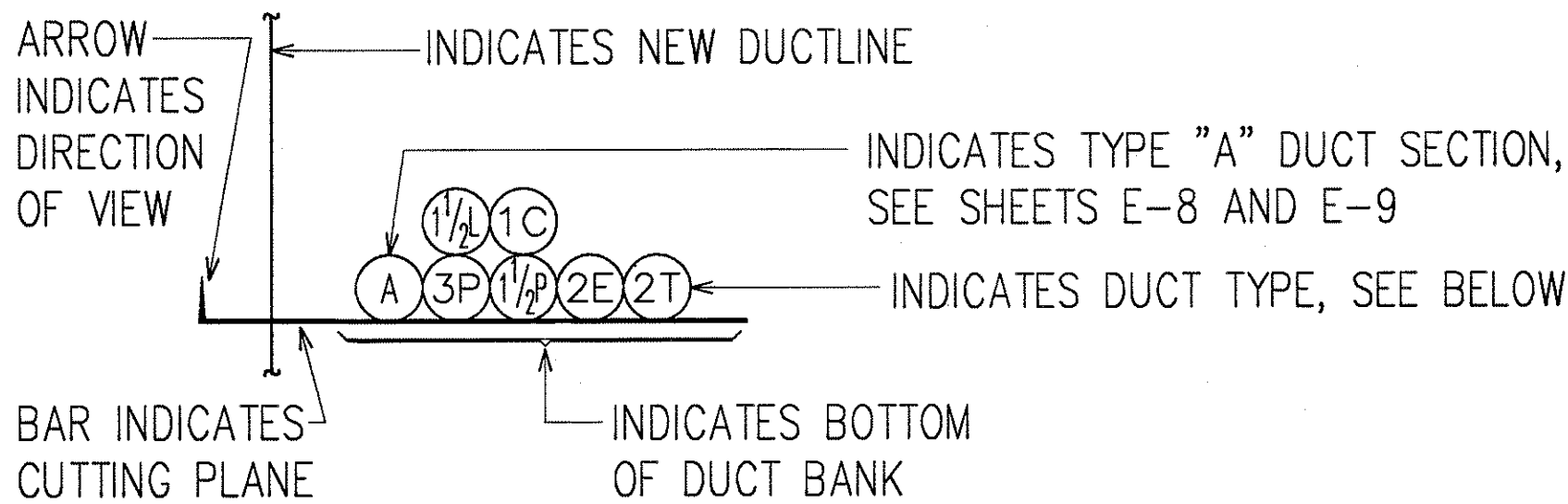


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	189	344

EXTERIOR ELECTRICAL SYMBOLS

NEW	EXISTING	DESCRIPTION	NEW	DESCRIPTION
		LUMINAIRE, BRACKET ARM AND STANDARD POLE	① →	NOTE INDICATOR, "SEE NOTE NO. 1" INDICATED.
		TWIN BRACKET ARM METAL STRANDED MOUNTED ON CONCRETE BARRIER, SEE E-	WP	DENOTES WEATHERPROOF
		RELOCATED LUMINAIRE AND BRACKET ARM AND STANDARD POLE	CS	CHANGEABLE MESSAGE SIGN CONNECTION
		RELOCATED TWIN BRACKET ARM METAL STANDARD MOUNTED ON CONCRETE BARRIER	G	BARRIER MOUNTED BARRIER TRANSFER VEHICLE SIGNAL GENERATOR CONNECTION, SEE SHEET E-96
		ELECTRICAL PANELBOARD	G	PEDESTAL MOUNTED BARRIER TRANSFER VEHICLE SIGNAL GENERATOR CONNECTION, SEE SHEET E-96
		24" X 32" PULLBOX, SIMILAR TO STATE OF HAWAII TYPE "A" PULLBOX, EXCEPT WITH "HWY LT" INSCRIBED ON COVER	SL 2	SIGN LIGHT SYSTEM CONNECTION, "2" INDICATES 2 LUMINAIRES
		19" X 28" PULLBOX, SIMILAR TO STATE OF HAWAII TYPE "B" PULLBOX, EXCEPT WITH "CONTROLS" INSCRIBED ON COVER	SG	HORIZONTAL SWING GATE CONNECTION
		24" X 32" PULLBOX, SIMILAR TO STATE OF HAWAII TYPE "A" PULLBOX, EXCEPT WITH "POWER" INSCRIBED ON COVER	MB	MOVABLE STEEL GATE CONNECTION
		2' X 4' PULLBOX, SIMILAR TO HECO 2' X 4' PULLBOX PULLBOX, EXCEPT WITH "POWER" INSCRIBED ON COVER	B	FLASHING BEACON CONNECTION
		2' X 4' HTCO PULLBOX	\$	POLE MOUNTED CONTRAFLow LANE SIGNAL SYSTEM CONTROL SWITCH
		2' X 4' HECO HANDHOLE		RACEWAY CONCEALED BELOW GRADE
				SURFACE MOUNTED EXPOSED RACEWAY, FOR MOUNTING ON SIDE OF EXISTING VIADUCT OR BRIDGE, SEE SHEET E-95 FOR EXPANSION AND DEFLECTION CONDUIT COUPLING REQUIREMENTS AT EXISTING EXPANSION JOINTS.
				SURFACE MOUNTED RACEWAY UNDER BRIDGE OR VIADUCT STRUCTURE
		EXISTING PULLBOX OR HANDHOLE, TYPE AS INDICATED.	e/t	EXISTNG HIGHWAY LIGHT CONDUIT AND WIRES
			E	EXISTING CONDUIT WITH NEW WIRES
		STATE OF HAWAII SERVICE EQUIPMENT		
		EXISTING UTILITY COMPANY WOOD POLE		
	X	ITEM TO BE REMOVED		

