Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	1	290

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN ALAMEDA AND CONTRA COSTA COUNTIES AT VARIOUS LOCATIONS FROM POWELL STREET UNDERCROSSING TO 0.1 MILE WEST OF THE CARQUINEZ BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

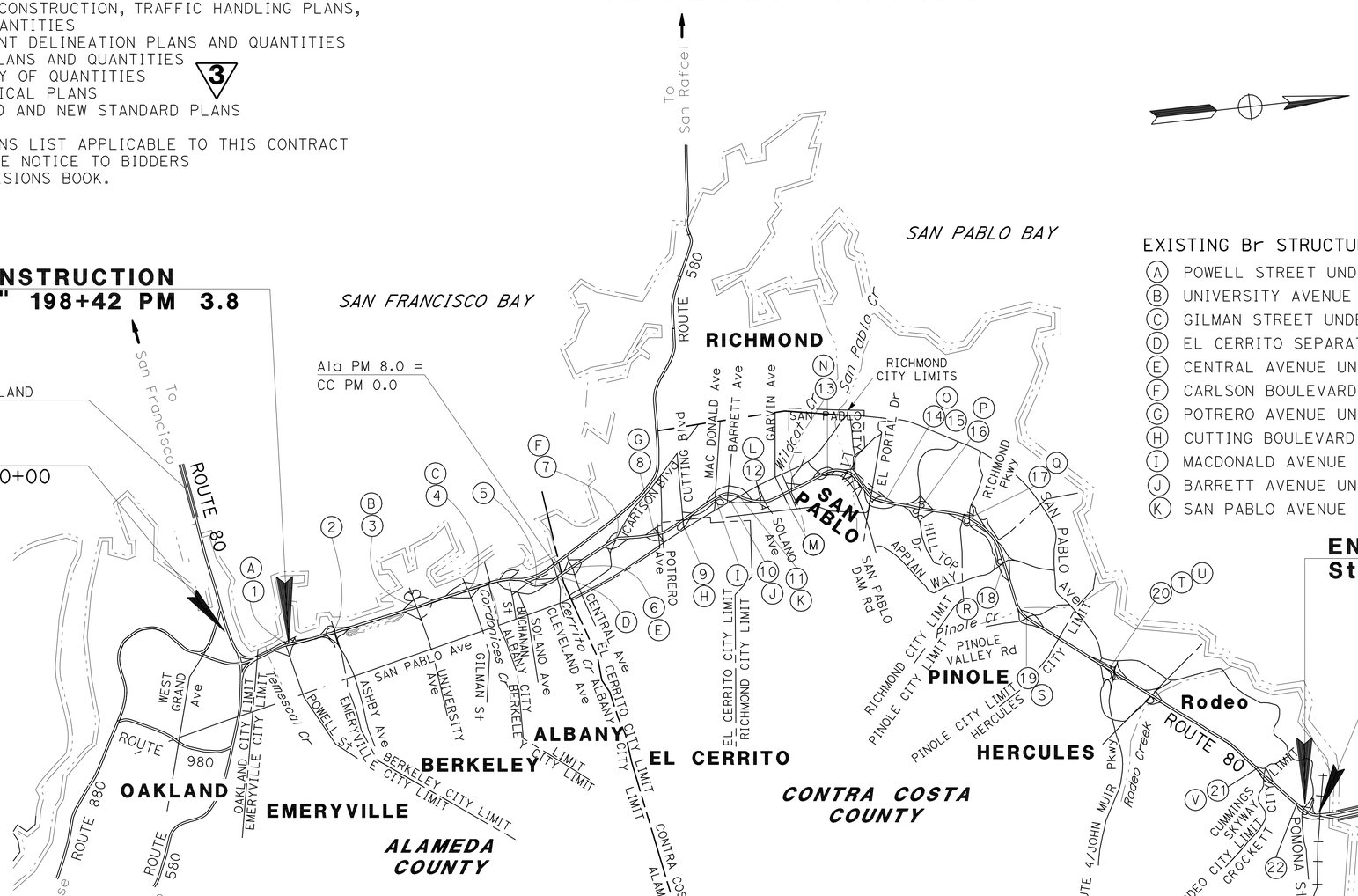
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	LOCATIONS OF CONSTRUCTION
3-4	TYPICAL CROSS SECTIONS
5-36	LAYOUTS
37	PROFILES AND SUPERELEVATION DIAGRAM
38-48	CONSTRUCTION DETAILS
49-52	TEMPORARY WATER POLLUTION CONTROL AND QUANTITIES
53-57	EROSION CONTROL PLANS, DETAILS AND QUANTITIES
58	CONTOUR GRADING
59-68	DRAINAGE PLANS, PROFILES, DETAILS AND QUANTITIES
69-72	WATERSHED MAP
73-106	UTILITY PLANS
107-122	CONSTRUCTION AREA SIGNS
123-133	STAGE CONSTRUCTION, TRAFFIC HANDLING PLANS, AND QUANTITIES
134-141	PAVEMENT DELINEATION PLANS AND QUANTITIES
142-178	SIGN PLANS AND QUANTITIES
179-180	SUMMARY OF QUANTITIES
181-241A	ELECTRICAL PLANS
242-290	REVISED AND NEW STANDARD PLANS

3

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

LOCATION MAP



EXISTING Br STRUCTURES

- (A) POWELL STREET UNDERCROSSING
- (B) UNIVERSITY AVENUE OVERCROSSING
- (C) GILMAN STREET UNDERCROSSING
- (D) EL CERRITO SEPARATION OVERHEAD
- (E) CENTRAL AVENUE UNDERCROSSING
- (F) CARLSON BOULEVARD UNDERCROSSING
- (G) POTRERO AVENUE UNDERCROSSING
- (H) CUTTING BOULEVARD UNDERCROSSING
- (I) MACDONALD AVENUE UNDERCROSSING
- (J) BARRETT AVENUE UNDERCROSSING
- (K) SAN PABLO AVENUE UNDERCROSSING
- (L) SOLANO AVENUE OVERCROSSING
- (M) RIVERSIDE AVENUE PEDESTRIAN OVERCROSSING
- (N) SAN PABLO DAM ROAD INTERCHANGE
- (O) EL PORTAL DRIVE UNDERCROSSING
- (P) HILLTOP DRIVE OVERCROSSING
- (Q) RICHMOND PARKWAY OVERCROSSING
- (R) APPIAN WAY OVERCROSSING
- (S) PINOLE VALLEY ROAD UNDERCROSSING
- (T) HERCULES OVERHEAD
- (U) ROUTE 80/4 SEPARATION
- (V) CUMMINGS SKYWAY OVERCROSSING

LEGEND:

- (#) LOCATION OF CONSTRUCTION (SEE SHEET LC-1)
- (X) EXISTING BRIDGE STRUCTURE

3 REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012

NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER	REGISTRATION No.	LICENSE Exp DATE	DATE SIGNED
RANDAL DURRENBERGER	C51277	9/30/13	11/23/11

CALTRANS DESIGN OVERSIGHT APPROVAL: JIIN-TIAN TENG

10/14/11
PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE

February 27, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randal Durrenberger — No. 65157 — Exp. 9/30/13 — CIVIL — STATE OF CALIFORNIA

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555 12TH STREET SUITE 1230
OAKLAND, CA 94607-4095

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

CONTRACT No.	04-3A7764
PROJECT ID	0400002043

LAST REVISION 11/09/11 — DATE PLOTTED => 20-AUG-2012 — TIME PLOTTED => 05:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	181	290

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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OAKLAND, CA 94607-4095

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

GENERAL NOTES:

1. ALL PULL BOXES NOT TO BECOME PART OF THE PERMANENT SYSTEM SHALL BE RC.
2. THE CLEARANCE BETWEEN THE BOTTOM OF THE LOWEST CIRCUIT BREAKER AND THE BOTTOM OF THE SERVICE EQUIPMENT ENCLOSURE FOR A TYPE III-A SERIES SHALL BE 24 INCHES MINIMUM.
3. SEE E-41 FOR DETAILS FOR No. 9 PULL BOX INSTALLATION IN EXISTING CONCRETE BARRIER.
4. CONFIRM THE SIZE OF EXISTING GROUNDING CONDUCTOR IN EXISTING CONDUITS REQUIRING NEW POWER CONDUCTORS. REMOVE EXISTING GROUNDING CONDUCTOR IF SMALLER THAN THE LARGEST NEW OR EXISTING POWER CONDUCTOR AND REPLACE WITH NEW GROUND WIRE MATCHING SIZE OF LARGEST CONDUCTOR IN CONDUIT.
5. IN NEW CONDUIT RUNS, PROVIDE A GROUNDING CONDUCTOR. IF THE LARGEST NEW CONDUCTOR WITHIN THE CONDUIT RUN IS SMALLER THAN THE MINIMUM SIZE GROUNDING CONDUCTOR, THEN INSTALL THE MINIMUM SIZE GROUNDING CONDUCTOR. IN ALL OTHER CASES, INSTALL A NEW GROUND WIRE MATCHING THE SIZE OF THE LARGEST CONDUCTOR IN THE CONDUIT.

