

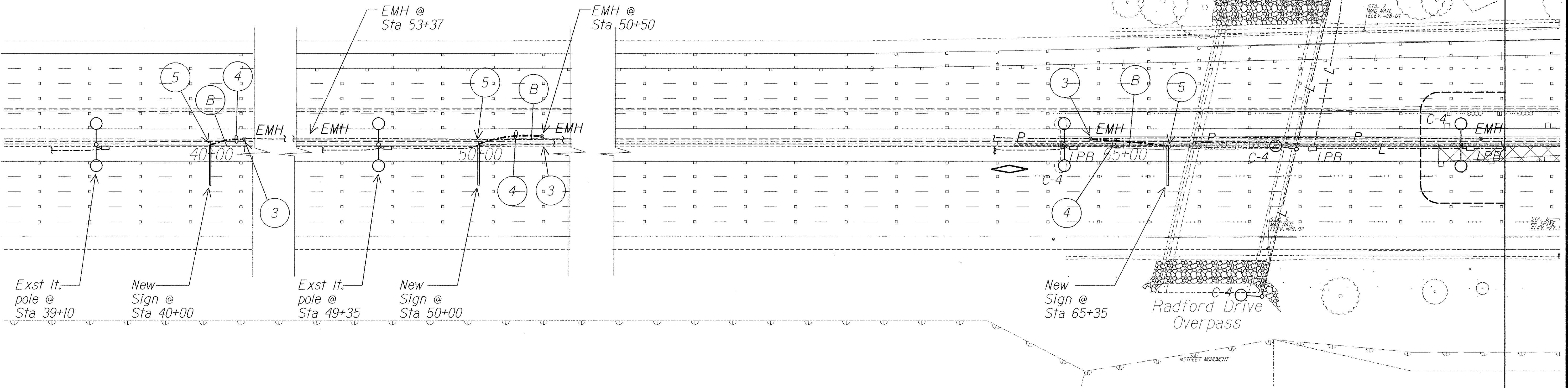
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	86	105

SYMBOLS

- Exist Street Lt Standard to Remain
- Remove Street Lt Standard
- New Aluminum St. Lt. Standard, 250W HPS Luminaire, See A E1 E11
- New Aluminum St. Lt. Standard, Double Arm, 250W HPS
- Exist St. Lt. Conduit
- Remove St. Lt. Conductors, Abandon Conduit in Place
- New St. Lt. Conduit, 2" PVC
- New Street Light Type A Pullbox, See A E1 E13
- Indicates Construction Note #3
- Indicates Duct Section A, See Sheet E-14
- Exist. St. Lt. Pullbox
- Exist. Junction Box
- Hash Marks Indicate Number of Current Carrying Conductors Excluding Ground Wire. No Marks Indicates 2 Current Carrying Conductors. Ground Wire is Required But Not Indicated by Marks.

NOTES:

- 1 Remove St. Lt. Pullbox
- 2 New St. Lt. Pullbox to Intercept Exist. St. Lt. Conduit.
- 3 Penetrate Exist. St. Lt. Pullbox or Manhole.
- 4 Install 1" PVC 80 to Sign Structure.
- 5 Provide Wiring to Sign Structure Lighting Fixture.
- 6 Install 2" PVC 80.
- 7 Provide Wiring to Swing Gate.
- 8 Install Waterproof Hot Dip Galvanized Cast Iron 18"x12"x6" Pullbox with Stainless Steel Cover Screws on Concrete Barrier



LIGHTING PLAN
SCALE: 1" = 40'-0" 03073-sel

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTE BOOK	
CHECKED BY	

RC. KATAHARA
LICENSED PROFESSIONAL ENGINEER
No. 3181-E
HAWAII, U.S.A.

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OR UNDER MY SUPERVISION.
Pr. Katakara 2/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**LIGHTING PLAN, NOTES
& SYMBOLS**

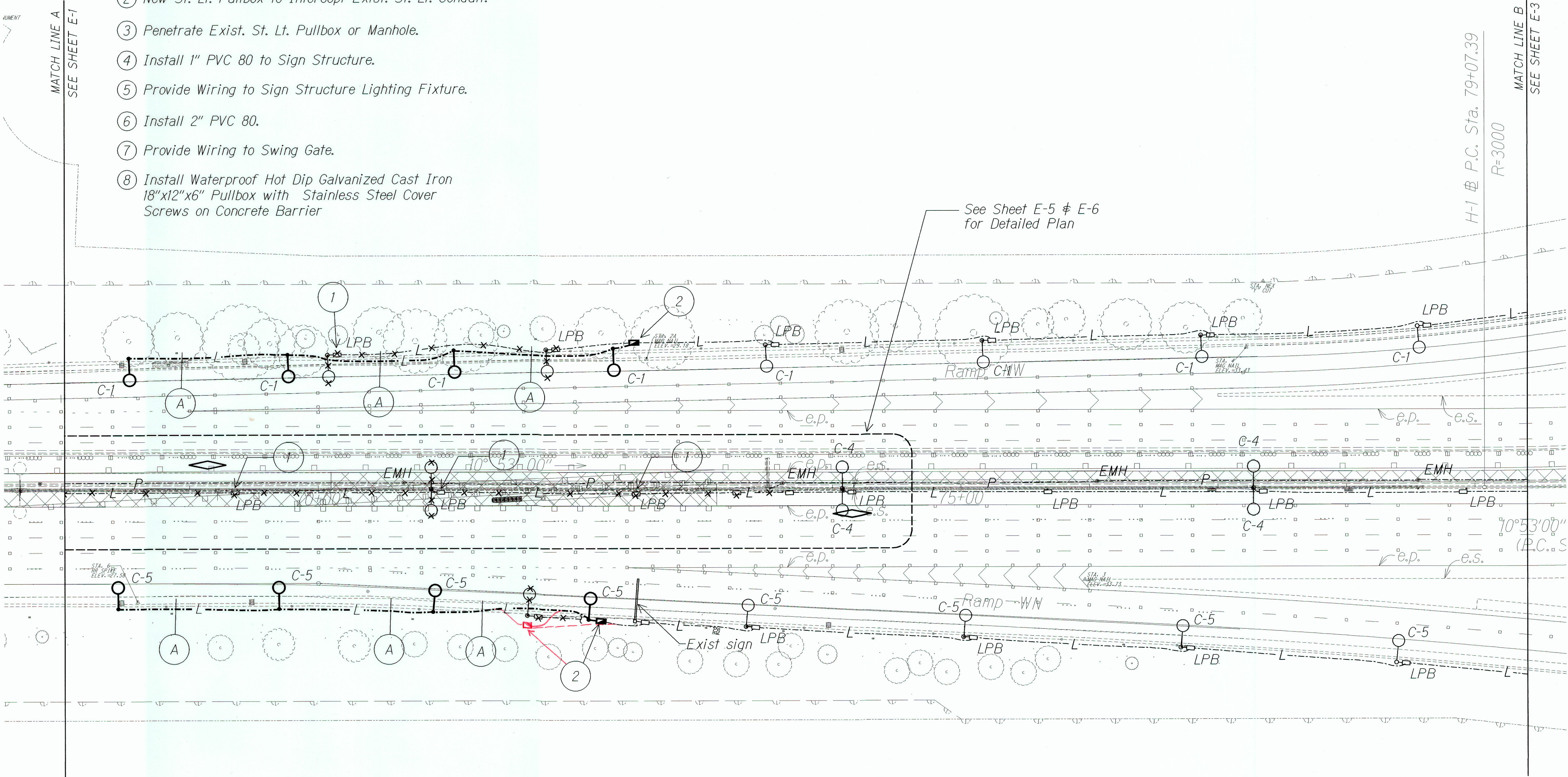
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

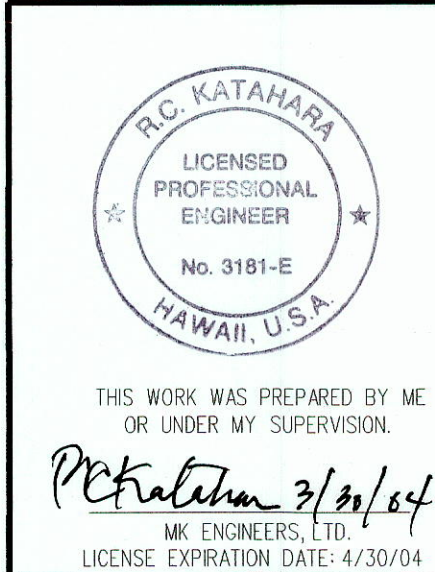
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	87	105

NOTES:

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LIGHTING PLAN
SCALE: 1" = 40'-0" 03073-se2



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-K246)

Scale: As Noted Date: March 2, 2004

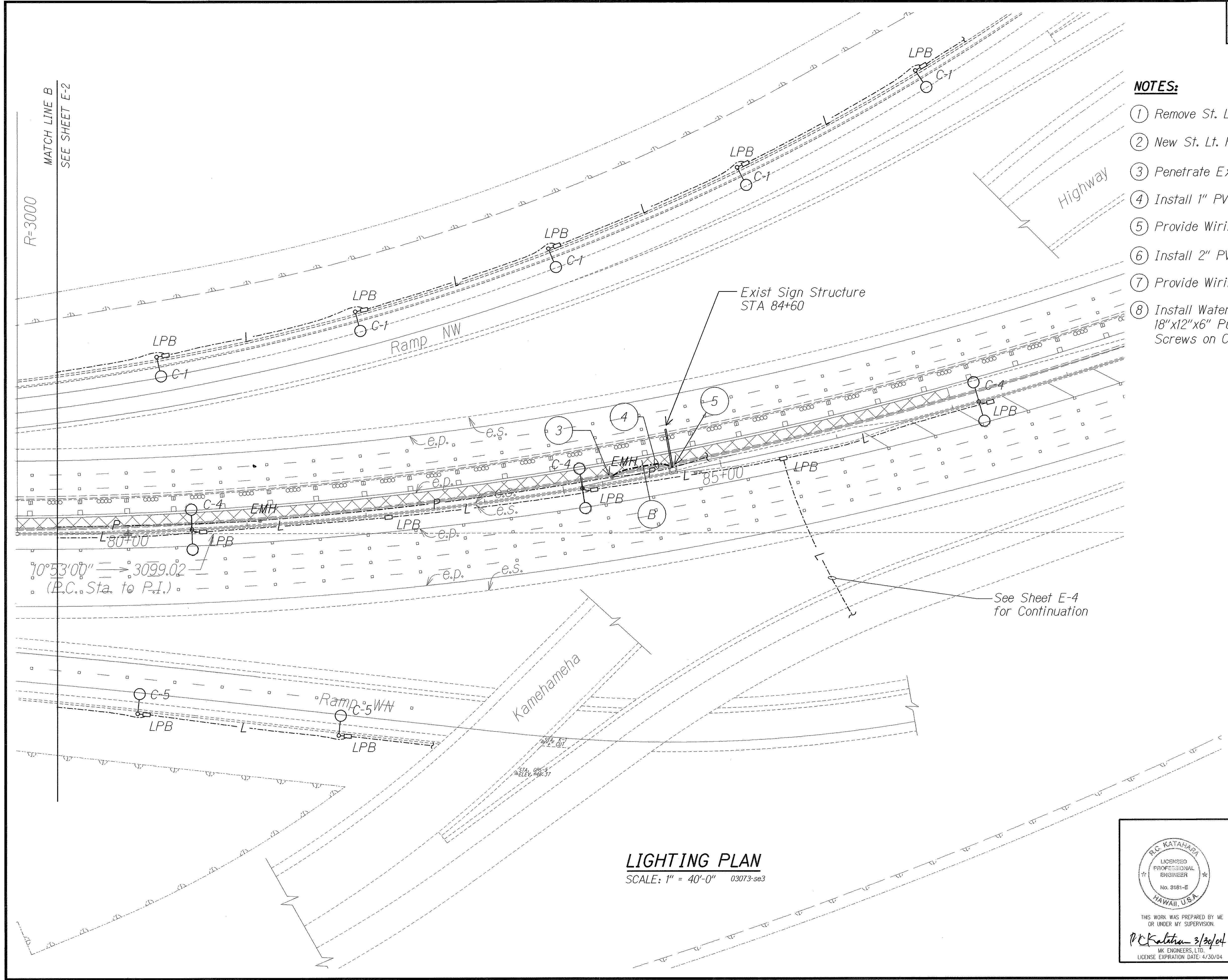
SHEET No. E-2 OF 20 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	88	105

NOTES:

- 1 Remove St. Lt. Pullbox
- 2 New St. Lt. Pullbox to Intercept Exist. St. Lt. Conduit.
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- 4 Install 1" PVC 80 to Sign Structure.
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- 8 Install Waterproof Hot Dip Galvanized Cast Iron 18"x12"x6" Pullbox with Stainless Steel Cover Screws on Concrete Barrier



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	CHECKED BY	
	REVIEWED BY	
	APPROVED BY	

LIGHTING PLAN
SCALE: 1" = 40'-0" 03073-se3

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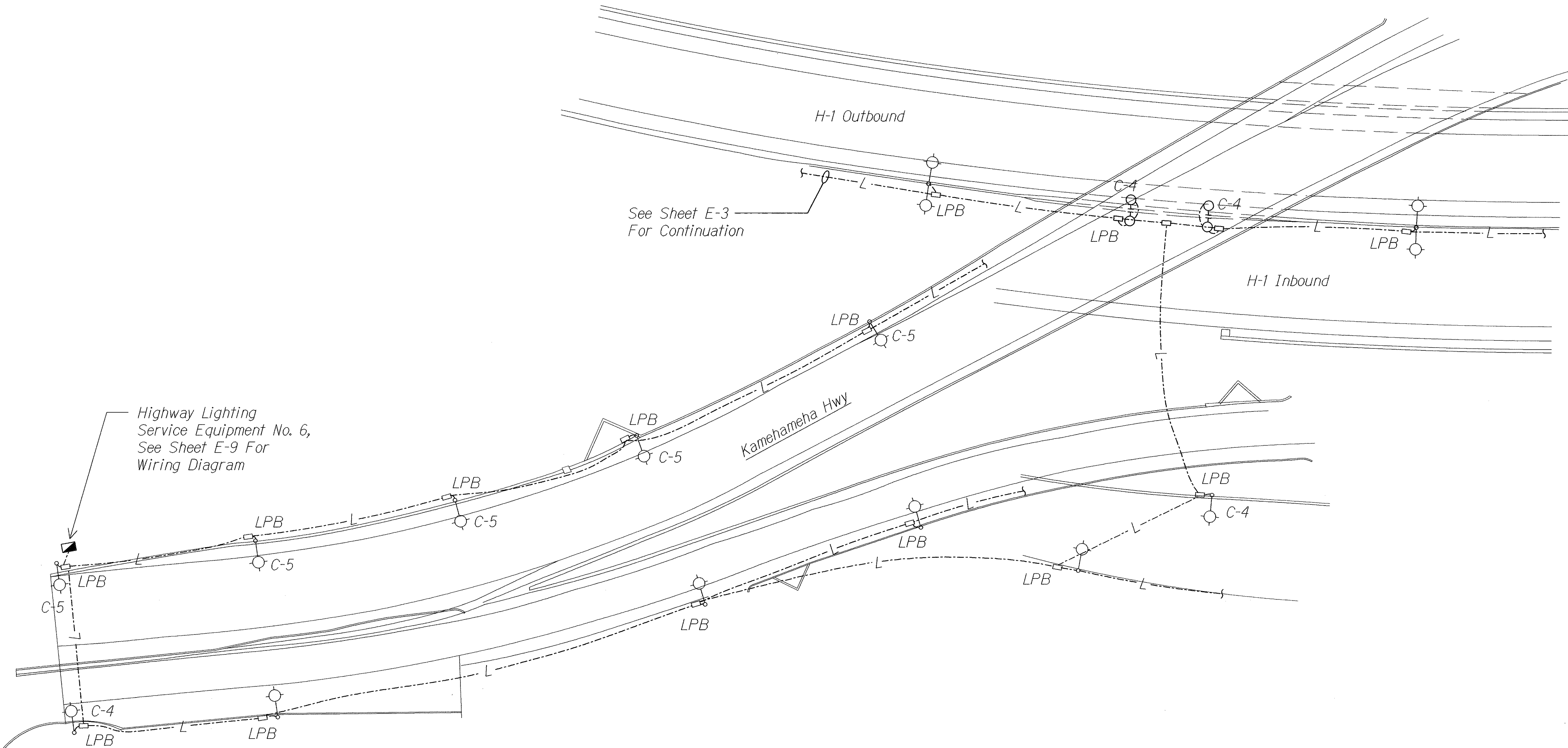
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	89	105



LIGHTING PLAN
 SCALE: 1" = 40'-0" 03073-s2a

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

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P. C. KATAHARA 3/30/04

MR. ENGINEERS, LTD.
 LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

LIGHTING PLAN

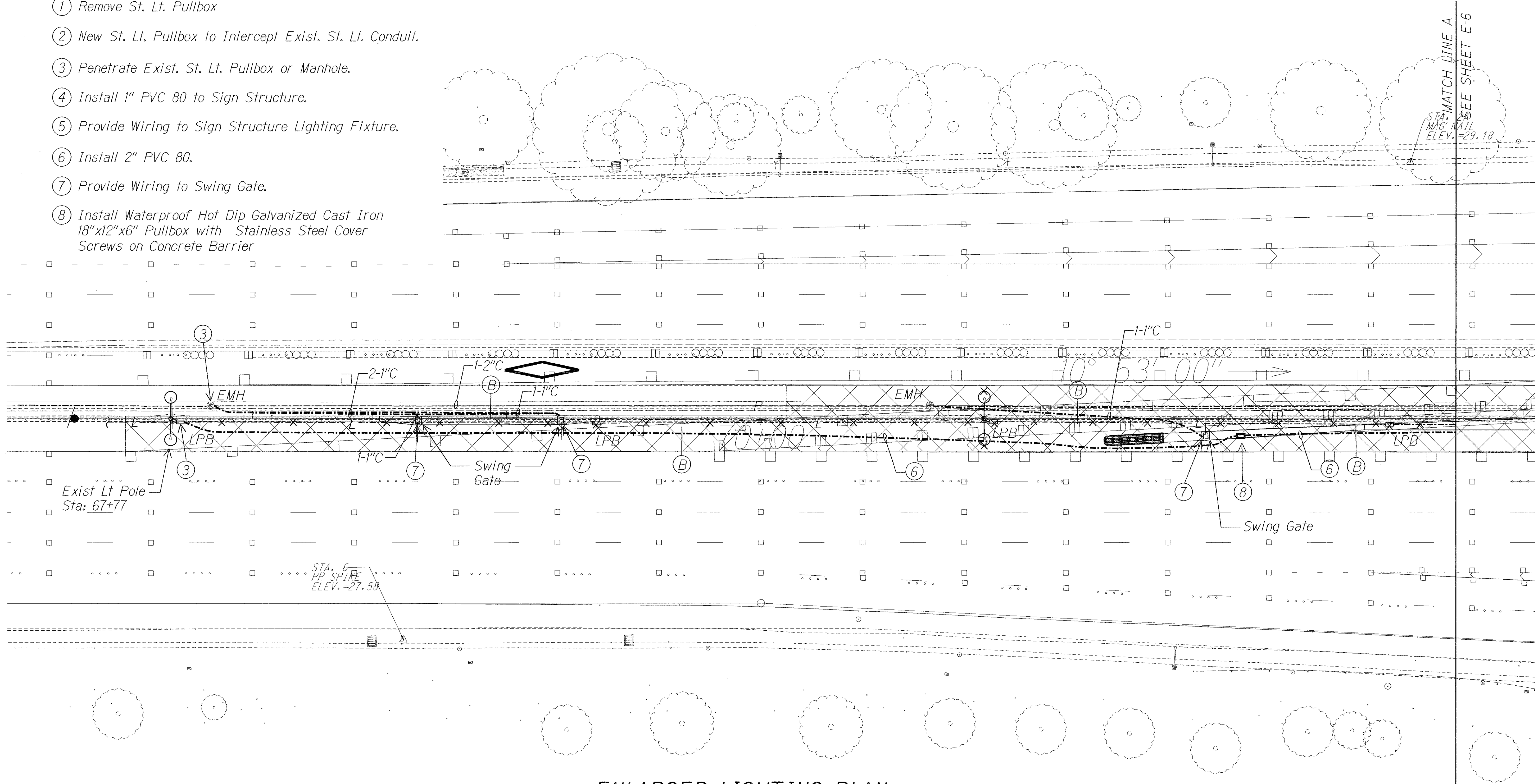
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
 RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
 FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	90	105

NOTES:

- ① Remove St. Lt. Pullbox
- ② New St. Lt. Pullbox to Intercept Exist. St. Lt. Conduit.
- ③ Penetrate Exist. St. Lt. Pullbox or Manhole.
- ④ Install 1" PVC 80 to Sign Structure.
- ⑤ Provide Wiring to Sign Structure Lighting Fixture.
- ⑥ Install 2" PVC 80.
- ⑦ Provide Wiring to Swing Gate.
- ⑧ Install Waterproof Hot Dip Galvanized Cast Iron 18"x12"x6" Pullbox with Stainless Steel Cover Screws on Concrete Barrier



ENLARGED LIGHTING PLAN
SCALE: 1" = 20'-0" 03073-SEPA

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ME ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ENLARGED LIGHTING PLAN

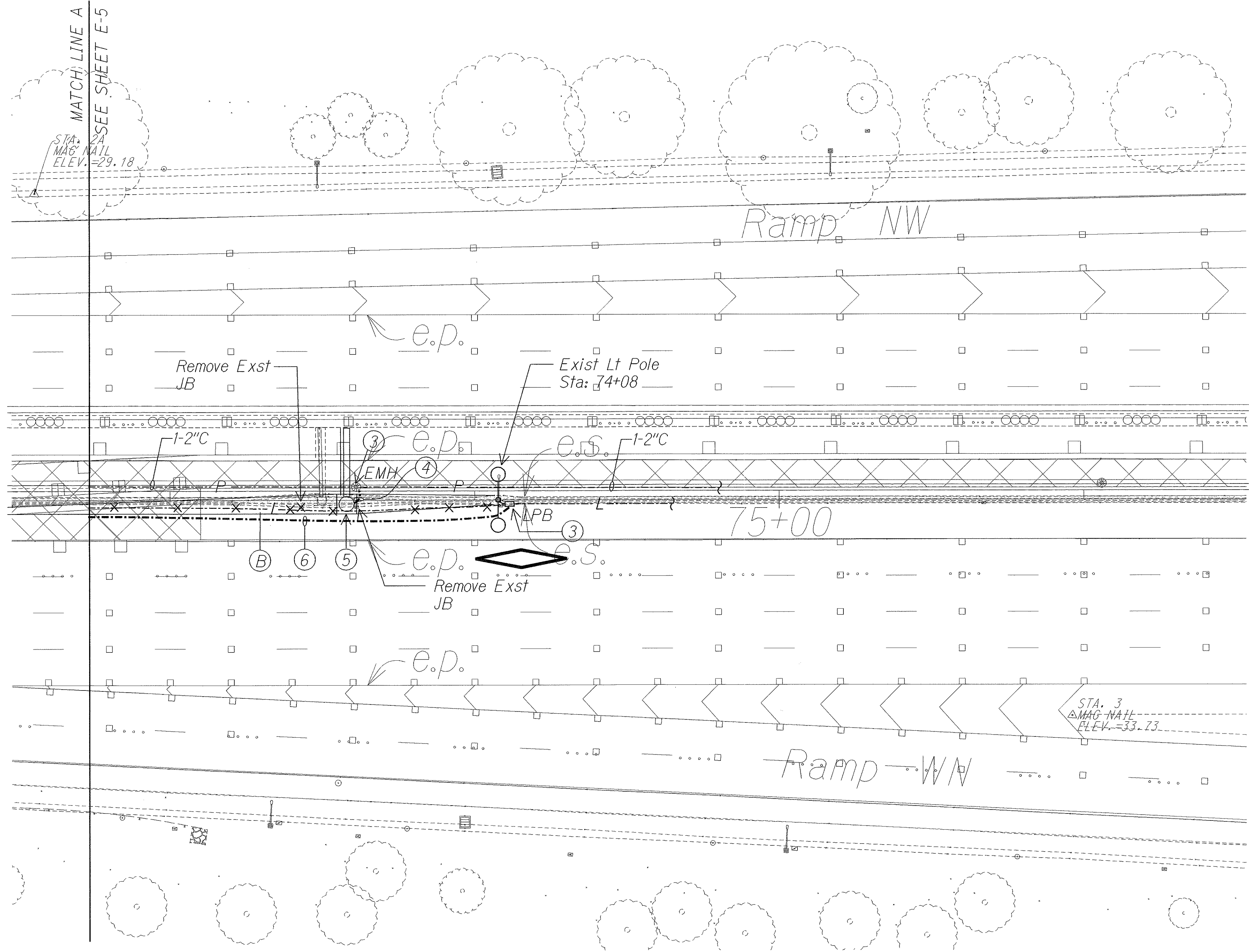
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	91	105