DUCT SECTION INDICATOR LEGEND



- L INDICATES HIGHWAY LIGHTING DUCT
- C INDICATES CONTROLS DUCT
- T INDICATES HAWAIIAN TELEPHONE COMPANY DUCT
- E INDICATES HAWAIIAN ELECTRIC COMPANY DUCT
- P INDICATES SECONDARY POWER DUCT FROM PANELBOARD OR CONTROLLER CABINET

EQUIPMENT SCHEDULE

PULLBOXES SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

TYPE "A" PULLBOX (STATE OF HAWAII) 24" X 32" TYPE "A" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND MODIFIED COVER, PROVIDED IN ACCORDANCE WITH DEPARTMENT OF TRANSPORTATION STANDARD DRAWING TE-41.

TYPE "B" PULLBOX (STATE OF HAWAII) 19" X 28" TYPE "B" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND MODIFIED COVER, PROVIDED IN ACCORDANCE WITH DEPARTMENT OF TRANSPORTATION STANDARD DRAWING TE-41.

2' X 4' HTCO PULLBOX 2' X 4' TYPE 435TB PRECAST CONCRETE PULLBOX WITH 2-PIECE NON-SKID STEEL CHECKERED PLATE COVERS, PER HTCO STANDARD DRAWING NO. 34056. A MINIMUM OF 2 PRE-CAST CONCRETE PULLBOX SECTIONS SHALL BE REQUIRED AT EACH PULLBOX.

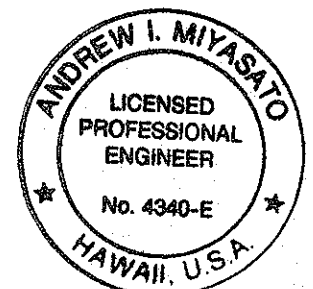
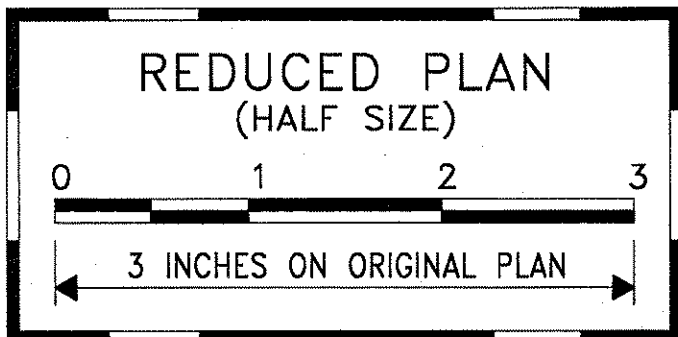
2' X 4' HECO PULLBOX 2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 30-2005.

2' X 4' ELECTRIC PULLBOX (STATE OF HAWAII) 2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 30-2005.

HIGHWAY LIGHT ID TAG INDICATOR LEGEND

1	= POLE LOCATION FROM EDGE OF TRAVELWAY, IN FEET
2	= HIGHWAY LIGHT & POLE NUMBER
3	= BRACKET ARM SPAN, IN FEET
4	= LUMINAIRE HEIGHT ABOVE PAVEMENT, IN FEET
5	= POLE LOCATION, STATION NUMBER
6	= POLE BASE MOUNTING, SEE NOTE BELOW
7	= LIGHT CIRCUIT NUMBER & PHASE TO PHASE CONNECTION, WHEN APPLICABLE

POLE BASE TYPE NOTES:
TYPE A = ANCHOR BASE IN GRADE
TYPE B = SLIP BASE IN GRADE
TYPE C = ANCHOR BASE ON CONCRETE BARRIER



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Ronald N. S. Ho & Assoc., Inc.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
EXTERIOR ELECTRICAL SYMBOLS,
EQUIPMENT SCHEDULE
INTERSTATE ROUTE H-1
CONTRAFLow AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-2 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	190	344