3 REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012

ELECTRICAL INDEX:

DRAWING No.	TITLE
E-1	ELECTRICAL INDEX, NOTES, SYMBOLS AND ABBREVIATIONS
E-2	MODIFY LIGHTING
E-3 to E-39	MODIFY RAMP METERING SYSTEM
E-40 to E-62	ELECTRICAL DETAILS

PROJECT NOTES:

1. INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY, AND GPRS WIRELESS RADIO MODEM ASSEMBLY (SEE E-55); AT MINIMUM 30′ FROM EDGE OF TRAVEL WAY. SEE ES-3C FOR FOUNDATION DETAILS.
2. INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER UNIT IN EXISTING CABINET.
3. INSTALL LONG LEAD-IN CABLE LOOP DETECTOR SENSOR UNIT FOR EACH LOOP 600 FEET OR FURTHER FROM CONTROLLER CABINET.
4. INSTALL TYPE 1-B SIGNAL STANDARD WITH "METER ON" SIGN. SEE E-52 FOR INSTALLATION DETAILS.
5. INSTALL TYPE 1-B SIGNAL STANDARD 3′ FROM EDGE OF SHOULDER AND 1′ DOWNSTREAM OF LIMIT LINE. SEE E-52 FOR POLE AND SIGNAL INSTALLATION DETAILS.
6. INSTALL VMS SYSTEM ON WOOD POSTS A MINIMUM OF 30′ FROM EDGE OF TRAVEL WAY, SEE E-53 AND E-54 FOR INSTALLATION AND CONTROL CIRCUIT DETAILS.
7. INSTALL GPRS WIRELESS RADIO MODEM ASSEMBLY IN EXISTING CABINET. SEE E-55 FOR DETAILS.
8. INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE WITH "TIME OF USE" METER. SEE RSP ES-2D FOR ENCLOSURE AND BASE DETAILS. REFER TO SERVICE WIRING DIAGRAM ON E-56 AND PROVIDE ALL EQUIPMENT ITEMS AS INDICATED.
9. INSTALL TYPE 1-B SIGNAL STANDARD PER FOUNDATION INSTALLATION DETAIL SHOWN ON E-49. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
10. INSTALL 18-4-100 SIGNAL STANDARD WITH 30′-0" SIGNAL MAST ARM PER RSP ES-7F. FOUNDATION IN EXISTING BARRIER PER E-43. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
11. INSTALL 23-4-100 SIGNAL STANDARD WITH 35′-0" SIGNAL MAST ARM PER RSP ES-7F. FOUNDATION IN EXISTING BARRIER PER E-43. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
12. INSTALL No. 9 DOUBLE PULL BOX IN EXISTING MEDIAN BARRIER PER E-41, DETAIL A.
13. INSTALL SALVAGED SINE, CAMERA CONTROL UNIT AND VIDEO ENCODER UNIT IN NEW CABINET. SEE SINE INSTALLATION AND CAMERA DETAIL ON E-62.
14. INSTALL TYPE 28-5-100 SIGNAL STANDARD WITH 50′-0" SIGNAL MAST ARM PER RSP ES-7G. INSTALL WITH 4′ MINIMUM CLEARANCE BETWEEN FACE OF MBGR AND NEAREST EDGE OF STANDARD. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
15. INSTALL TYPE 1-B STANDARD IN BARRIER. SEE SHEET E-42 FOR POLE INSTALLATION DETAIL.
16. INSTALL TYPE 18-4-100 SIGNAL STANDARD WITH 30′-0" SIGNAL MAST ARM PER RSP ES-7F. INSTALL WITH 4′ MINIMUM CLEARANCE BETWEEN FACE OF MBGR AND NEAREST EDGE OF STANDARD. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
17. REPLACE EXISTING PULL BOX WITH NEW No. 6 PULL BOX.
18. NOT ALL EQUIPMENT CONNECTED ARE SHOWN.
19. RC EXISTING FOUNDATION.
20. INSTALL CANTILEVER VMS. SIGN POST SHALL BE PLACED 4′ FROM FACE OF MBGR OR BARRIER. SEE E-57 TO E-59 FOR INSTALLATION DETAILS.
21. INSTALL TERMINAL BLOCK IN EXISTING CABINET. MAKE ALL DLC CONNECTIONS NECESSARY.
22. INSTALL MULTIMODE PHASE SELECTOR, AUXILIARY INTERFACE PANEL AND TSP GPS - SYSTEM RADIO IN CABINET. INSTALL RADIO ON CABINET PER MANUFACTURER'S RECOMMENDATIONS.
23. INSTALL WITH 4′ MINIMUM CLEARANCE BETWEEN MBGR AND NEAREST EDGE OF STANDARD.
24. Exist 2"C, 2#4 (120 V TOS), 2#4 (240 V HIGHWAY LIGHTING), 2#6 (240 V SIGN ILLUMINATION), 2#6 (120 V HAR), 2#12 (120 V SIGN TEST SWITCH), 2#12 (120 V TELEPHONE DEMARCATION), 3#14 (120 V PEU).
25. INSTALL No. 9 SINGLE PULL BOX IN Exist BARRIER PER E-41, DETAIL A-1.
26. Exist 2"C, 2#4 (120 V RAMP METERING), 2#4 (120 V TMS), 2#6 (240 V HIGHWAY LIGHTING), 2#8 (240 V SIGN LIGHTING), 2#14 (120 V SIGN TEST SWITCH).
27. INSTALL OPTICAL DETECTOR ON SIGNAL HEAD PER ES-4E.
28. Exist 2½"C, 2#4 (120 V RAMP METERING), 2#4 (120 V TMS), 2#6 (240 V HIGHWAY LIGHTING), 2#8 (240 V SIGN LIGHTING), 2#14 (120 V SIGN TEST SWITCH), 5#14 (120 V TWO PEU).
29. Exist 2-3"C, 2#1/0 (120 V VMS POWER), 1 vcc, 2#4 (120 V RAMP METERING), 2#10, 12 dlc; ADD 6#14, 1#8, 1 PREEMPTION CABLE.
30. INSTALL VMS ON WOOD POSTS. ALLOW 4′ MINIMUM FROM NEAREST EDGE OF VMS TO FACE OF MBGR OR BARRIER SEE E-53 AND E-54 FOR INSTALLATION AND CONTROL CIRCUIT DETAILS.
31. INSTALL CONDUIT ON TOP OF BRIDGE RAIL AND SECURE CONDUIT WITH ONE HOLE GALVANIZED STEEL STRAP EVERY 5 FEET.
32. INSTALL 3 kVA 240-120/240 V STEP-DOWN TRANSFORMER, ENCLOSURE, AND FOUNDATION/PAD PER E-60 AND E-61. INSTALL WITH 30′ MINIMUM CLEARANCE BETWEEN EDGE OF TRAVEL WAY AND NEAREST EDGE OF ENCLOSURE.
33. INSTALL 23-4-100 SIGNAL STANDARD WITH 35′-0" SIGNAL MAST ARM PER RSP ES-7F. FOUNDATION IN EXISTING BARRIER PER E-44. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
34. INSTALL TYPE 1-B SIGNAL STANDARD PER FOUNDATION INSTALLATION DETAIL SHOWN ON E-50. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
35. Exist 2-3"C, 2#6, 1-tvp, 1-tvcp, 1-vcc, 22 dlc; ADD 2#10, 9#14, 1#8.
36. Exist 2-3"C, 9#14, 3#10, 17 dlc; RC 1#10; ADD 1#8.
37. INSTALL OPTICAL DETECTOR ON TYPE 1-B SIGNAL STANDARD PER INSTALLATION DETAIL ON E-52.
38. INSTALL TYPE 60-5-100 SIGNAL STANDARD WITH 60′ MAST ARM PER ES-7H. INSTALL WITH 30′ MINIMUM CLEARANCE BETWEEN EDGE OF TRAVELED WAY AND NEAREST EDGE OF STANDARD. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
39. INSTALL TYPE 18-4-100 SIGNAL STANDARD WITH 25′-0" SIGNAL MAST ARM PER RSP ES-7F. INSTALL WITH 4′ MINIMUM CLEARANCE BETWEEN FACE OF MBGR AND NEAREST EDGE OF STANDARD. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
40. INSTALL TYPE 27-4-100 SIGNAL STANDARD WITH 45′ MAST ARM PER RSP ES-7F. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
41. INSTALL TYPE 18-4-100 SIGNAL STANDARD WITH 25′-0" SIGNAL MAST ARM PER RSP ES-7F. FOUNDATION IN BARRIER PER E-45. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
42. COORDINATE WITH PG&E FOR SERVICE CONNECTION.
43. INSTALL TYPE 28-5-100 SIGNAL STANDARD WITH 55′-0" SIGNAL MAST ARM PER RSP ES-7G. FOUNDATION INSTALLATION DETAIL ON E-46. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS. INSTALL WITH 4′ MINIMUM CLEARANCE BETWEEN FACE OF MBGR AND NEAREST EDGE OF STANDARD.
44. INSTALL TYPE 18-4-100 SIGNAL STANDARD WITH 30′-0" SIGNAL MAST ARM PER RSP ES-7F. FOUNDATION IN EXISTING RETAINING WALL PER E-48. SEE E-52 FOR SIGNAL HEAD INSTALLATION DETAILS.
45. SEE E-51 FOR RAMP METER DETECTOR INSTALLATION DETAILS.
46. APPROXIMATE LIMIT OF INSTALLATION OF CONDUIT ON TOP OF BARRIER RAIL.
47. SALVAGE EXISTING SINE, CAMERA CONTROL UNIT AND VIDEO CONTROL UNIT. RELOCATE TO NEW CABINET SHOWN ON E-3.

SYMBOLS AND ABBREVIATIONS:

(SEE ALSO A10A, A10B, RSP ES-1A, RSP ES-1B AND RSP ES-1C)

PROPOSED	EXISTING	
VMS		PROPOSED VARIABLE MESSAGE SIGN ON WOOD POST, SEE E-53 AND E-54 FOR INSTALLATION DETAILS
VMS		PROPOSED CANTILEVERED VMS SEE E-54, E-57, E-58, AND E-59 FOR INSTALLATION DETAILS
	vms	EXISTING VARIABLE MESSAGE SIGN ON WOOD POST.
BLK		3 kVA 240-120/240 V STEP-DOWN TRANSFORMER
		BLACK
GPRS	gprs	GENERAL PACKET RADIO SYSTEM
	hcc	HYBRID CAMERA CABLE
KYBD		KEYBOARD
LCD		LIQUID CRYSTAL DISPLAY
	mvdsc	MICROWAVE VEHICLE DETECTION SYSTEM CONTROL CABLE
PG&E		PACIFIC GAS AND ELECTRIC COMPANY
SINE		SIGNAL INTERCONNECT NETWORK ELEMENT
TC	tc	TELEPHONE CABLE
	tvc	TELEVISION CONTROL CABLE
	tvcp	TELEVISION CONTROL POWER CABLE
	tvl	TELEVISION VIDEO CABLE
	tvp	TELEVISION POWER CABLE
VCC	vcc	VMS CONTROL CABLE
VMS	vms	VARIABLE MESSAGE SIGN
CTID		CALTRANS IDENTIFICATION
WHT		WHITE

ELECTRICAL INDEX, NOTES, SYMBOLS AND ABBREVIATIONS

E-1

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY: R. DOLE — CHECKED BY: K. AKWABI — CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

LAST REVISION 08-22-11 — DATE PLOTTED => 20-AUG-2012 — TIME PLOTTED => 05:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala,CC	80	3.8/8.0, 0.0/13.5	183	290