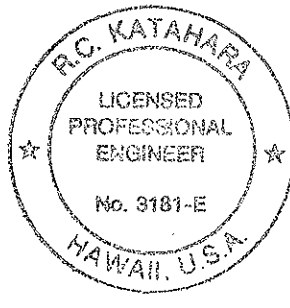
NOTES:

- ① Remove St. Lt. Pullbox
- ② New St. Lt. Pullbox to Intercept Exist. St. Lt. Conduit.
- ③ Penetrate Exist. St. Lt. Pullbox or Manhole.
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- ⑥ Install 2" PVC 80.
- ⑦ Provide Wiring to Swing Gate.
- ⑧ Install Waterproof Hot Dip Galvanized Cast Iron 18"x12"x6" Pullbox with Stainless Steel Cover Screws on Concrete Barrier



ENLARGED LIGHTING PLAN

SCALE: 1" = 20'-0" 03073-sepb



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R. O. KATAHARA 3/20/04
 MK ENGINEERS, LTD.
 LICENSE EXPIRATION DATE: 4/30/04

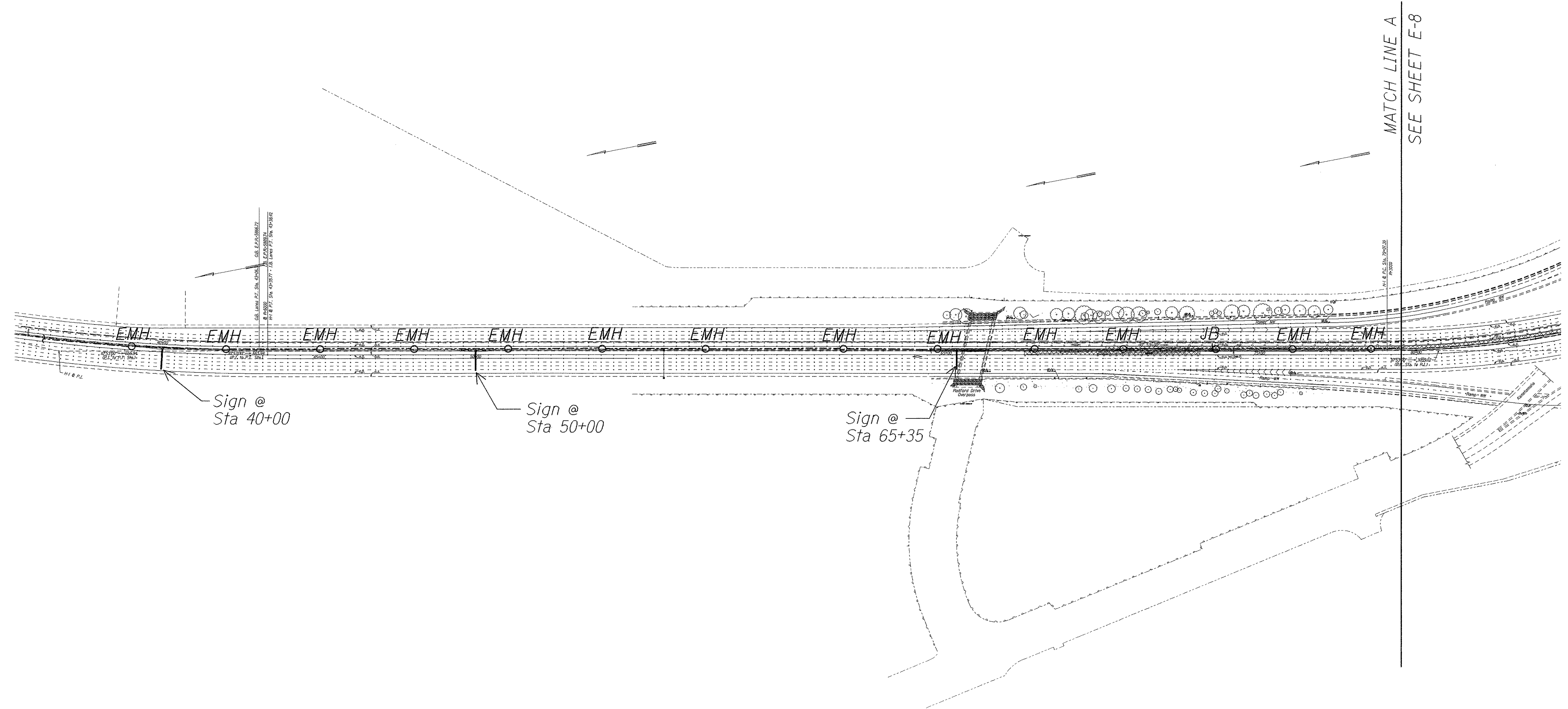
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ENLARGED LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
 RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
 FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	92	105



OVERALL SIGN LIGHTING PLAN
SCALE: 1" = 200'-0" 03073-osa

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

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MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

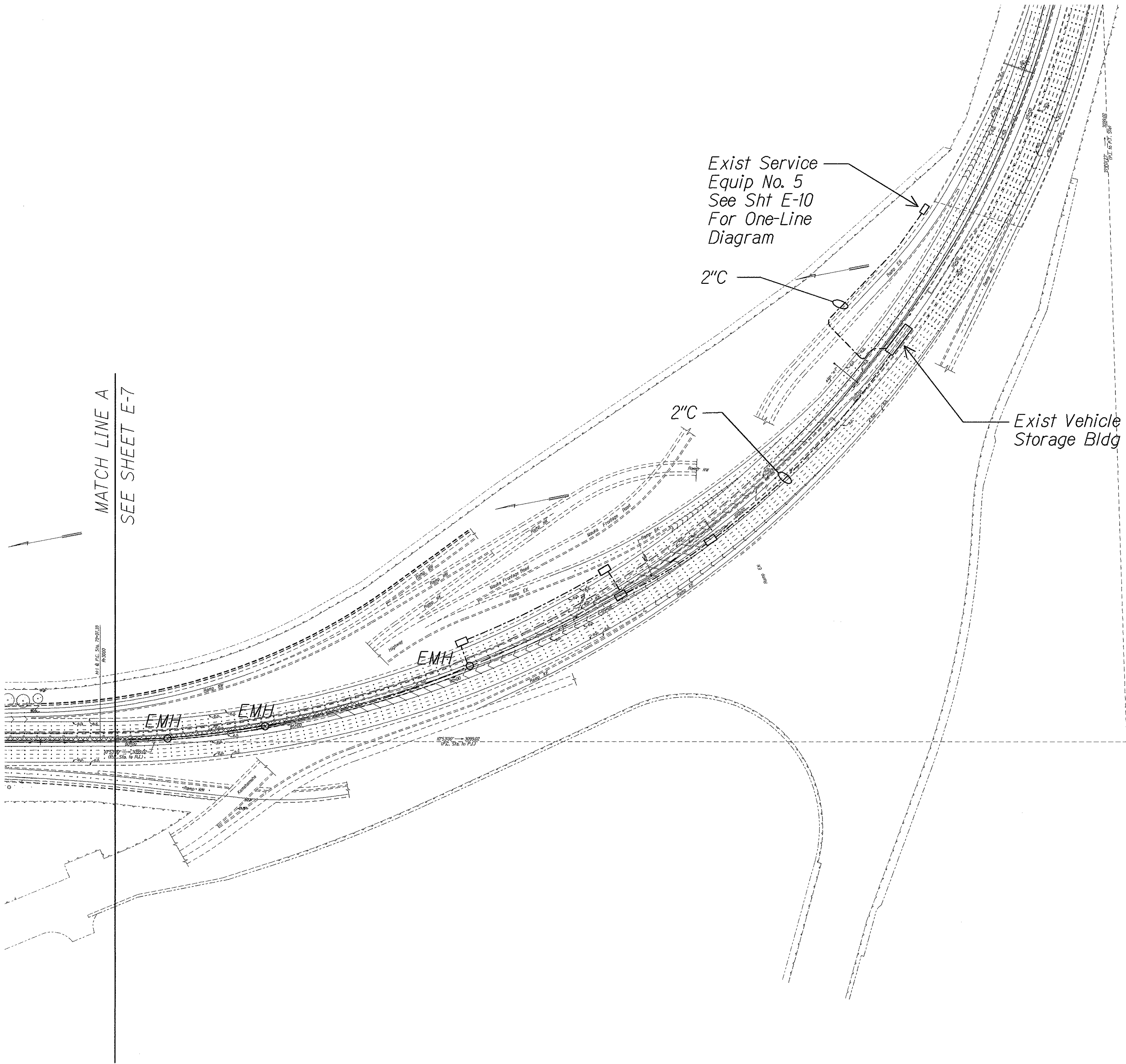
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	93	105



OVERALL SIGN LIGHTING PLAN
SCALE: 1" = 200'-0" 03073-osb

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)
Scale: As Noted Date: March 2, 2004

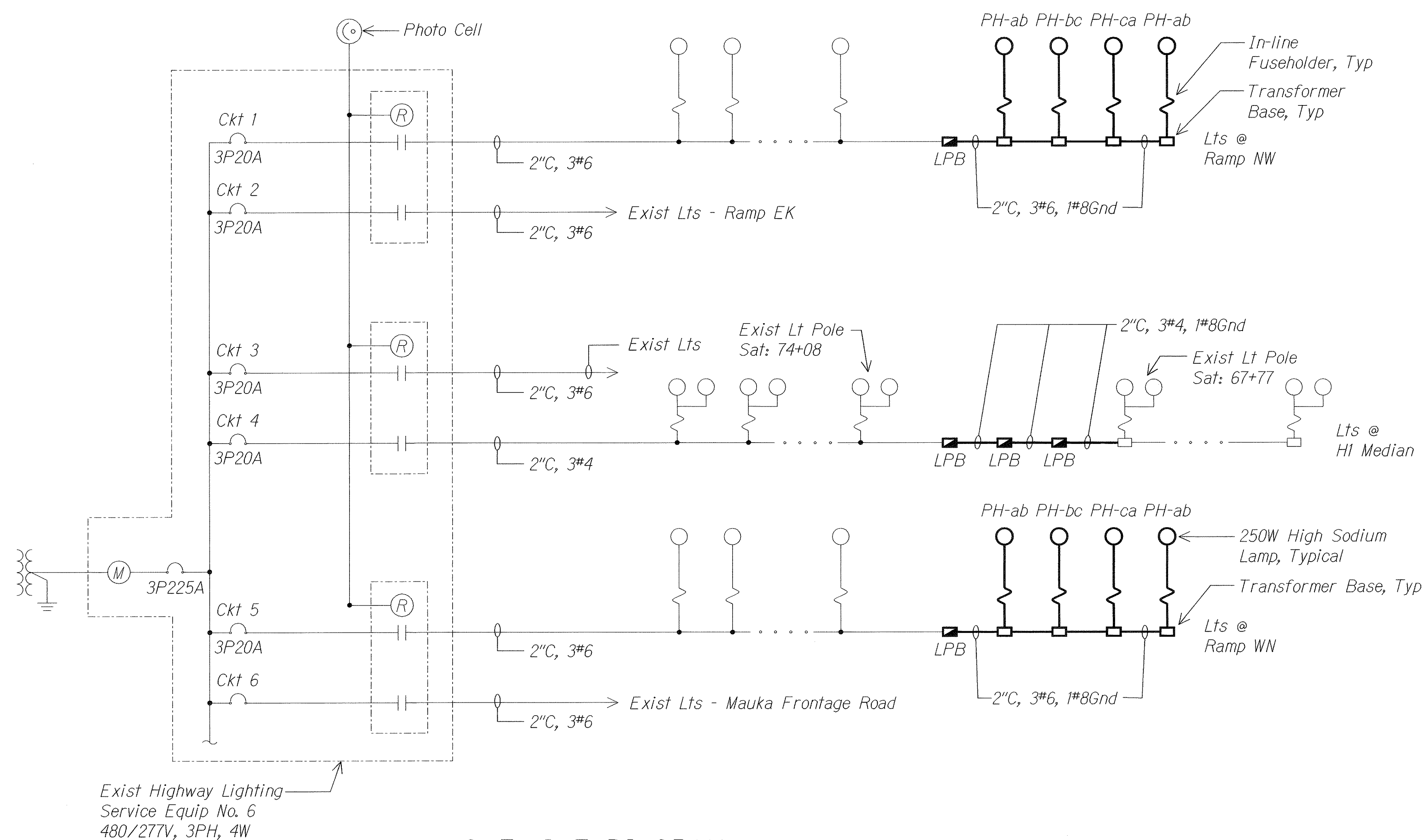
SHEET No. E-8 OF 20 SHEETS

RC. KATAHARA
LICENSED PROFESSIONAL ENGINEER
No. 3161-E
HAWAII, U.S.A.

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RC. KATAHARA 3/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	94	105



ONE-LINE DIAGRAM

NOTES:

- Light Lines Denote Existing Condition.
Bold Lines Denote New Work.
- See Dwgs E-1 to E-6 for Plans.

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R.C. KAHARA 3/2/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

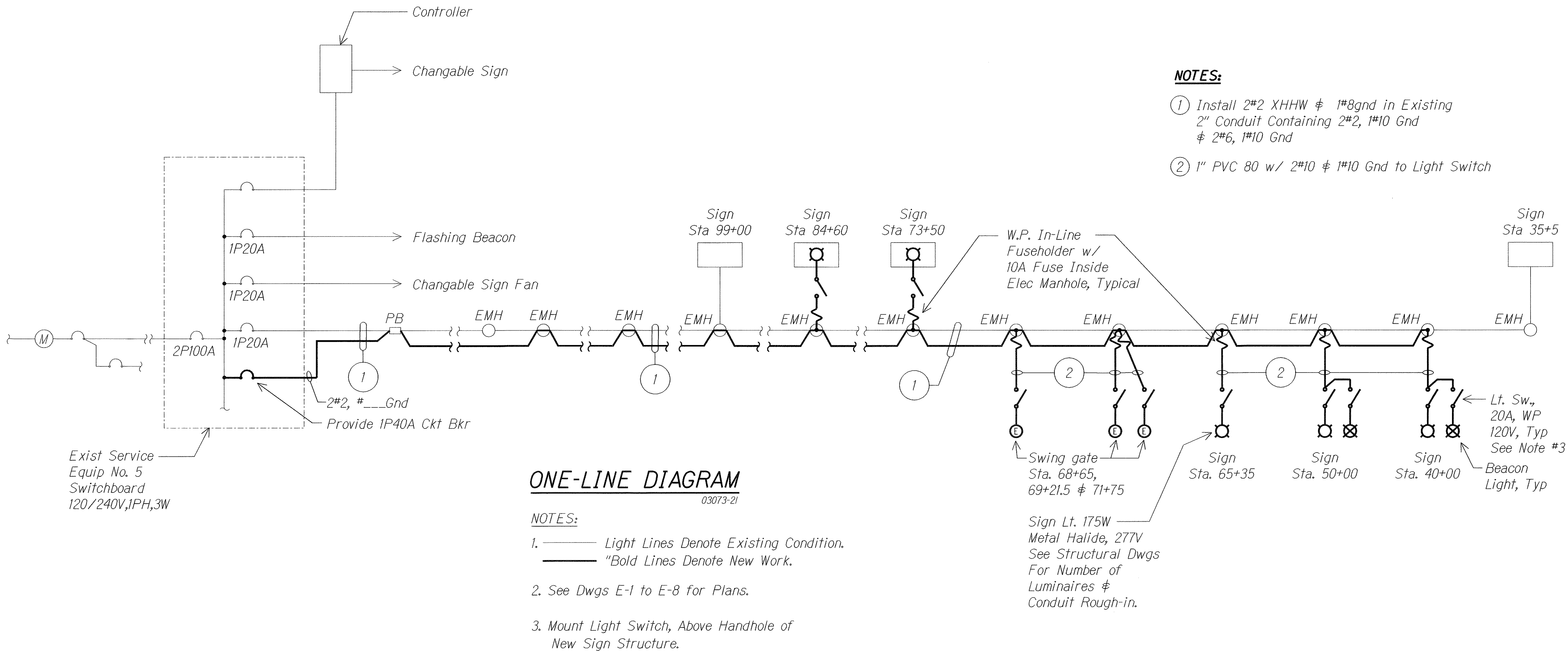
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE-LINE DIAGRAM

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	95	105



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	CHECKED BY	
	NO.	

R.O. KATAHARA
LICENSED PROFESSIONAL ENGINEER
No. 3181-E
HAWAII, U.S.A.

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OR UNDER MY SUPERVISION.
R.O. KATAHARA 3/20/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

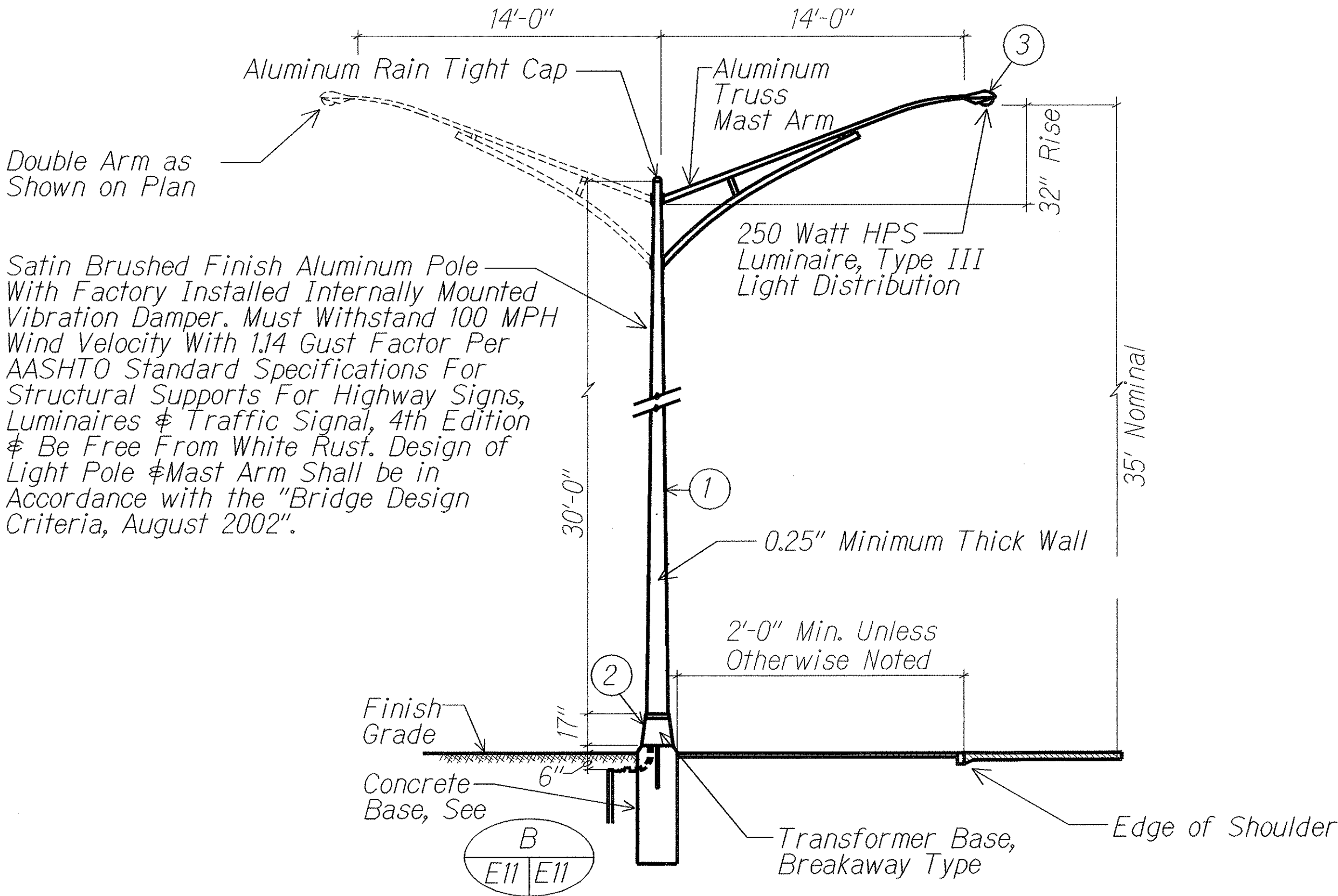
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE-LINE DIAGRAM