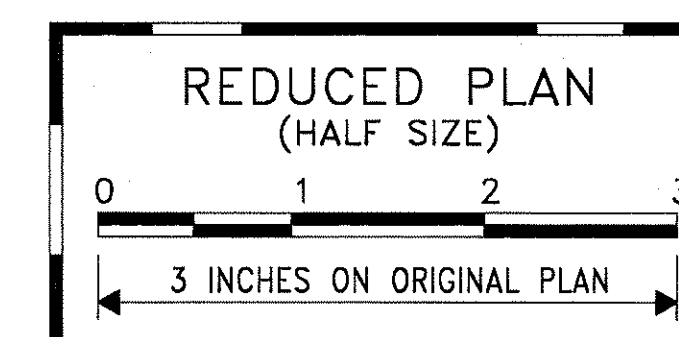
INTERIOR ELECTRICAL SYMBOLS

[illegible]

NOTE: NO HASH MARKS ON RACEWAY SYMBOL INDICATES 2 WIRES,
3 HASH MARKS INDICATE 3 WIRES; ETC.

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
	CHECKED BY _____
No. _____	

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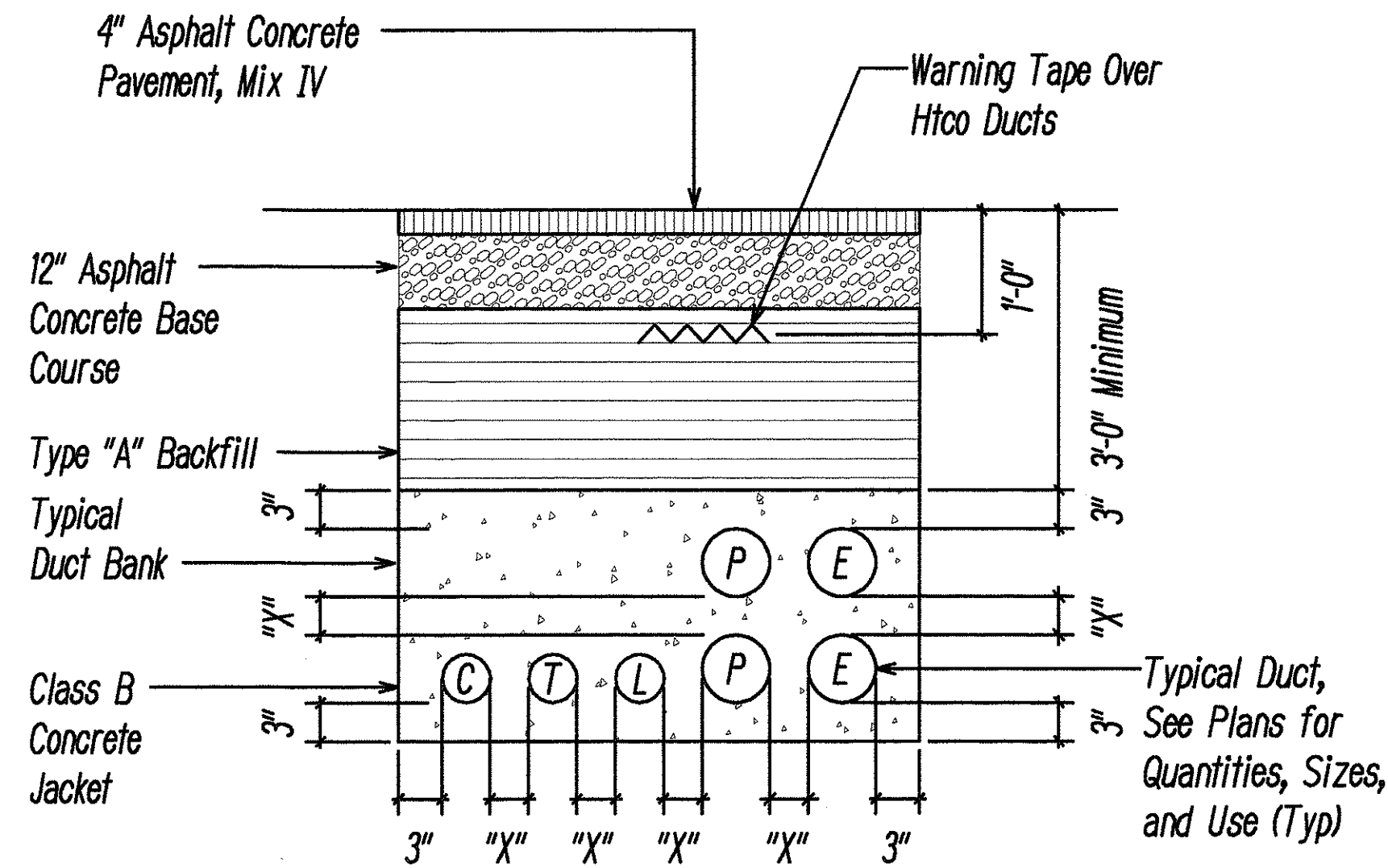
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Andrew J. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERIOR ELECTRICAL SYMBOLS

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-3 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O.195	344



- See Sheet E-9 for Various Duct Section Details
- Provide Schedule 40 Type for Concrete Encased Ducts & Schedule 80 Type for Direct Buried.

