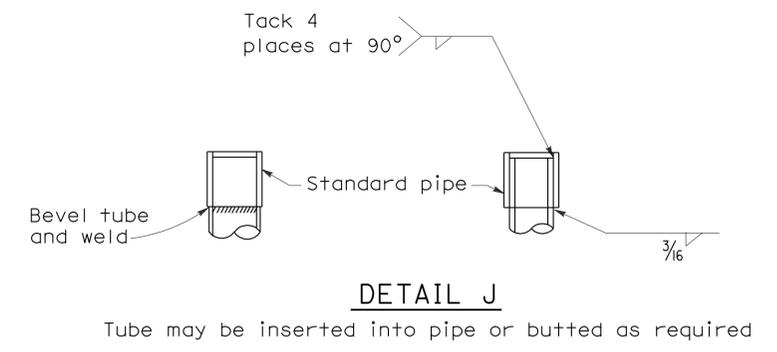
TYPE 1 SIGNAL STANDARDS



LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS



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

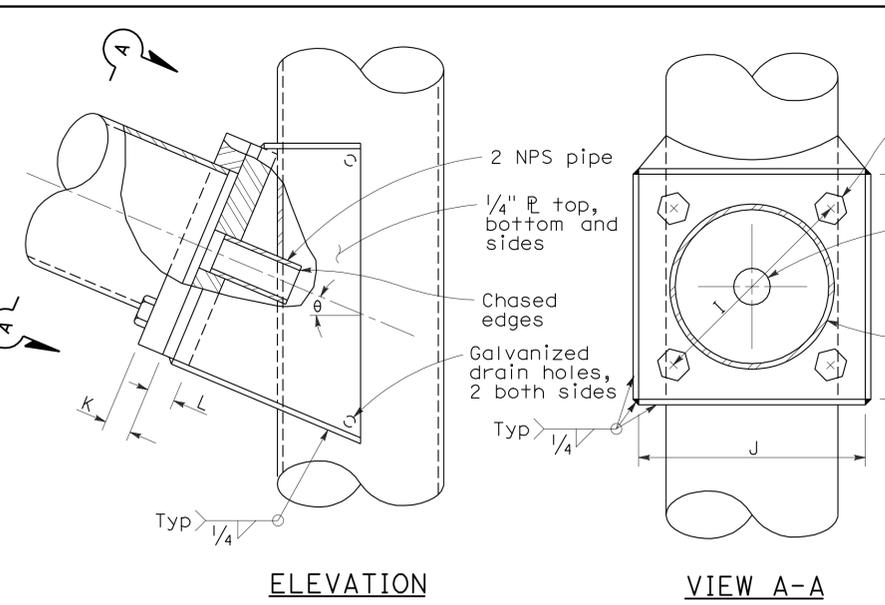
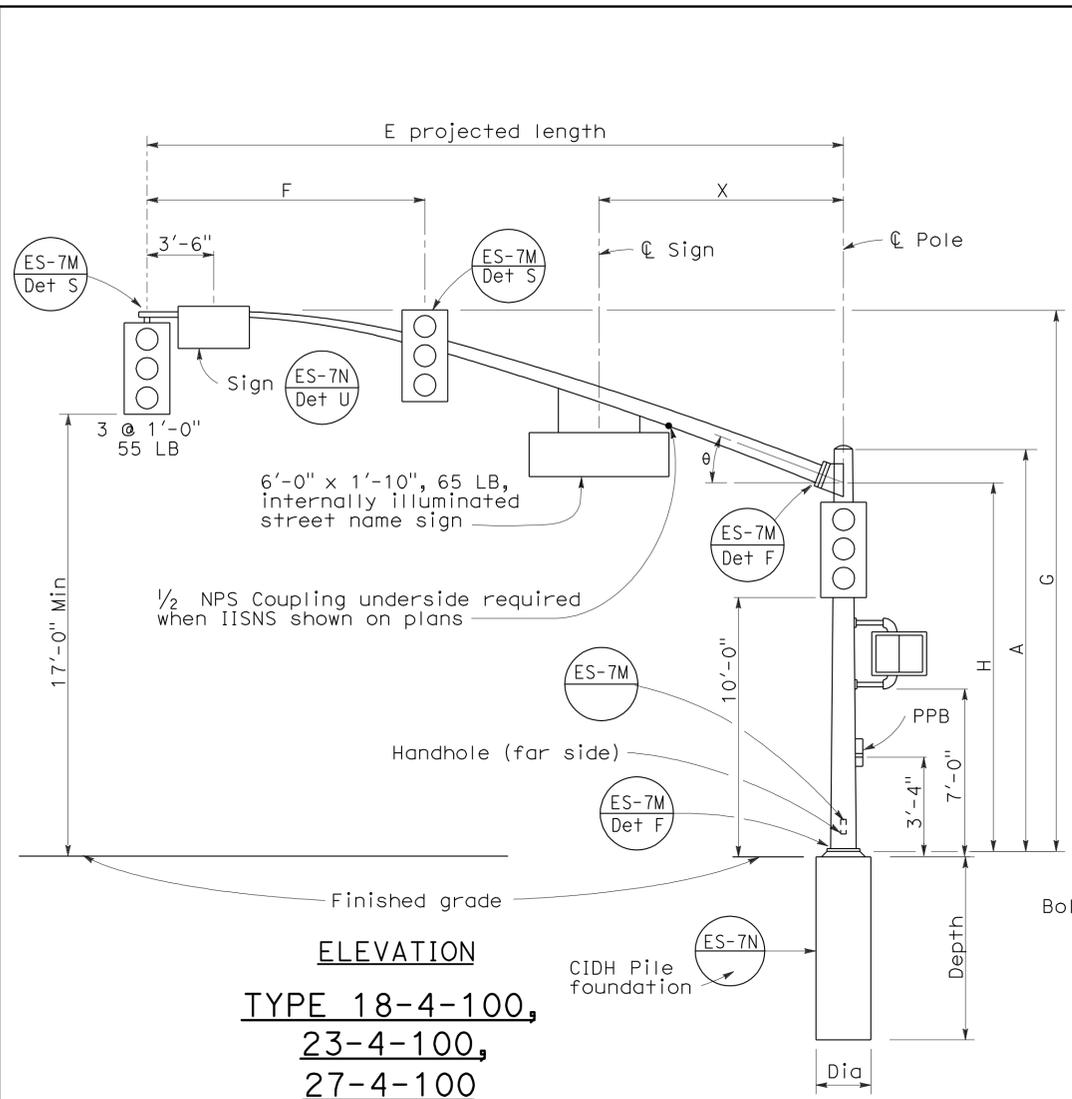


STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)

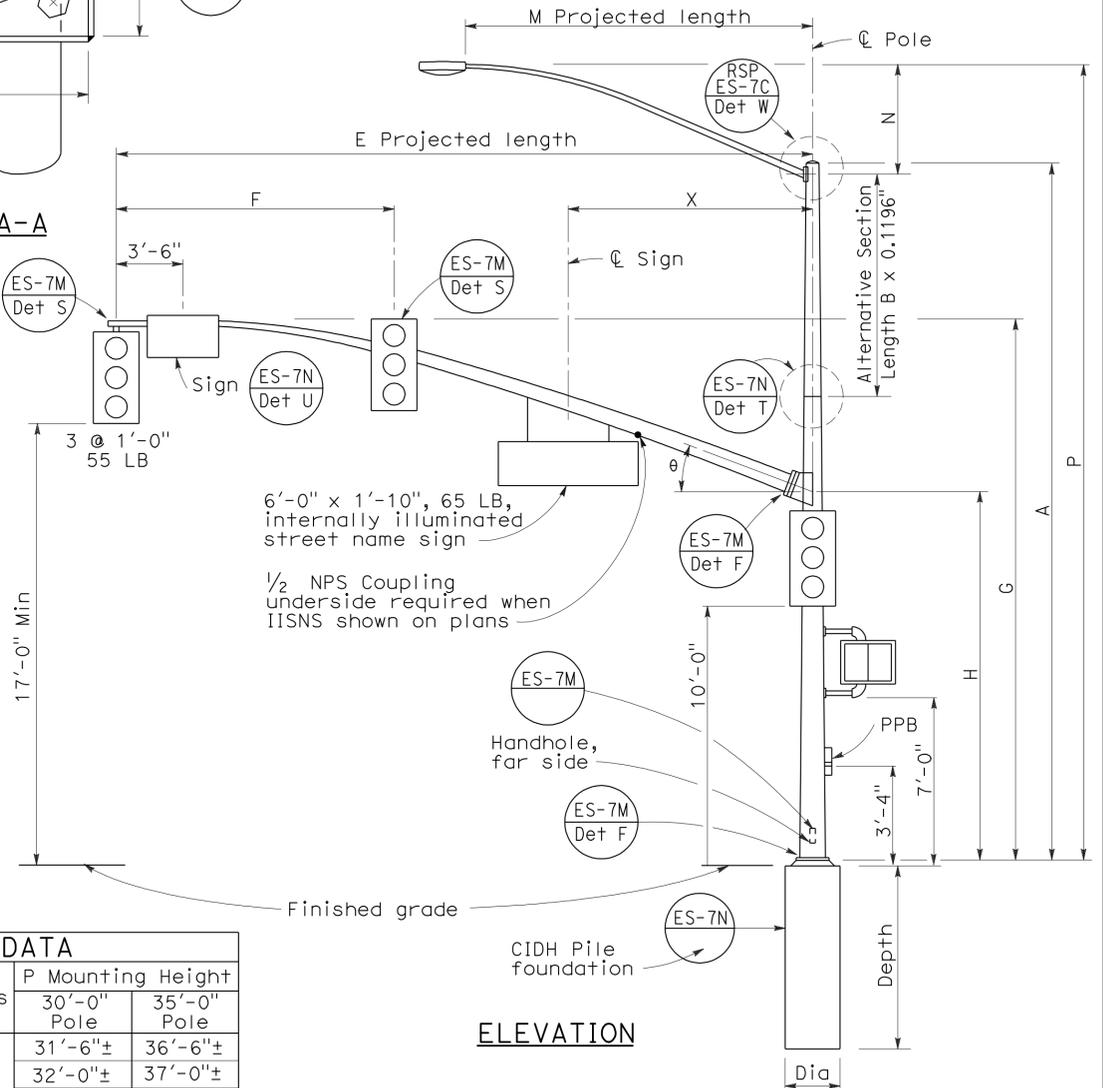
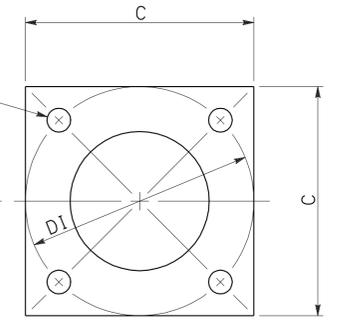
NO SCALE