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

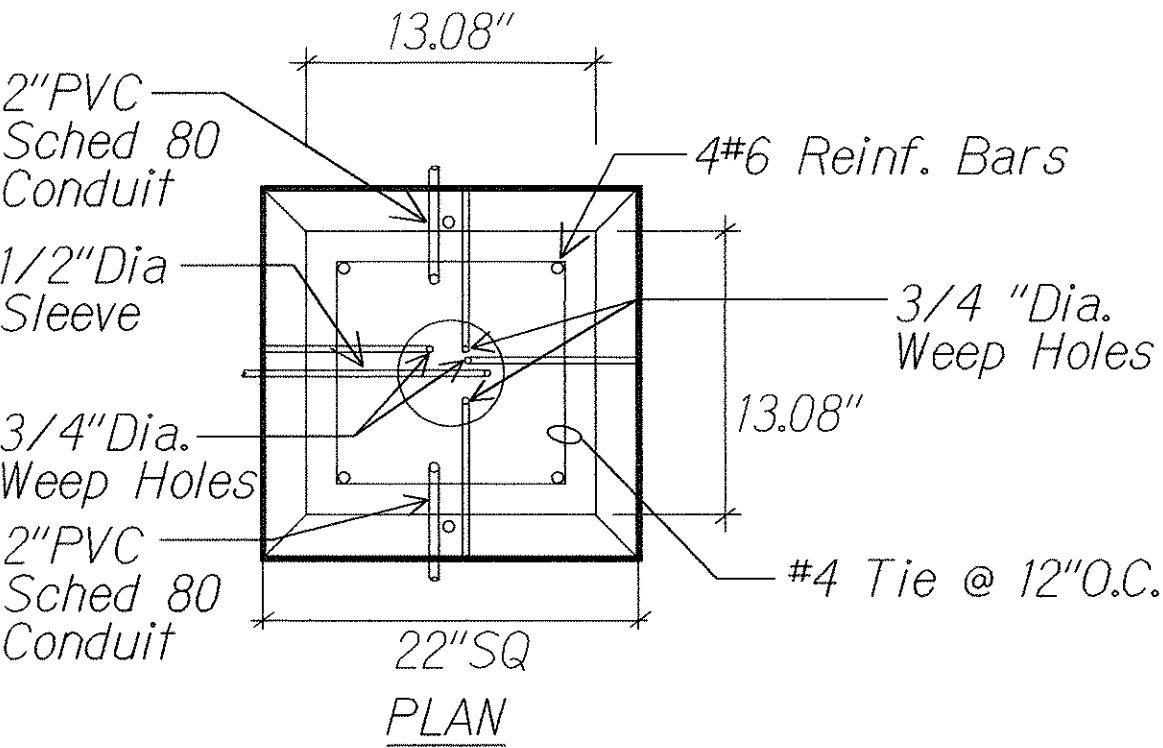
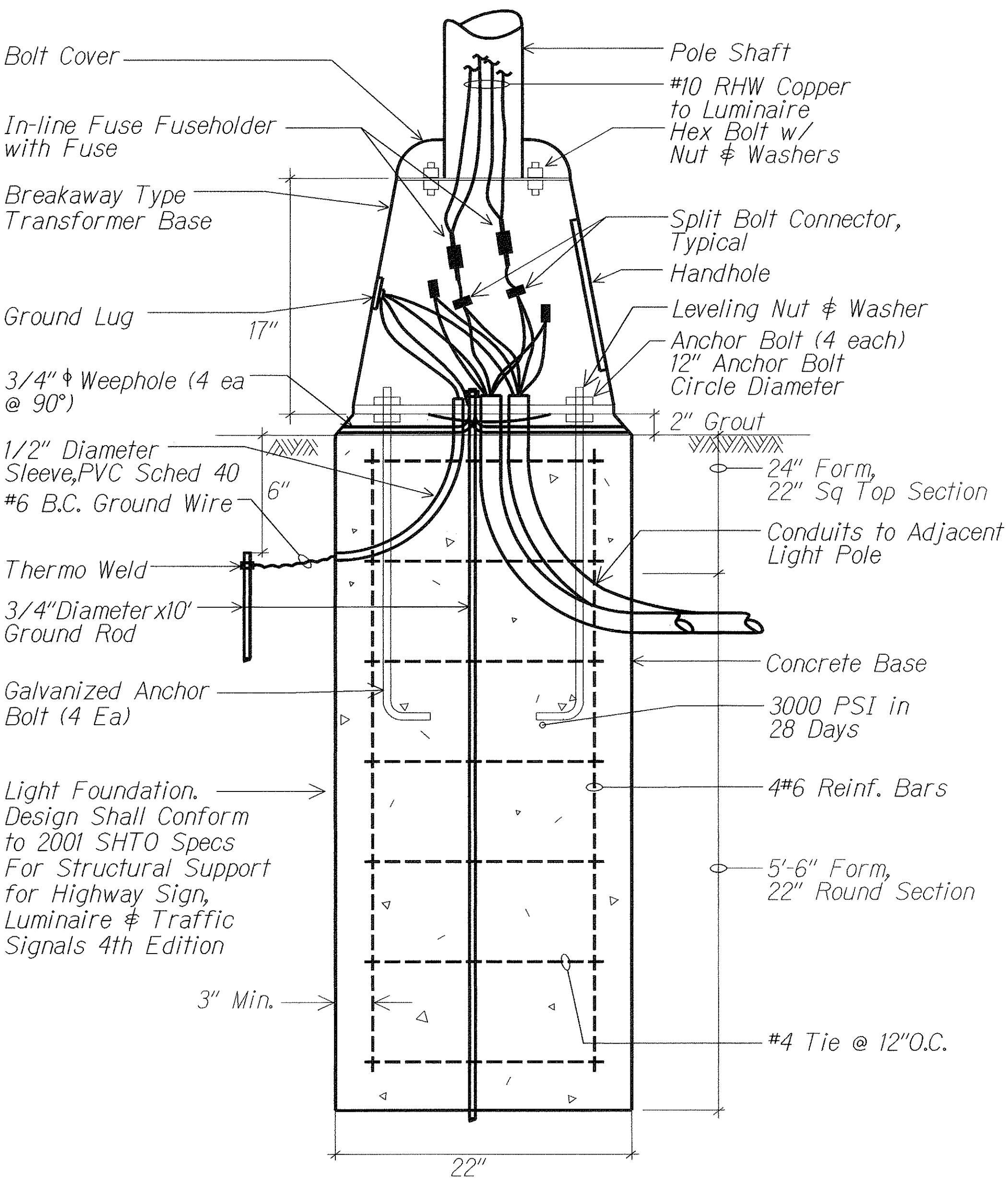
Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(246)	2004	96	105



A
E1 E11
HIGHWAY LIGHT STANDARD DETAIL
NTS 03073-d5

MATERIAL LIST		
ITEM	DESCRIPTION	MANUFACTURER
①	Light Pole, 30', Alum	
②	Transformer Base (Alum) (Breakaway Type)	
③	Luminaire, 250W HPS	



B
E1 E11
TYPICAL TRANSFORMER BASE WIRING DETAIL
NTS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	NOTED BY	

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R.C. KATAHARA 3/24/04

MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**HIGHWAY LIGHT
STANDARD DETAILS**

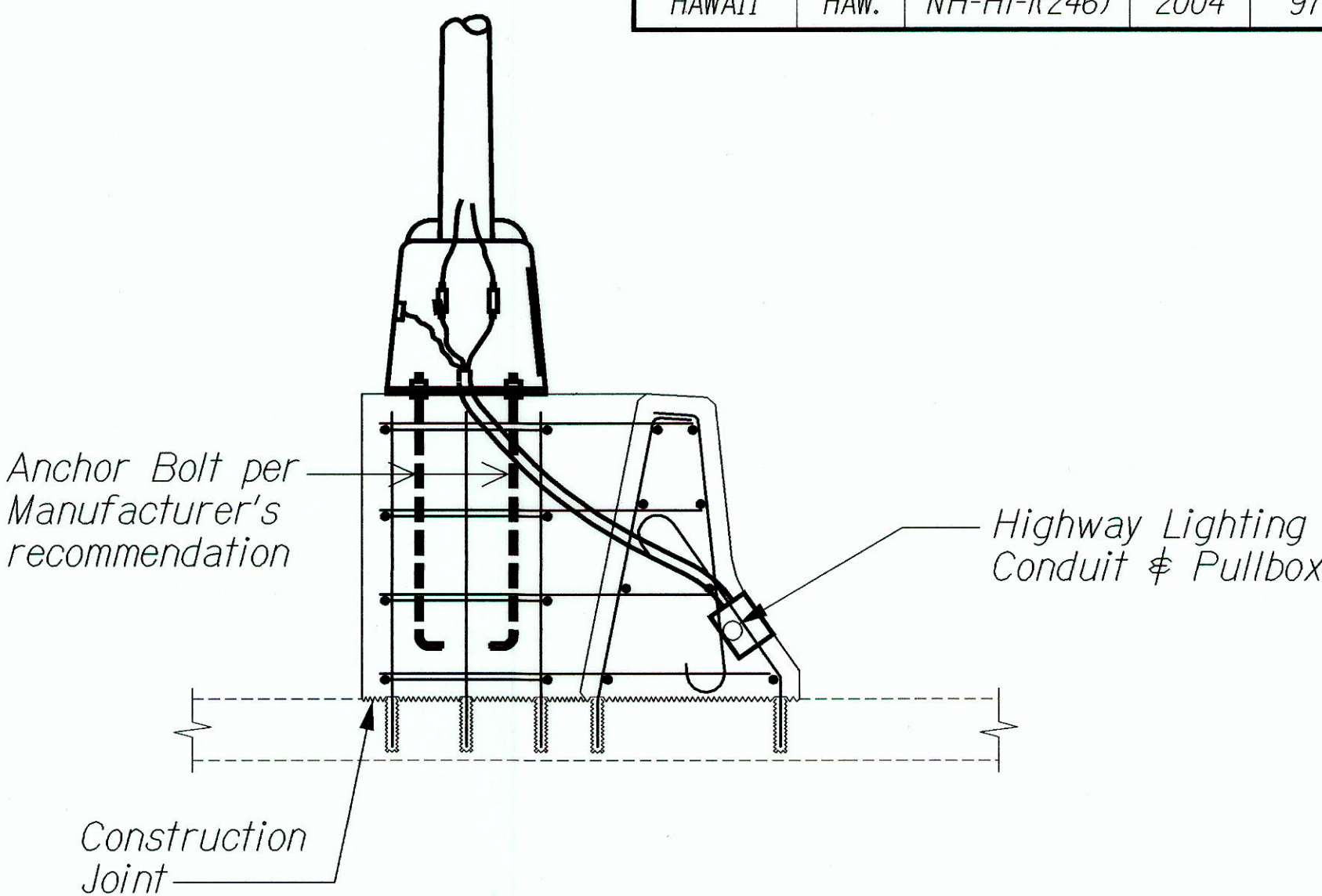
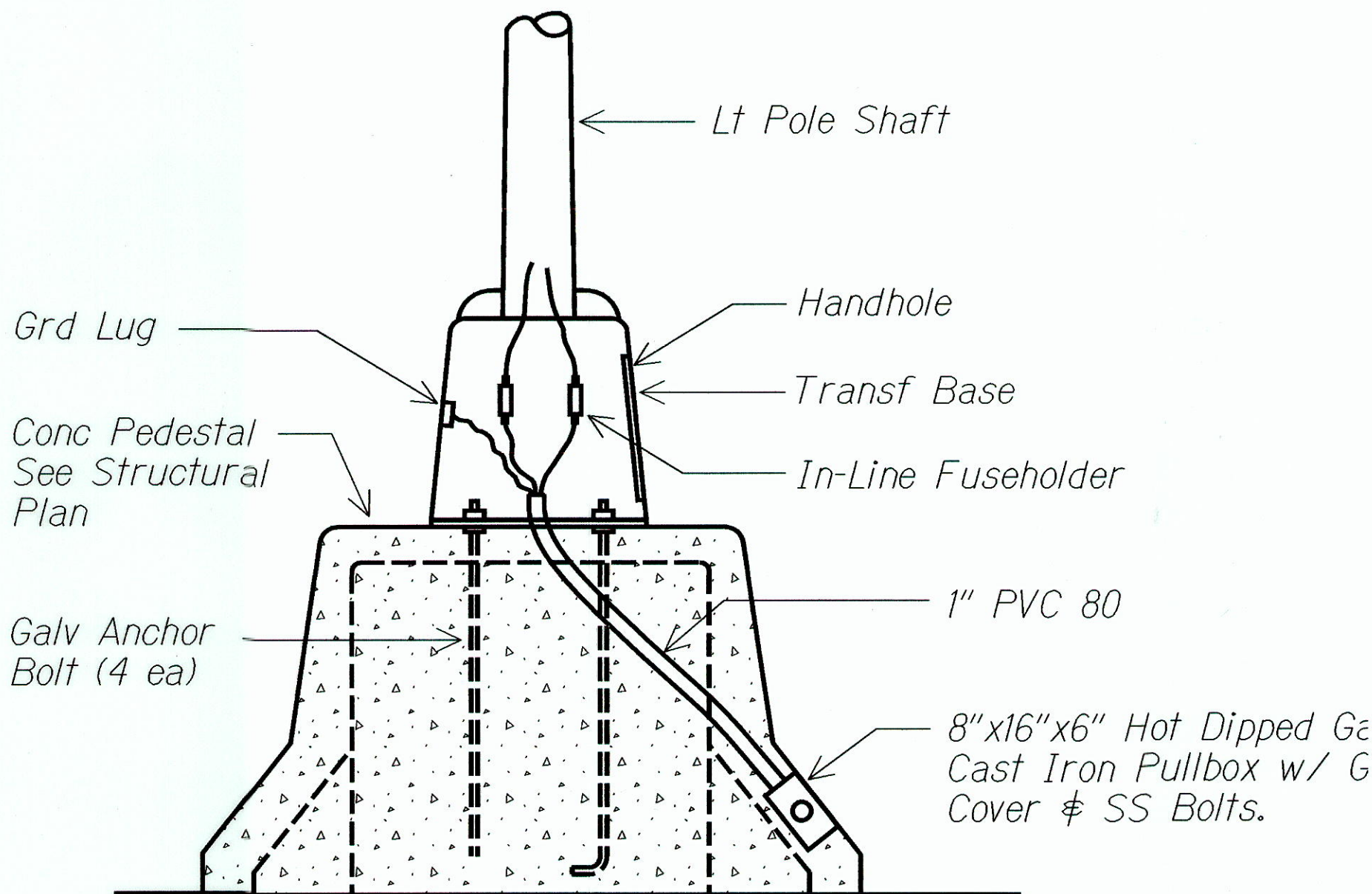
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-H1-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	97	105

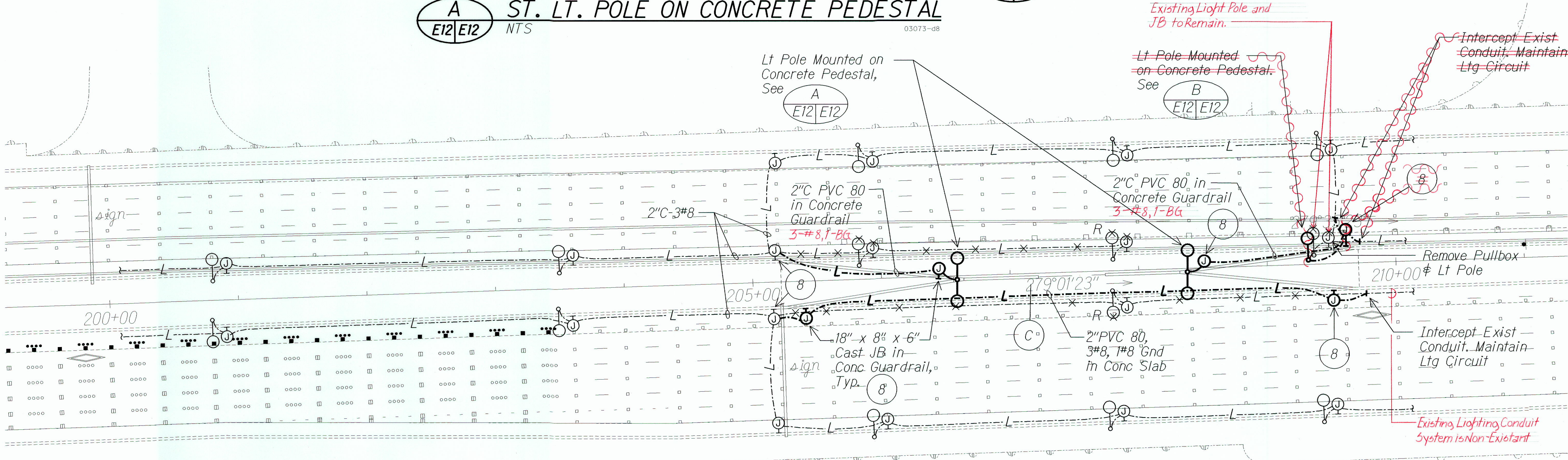
NOTES:

- 1 Remove St. Lt. Pullbox
- 2 New St. Lt. Pullbox to Intercept Exist. St. Lt. Conduit.
- 3 Penetrate Exist. St. Lt. Pullbox or Manhole.
- 4 Install 1" PVC 80 to Sign Structure.
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- 7 Provide Wiring to Swing Gate.
- 8 Install Waterproof Hot Dip Galvanized Cast Iron 18"x12"x6" Pullbox with Stainless Steel Cover Screws on Concrete Barrier



A ST. LT. POLE ON CONCRETE PEDESTAL NTS

B STREET LIGHT POLE ON CONCRETE PEDESTAL Scale: 3/4" = 1'-0"



LIGHTING PLAN SCALE: 1" = 40'-0" 03073-sel

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	NOTED BY	

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P. Katakara 3/30/04

ME ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

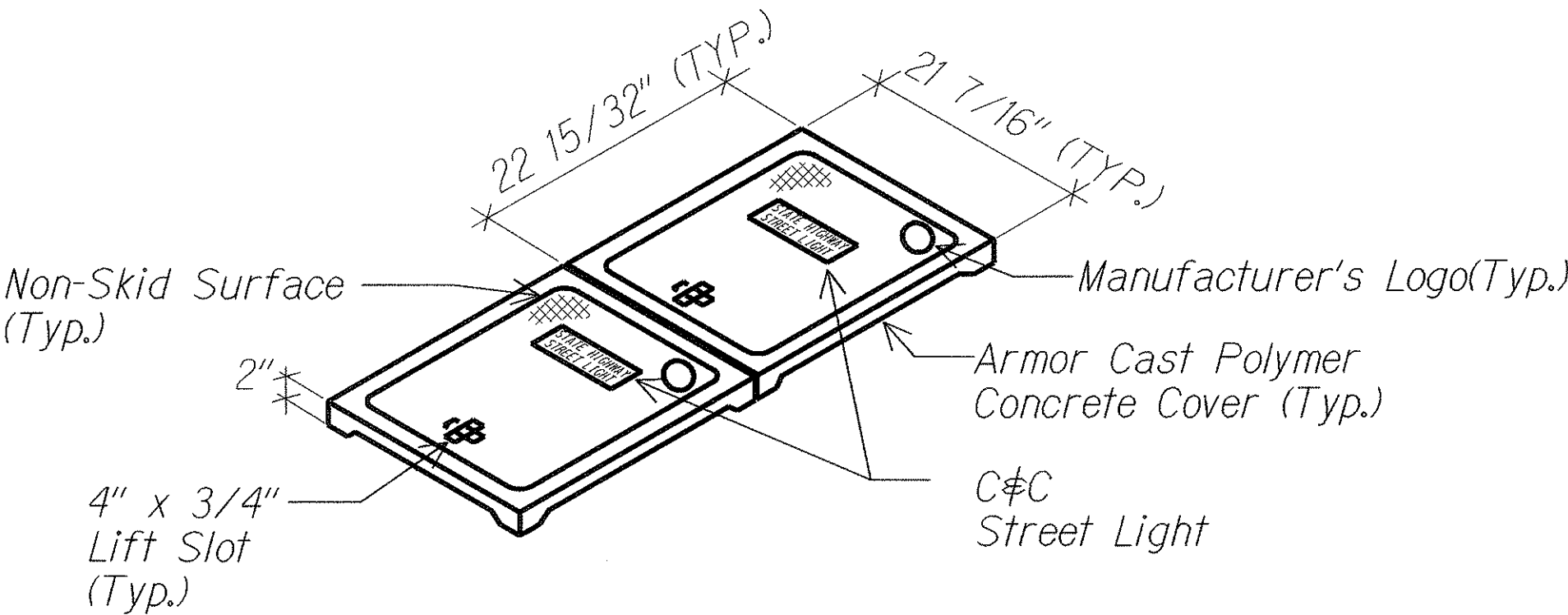
LIGHTING PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

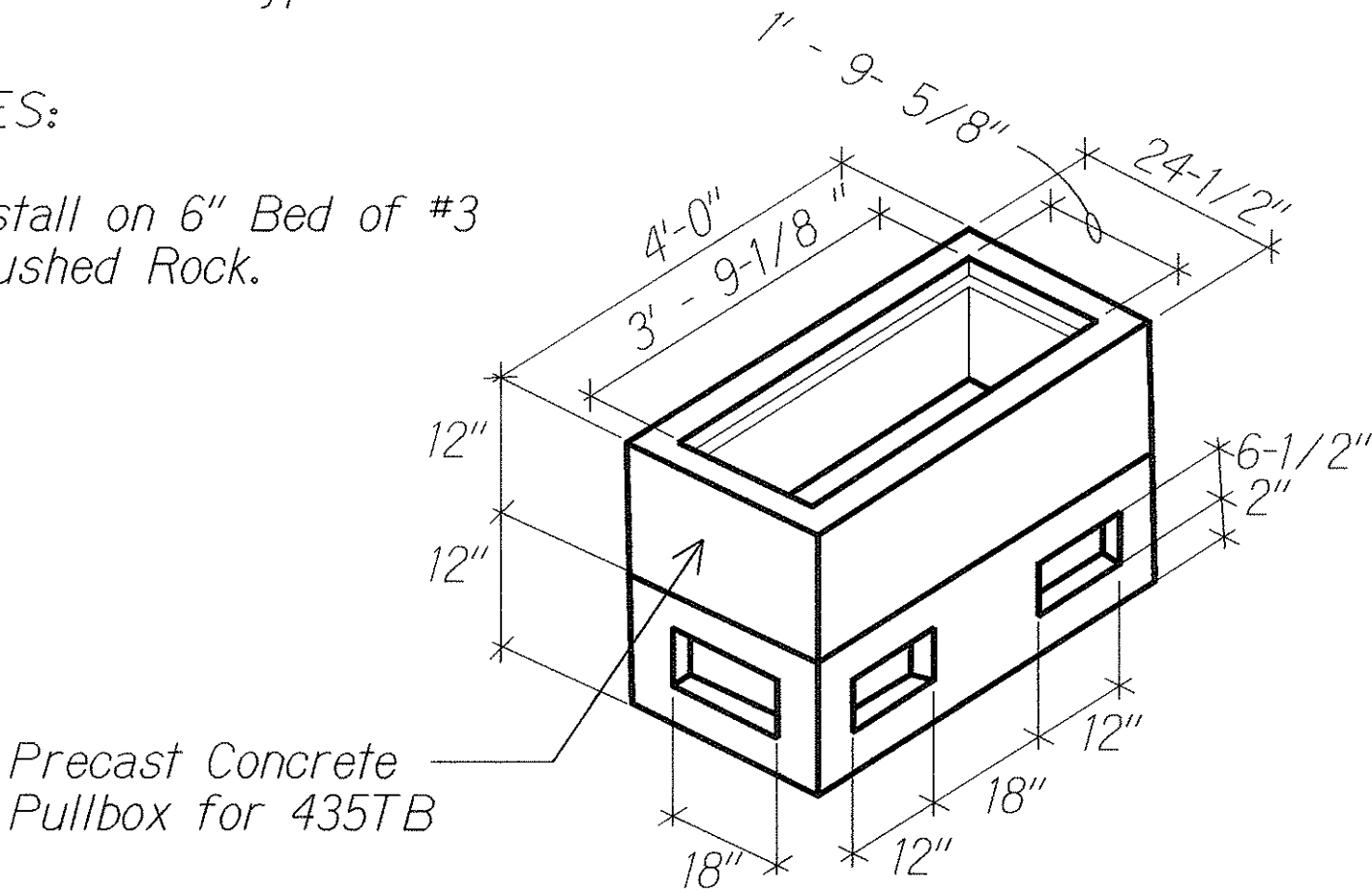
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	98	105