TYPICAL DUCT SECTION
Not to Scale

Duct Separation Distance "X" Requirements in Duct Sections:

E - E (or P, L) = 1 1/2"	E = HECo Duct
E - T (or C) = 3"	T = HTCo Duct
P - P (or L) = 1 1/2"	P = State Power Duct
P - T (or C) = 3"	C = State Controls Duct
T - T = 1 1/2"	L = State Highway Light Duct
T - L (or C) = 3"	
L - L = 1 1/2"	
L - C = 3"	
C - C = 1 1/2"	

Duct Separation Distance "Y" Requirements in Duct Sections:

E - E (or P, L) = 3"	E = HECo Duct
E - T (or C) = 12"	T = HTCo Duct
P - P (or L) = 3"	P = State Power Duct
P - T (or C) = 12"	C = State Controls Duct
T - T = 3"	L = State Highway Light Duct
T - L (or C) = 12"	
L - L = 3"	
L - C = 12"	
C - C = 3"	

DUCT SECTION BACKFILL NOTES

- Trench Backfill Material "A"
1. Sand Equivalent ≥ 20
2. 8" Maximum Lift Loose
3. 95% Compaction
- Trench Backfill Material "B"
1. Sand Equivalent ≥ 20
2. 8" Maximum Lift Loose
3. 95% Compaction
- If Material below Duct is not Equivalent to Backfill Material "B", Excavate Material & Provide 3" Backfill Material "B". See Above
- Concrete - 3" Encasement, 2500 PSI Compressive Strength @ 28 Days.
- Beach Sand

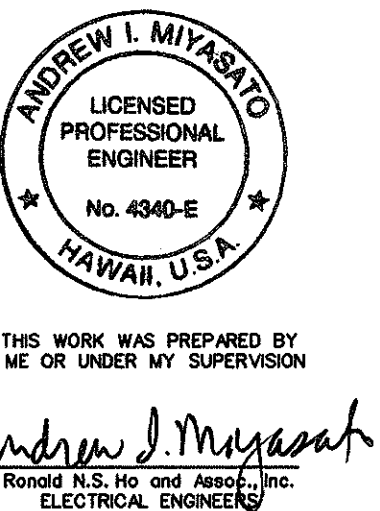
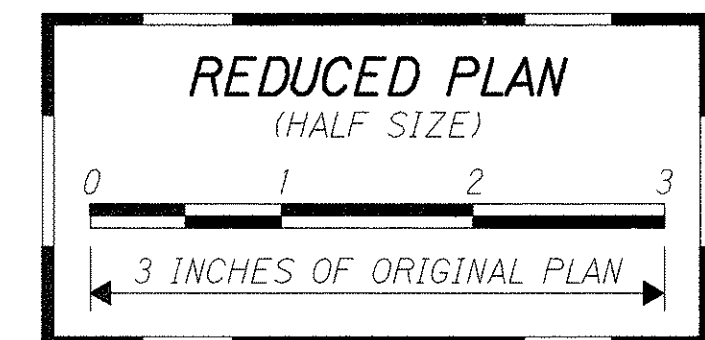
NOTE: Base Course & Sub-Base Course per 1985 State Standard Specifications for Highway Construction.

DUCT SCHEDULE

Item	Description
1P	State Power - 1"C
1 1/4 P	State Power - 1 1/4"C
1 1/2 P	State Power - 1 1/2"C
2P	State Power - 2"C
3P	State Power - 3"C
1L	State Highway Light - 1"C
1C	State Controls - 1"C
1 1/4 C	State Controls - 1 1/4"C
2E	HECo - 2"C
3E	HECo - 3"C
2T	HTCo - 2"C

General Notes:

- Provide Polyolefin 200 lb Test Pullcord in all Empty Conduits, unless otherwise Noted.
- Contractor shall Coordinate all Work with Hawaiian Telephone Co. and Hawaiian Electric Co.
- See Construction Notes on Civil Sheets.
- For Underground Telephone Ducts, Provide Duct Measuring/ Cable Pulling Tape (Neptco WP1800P Muletape or Approved Equal) in each Duct.
- Provide Warning Tape over Hawaiian Telephone Co. Ducts.
- All Applicable Construction work on Hawaiian Telephone Co. Facilities shall be done in Accordance with the "Hawaiian Telephone Company Standard Specifications for placing Underground Telephone Systems" dated May 1992.