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.

2006 REVISED STANDARD PLAN RSP ES-7B



SIGNAL ARM CONNECTION DETAILS



ELEVATION

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

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm P Thickness	L Pole P Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	23'-0"±		8 1/16"		13 1/2"		1'-1 1/2"	1 1/2"	21°		
40'-0"	15'-0"	9 3/8"										
45'-0"		23'-8"±	10 1/4"	15°	13'-0"							

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

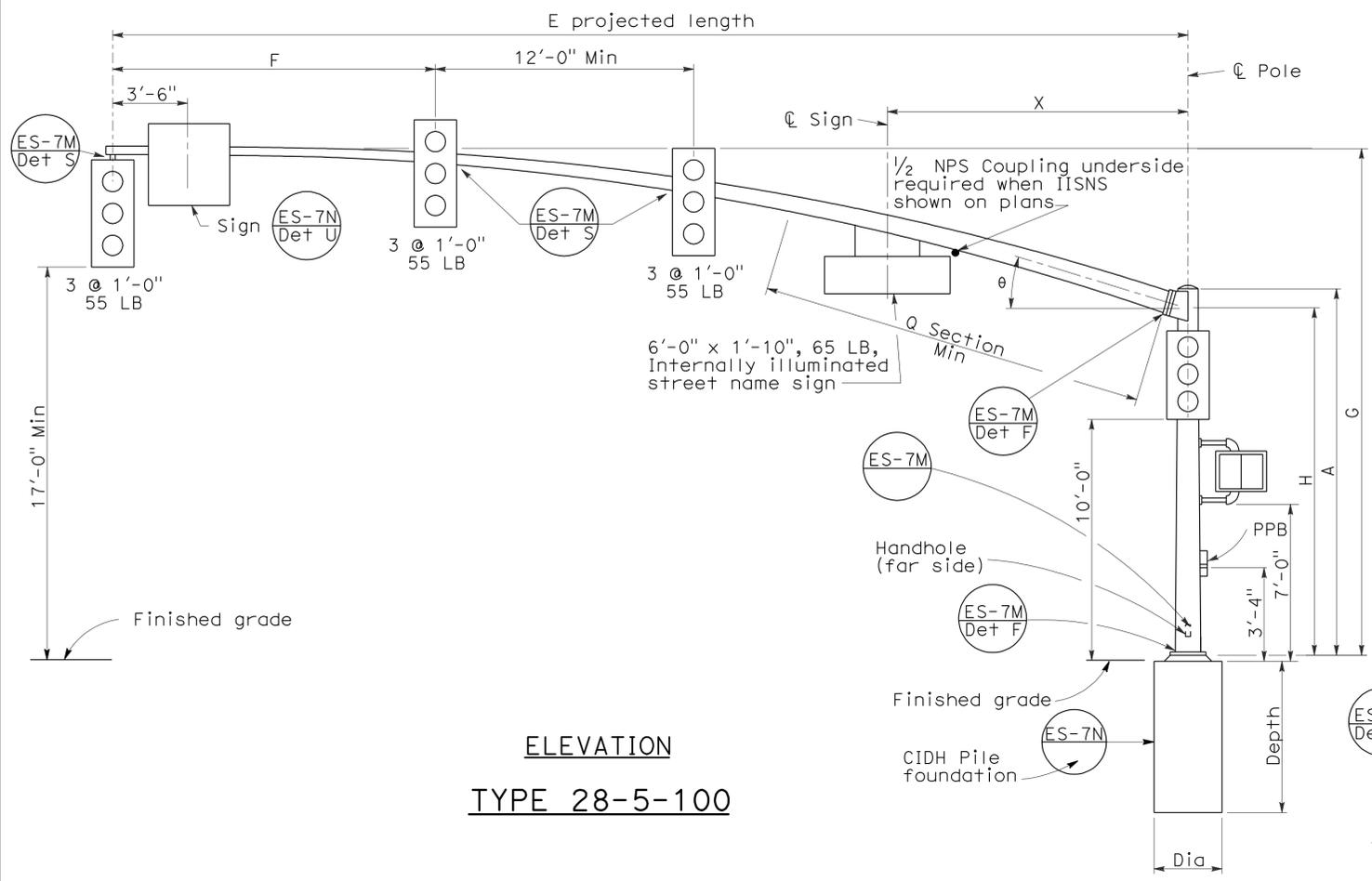
Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	None	25'-0", 30'-0"	3'-0"	9'-0"	Yes		
19-4-100			30'-0"			8"												None	8"
19A-4-100			35'-0"			7 5/16"												15'-0"	7 5/16"
23-4-100			17'-0"			9"												None	None
24-4-100			30'-0"	8"	10'-0"	8"	9 3/8"	7 5/16"											
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"													
26-4-100			30'-0"	8"	10'-0"	8 3/8"	9 3/4"	7 1/16"											
26A-4-100			35'-0"	7 5/16"	15'-0"	7 1/16"													
27-4-100			17'-0"	9 3/4"	None	None													