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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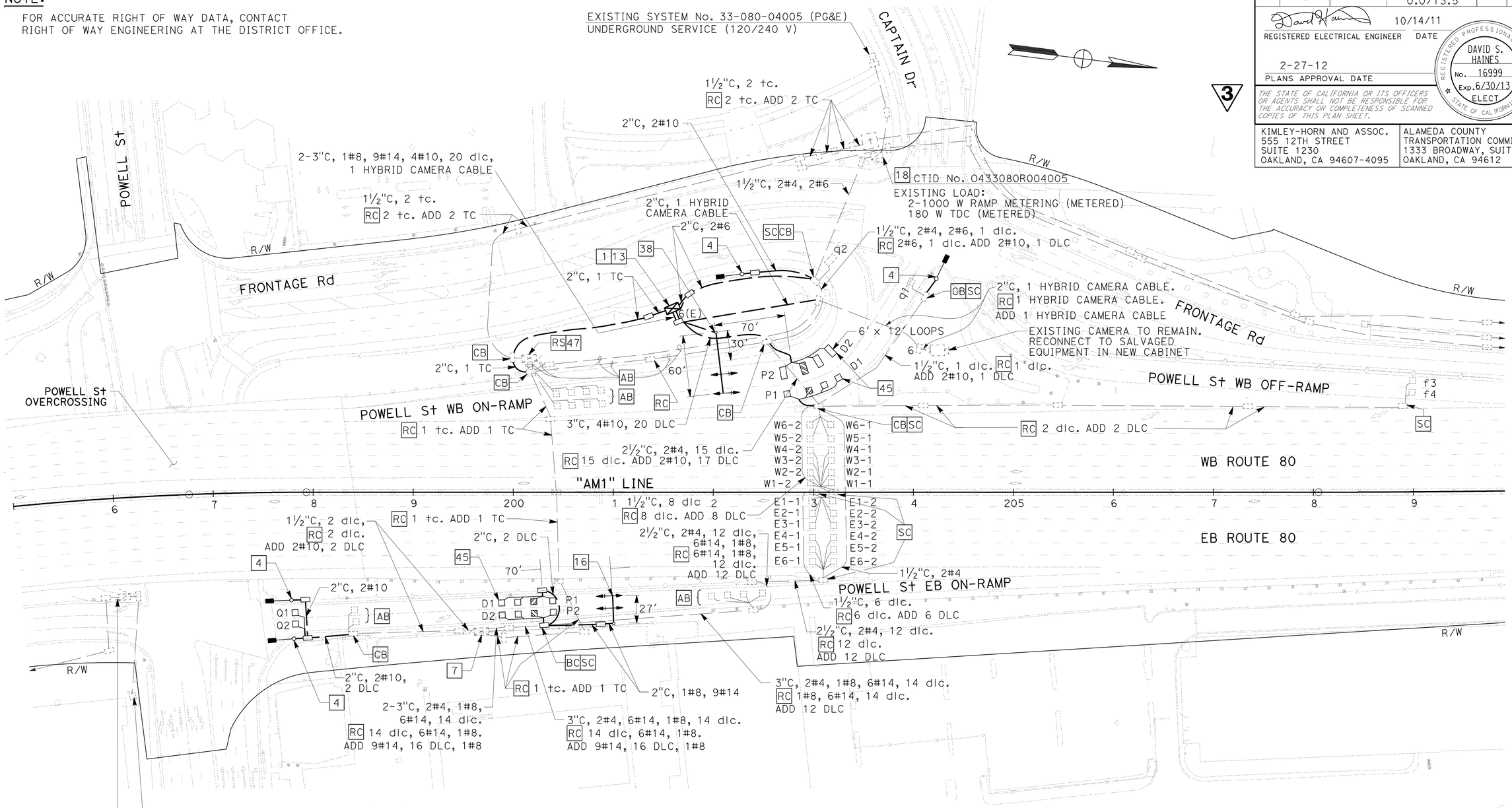
1333 BROADWAY, SUITE 220
OAKLAND, CA 94612

3

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



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

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

APPROVED FOR ELECTRICAL WORK ONLY.

MODIFY RAMP METERING SYSTEM LOCATION 1

SCALE: 1" = 50'

E-3

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY: R. DOLE
CHECKED BY: K. AKWABI
CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

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PLANS APPROVAL DATE

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ALAMEDA COUNTY
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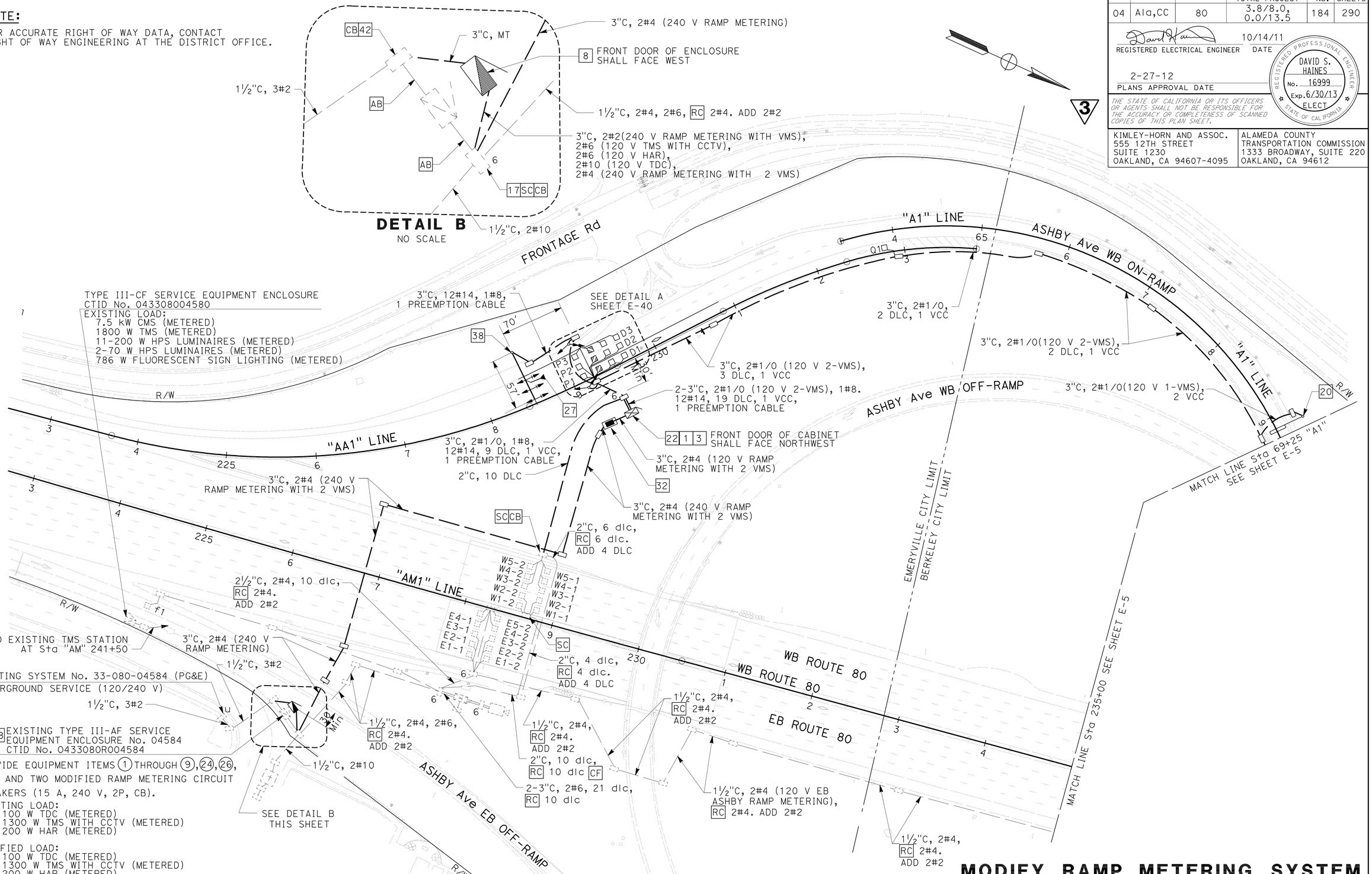

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3 REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012

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

MODIFY RAMP METERING SYSTEM LOCATION 2

SCALE: 1" = 50'

E-4

REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	CHECKED BY	CONSULTANT FUNCTIONAL SUPERVISOR
JCS	10/14/11	R. DOLE	K. AKWABI	RANDAL DURRENBERGER

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REGISTERED ELECTRICAL ENGINEER 10/14/11 DATE