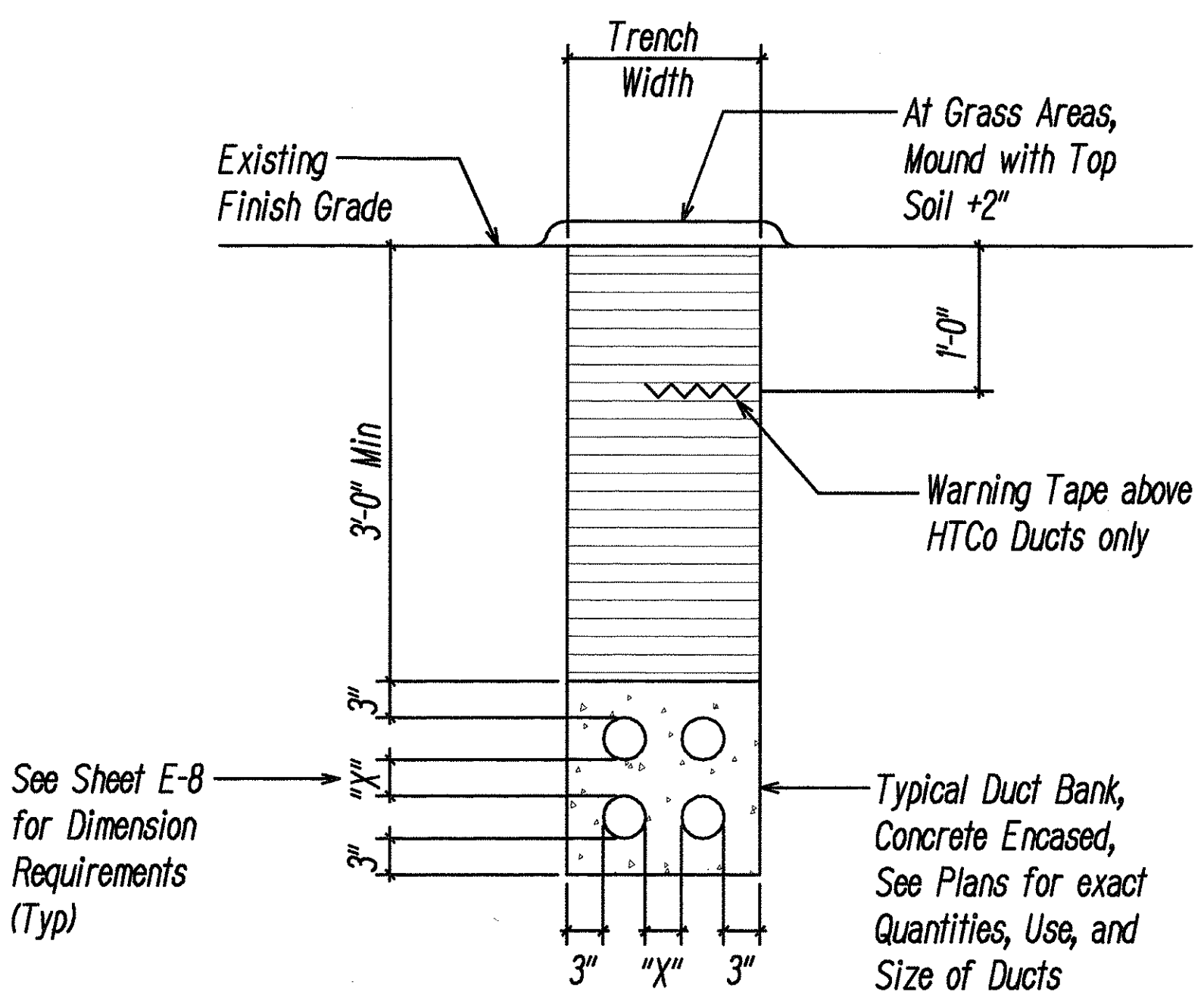
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DUCT SECTION DETAILS I