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

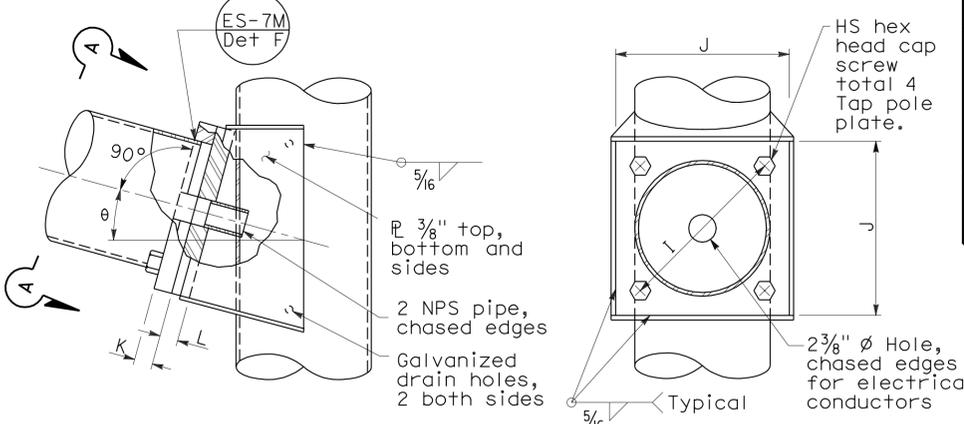
RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED
 NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 -
 PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