2-27-12
PLANS APPROVAL DATE

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

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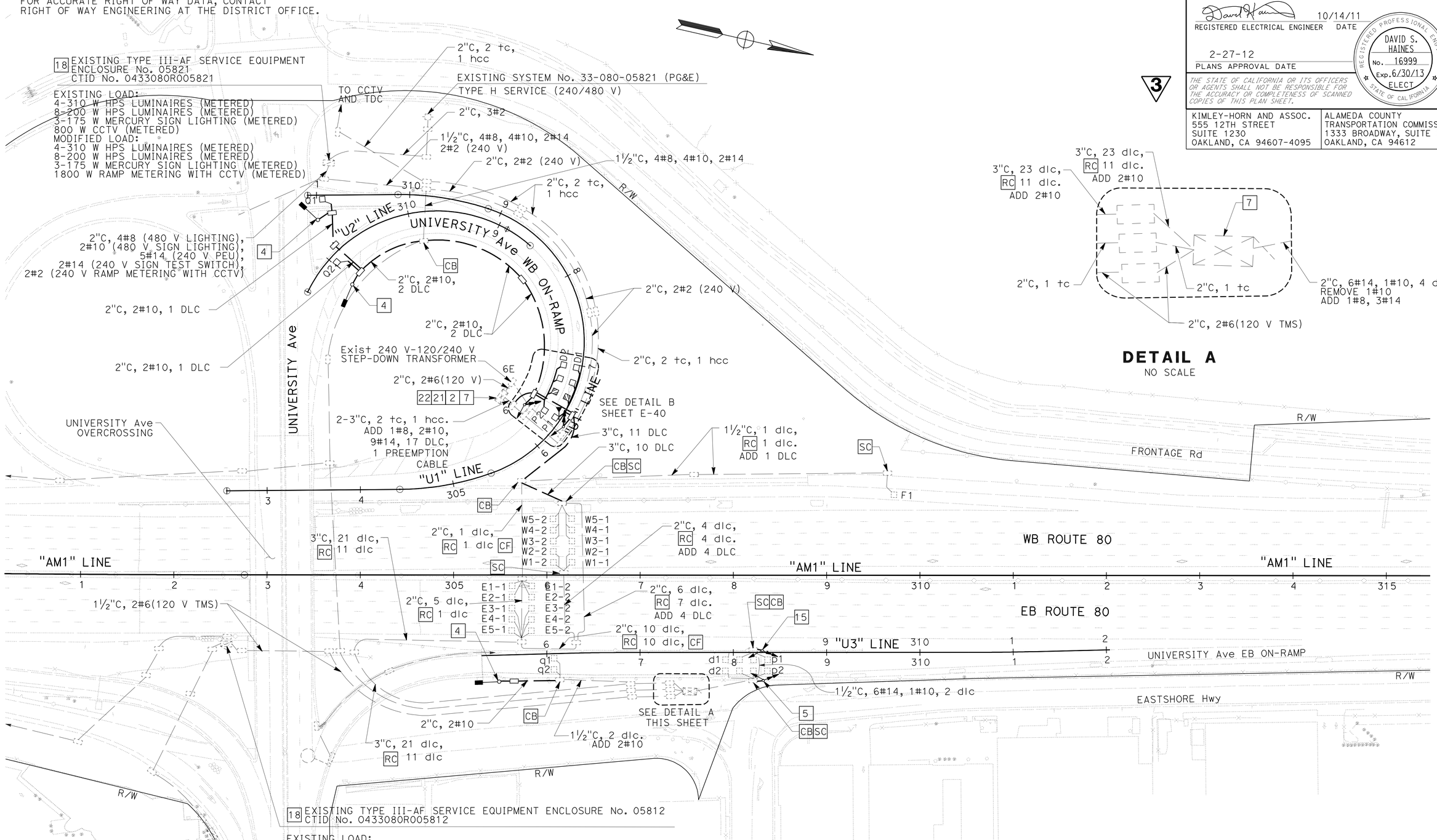

DETAIL A
NO SCALE

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**
APPROVED FOR ELECTRICAL WORK ONLY.

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

MODIFY RAMP METERING SYSTEM LOCATION 3

SCALE: 1" = 50'

E-6

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY	CHECKED BY
R. DOLE	K. AKWABI

CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

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LAST REVISION | DATE PLOTTED => 20-AUG-2012 | TIME PLOTTED => 05:49
08-22-11

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REGISTERED ELECTRICAL ENGINEER 10/14/11 DATE

2-27-12
PLANS APPROVAL DATE

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

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OAKLAND, CA 94607-4095

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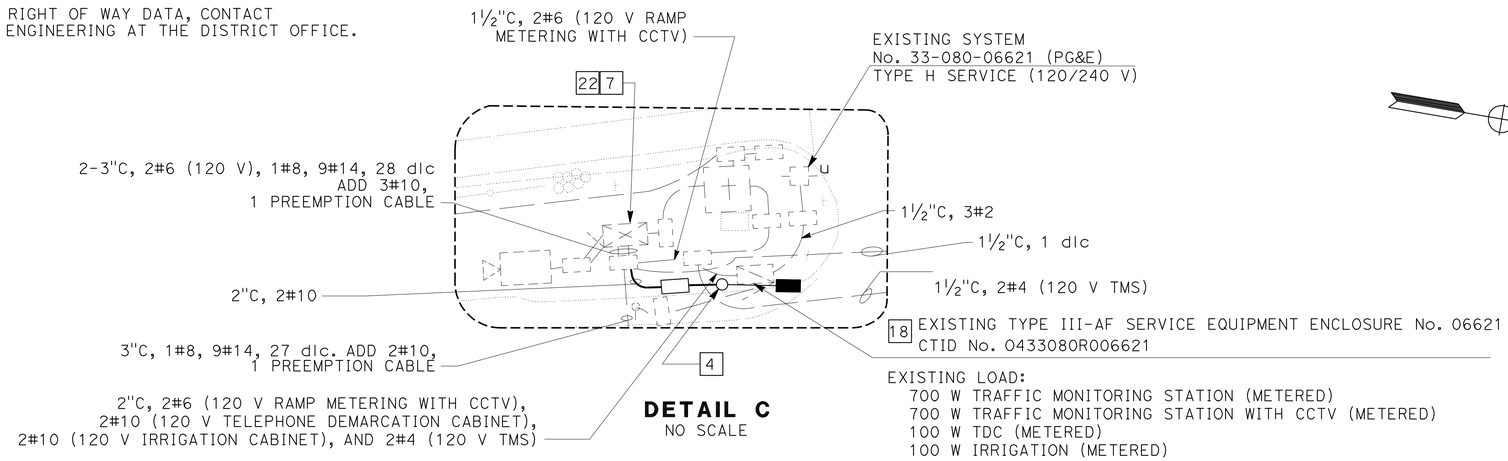
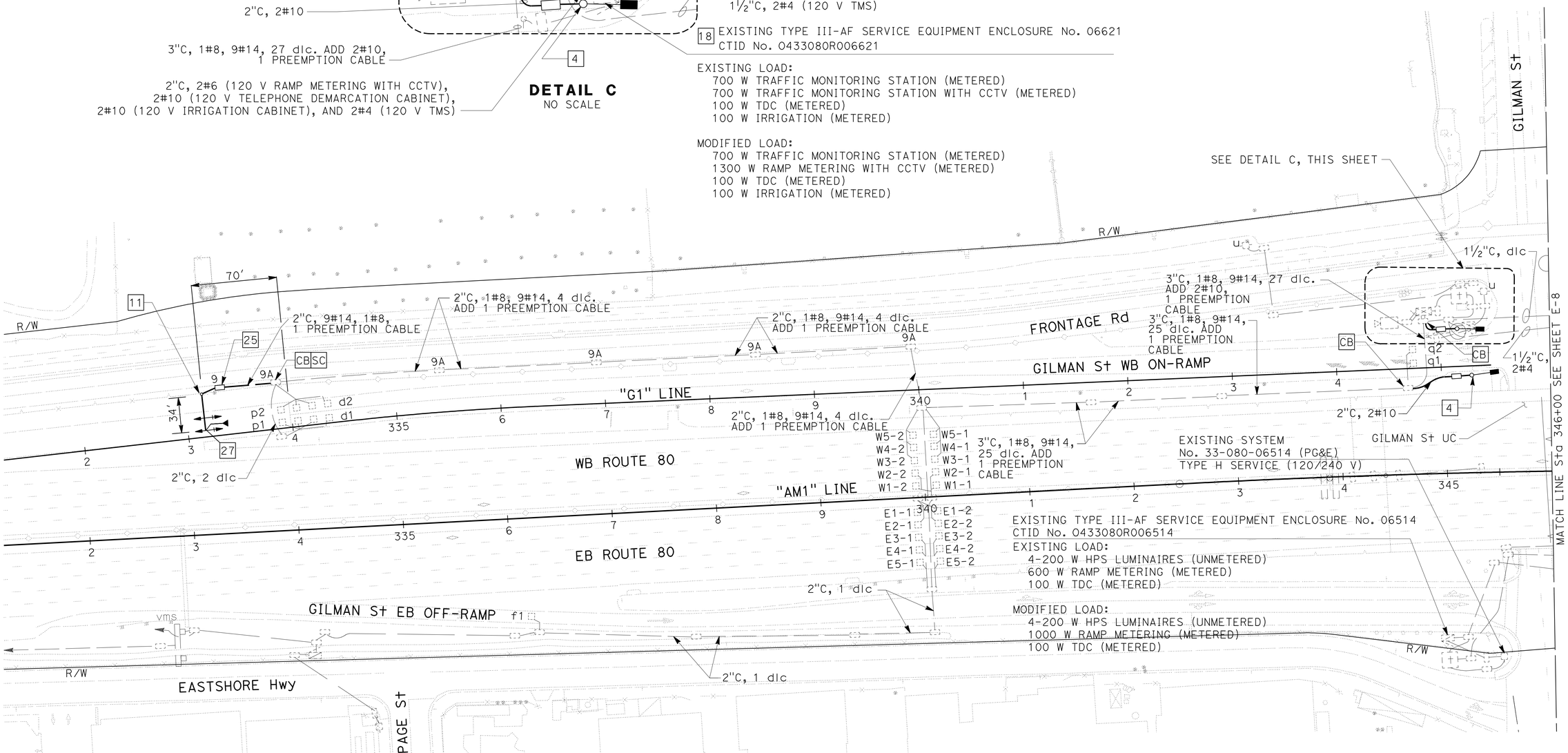


DETAIL C
NO SCALE

EXISTING LOAD:
700 W TRAFFIC MONITORING STATION (METERED)
700 W TRAFFIC MONITORING STATION WITH CCTV (METERED)
100 W TDC (METERED)
100 W IRRIGATION (METERED)

MODIFIED LOAD:
700 W TRAFFIC MONITORING STATION (METERED)
1300 W RAMP METERING WITH CCTV (METERED)
100 W TDC (METERED)
100 W IRRIGATION (METERED)



MODIFY RAMP METERING SYSTEM LOCATION 4

SCALE: 1" = 50'

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

APPROVED FOR ELECTRICAL WORK ONLY.