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

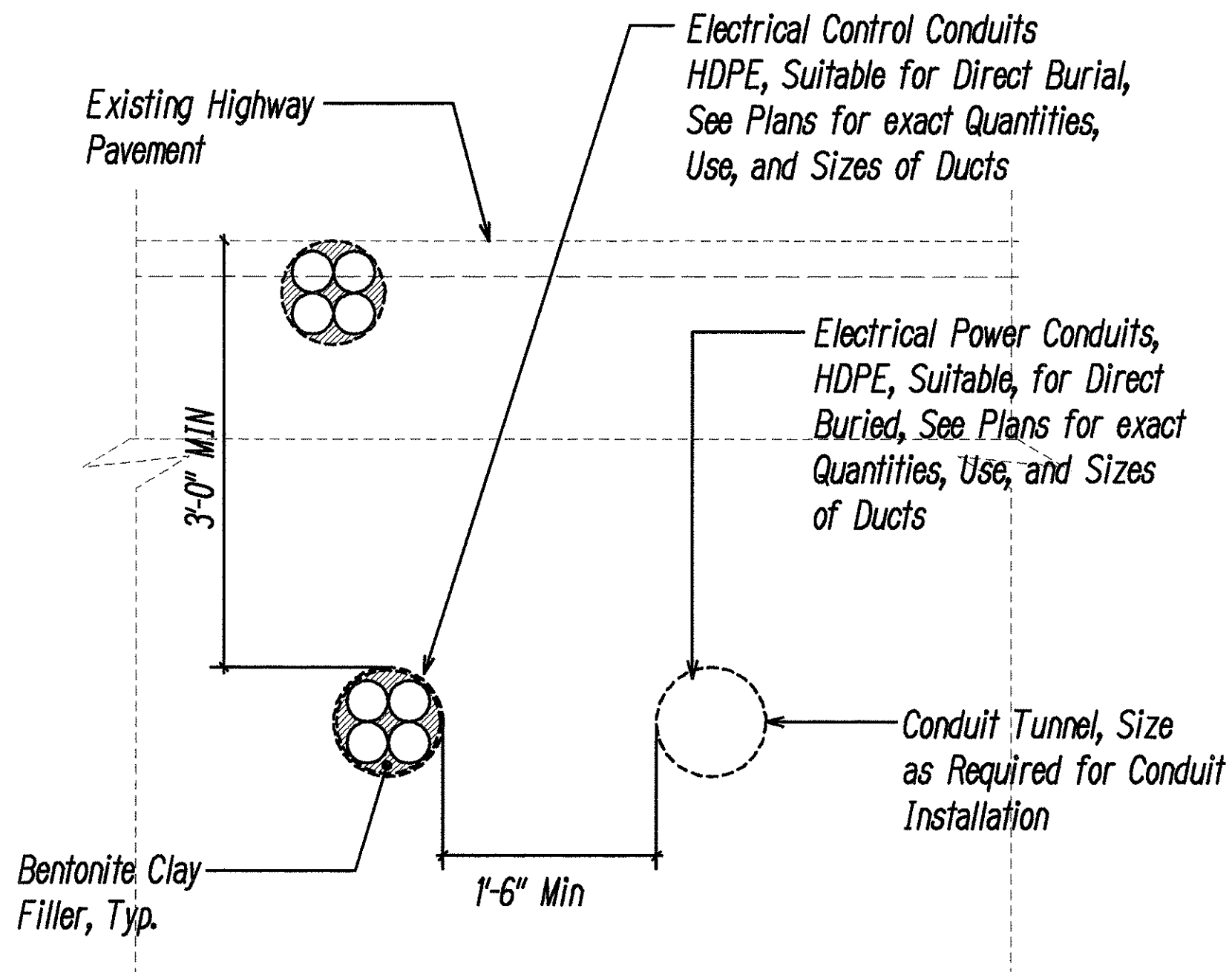
Scale: As Noted Date: October, 1997

SHEET No. E-8 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 196	344