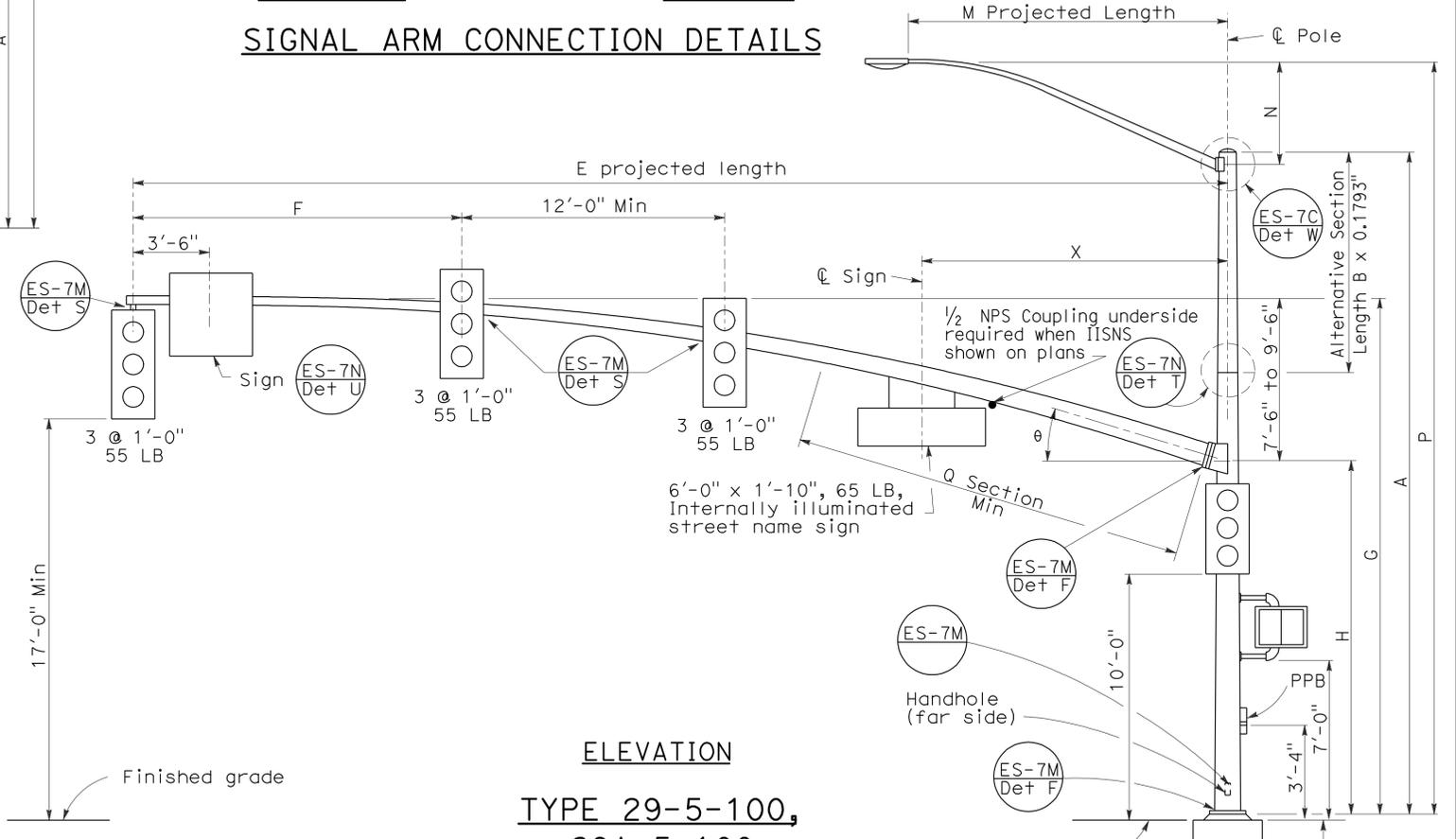
2006 REVISED STANDARD PLAN RSP ES-7F



ELEVATION
TYPE 28-5-100

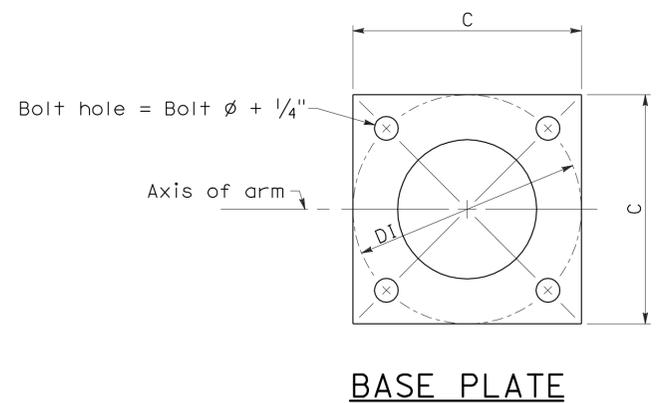


ELEVATION
VIEW A-A
SIGNAL ARM CONNECTION DETAILS



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

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



BASE PLATE

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm Plate Thickness	L Pole Plate Thickness	θ	Q Section		X Max
												Length	Thickness	
50'-0" 55'-0"	15'-0"	23'-7"± to 25'-7"±	16'-0"	11 11/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	C	DI Bolt Circle	Thickness	Anchor Bolts Size			Dia	Depth	Reinforced		
				Base	Top											Alternative Section B Length	Bottom
28-5-100	5	100	17'-0"	14"	11 11/16"	21"	21"	1 3/4"	2" ø x 42" x 6"	6'-15' 15'-0"	50'-0", 55'-0"	3'-0"	9'-2"	Yes			
29-5-100			30'-0"		9 7/8"										10'-0"	11 1/4"	9 7/8"
29A-5-100			35'-0"		9 3/16"										15'-0"	9 3/16"	23"

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

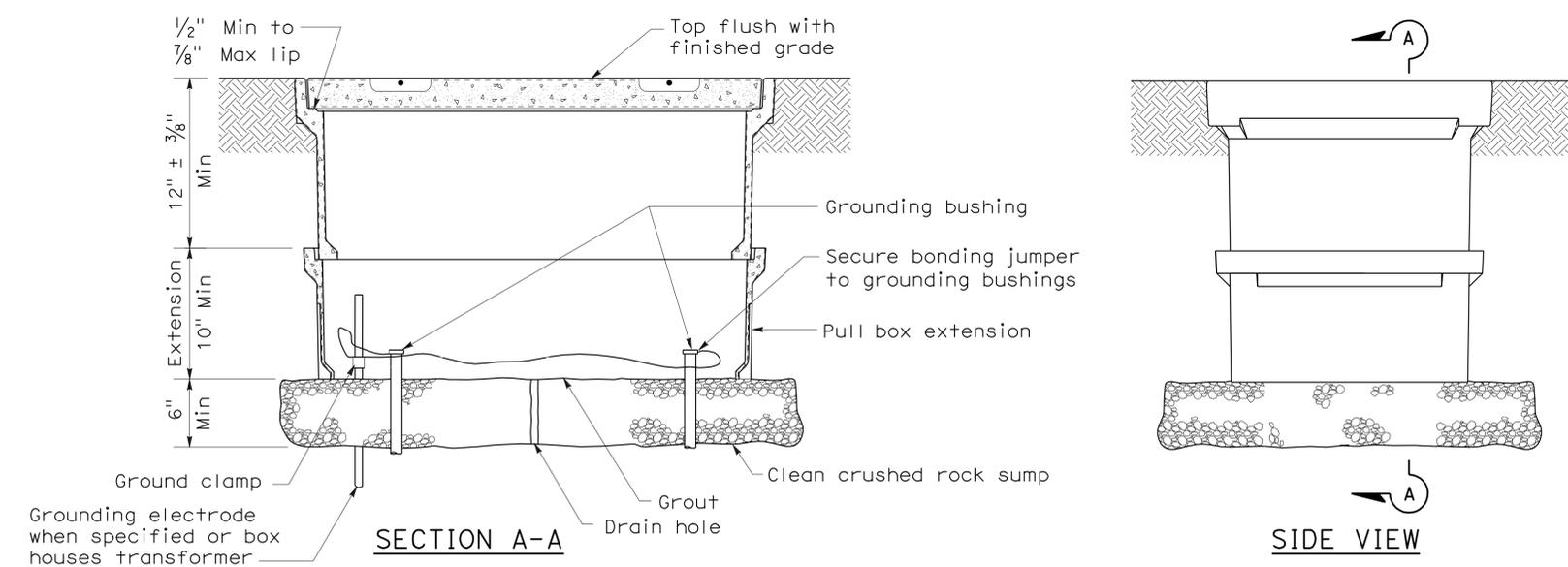
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 5 ARM LOADING
WIND VELOCITY=100 MPH,
ARM LENGTHS 50' TO 55')
 NO SCALE