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

E-7

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY: R. DOLE
CHECKED BY: K. AKWABI
CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 08-22-11 | DATE PLOTTED => 20-AUG-2012 | TIME PLOTTED => 05:49

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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2-27-12
PLANS APPROVAL DATE

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

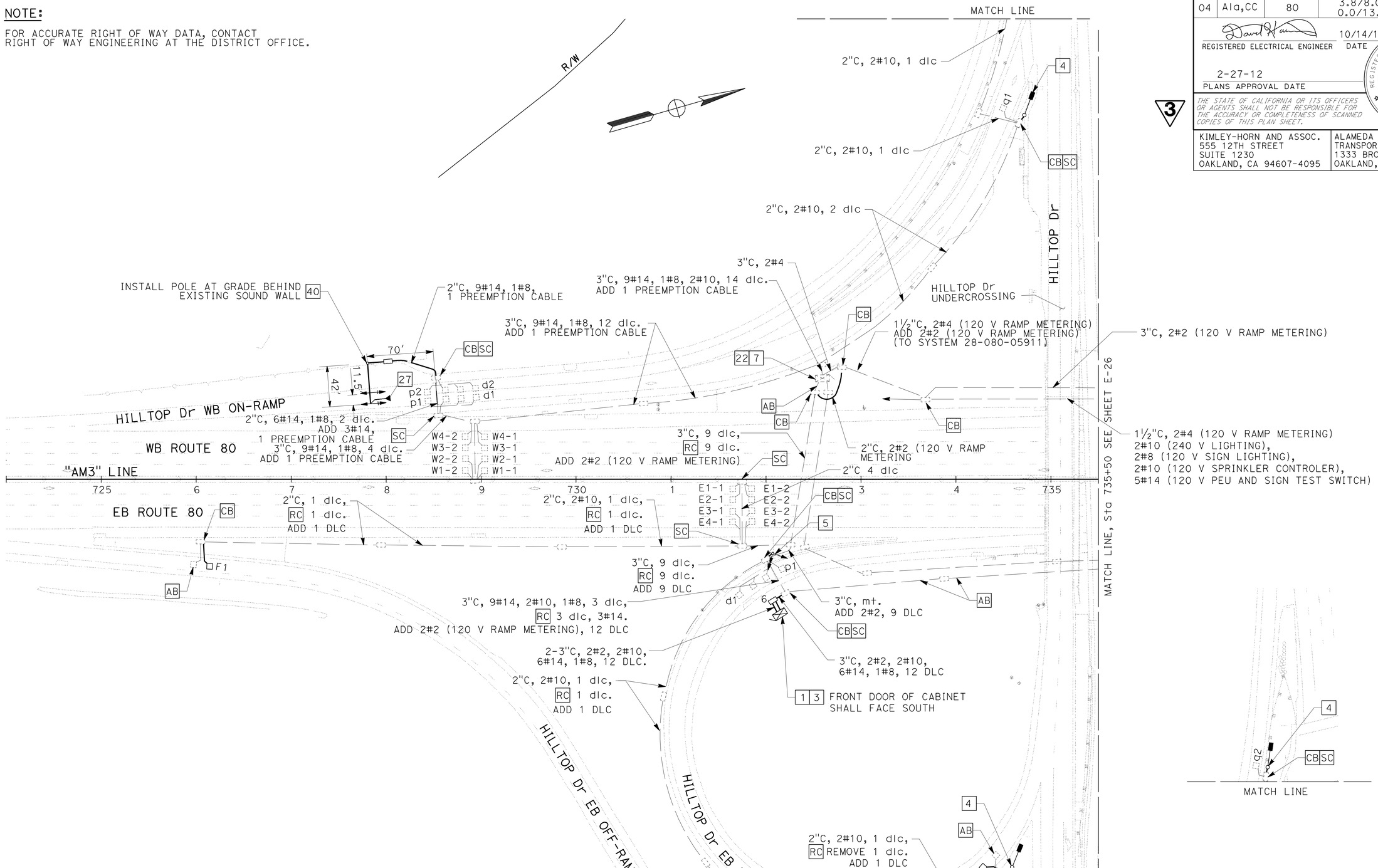
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

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

NOTE:

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



APPROVED FOR ELECTRICAL WORK ONLY.

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

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

MODIFY RAMP METERING SYSTEM LOCATION 16

SCALE: 1" = 50'

E-25

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

CALCULATED-DESIGNED BY: R. DOLE — CHECKED BY: K. AKWABI

REVISED BY: JCS — DATE REVISED: 10/14/11

LAST REVISION 08-22-11 — DATE PLOTTED => 20-AUG-2012 — TIME PLOTTED => 09:49

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

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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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OAKLAND, CA 94612

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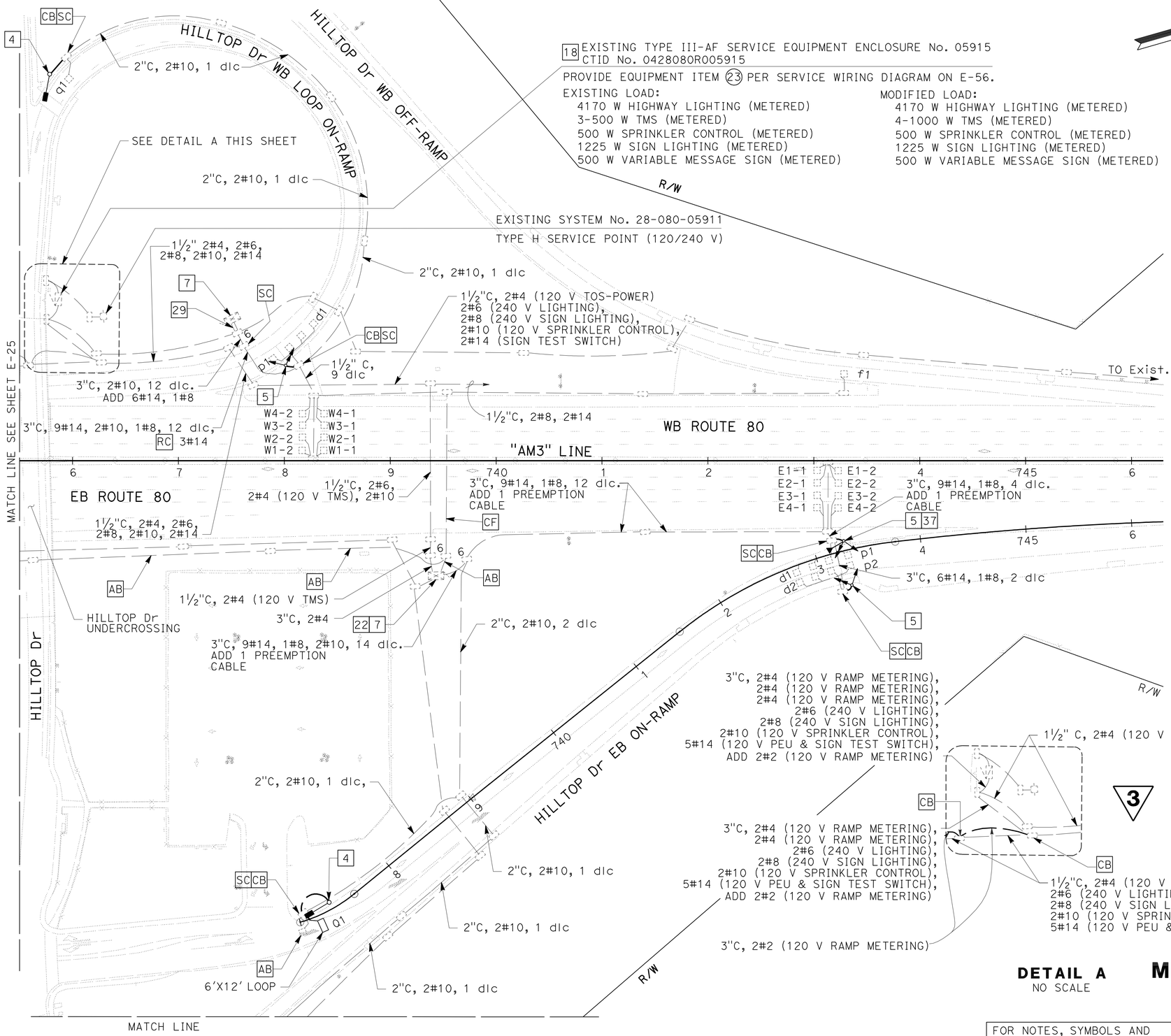


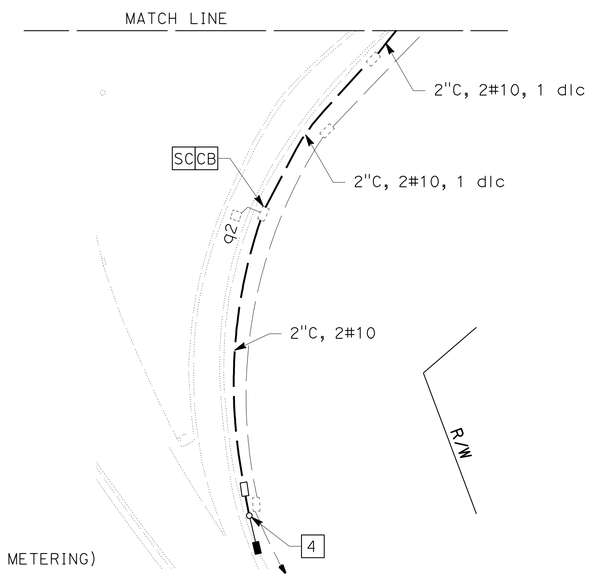
EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 05915
CTID No. 0428080R005915

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)

EXISTING SYSTEM No. 28-080-05911
TYPE H SERVICE POINT (120/240 V)



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)

1½" C, 2#4 (120 V RAMP METERING)

CB

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),
5#14 (120 V PEU & SIGN TEST SWITCH),
ADD 2#2 (120 V RAMP METERING)

1½"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).

3"C, 2#2 (120 V RAMP METERING)

DETAIL A
NO SCALE

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

MODIFY RAMP METERING SYSTEM LOCATION 16

SCALE: 1" = 50'

E-26

APPROVED FOR ELECTRICAL WORK ONLY.