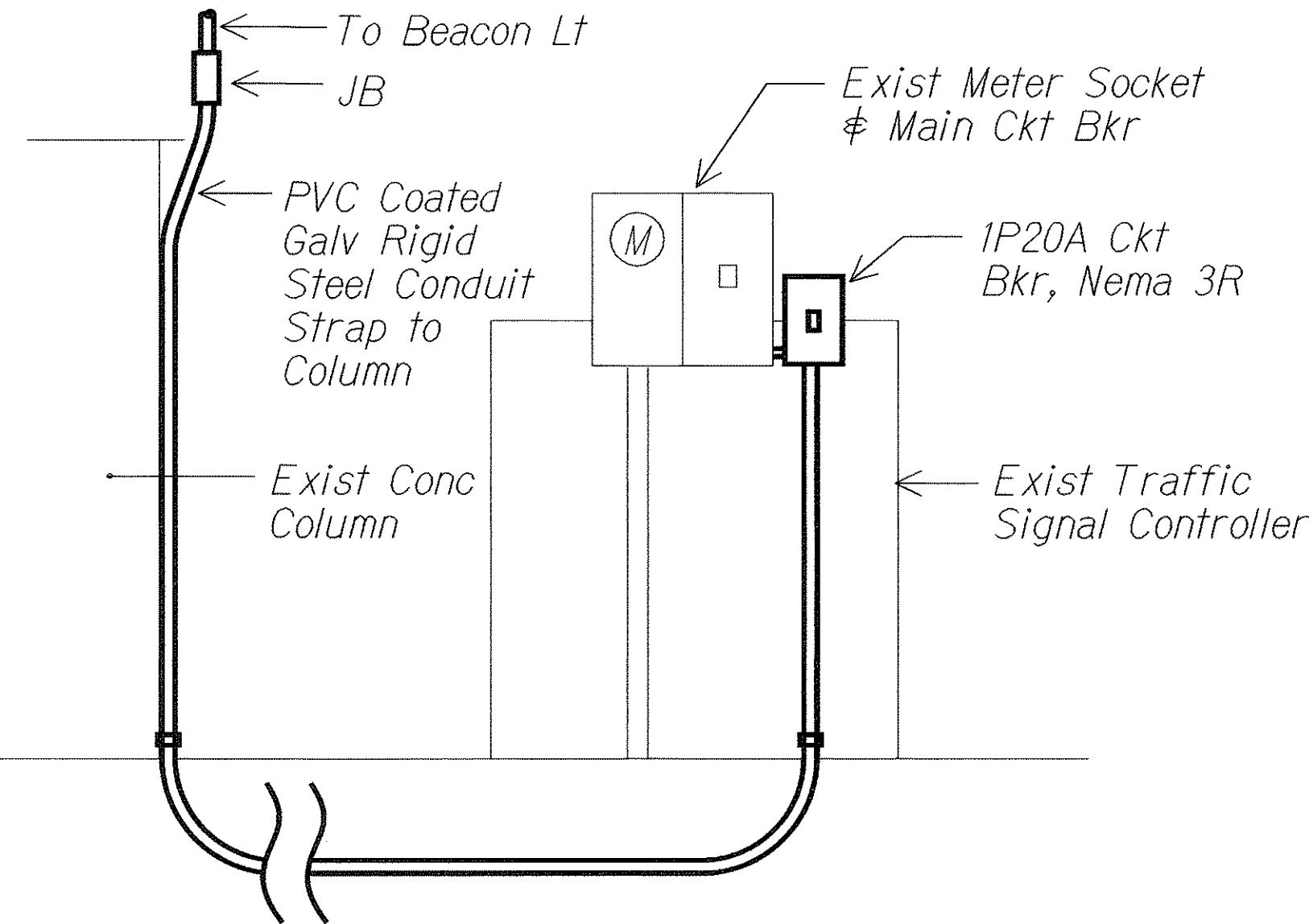


NOTES:

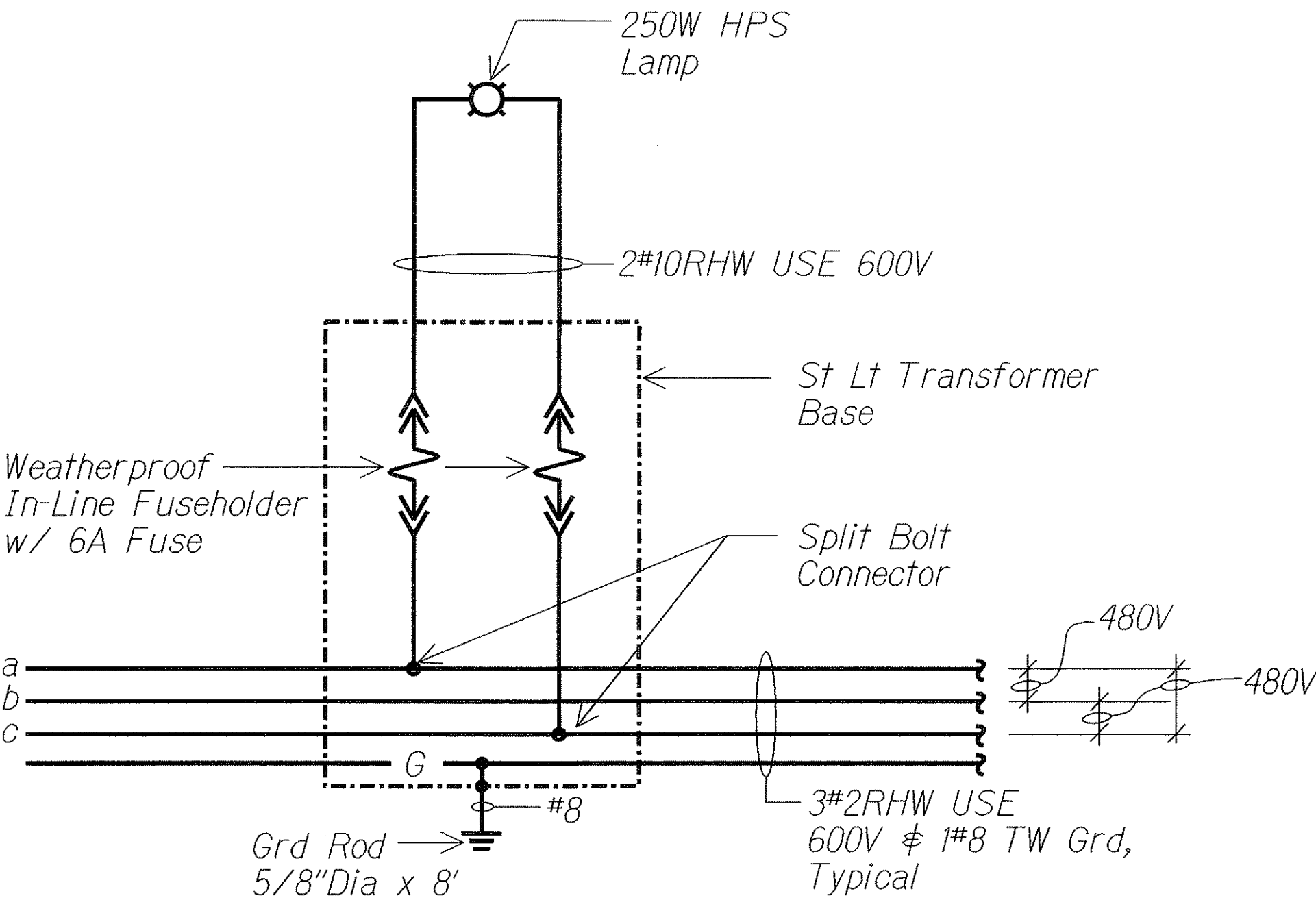
1. Install on 6" Bed of #3 Crushed Rock.



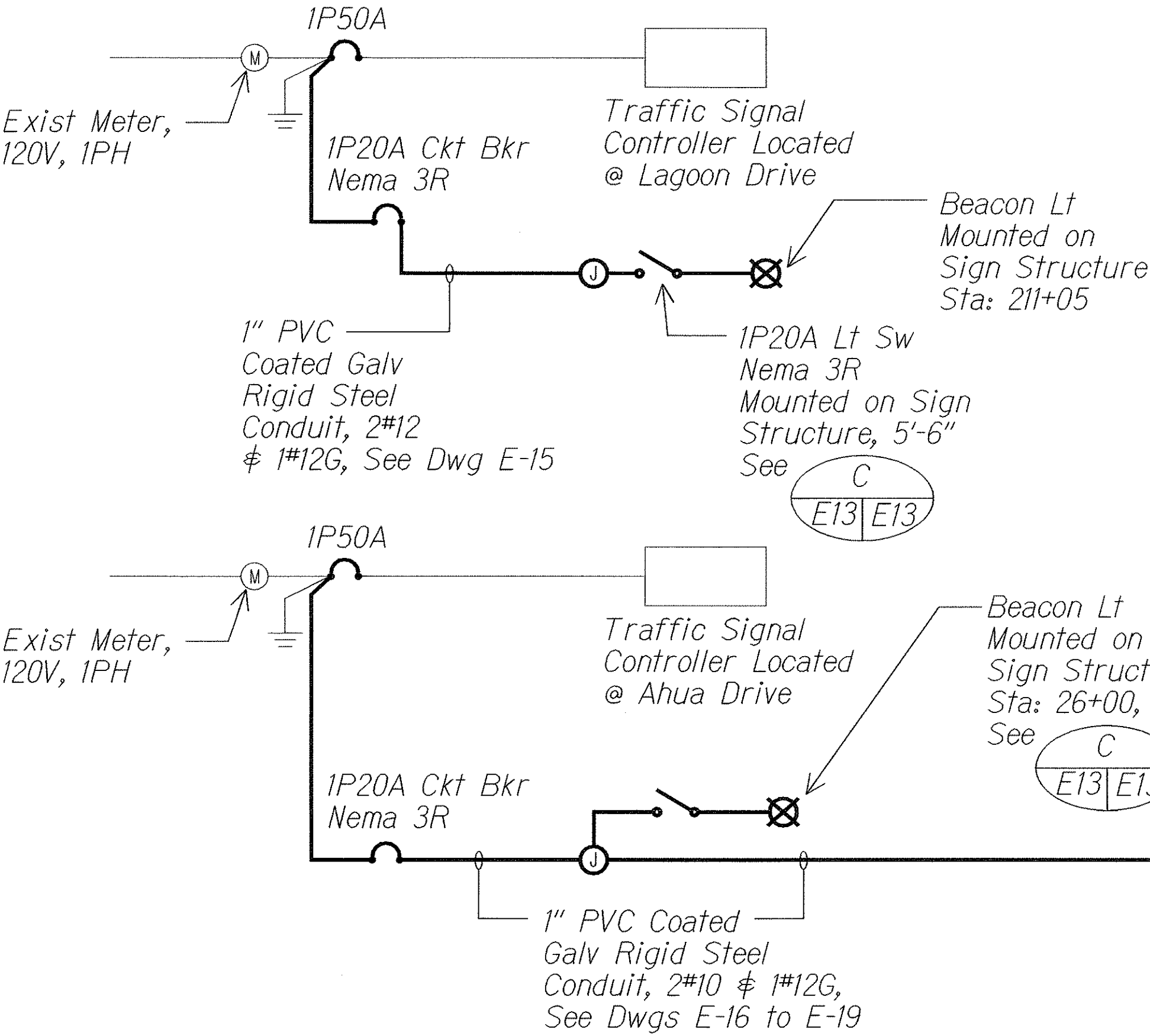
A STREET LIGHT PULLBOX DETAIL
E13 E13 NTS



B SERVICE EQUIP ELEVATION
E15 E13 NTS



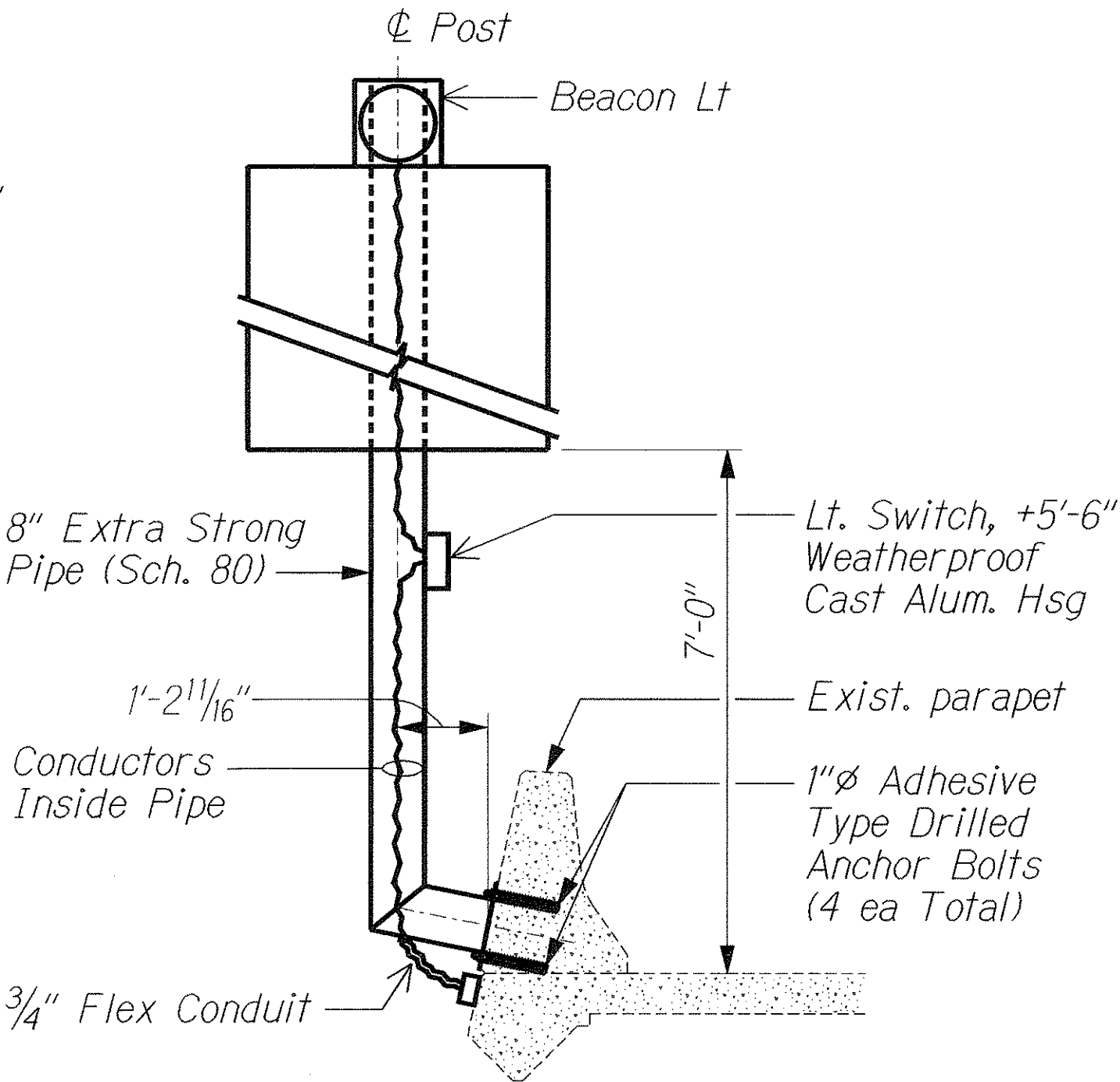
TYPICAL STREET LIGHT WIRING DIAGRAM
03073-d4



BEACON LIGHT ONE-LINE DIAGRAM
03073-3L

NOTES:

1. Light Lines Denote Existing Condition
Bold Lines Denote New Work



C BEACON LT MOUNTING DETAIL
E13 E13 Scale: 1/2"=1'-0"

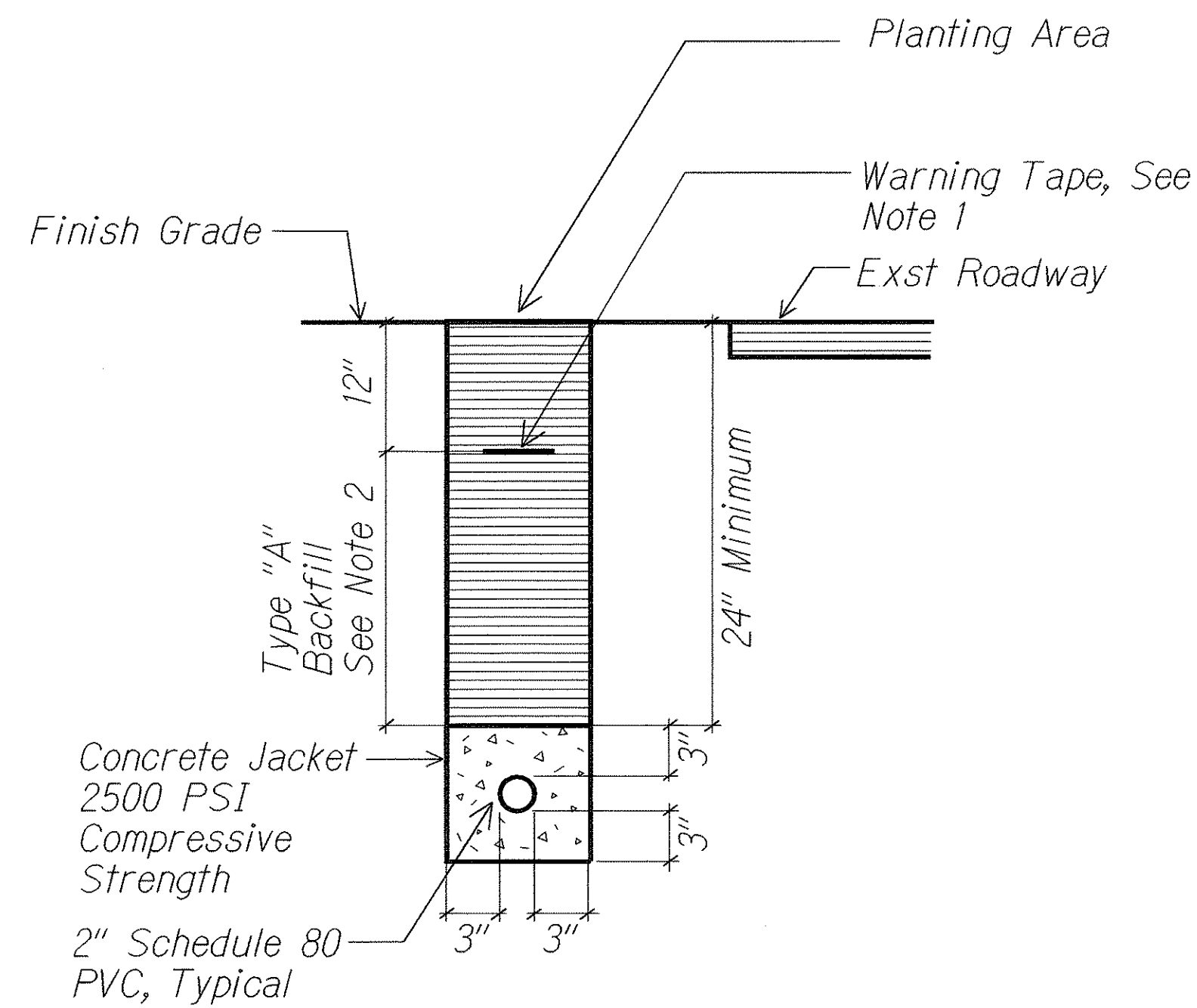
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R.C. Katanahara 3/30/04
M.K. ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

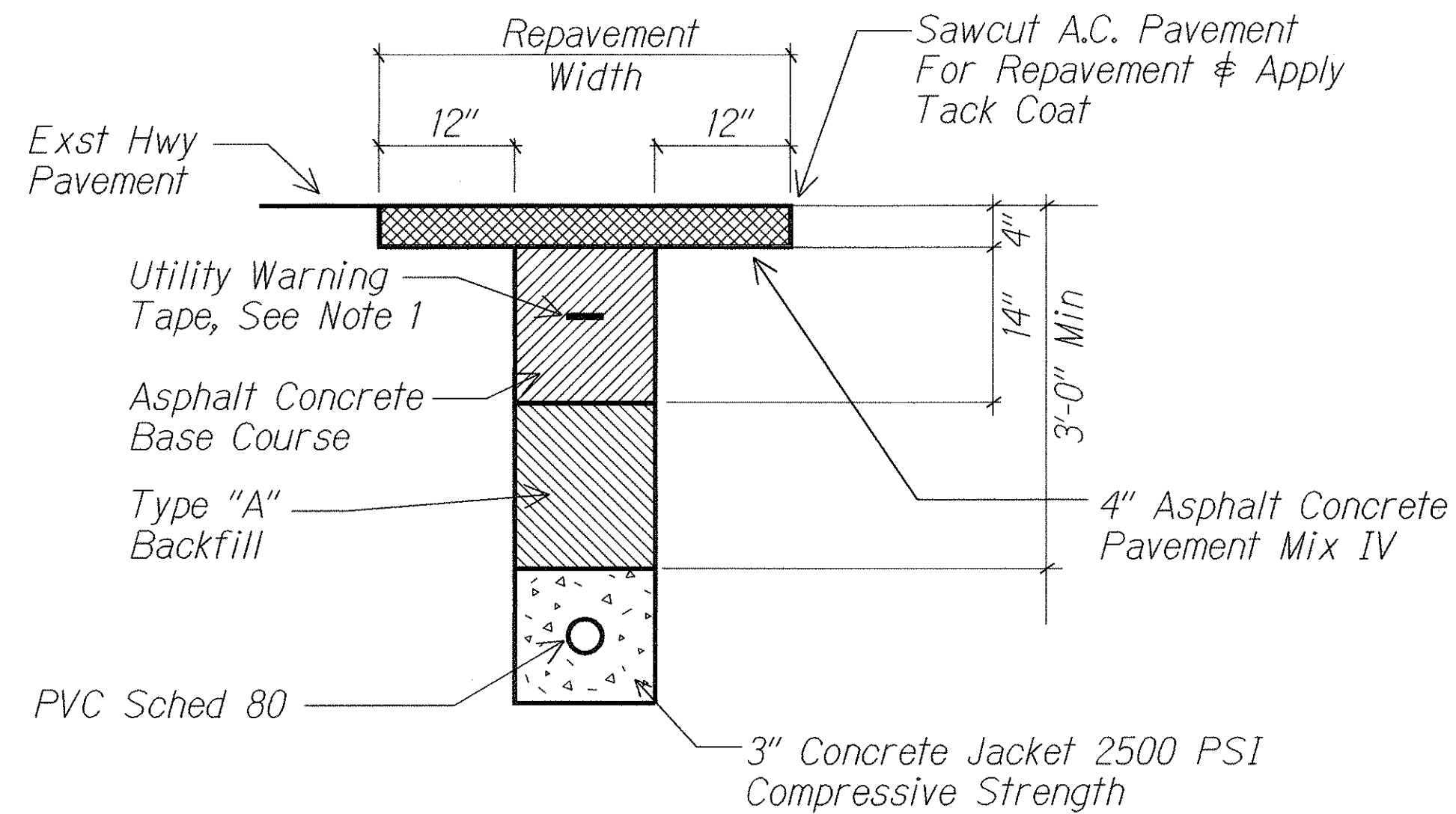
PULLBOX DETAILS & DIAGRAM

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)
Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-K(246)	2004	99	105