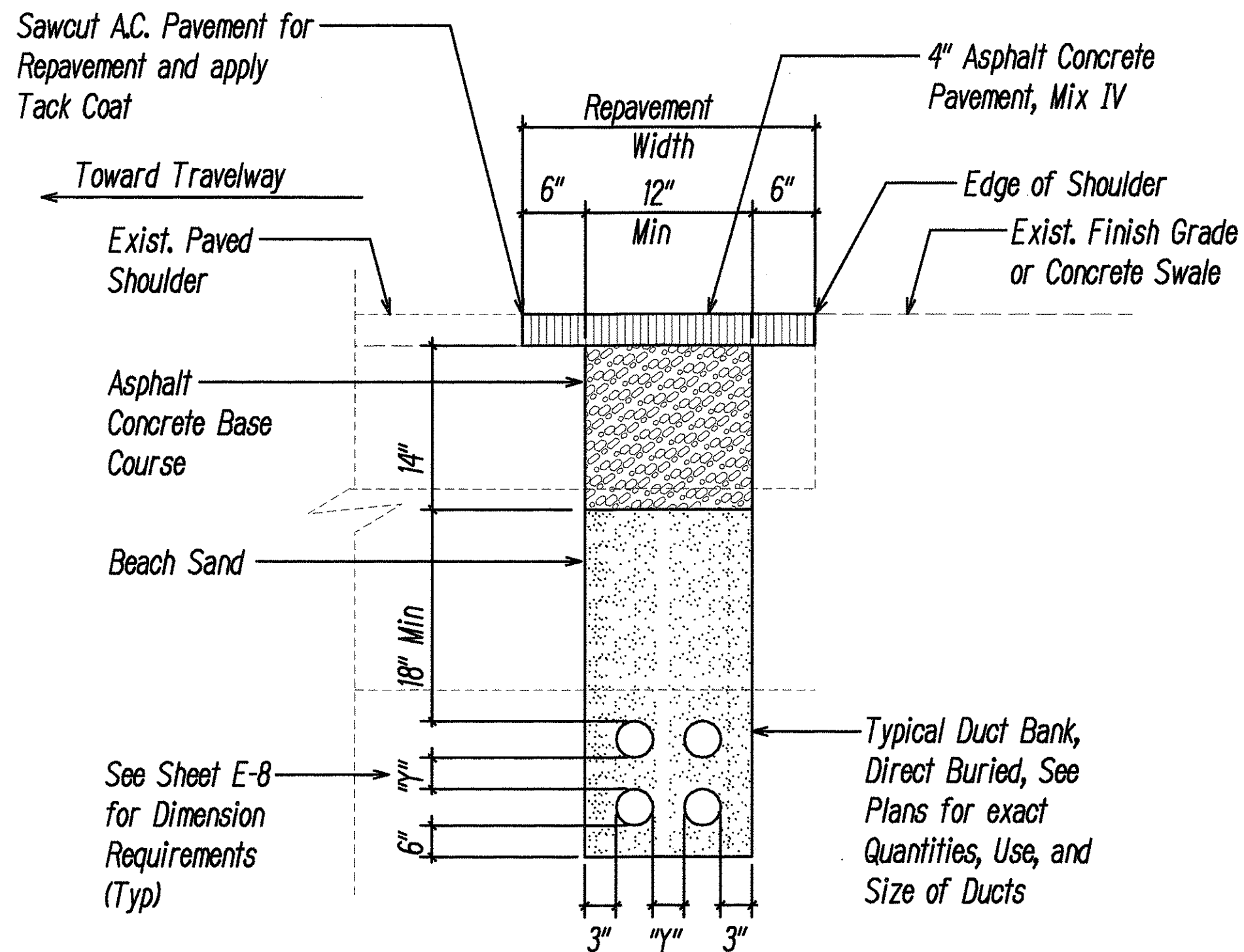


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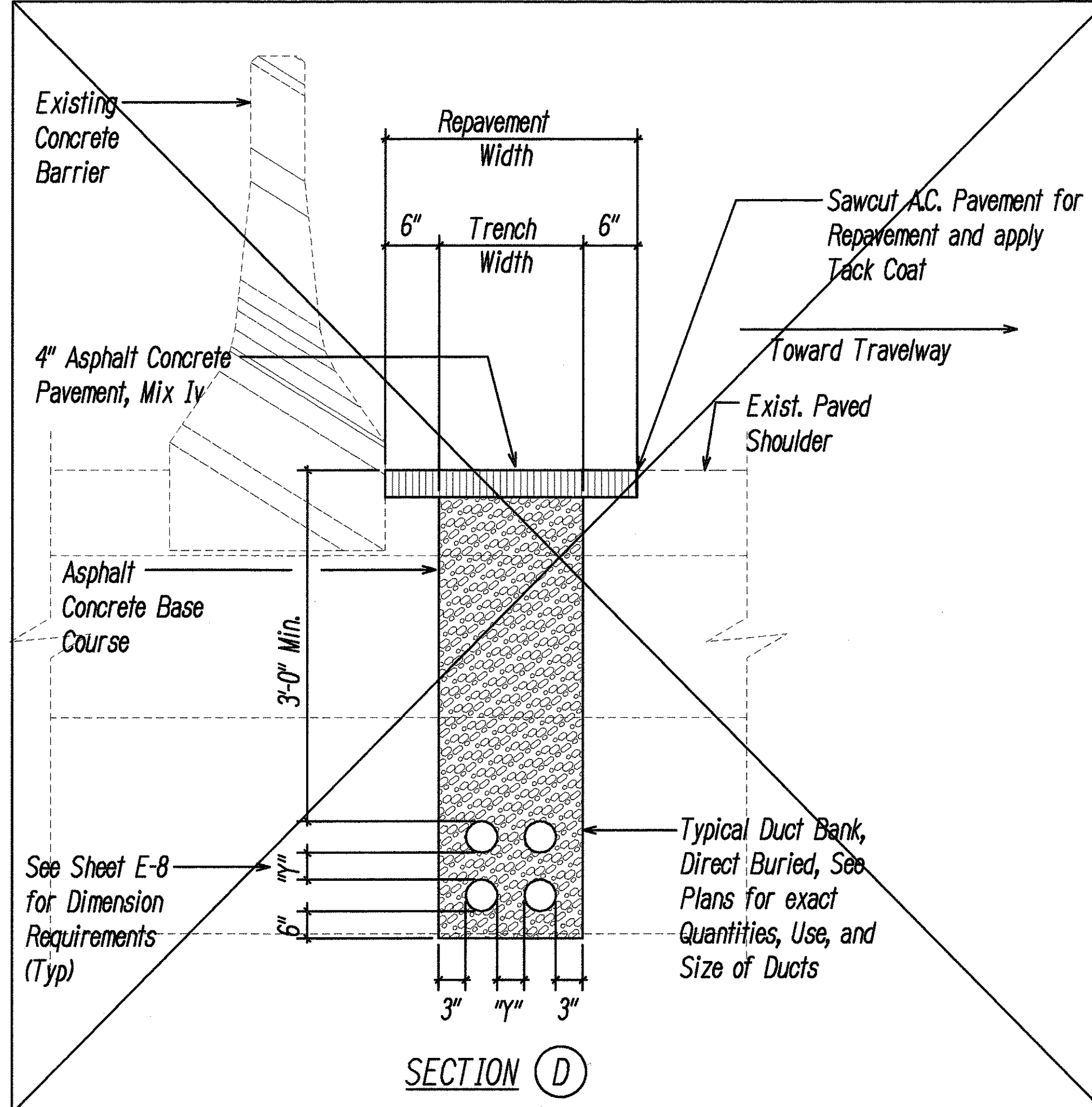


Note: See Specifications, Section 630-Trenchless Sleeves for Conduit Installation.