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER
CALCULATED-DESIGNED BY: R. DOLE
CHECKED BY: K. AKWABI
REVISED BY: JCS
DATE REVISED: 10/14/11

LAST REVISION 08-22-11
DATE PLOTTED => 20-AUG-2012
TIME PLOTTED => 05:49

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

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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1333 BROADWAY, SUITE 220
OAKLAND, CA 94612

NOTE:

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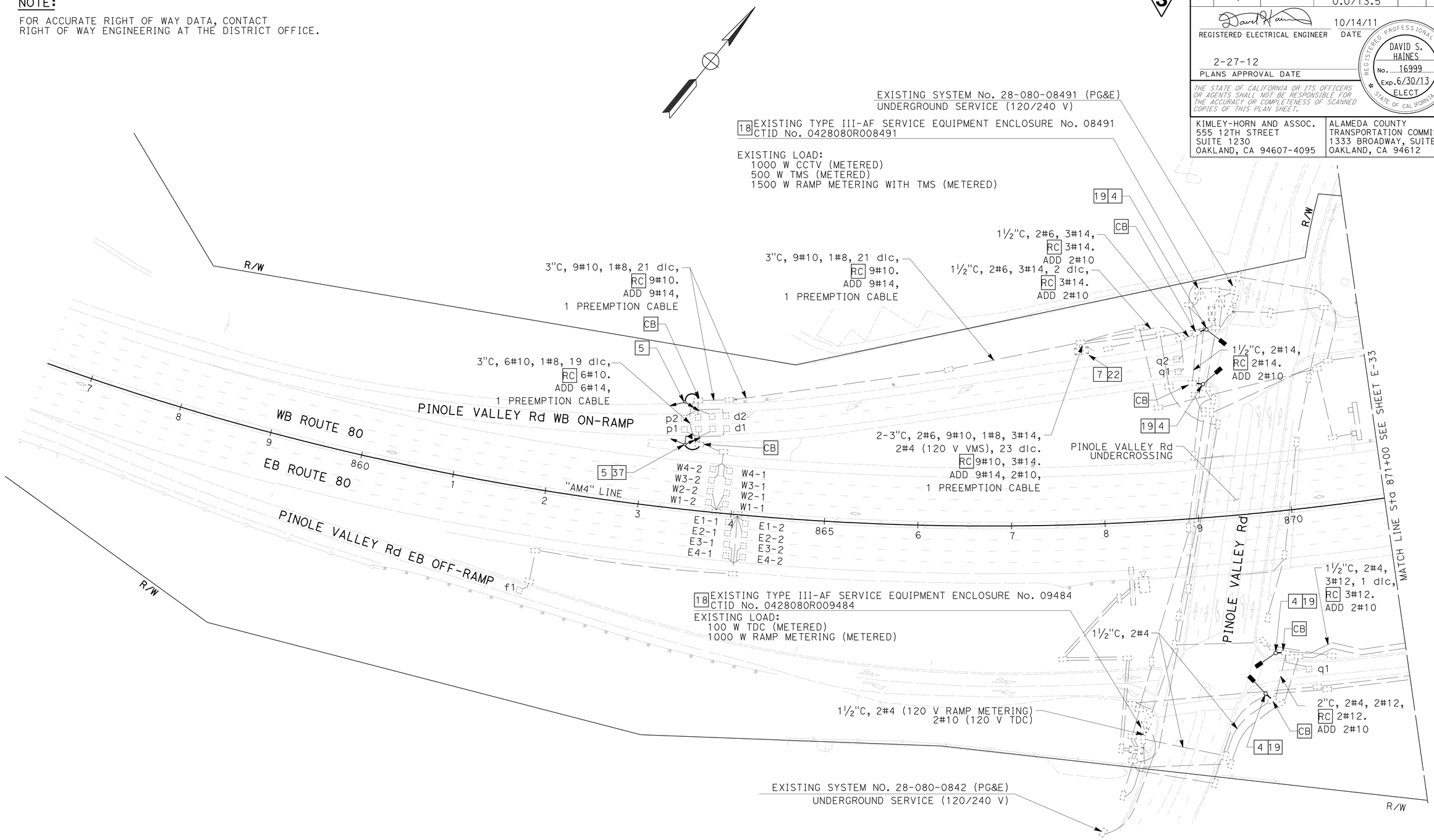

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

APPROVED FOR ELECTRICAL WORK ONLY.

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

MODIFY RAMP METERING SYSTEM LOCATION 19

SCALE: 1" = 50'

E-32

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

CALCULATED-DESIGNED BY: R. DOLE — CHECKED BY: K. AKWABI

REVISED BY: JCS — DATE REVISED: 10/14/11

LAST REVISION 08-22-11 — DATE PLOTTED => 20-AUG-2012 — TIME PLOTTED => 05:50

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

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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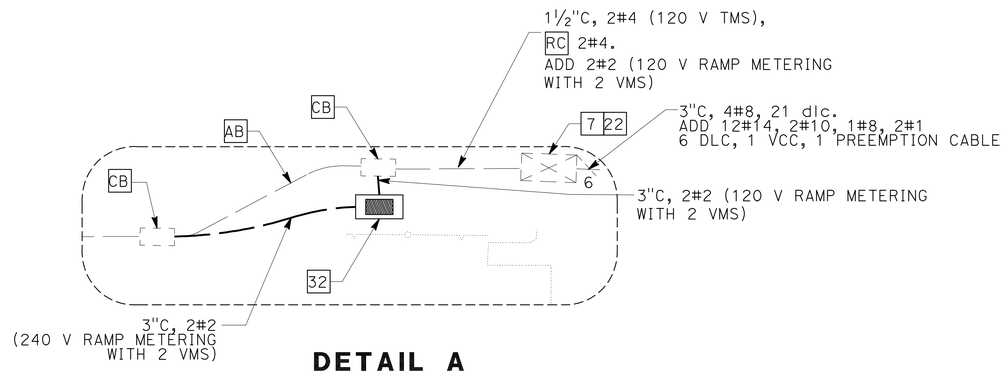
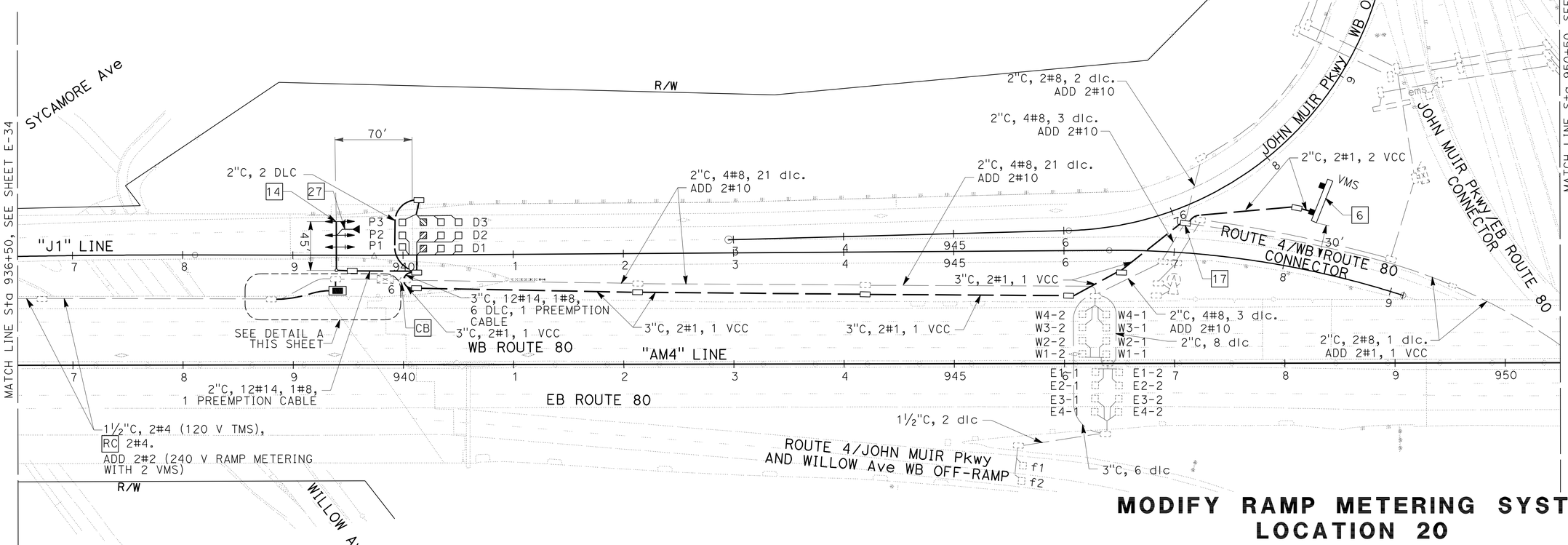


DETAIL A
NO SCALE



MODIFY RAMP METERING SYSTEM
LOCATION 20
SCALE: 1" = 50'

E-35

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

APPROVED FOR ELECTRICAL WORK ONLY.

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

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY: R. DOLE
CHECKED BY: K. AKWABI
CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 08-22-11 | DATE PLOTTED => 20-AUG-2012 | TIME PLOTTED => 05:50