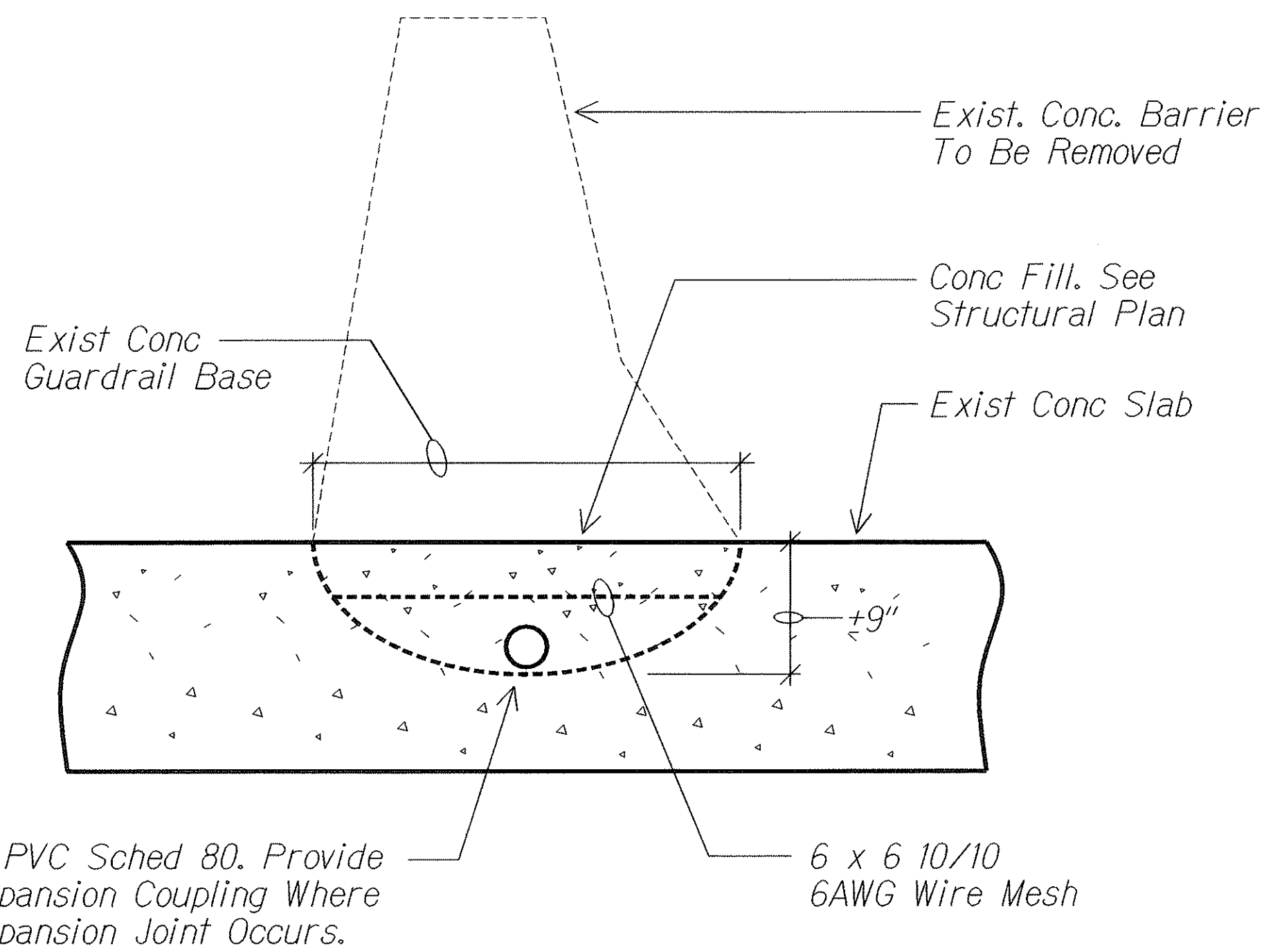
A DUCT SECTION **(A)**
E1 E14 NTS 03073-d6



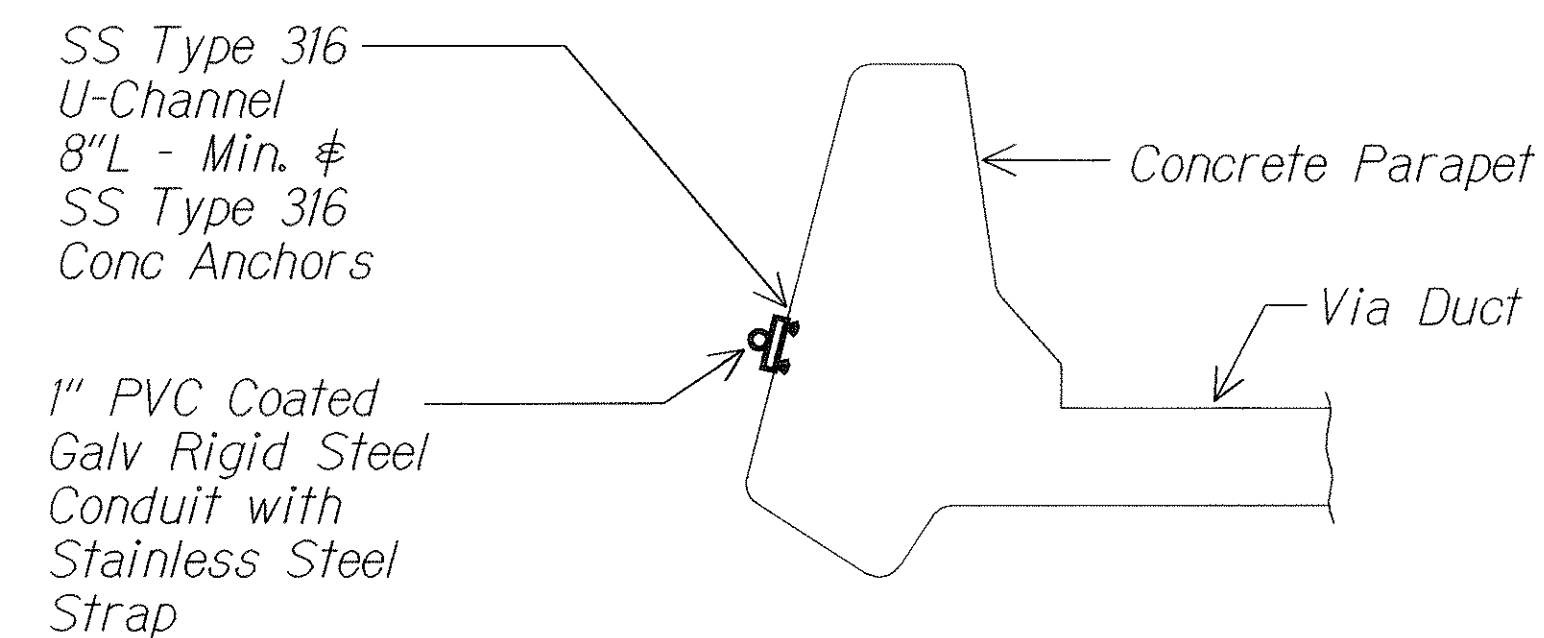
B DUCT SECTION **(B)**
E1 E14 NTS

NOTES:

1. 8 MIL Thick Red Colored Plastic Warning Tape 3" Wide, Entire Length of Duct. Tape to Have Continuous Metallic Backing and Corrosion Resistant Foil Core. Warning and Identification to be Imprinted on Tape and Shall Read "Caution Buried Electric Cable Below". Message Shall Be Repeated Approximately Every Ten Feet.
2. Type "A" Backfill: Beach Sand, Earth or Earth and Gravel Used, the Maximum Rock Size Shall Be 1" and the Mixture Shall Contain Not More Than 50% By Volume of Rock Particles.



C ST. LT. CONDUIT IN CONCRETE SLAB
E1 E14 NTS

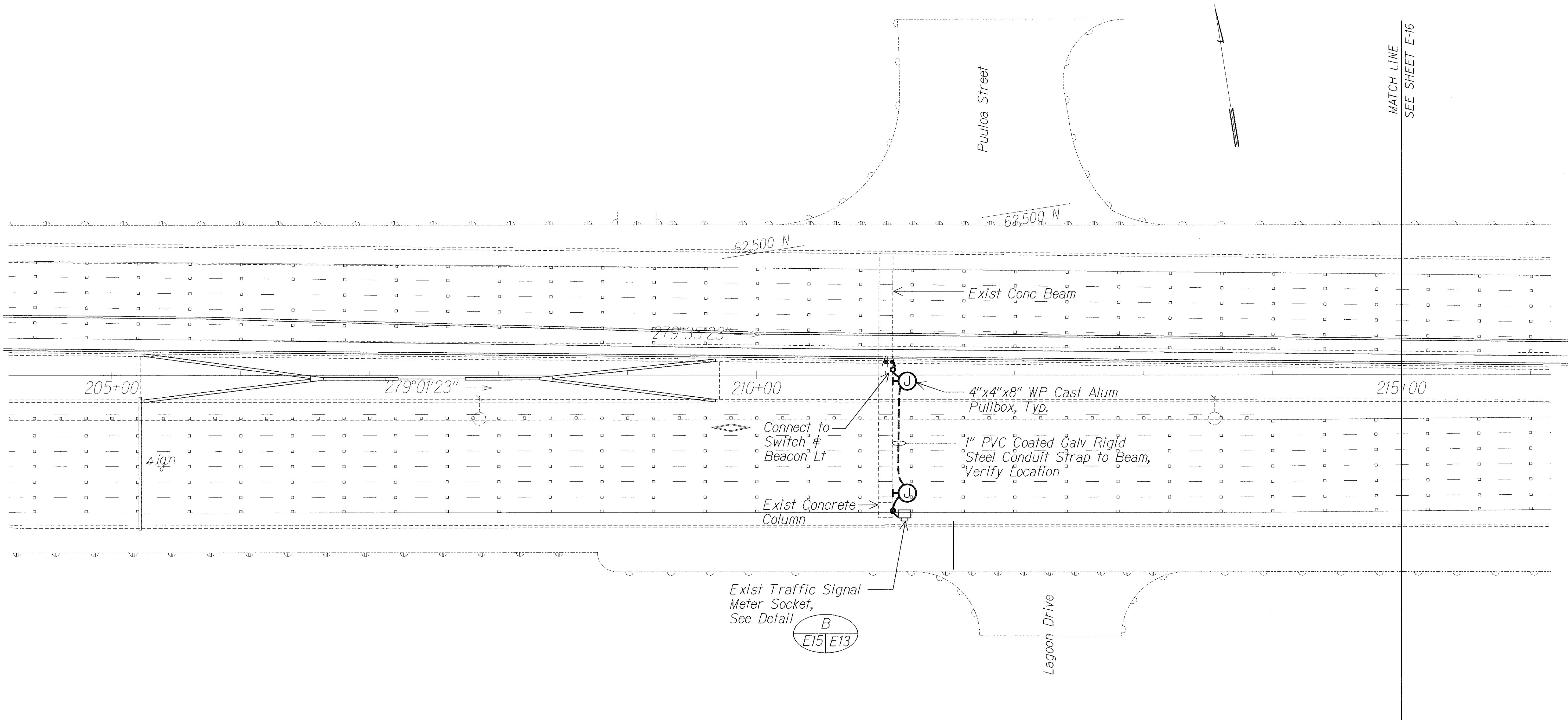


D CONDUIT INSTALLATION DETAIL **(D)** AT PARAPET
E15 E14 NTS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	CHECKED BY	
	QUANTITIES BY	

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	SHEET No. E-14 OF 20 SHEETS
	99

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	100	105



SIGN STRUCTURE ELECTRICAL PLAN

SCALE: 1" = 40'-0"

03073-sb1

Note: See E-13 for 1-Line Diagram.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY	DRAWN BY	
NOTED BY	CHECKED BY	
DATE		

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R. K. KATAHARA 3/2/04

ME ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

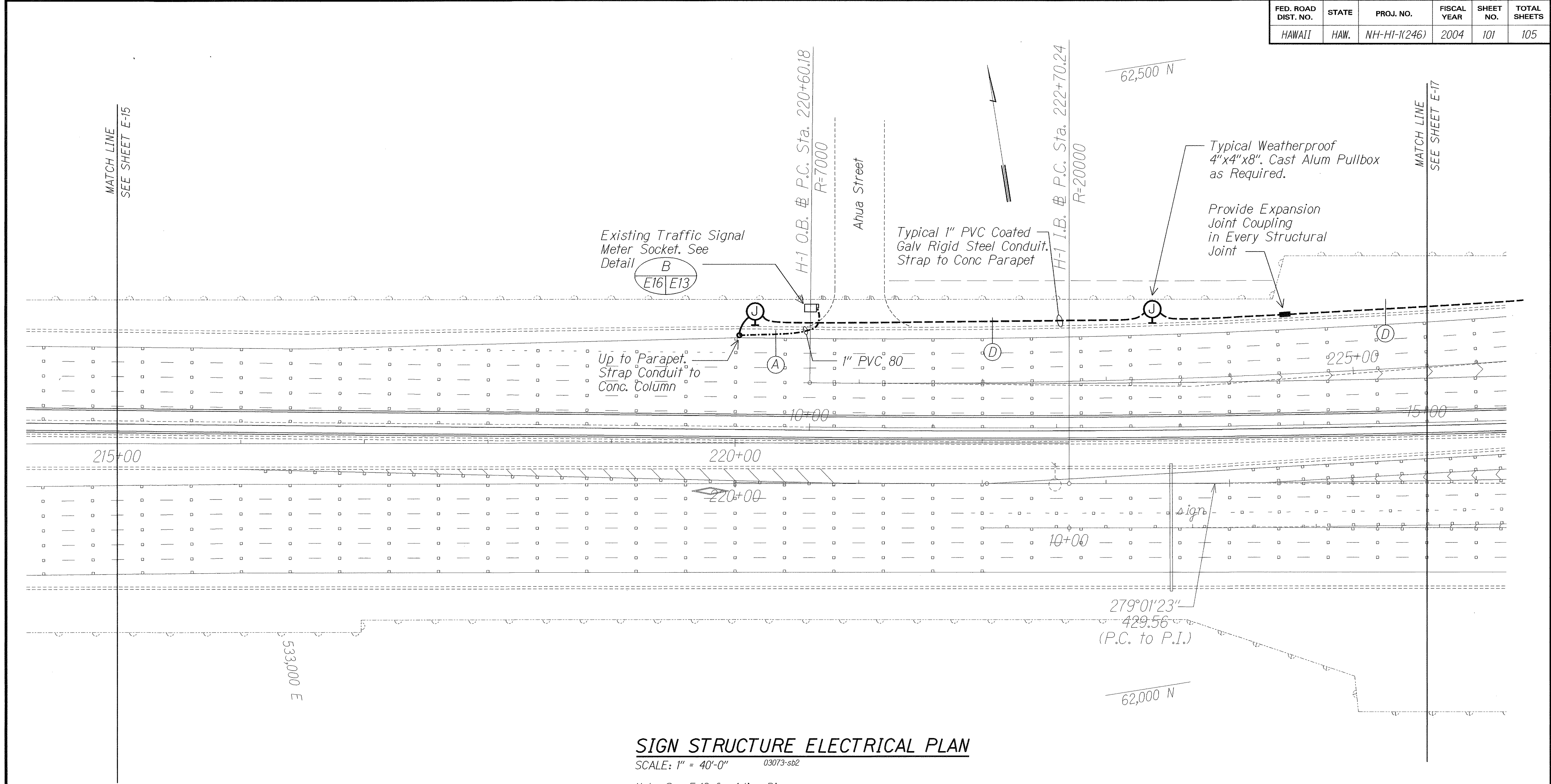
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN STRUCTURE ELECTRICAL PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	101	105



SIGN STRUCTURE ELECTRICAL PLAN

SCALE: 1" = 40'-0" 03073-sb2

Note: See E-13 for 1-line Diagram.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	NOTED BY	
NO.		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
P.C. KATAHARA 3/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

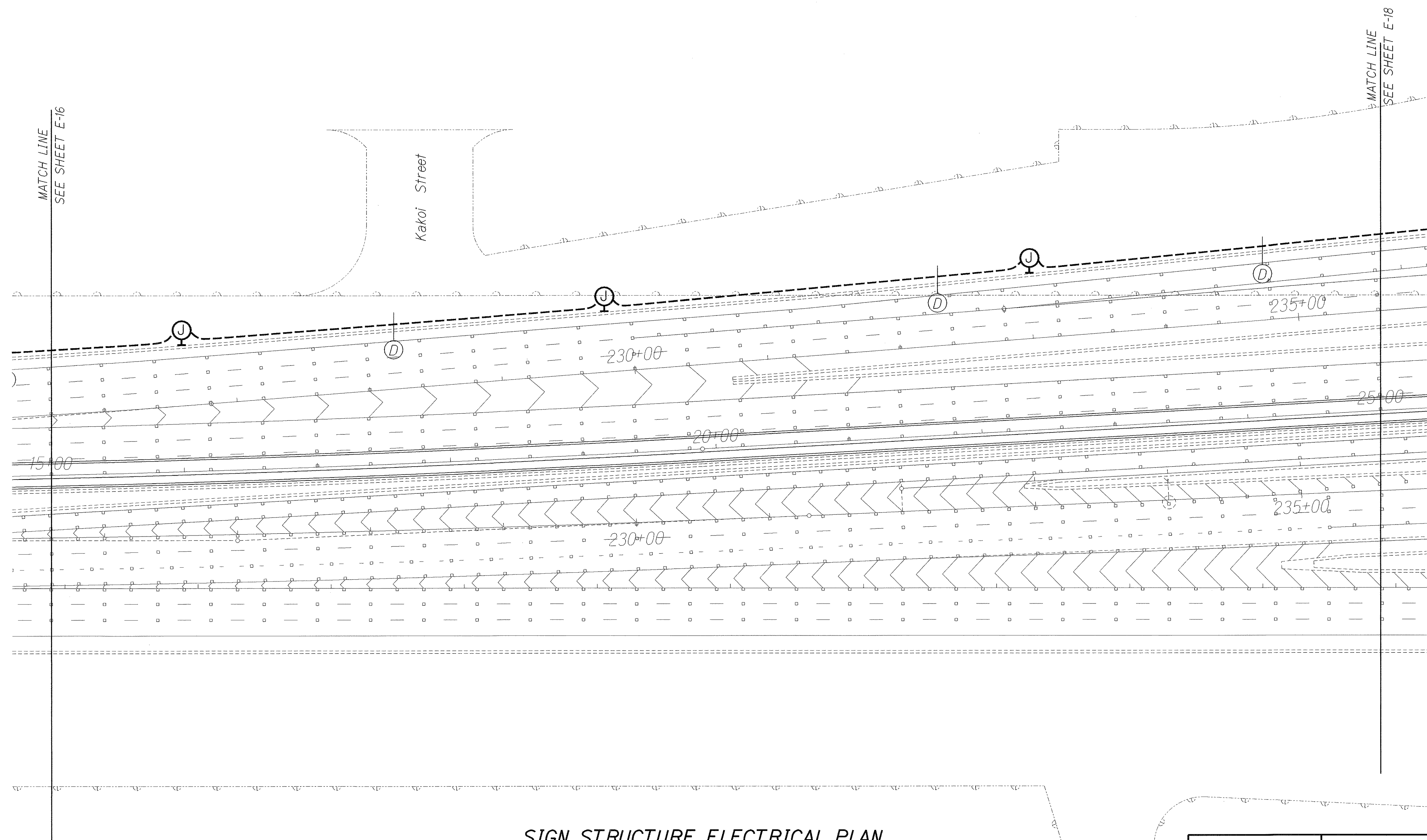
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN STRUCTURE ELECTRICAL PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	102	105



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
	NOTED BY	
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	
	N.	

SIGN STRUCTURE ELECTRICAL PLAN
SCALE: 1" = 40'-0"
Note: See E-13 for I-line Diagram.

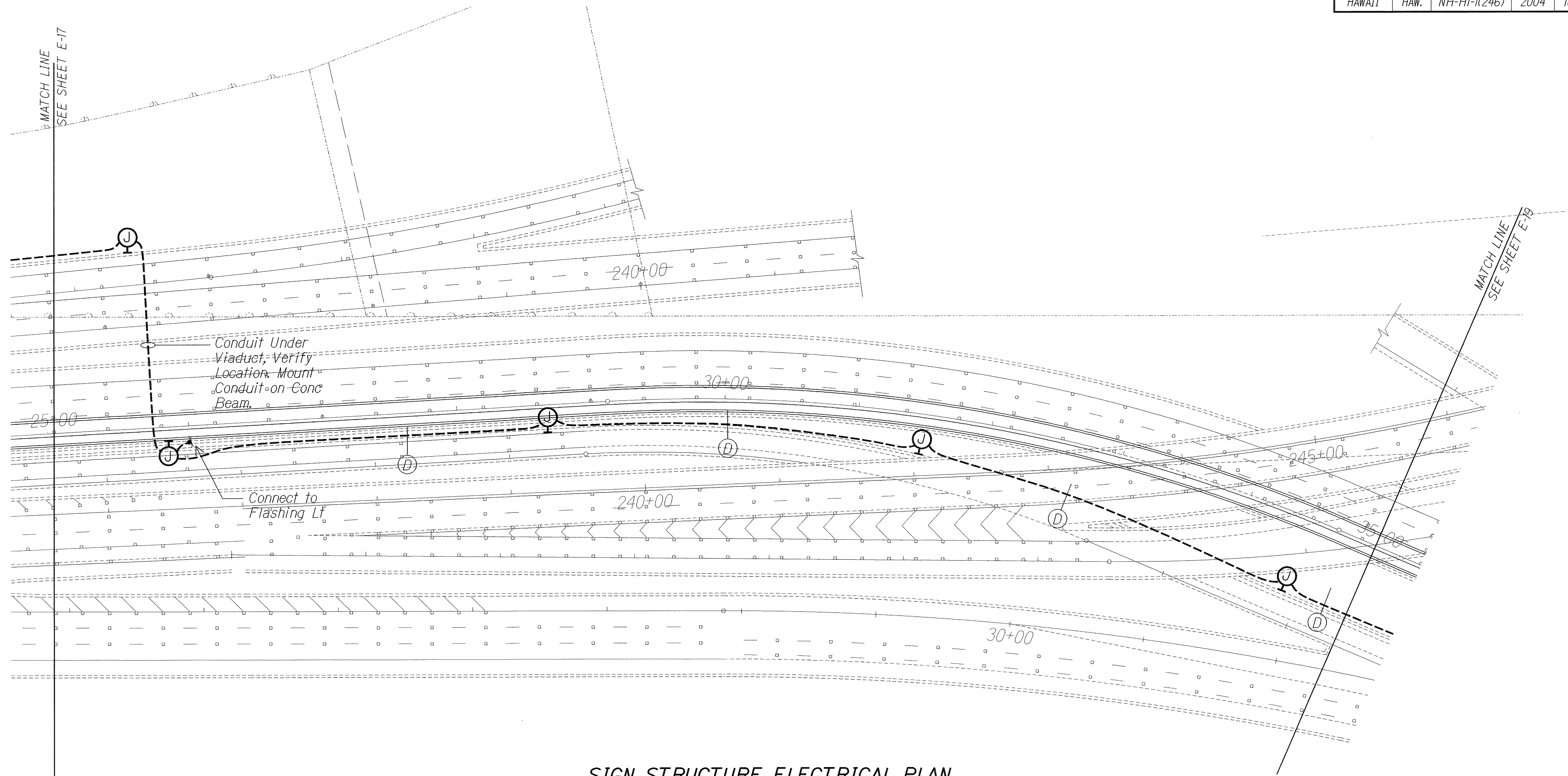
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Pickelton 3/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN STRUCTURE ELECTRICAL PLAN

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)
Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	103	105



SIGN STRUCTURE ELECTRICAL PLAN

SCALE: 1" = 40'-0" 03073-sb4 03073-sb4

Note: See E-13 for I-line Diagram.