RSP ES-7G DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN ES-7G
 DATED MAY 1, 2006 - PAGE 443 OF THE STANDARD PLANS BOOK DATED MAY 2006.

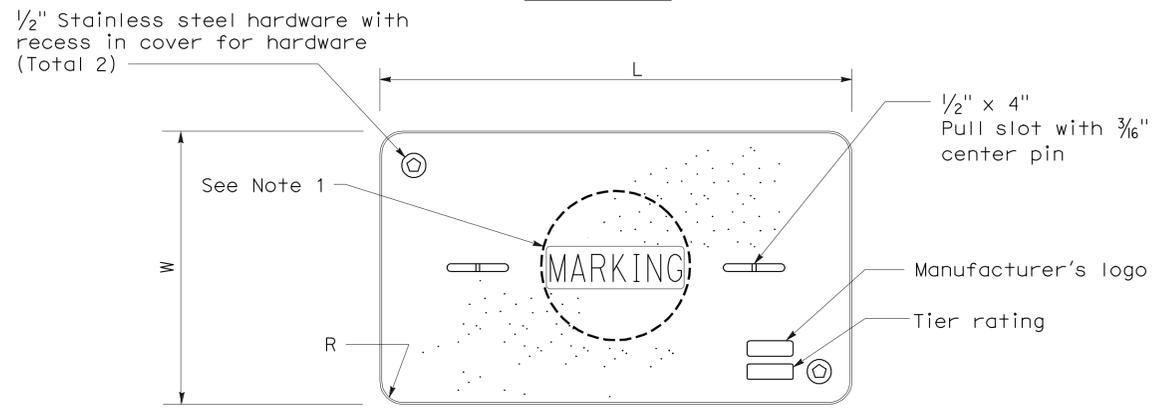
2006 REVISED STANDARD PLAN RSP ES-7G

2006 NEW STANDARD PLAN NSP ES-8A

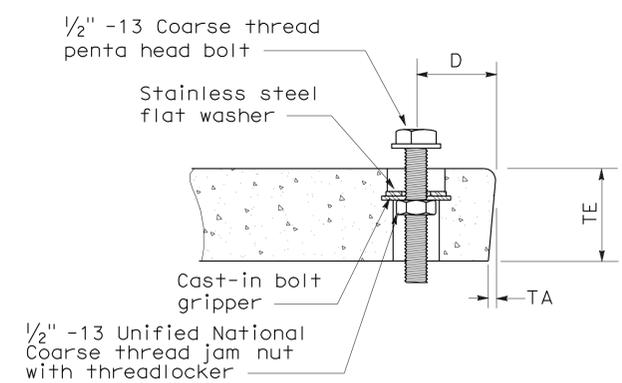
To accompany plans dated 2-27-12



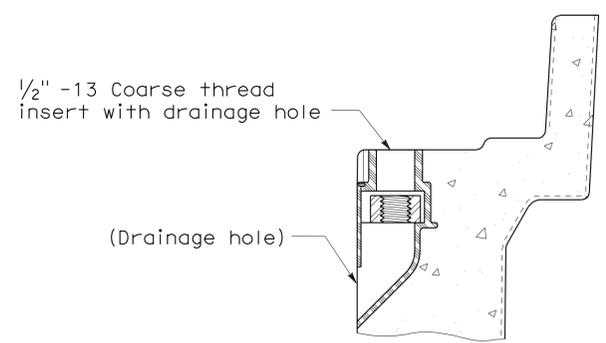
INSTALLATION DETAILS
DETAIL A



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.