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

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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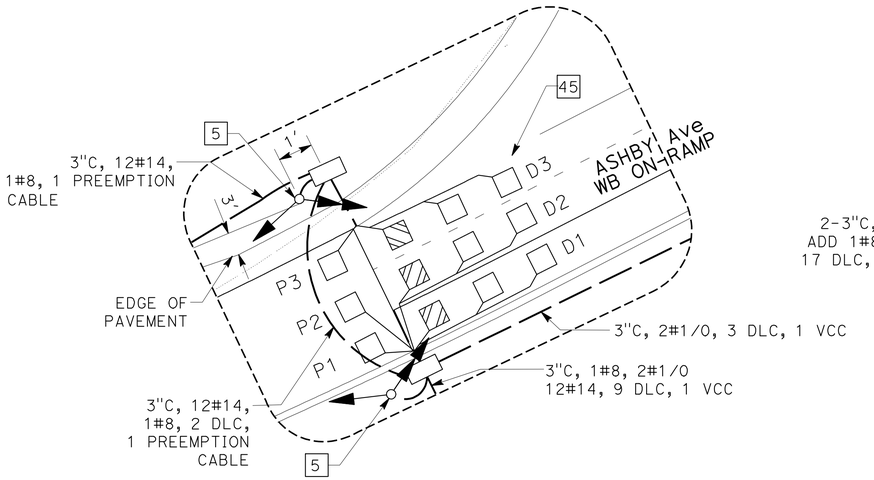
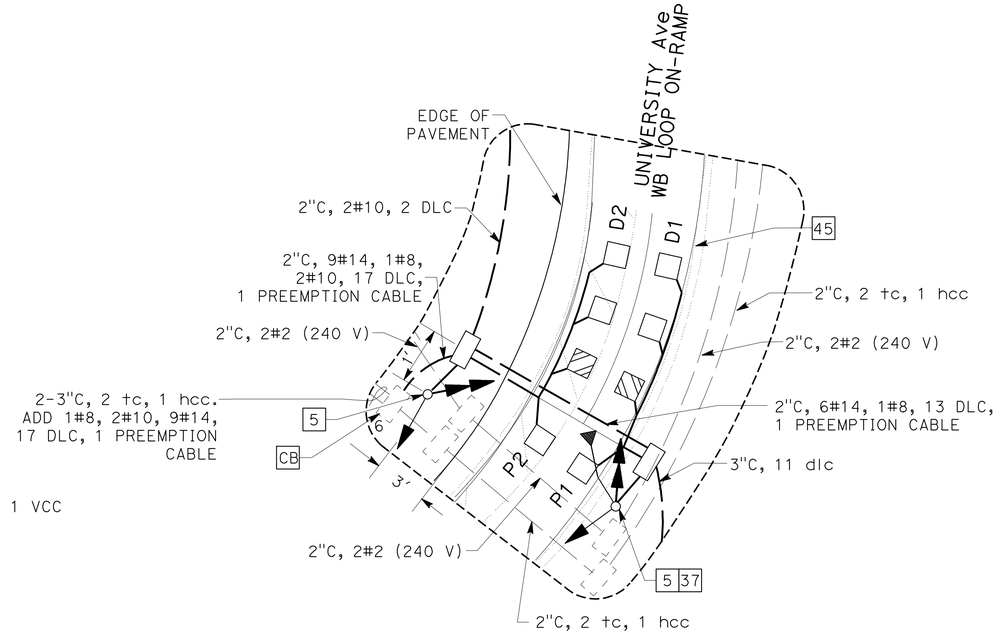
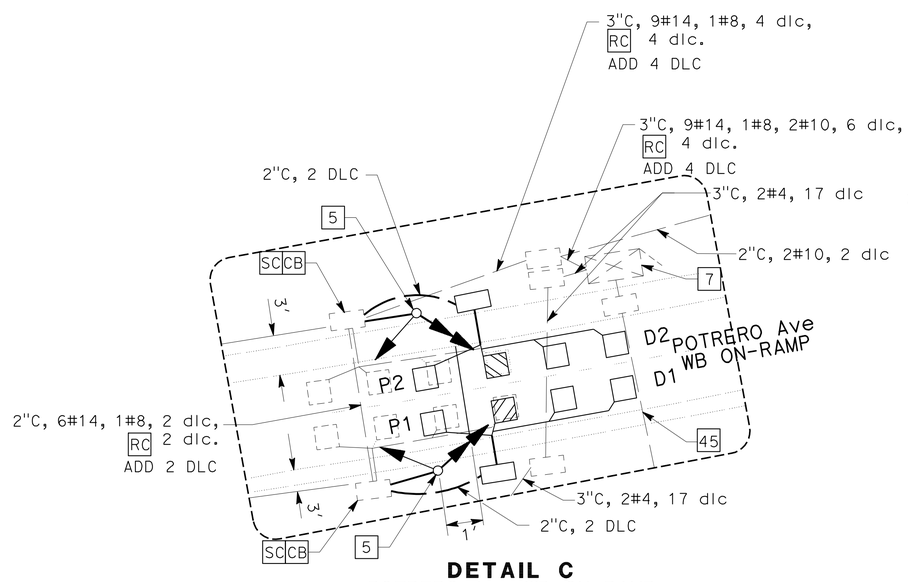
3



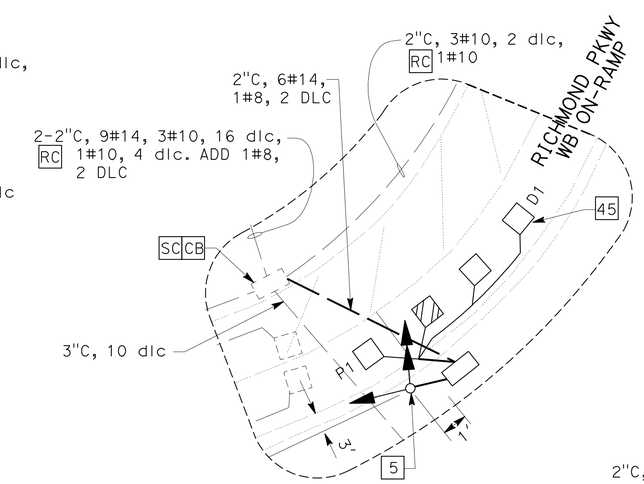
DETAIL A
ASHBY Ave WB ON-RAMP
(SHEET E-4)



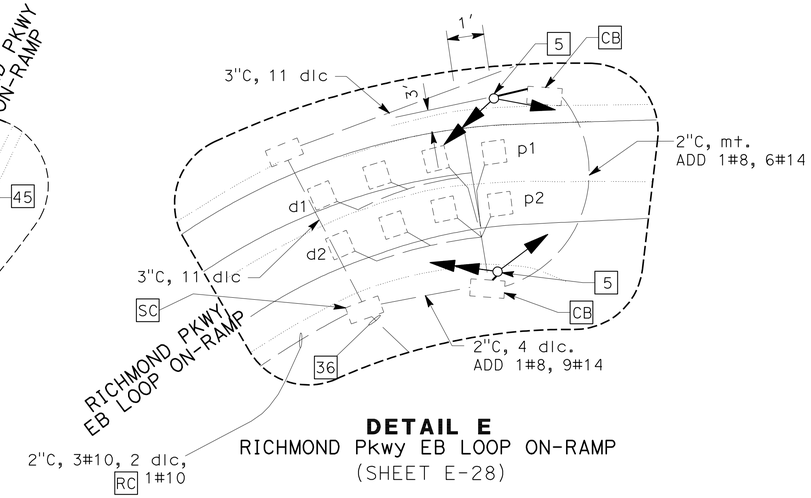
DETAIL B
UNIVERSITY Ave WB LOOP ON-RAMP
(SHEET E-6)



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)

3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

APPROVED FOR ELECTRICAL WORK ONLY.

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

ELECTRICAL DETAILS
(LOOP DETAILS)

NO SCALE

E-40

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY	CHECKED BY
R. DOLE	K. AKWABI

CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

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04	Ala,CC	80	3.8/8.0, 0.0/13.5	232	290

REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
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REGISTERED PROFESSIONAL ENGINEER — DAVID S. HAINES — No. 16999 — Exp. 6/30/13 — ELECT — STATE OF CALIFORNIA

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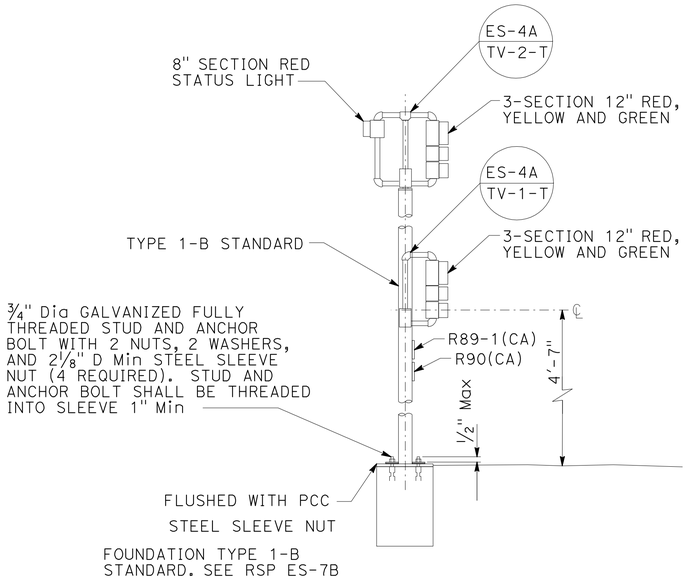
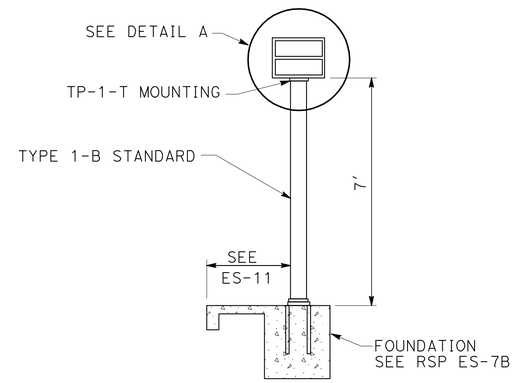
OAKLAND, CA 94612

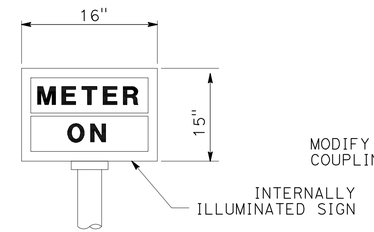
3



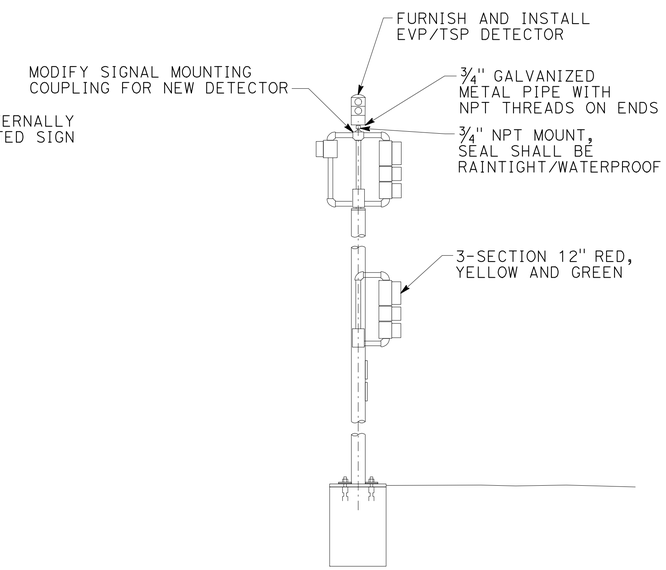
DETAIL "SIG"
RAMP METER SIGNAL, POLE MOUNTED