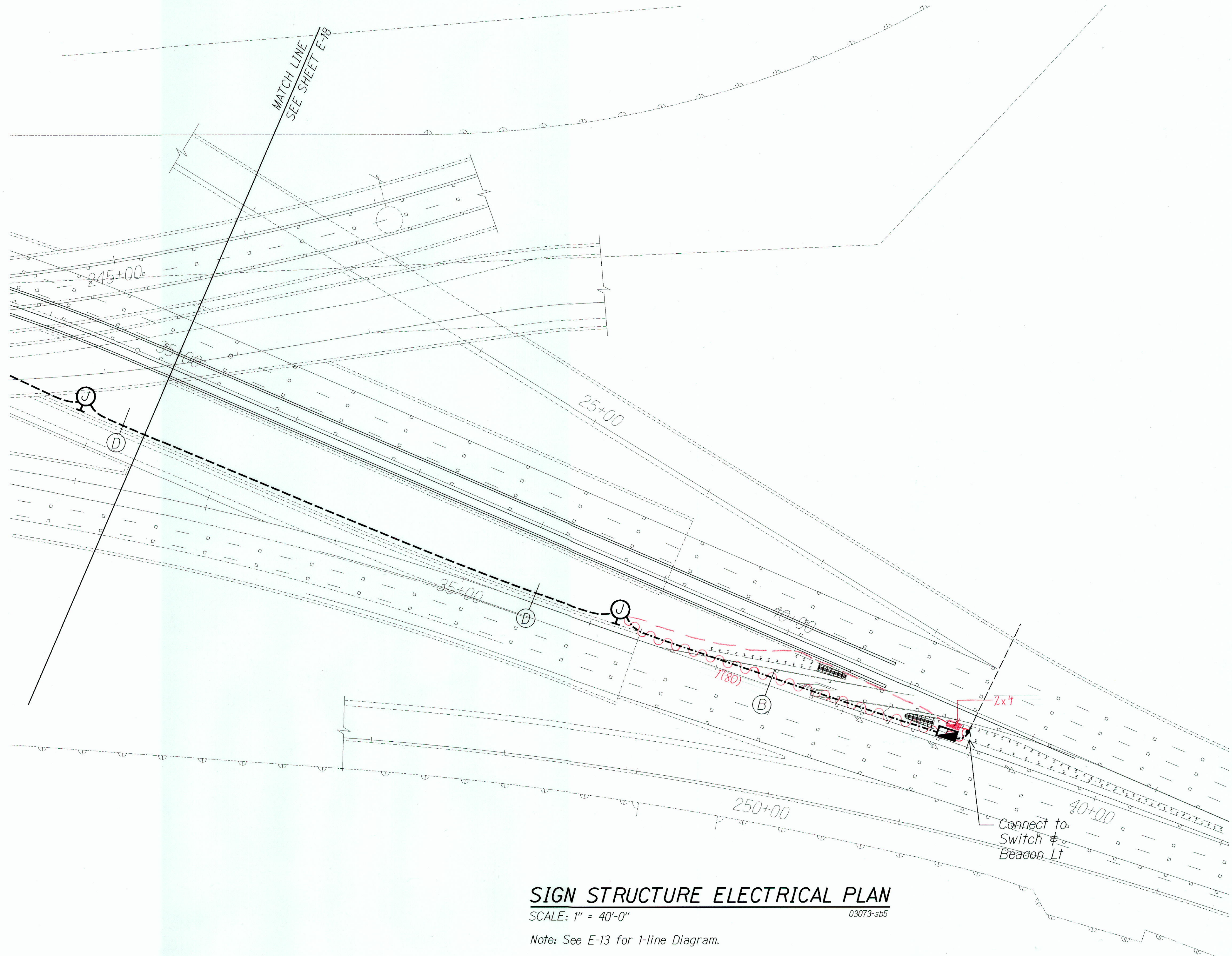
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY	DRAWN BY	
NOTE BOOK	CHECKED BY	

R.C. KATAHARA
LICENSED PROFESSIONAL ENGINEER
No. 3181-E
HAWAII, U.S.A.

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OR UNDER MY SUPERVISION.
R.C. KATAHARA 3/26/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SIGN STRUCTURE
ELECTRICAL PLAN**
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)
Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	104	105



SIGN STRUCTURE ELECTRICAL PLAN
SCALE: 1" = 40'-0"
03073-sb5
Note: See E-13 for 1-line Diagram.

ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY	
NOTE BOOK	DESIGNED BY	
	CHECKED BY	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
R.C. KATAHARA 3/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

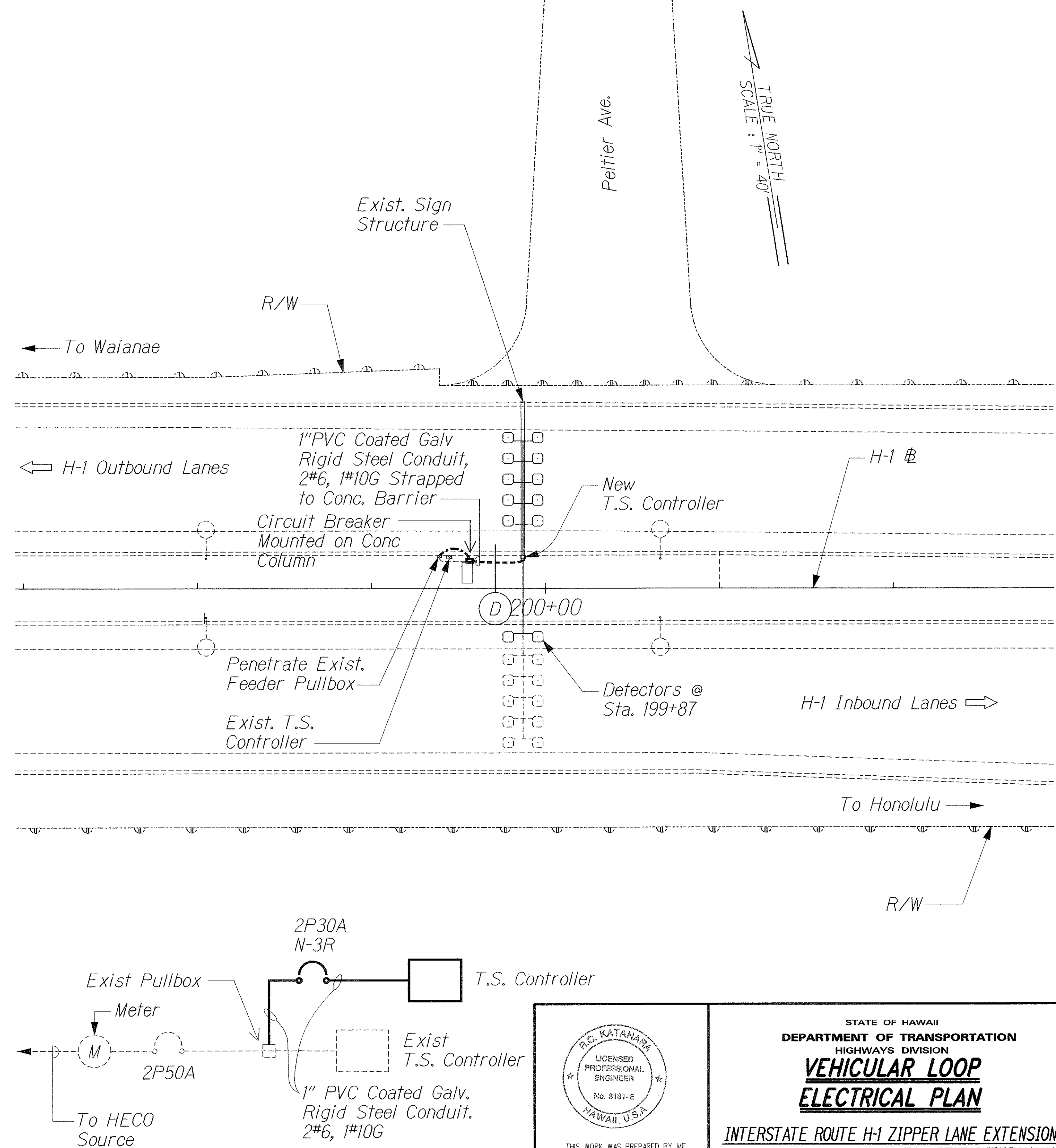
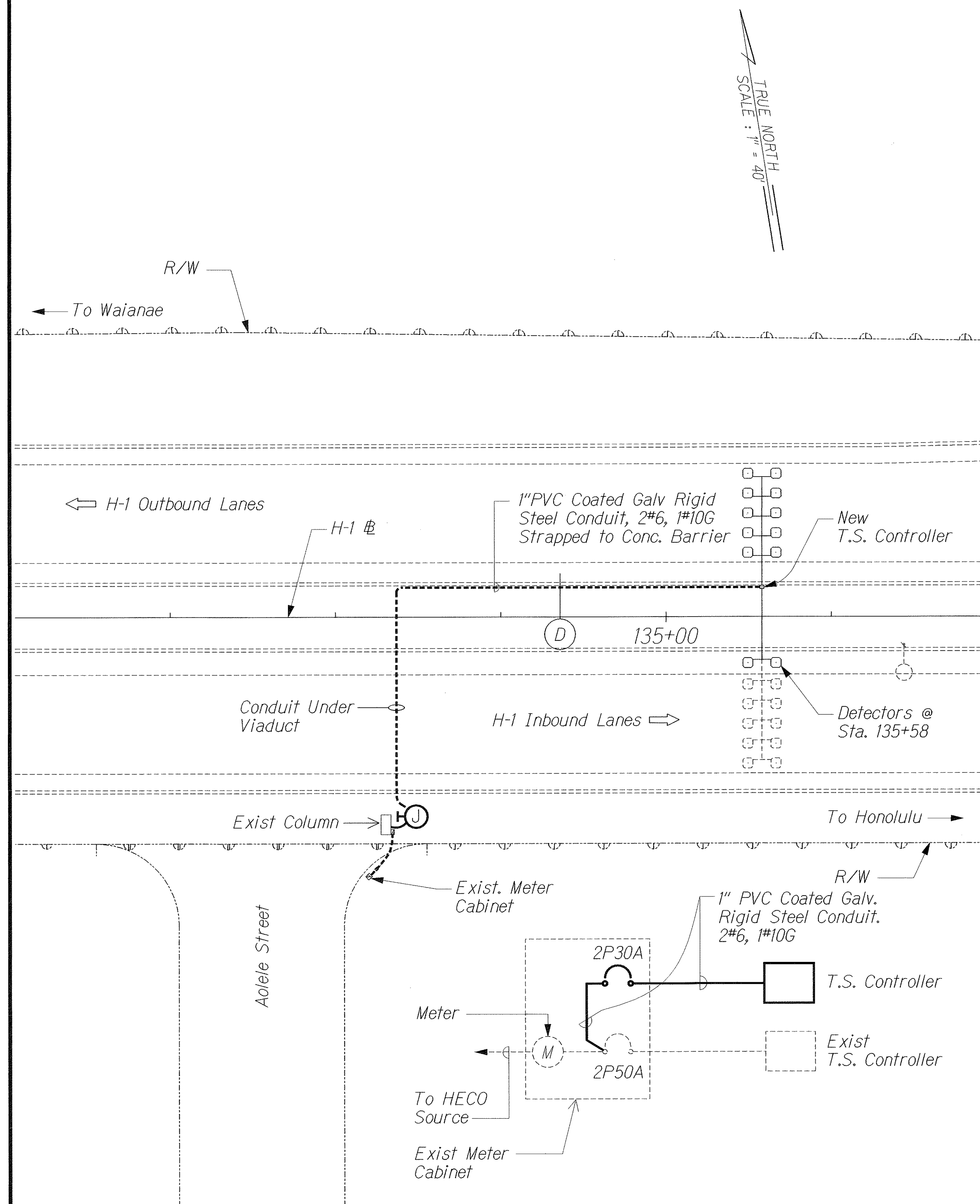
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN STRUCTURE ELECTRICAL PLAN

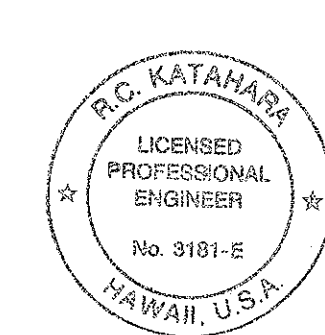
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(246)	2004	105	105



SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
DATE	



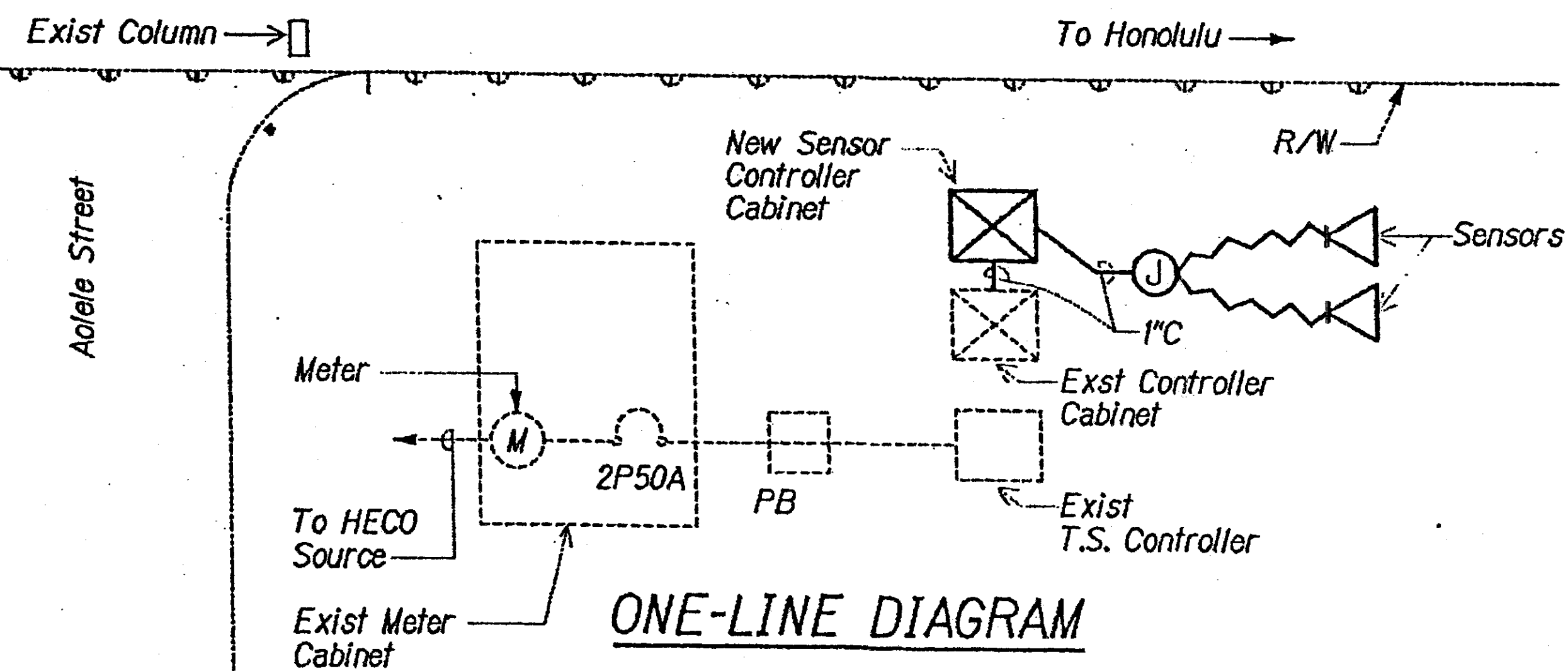
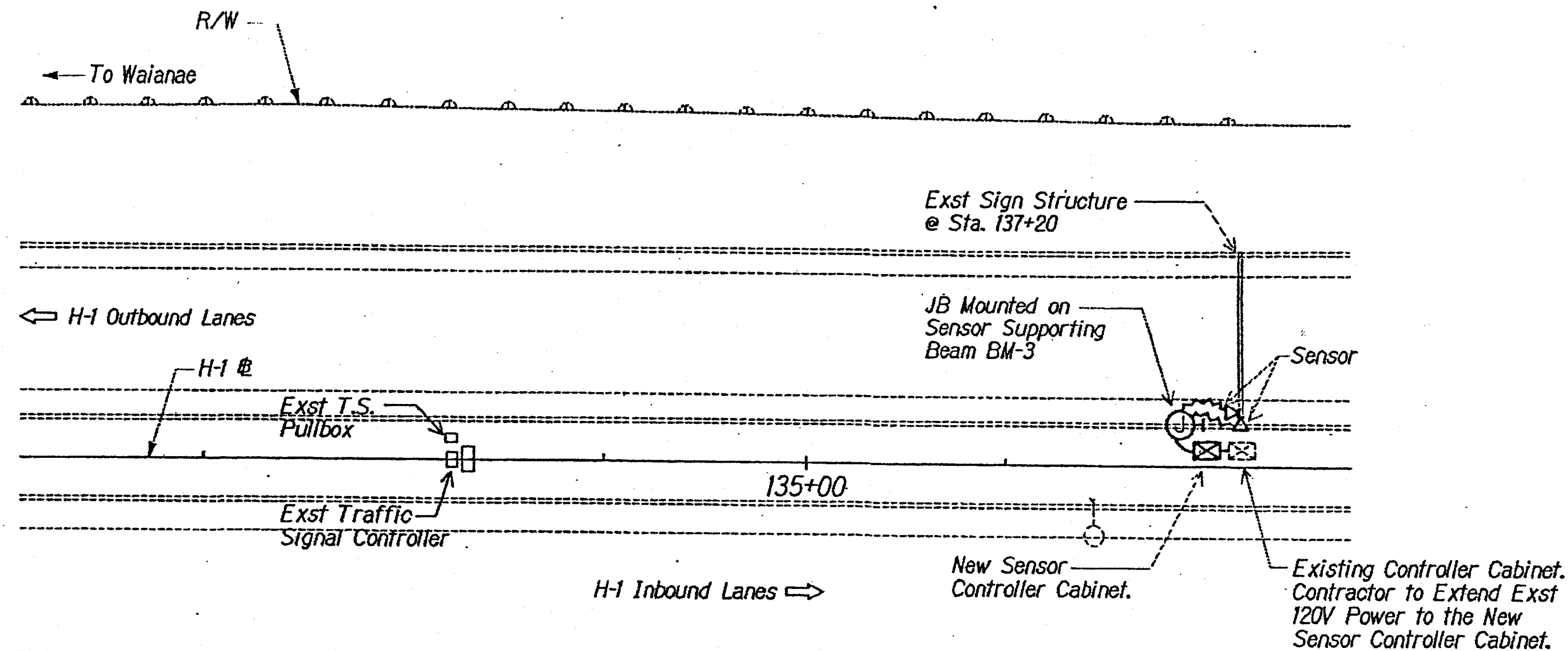
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
R.C. KATAHARA 3/30/04
MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**VEHICULAR LOOP
ELECTRICAL PLAN**

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-1(246)

Scale: As Noted Date: March 2, 2004

SHEET No. E-20 OF 20 SHEETS



ONE-LINE DIAGRAM

- NOTES:**
- Light Lines Denote Existing Condition
Bold Lines Denote New Work
 - Sensors to be Provided with Contact Closure to Provide Functional Equivalent of 2 Loops per Lane of Coverage.

REVISION	DATE	DESCRIPTION	BY	APP'D.
4-14-05		ADDED SENSORS CLOSURE, JUNCTION BOX & EXISTING CABINET		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

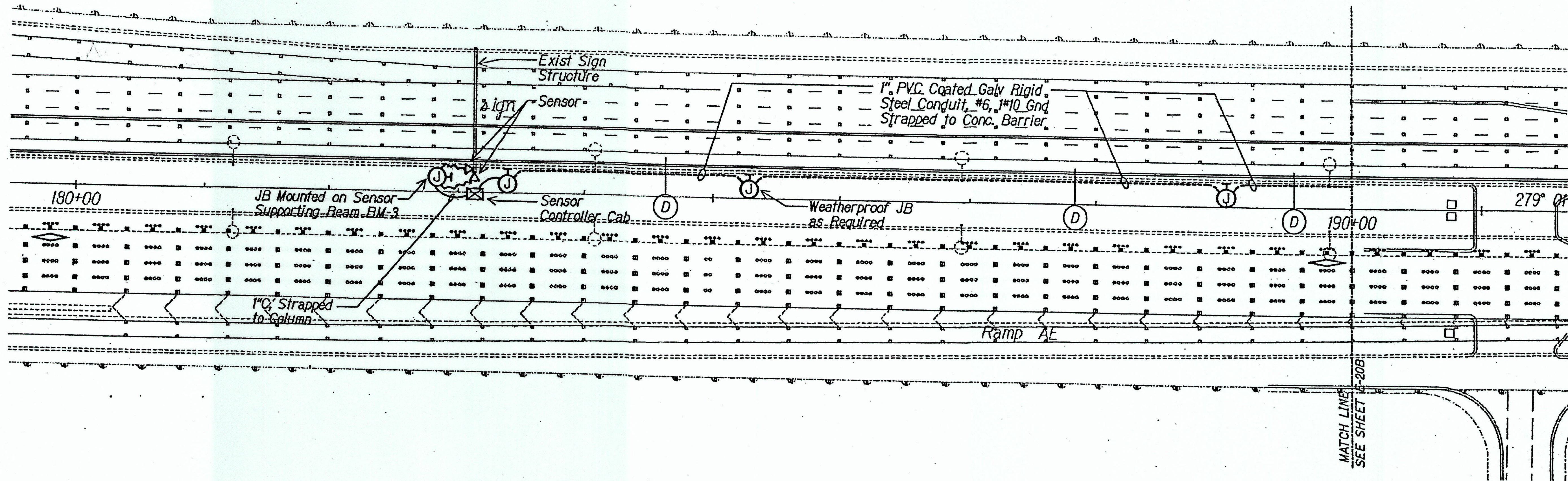
BY: *[Signature]*
DATE: March 2, 2004

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TRAFFIC SENSOR
ELECTRICAL PLAN**

INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
FEDERAL AID PROJECT NO. NH-HI-K246J

Scale: As Noted Date: March 2, 2004

FED. ROAD DIST. NO.	ST.	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-K246	2004	C.O. 105 S-1	105

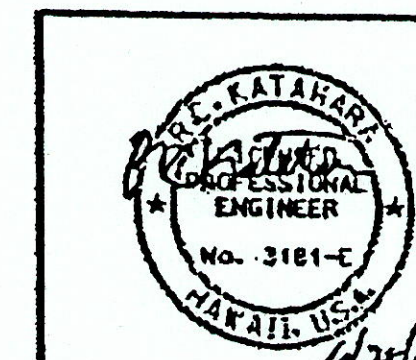


SIGN STRUCTURE ELECTRICAL PLAN
 SCALE: 1" = 40'-0" 03073-edi

Note: See E-20B For I-Line Diagram.