DIMENSION TABLE

PULL BOX	PULL BOX			COVER						
	Minimum Depth Box	Minimum Depth Extension	Maximum Weight	L	W	R	TE	TA	D	Maximum Weight
No. 3/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

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

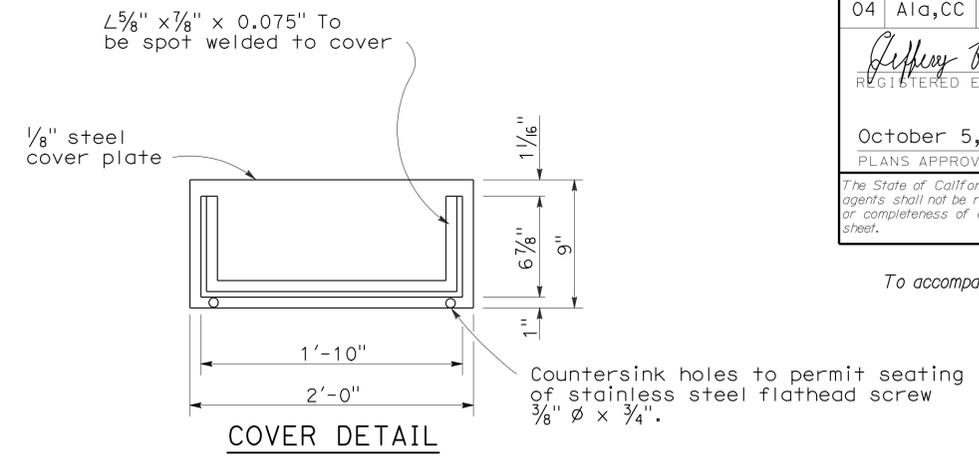
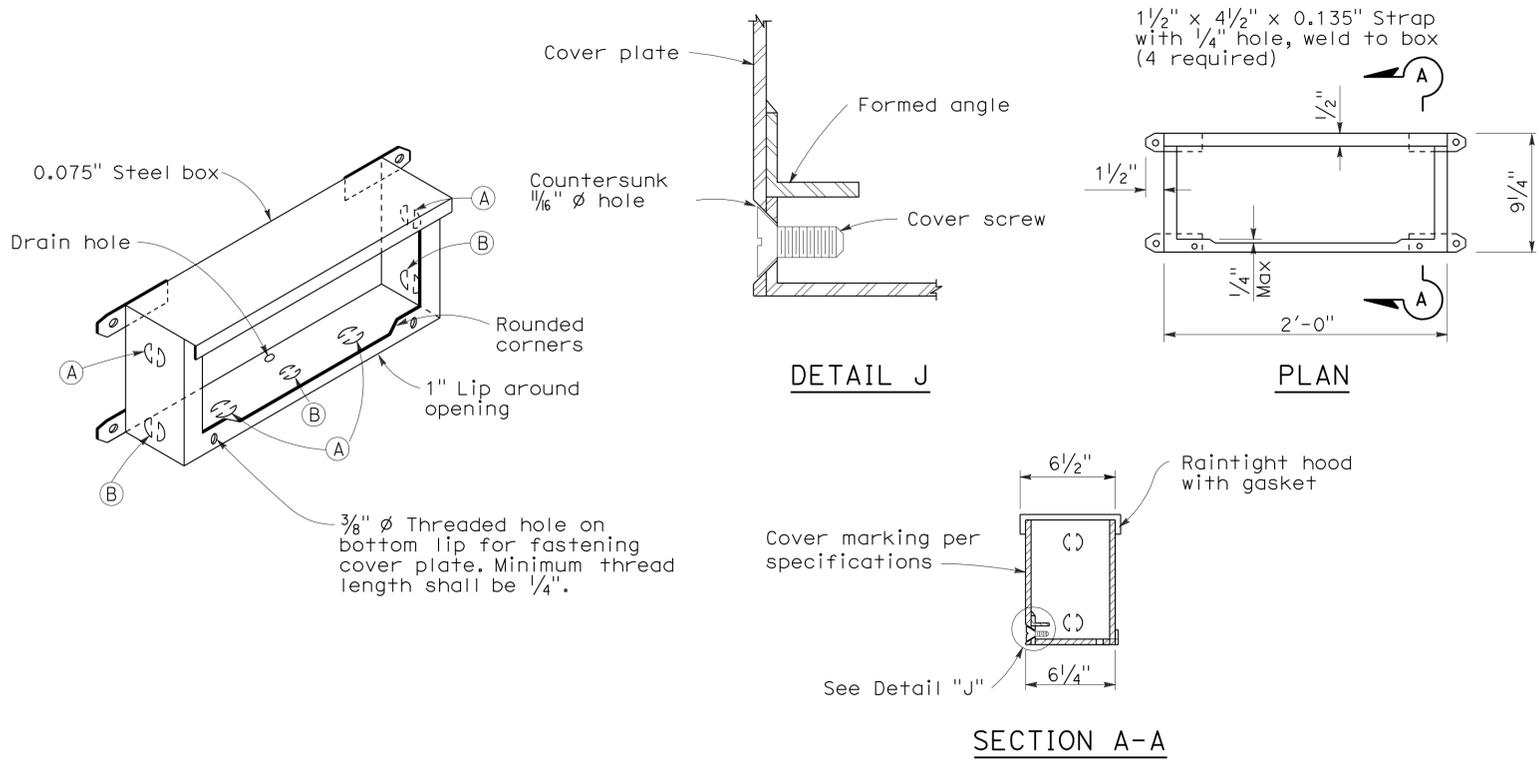
NSP ES-8A DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	290	290