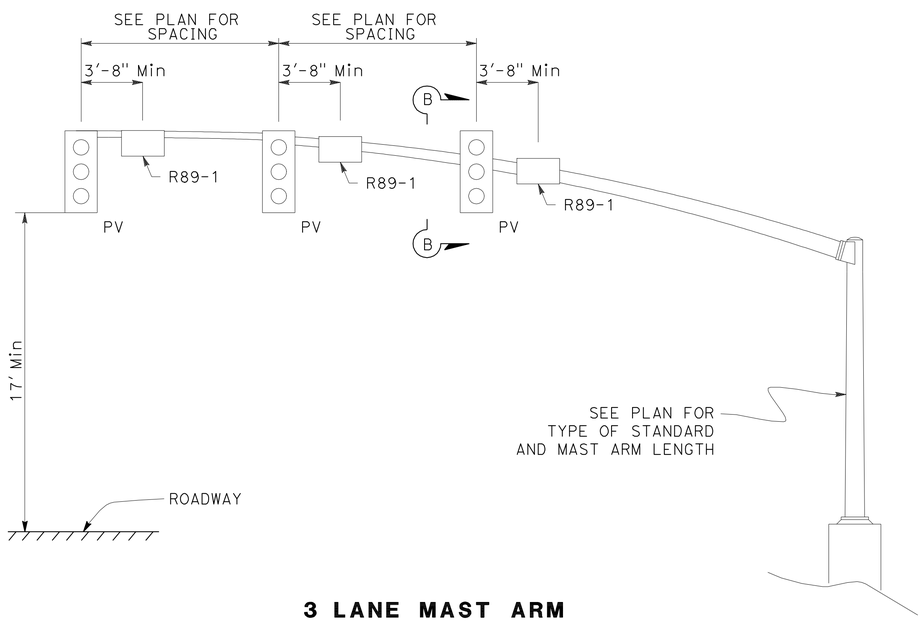
METER ON SIGN DETAIL



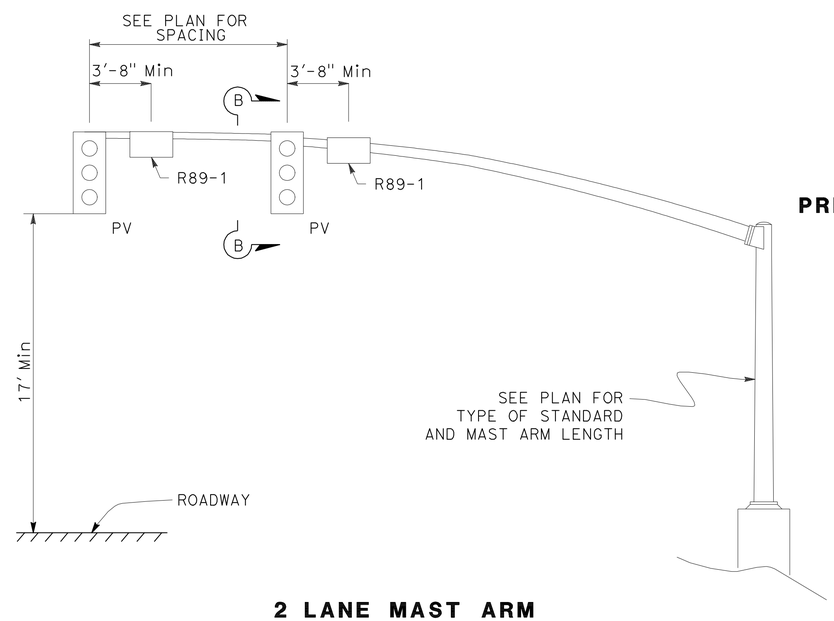
DETAIL A



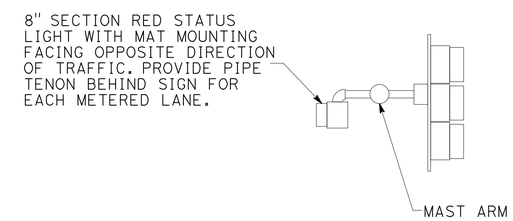
DETAIL "TSP"
PREEMPTION DETECTOR INSTALLATION ON TYPE 1-B STANDARD



3 LANE MAST ARM



2 LANE MAST ARM



SECTION B-B

DETAIL "MA"
SIGNALS MOUNTED ON MAST ARM DETAIL

ELECTRICAL DETAILS
(RAMP METERING SIGNALS AND METER ON SIGNALS)
NO SCALE

E-52

APPROVED FOR ELECTRICAL WORK ONLY. 3 **REVISED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

REVISED BY	DATE REVISED
JCS	10/14/11

CALCULATED-DESIGNED BY: R. DOLE
CHECKED BY: K. AKWABI
CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 08-22-11 | DATE PLOTTED => 20-AUG-2012 | TIME PLOTTED => 05:50

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REGISTERED ELECTRICAL ENGINEER — DATE 10/14/11

2-27-12
PLANS APPROVAL DATE

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

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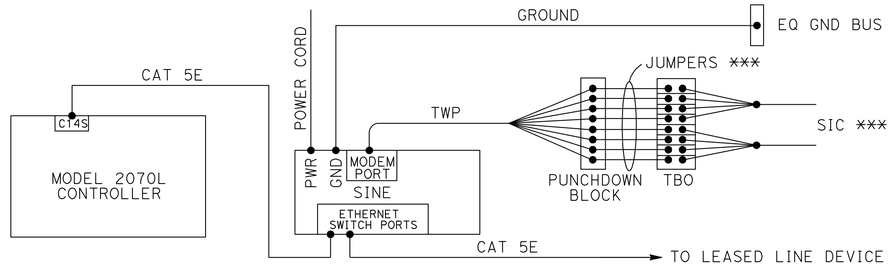
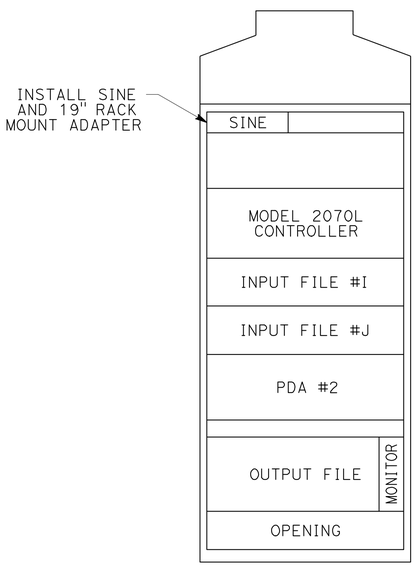
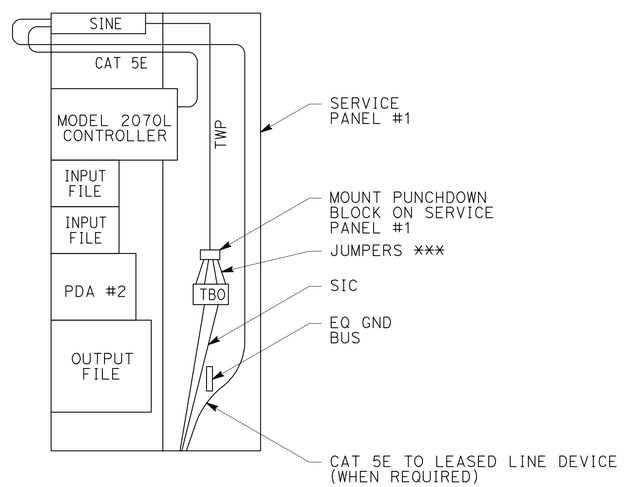


*** - DETAILED WIRING AND PORT ASSIGNMENTS TO BE PROVIDED BY THE ENGINEER

TYPICAL WIRING DETAIL



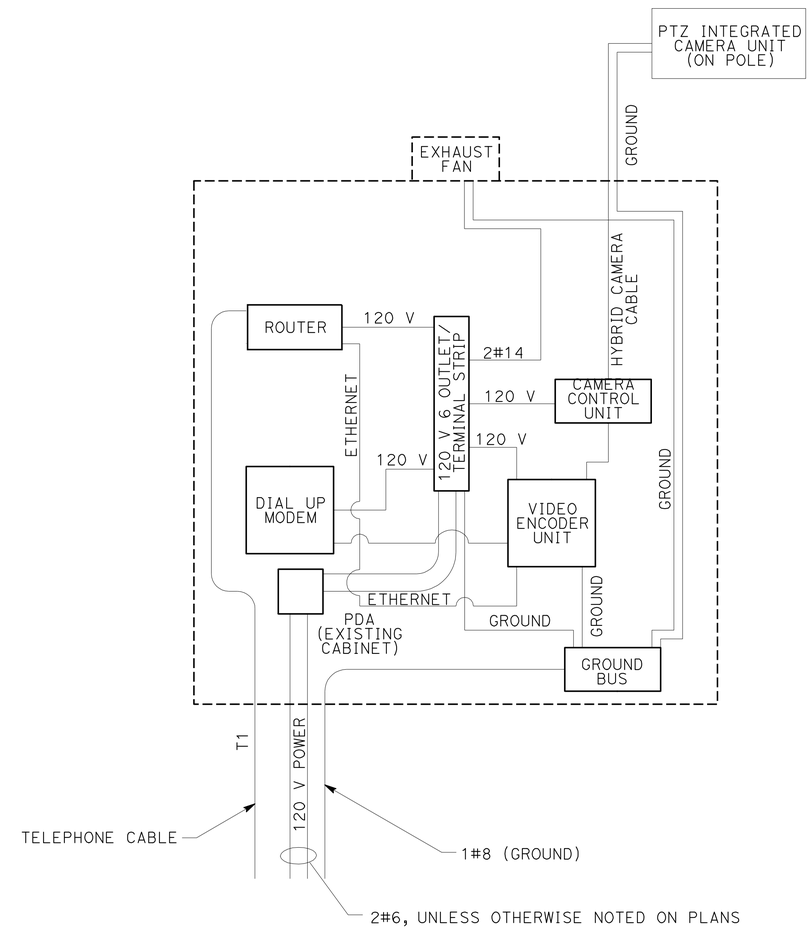
FRONT VIEW



SIDE VIEW

*** - DETAILED WIRING AND PORT ASSIGNMENTS TO BE PROVIDED BY THE ENGINEER

TYPICAL EXISTING MODEL 334 LAYOUT



CAMERA CABINET WITH TELEPHONE AND T1 COMMUNICATION
(Approx 37"H x 24"W x 20"D)

ELECTRICAL DETAILS
(SINE INSTALLATION AND CAMERA CABINET)

NO SCALE

3 **ADDED PER ADDENDUM No. 3 DATED AUGUST 20, 2012**

E-62

REVISED BY	DATE REVISED
DCC	10-13-11

CALCULATED-DESIGNED BY: DANIEL CARLEY
CHECKED BY: KAREN GEMMILL
CONSULTANT FUNCTIONAL SUPERVISOR: RANDAL DURRENBERGER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 20-AUG-2012 | TIME PLOTTED => 05:50