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE BY	
NOTED BY	
REVISIONS	

REVISION	DATE	DESCRIPTION	BY	APP'D.
1-14-05		ADDED SHEET		



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ME ENGINEER, LTD.
 LICENSE EXPIRATION DATE: 4/30/06

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**TRAFFIC SENSOR
 ELECTRICAL PLAN**

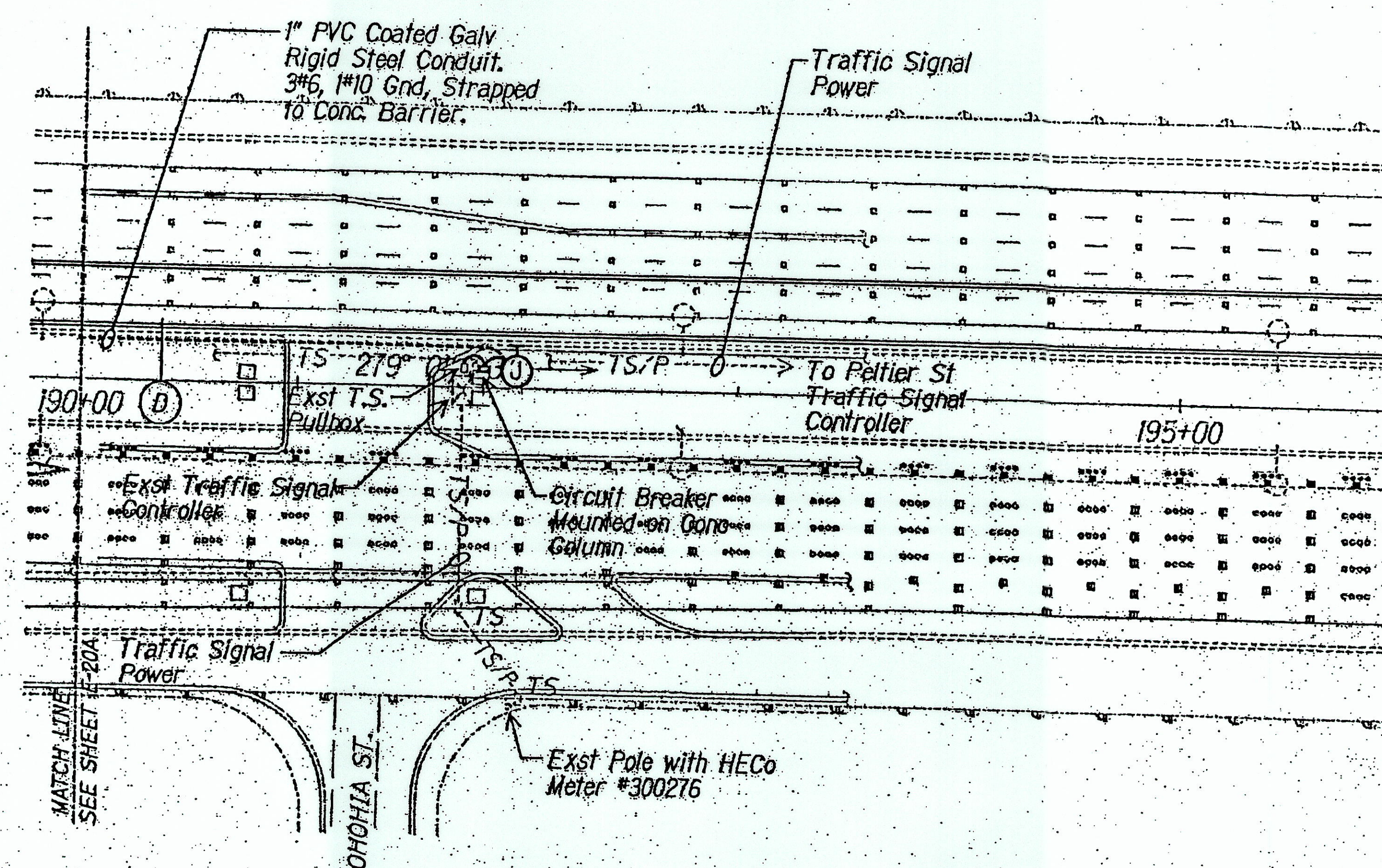
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
 RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
 FEDERAL AID PROJECT NO. NH-HI-K246

Scale: As Noted Date: March 2, 2004

SHEET No. E-20AOF 20 SHEETS

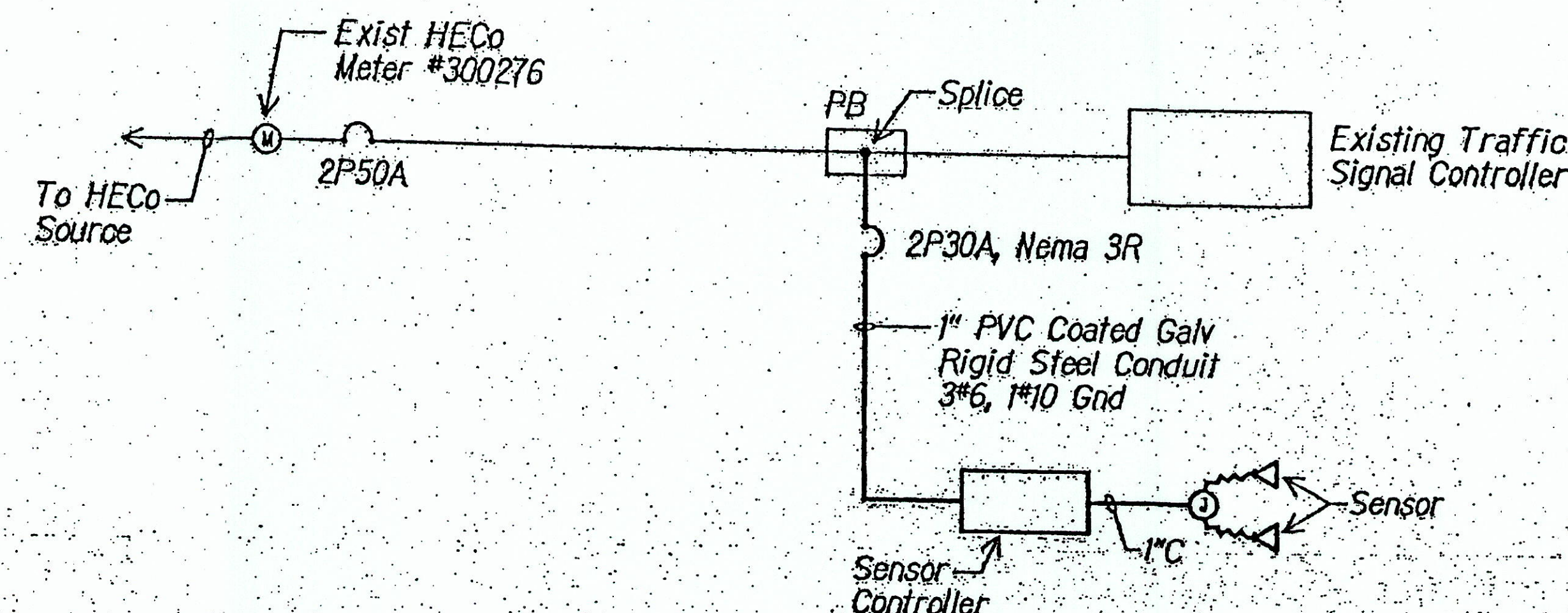
C.O. 105 S-1

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NI-HI-1(246)	2004	C.O. 105 S-2	105



SIGN STRUCTURE ELECTRICAL PLAN
 SCALE: 1" = 40'-0"
 03073-602

Note: See this Sheet for I-Line Diagram.



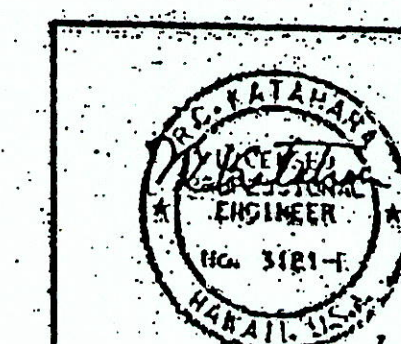
ONE-LINE DIAGRAM
 03073-4L

NOTES:

- Light Lines Denote Existing Condition
 Bold Lines Denote New Work
- Sensors to be Provided with Contact Closure to Provide Functional Equivalent of 2 Loops per Lane of Coverage.

DESIGNED BY	DATE
CHECKED BY	DATE
DRAWN BY	DATE
IN CHARGE	DATE
APPROVED BY	DATE

REVISION	DATE	DESCRIPTION	BY	APP'D.
1-14-05		ADDED SHEET		



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**TRAFFIC SENSOR
 ELECTRICAL PLAN**