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

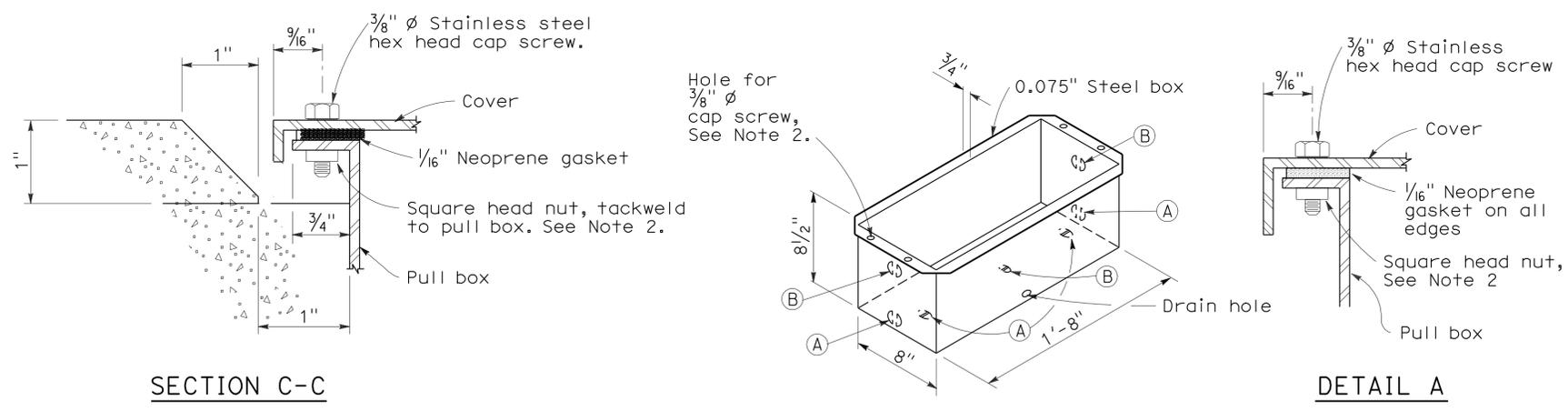
REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

To accompany plans dated 2-27-12



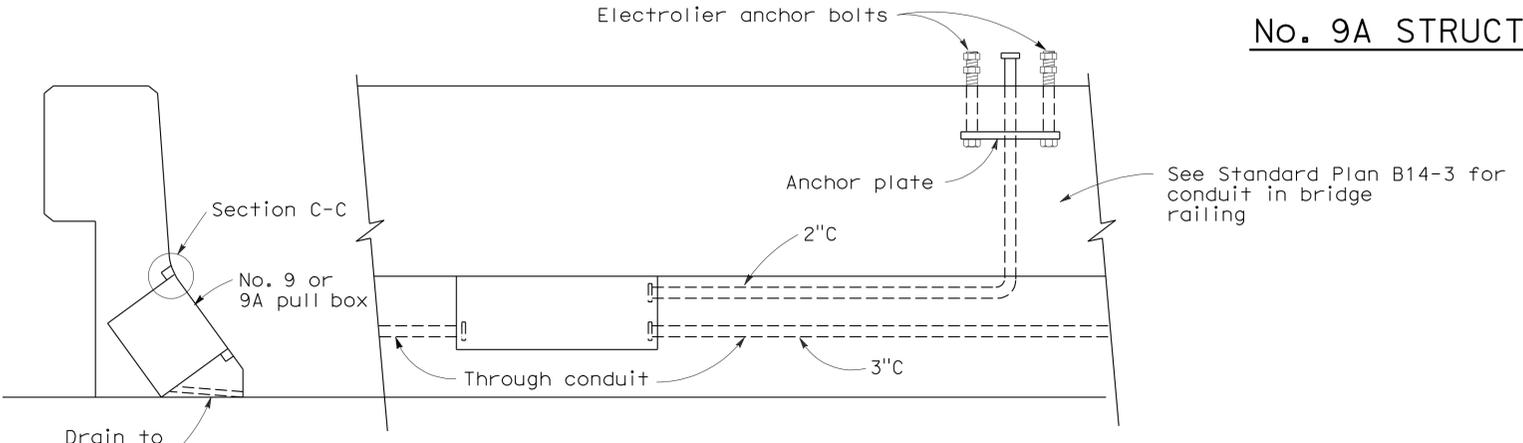
INSTALLATION NOTE:
 Box shall be parallel to top of railing. Close cover box during pouring with 1/4" plywood of sufficient size to provide 1:1 chamfer on 3 sides of cover. Upper edge of plywood shall fit against lower edge of raintight hood.

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



- 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.

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