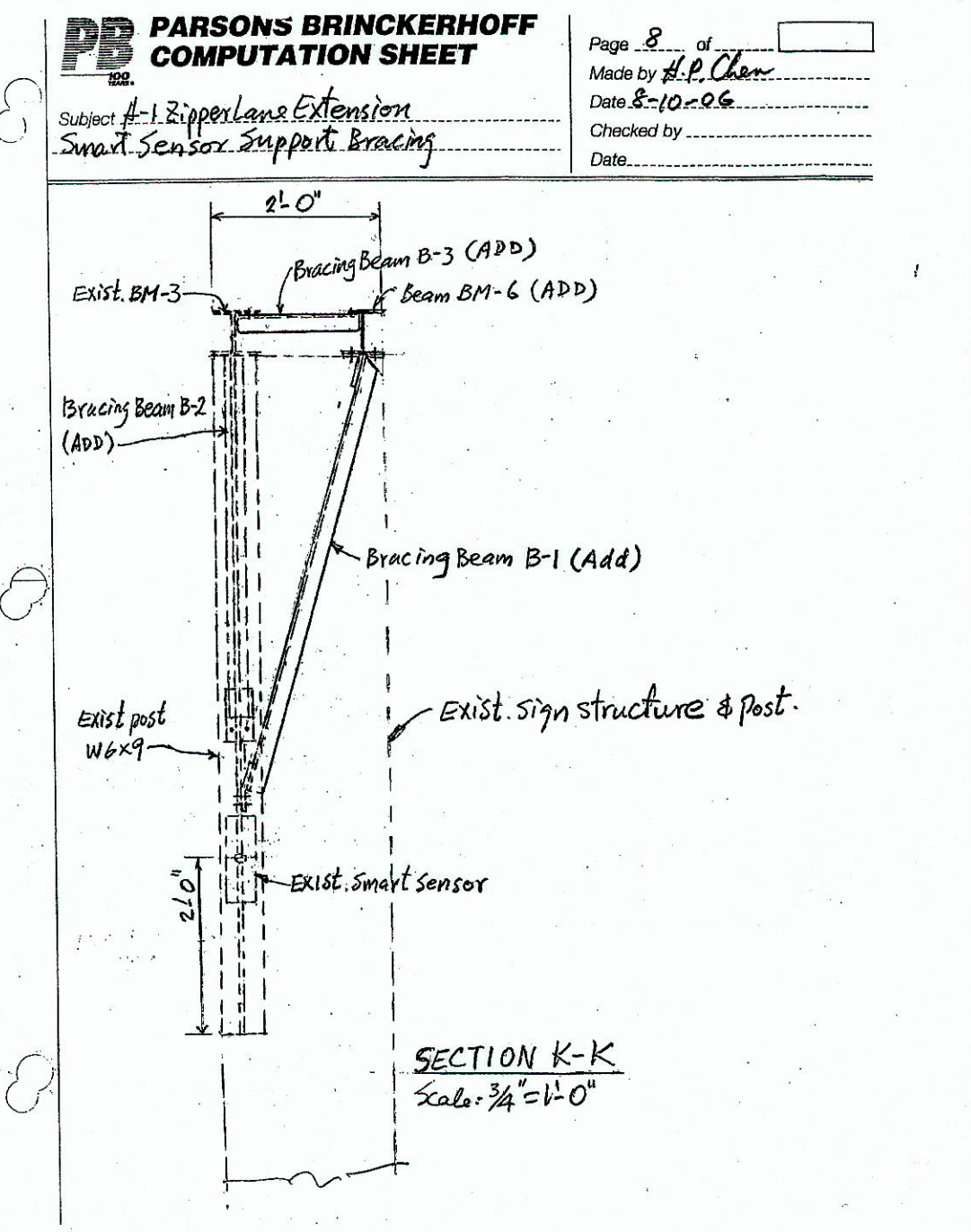
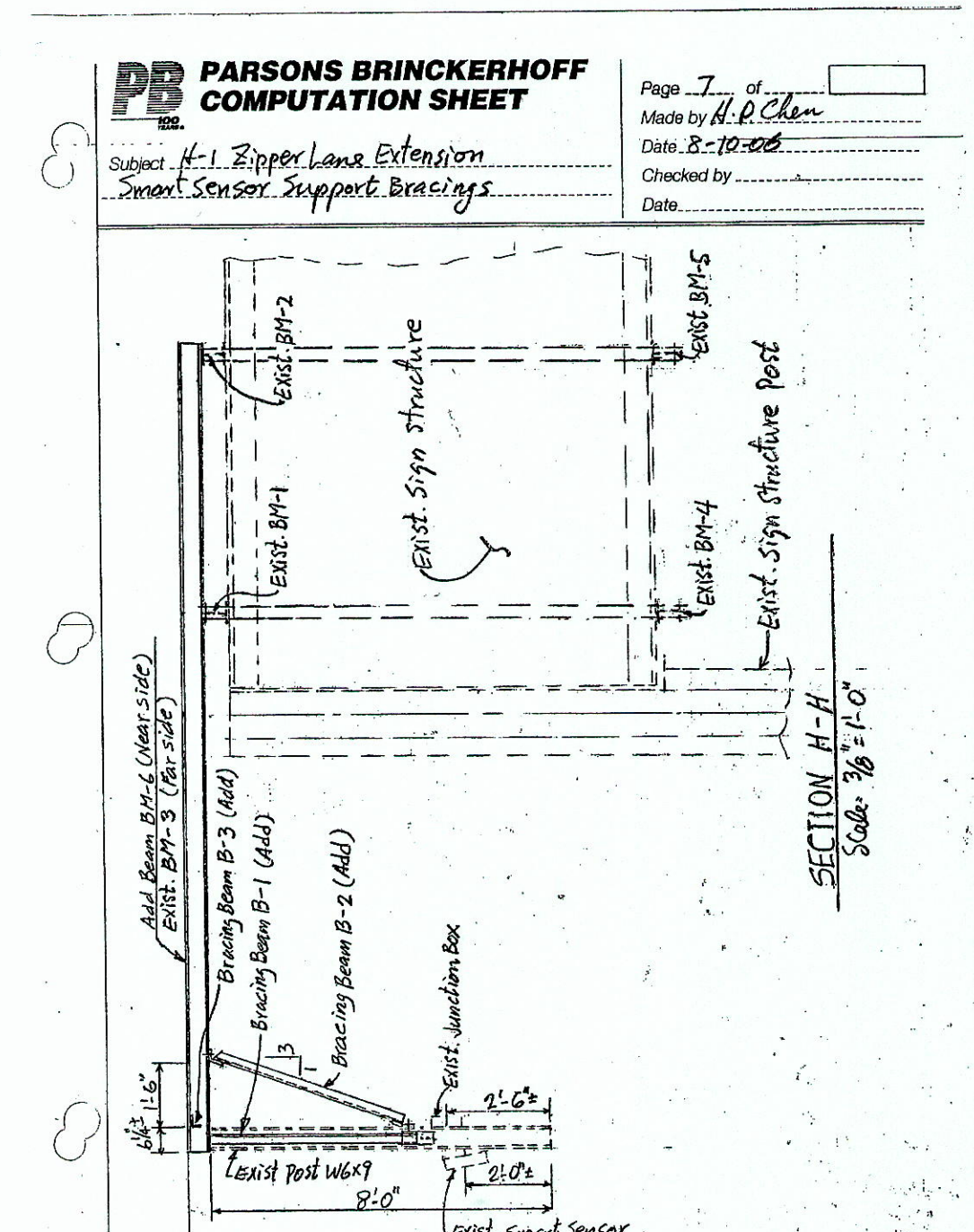
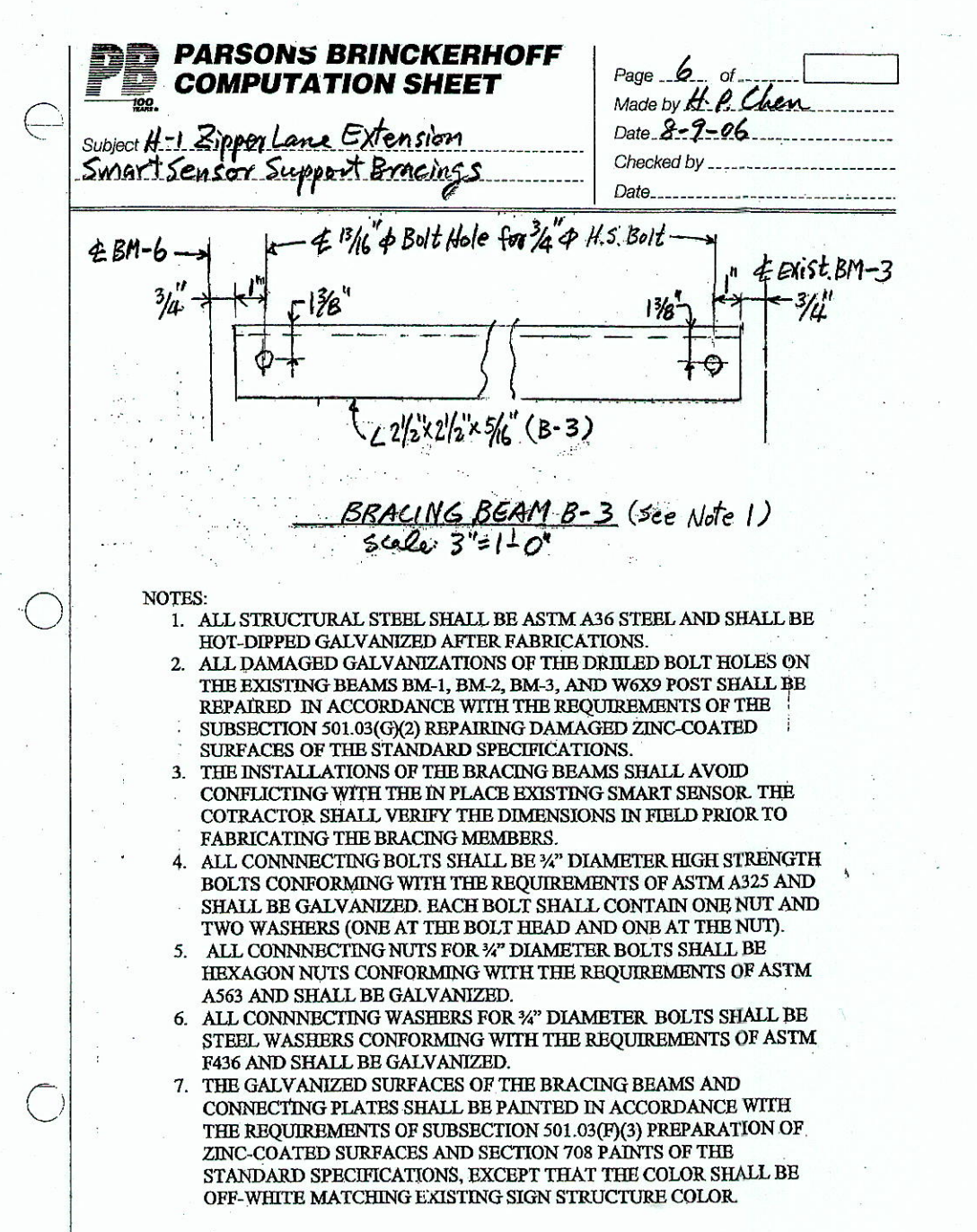
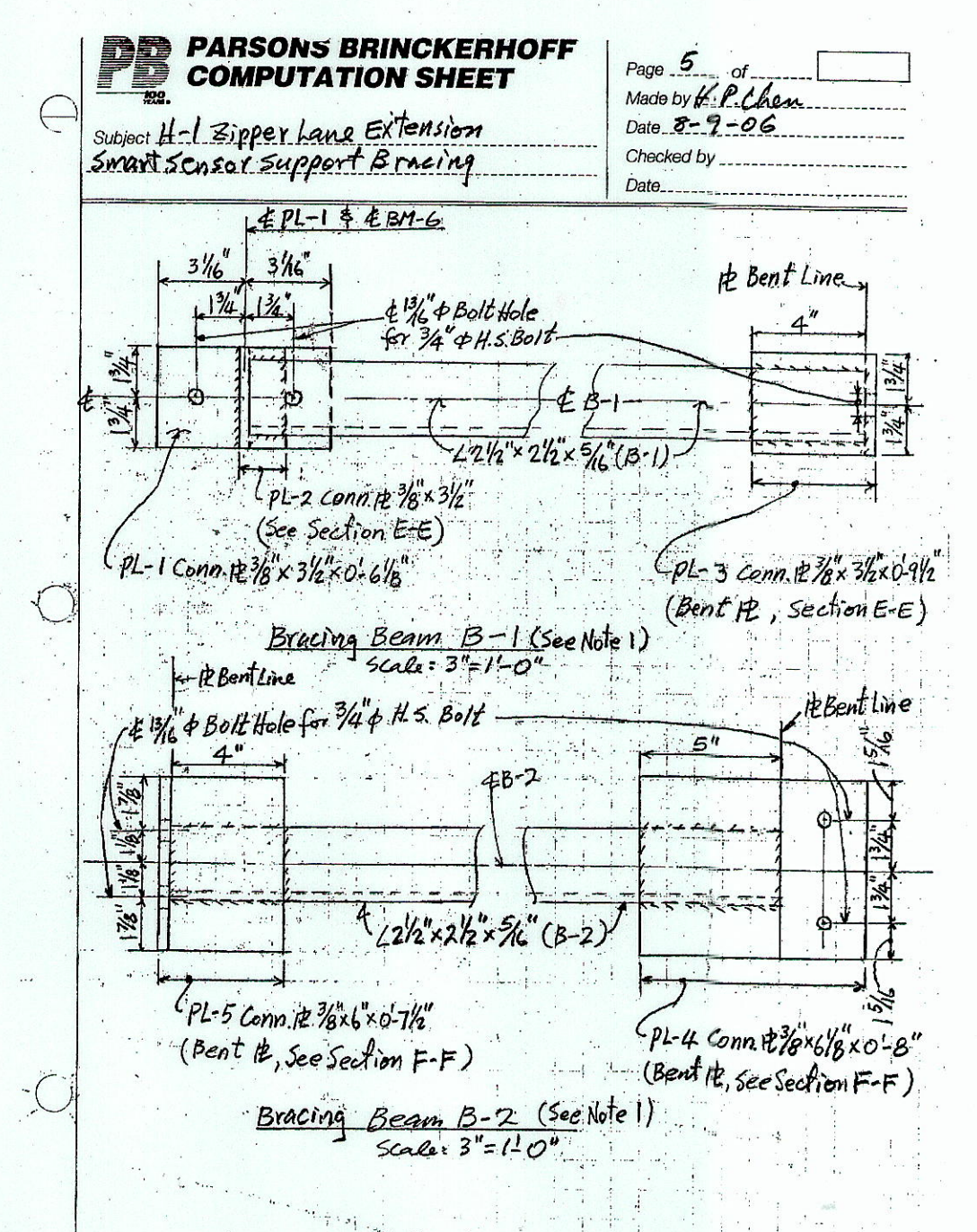
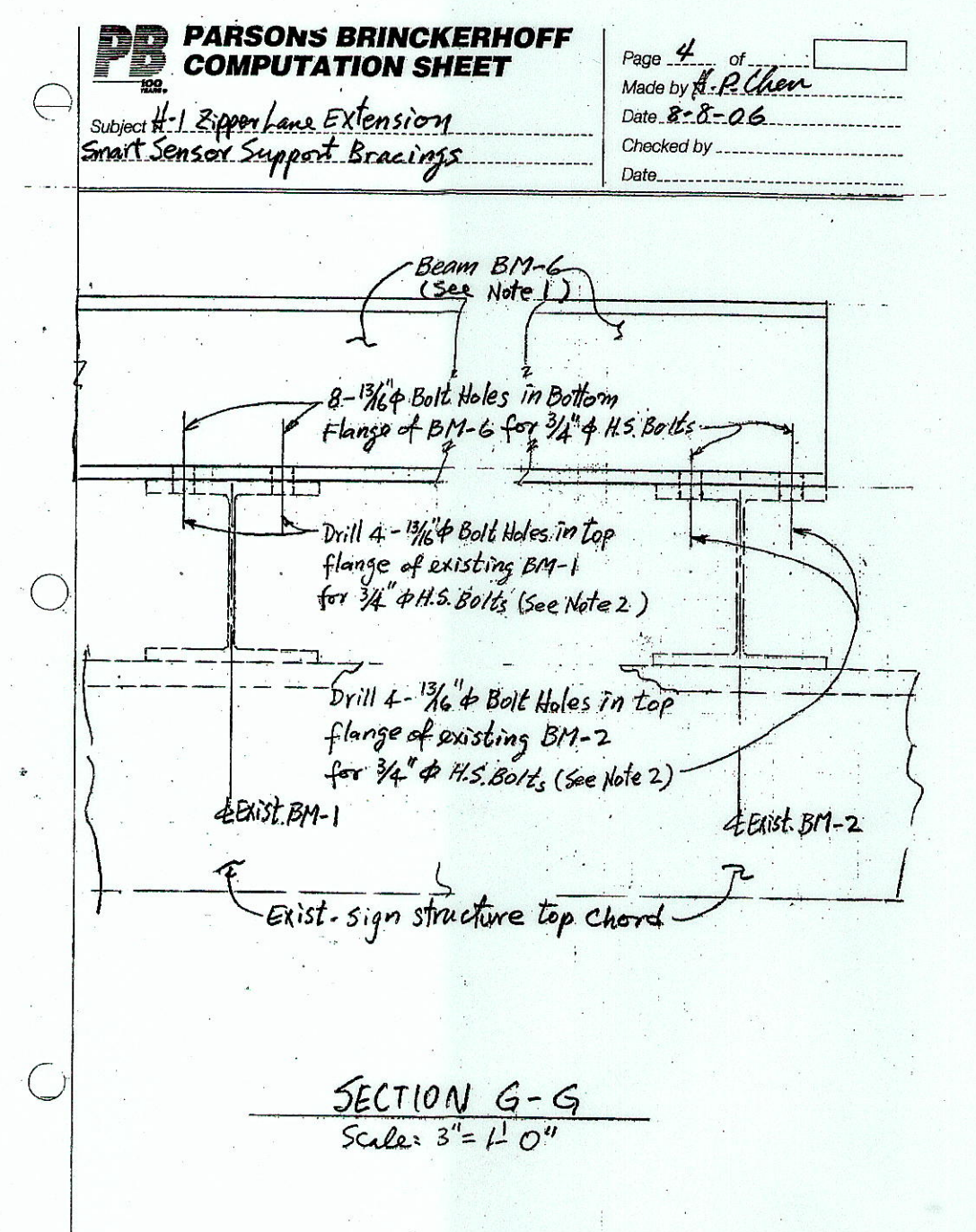
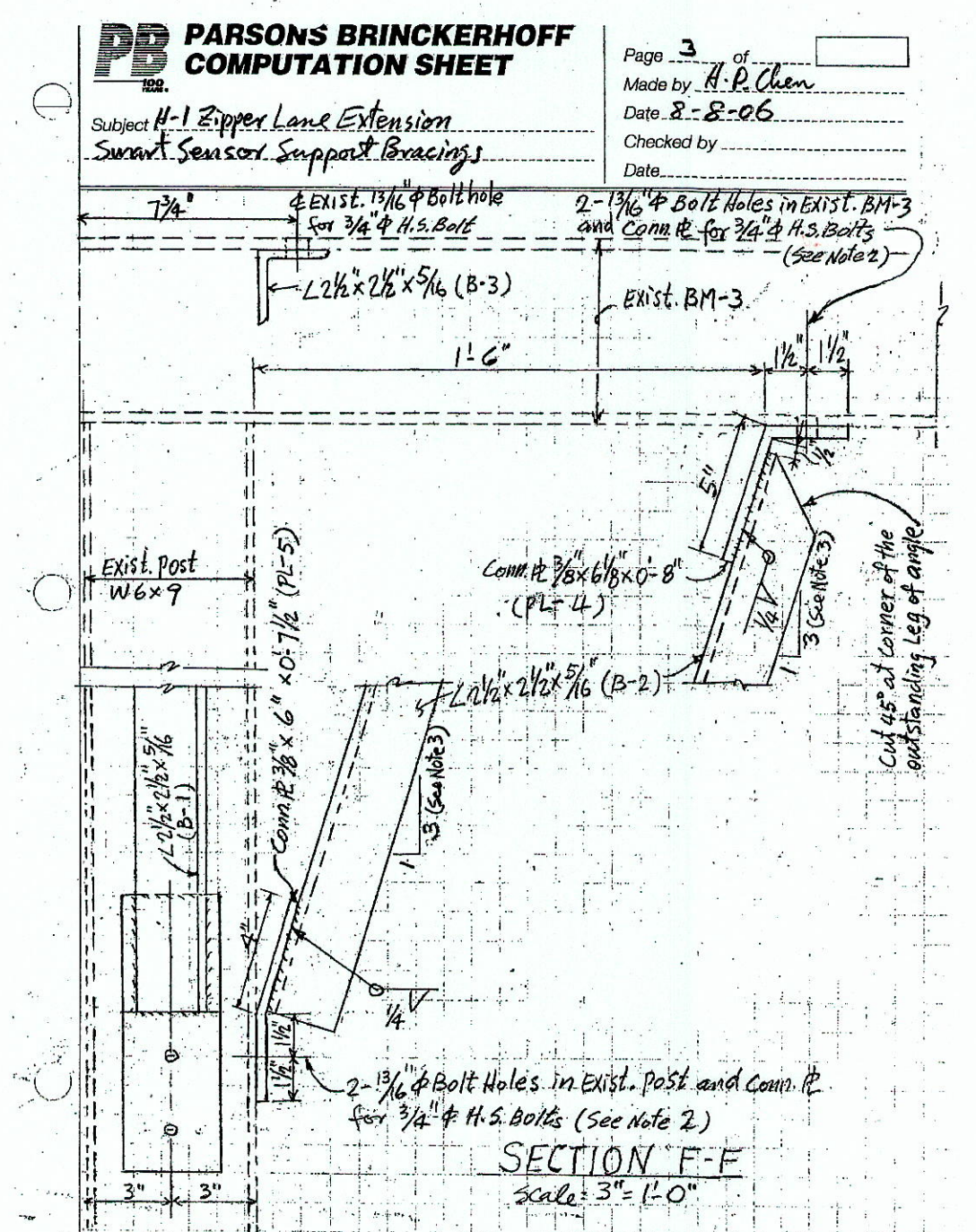
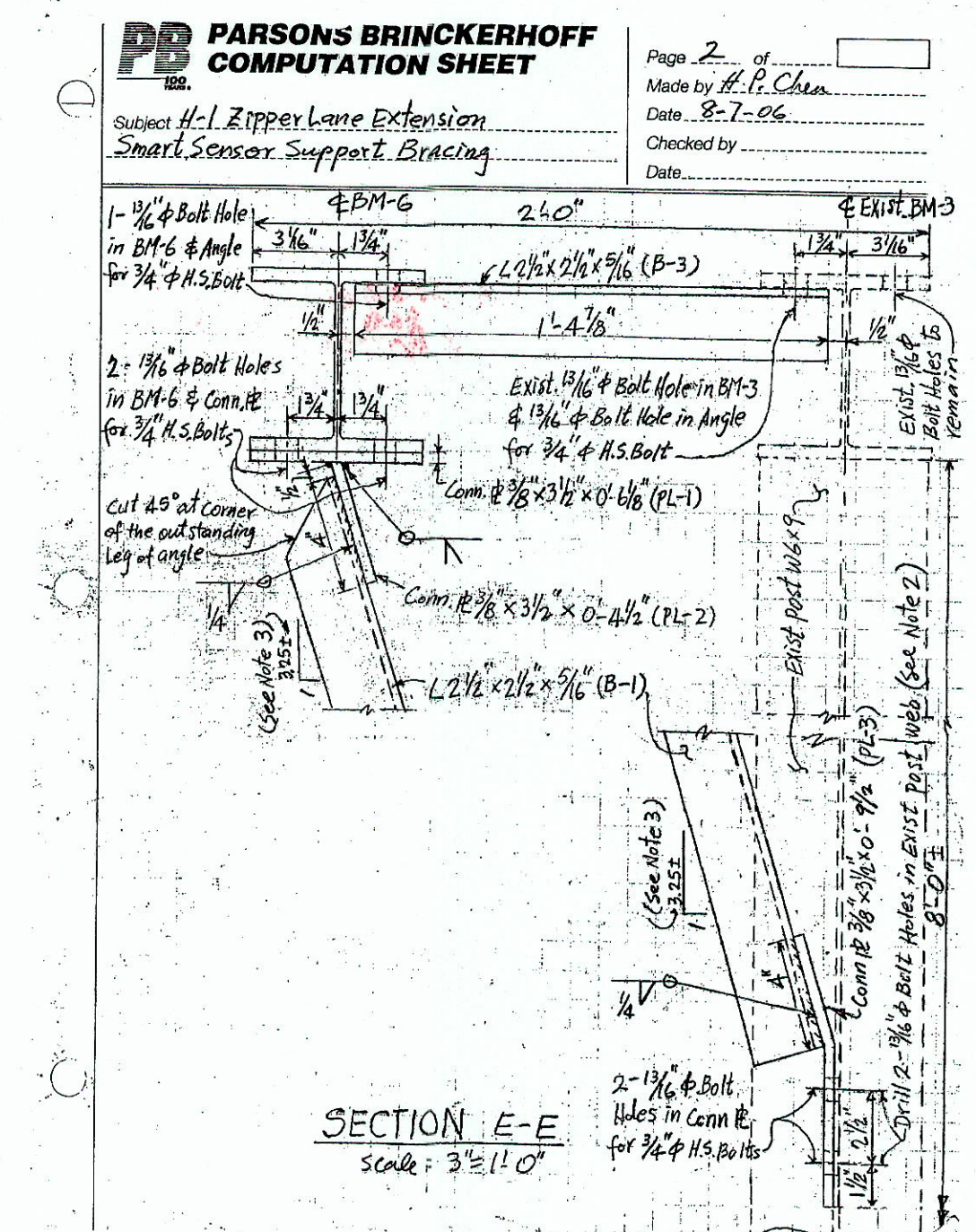
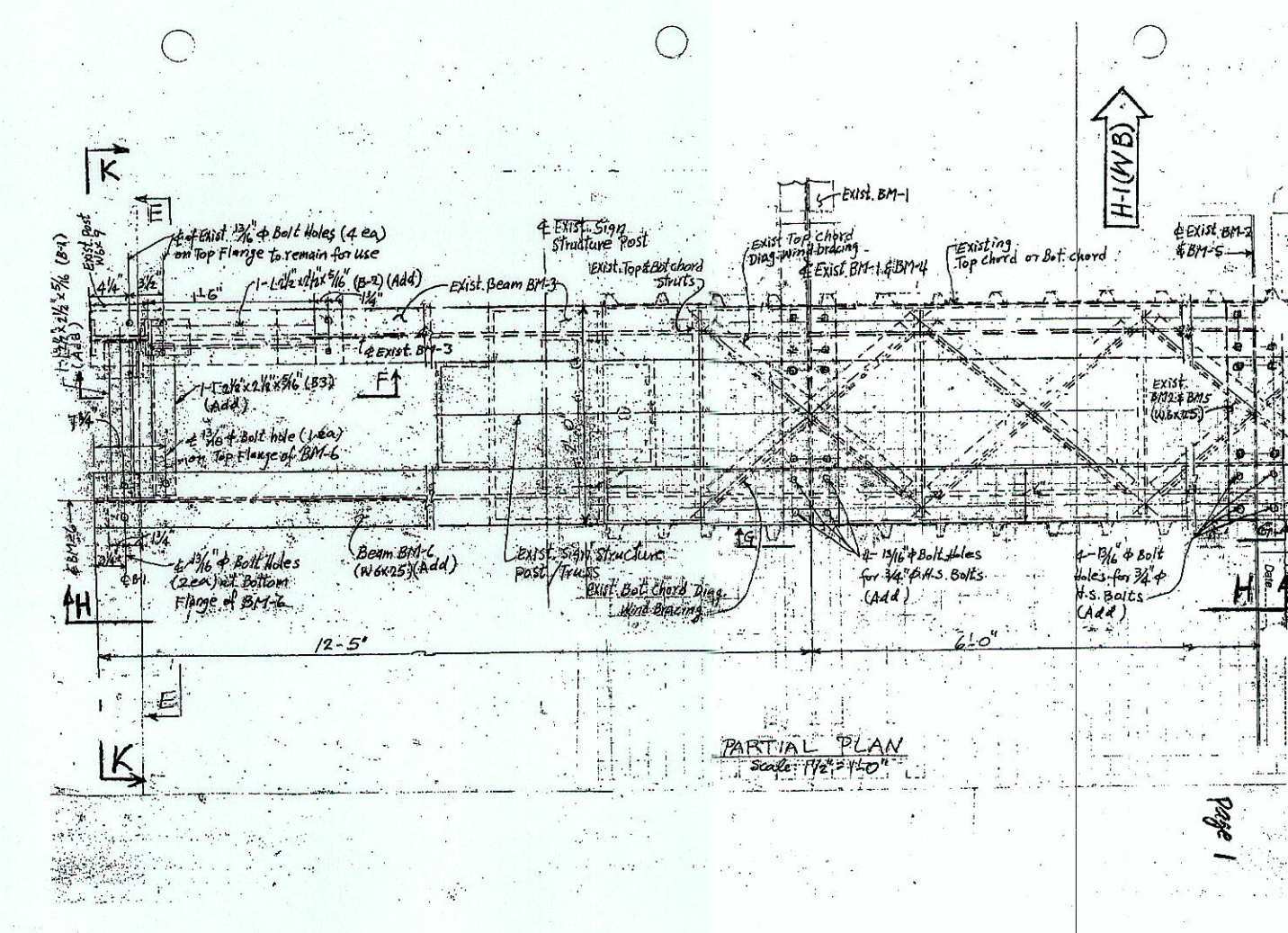
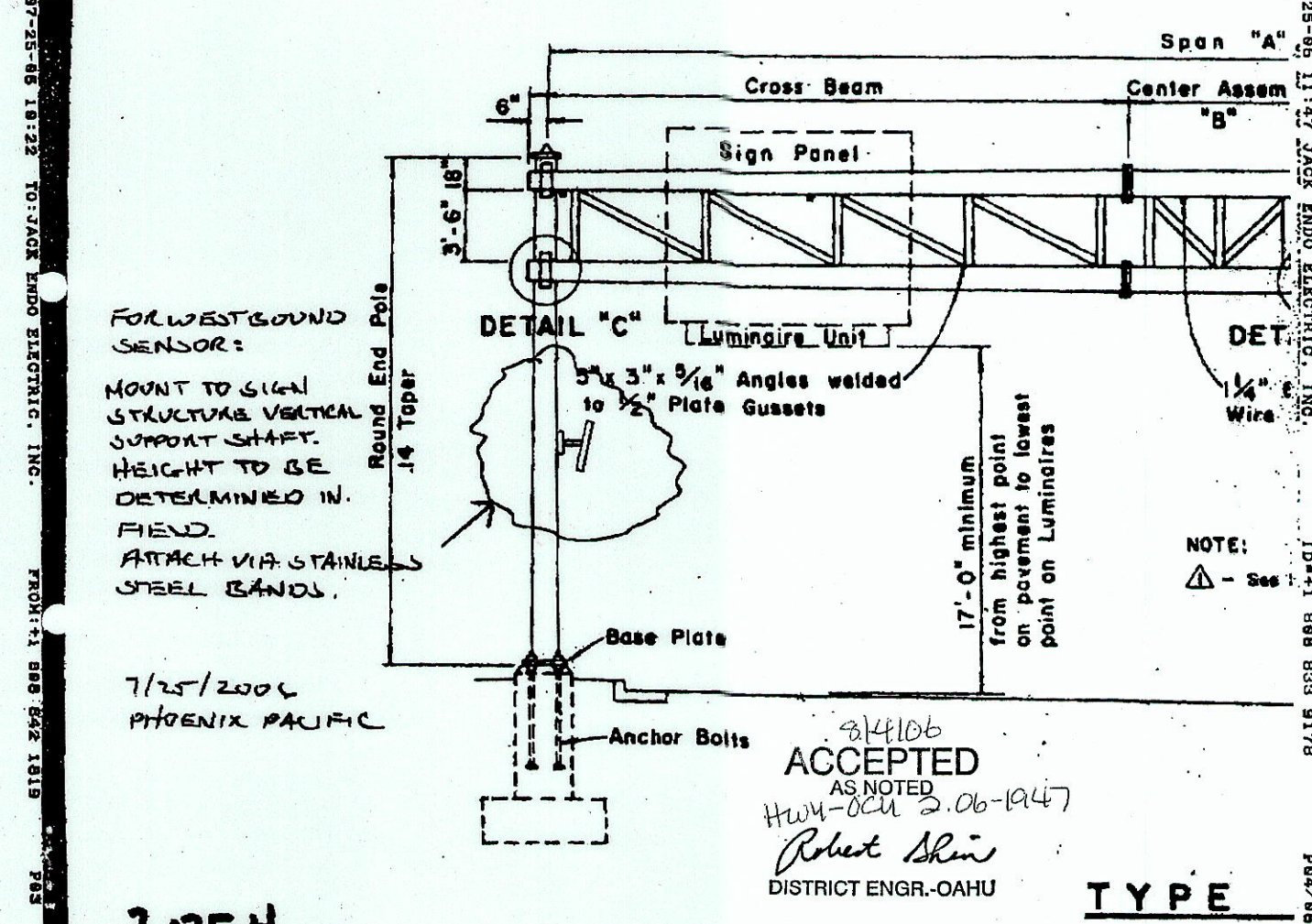
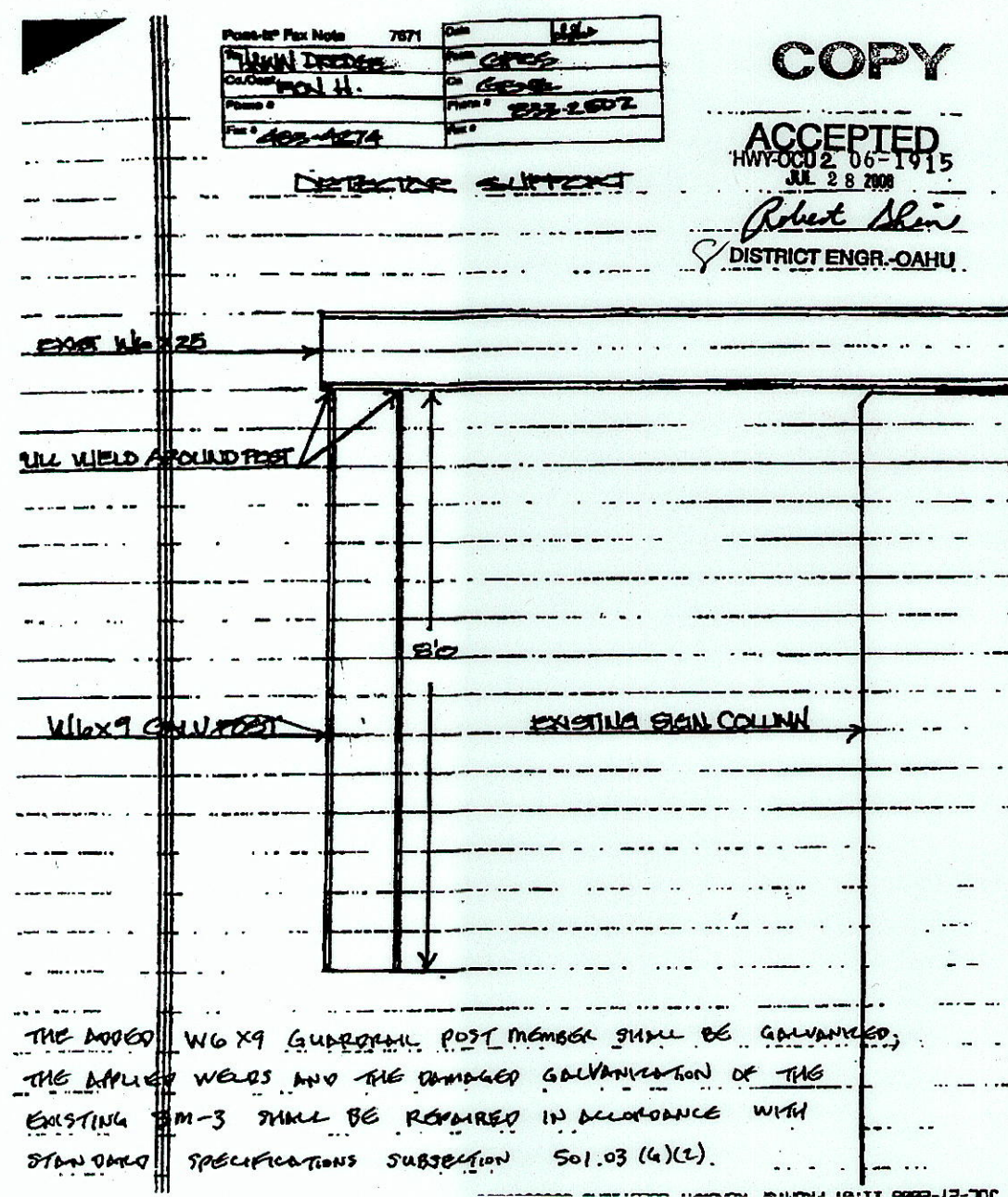
INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
 RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE
 FEDERAL AID PROJECT NO. NI-HI-1(246)

Scale: As Noted Date: March 2, 2004

SHEET No. E-20B OF 20 SHEETS

C.O. 105 S-2

FED. ROAD DIST. NO.	STATE	FEDERAL-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-11(246)	2004	CO105S-3	105



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
TRAFFIC SENSOR
SMART SENSOR DETAILS
 Interstate Route H-1 Zipper Lane Extension
 Radford Drive Overpass to Keahi Interchange
 Federal-Aid Project No. NH-HI-11(246)

Scale: As Noted Date: March 2, 2004

SHEET No. E20C OF 20 SHEETS

C.O. 105 S-3