SECTION (B)

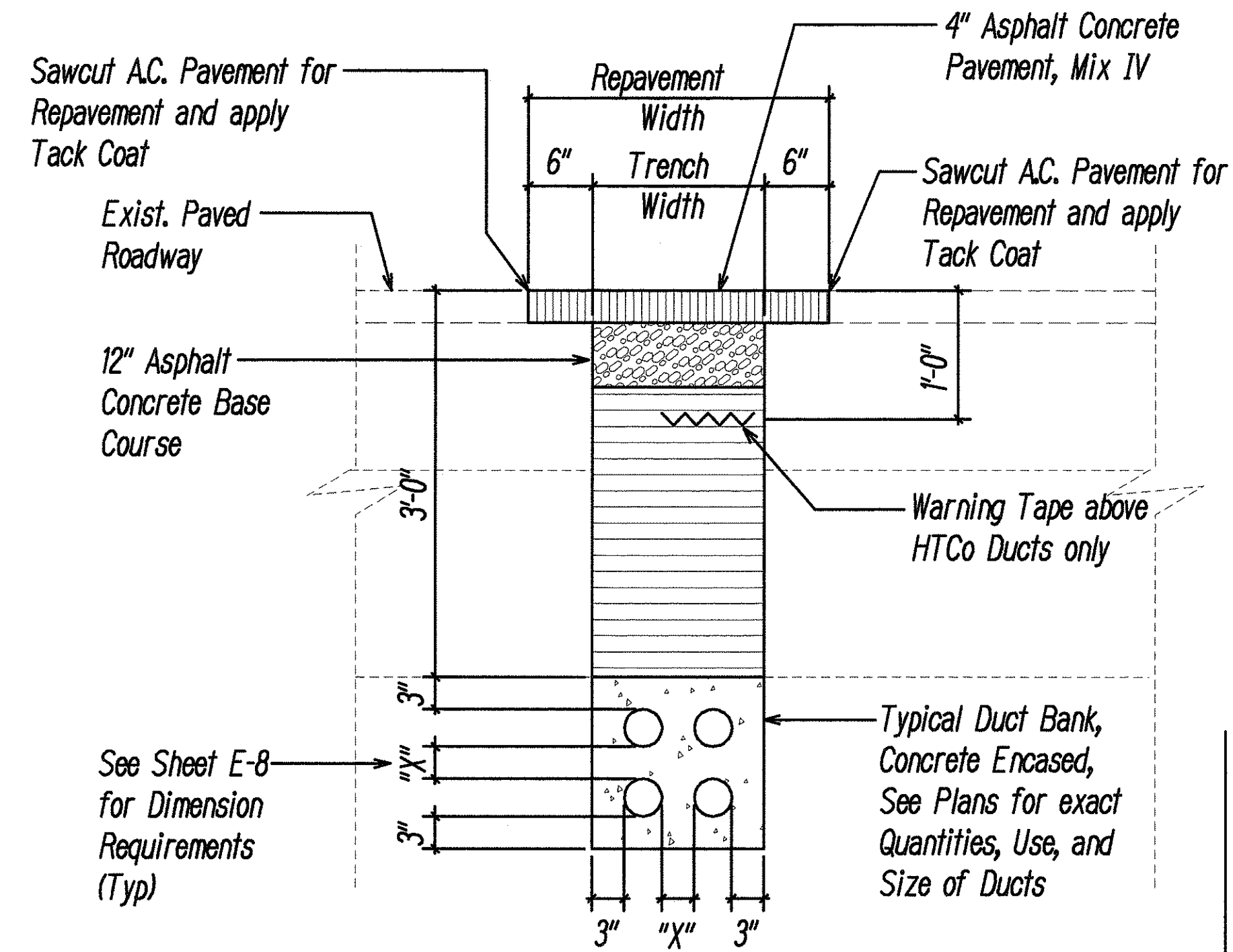


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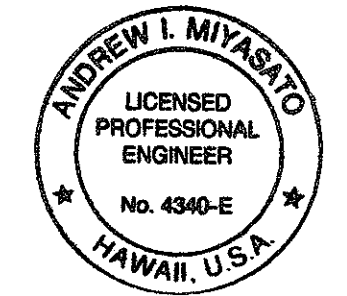


SECTION (D)

Omit, See Sheet E-9A



SECTION (E)



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 Ronald H. Ho and Assoc., Inc.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
DUCT SECTION DETAILS II

**INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. HIEFG-01-96**

Scale: As Noted Date: October, 1997

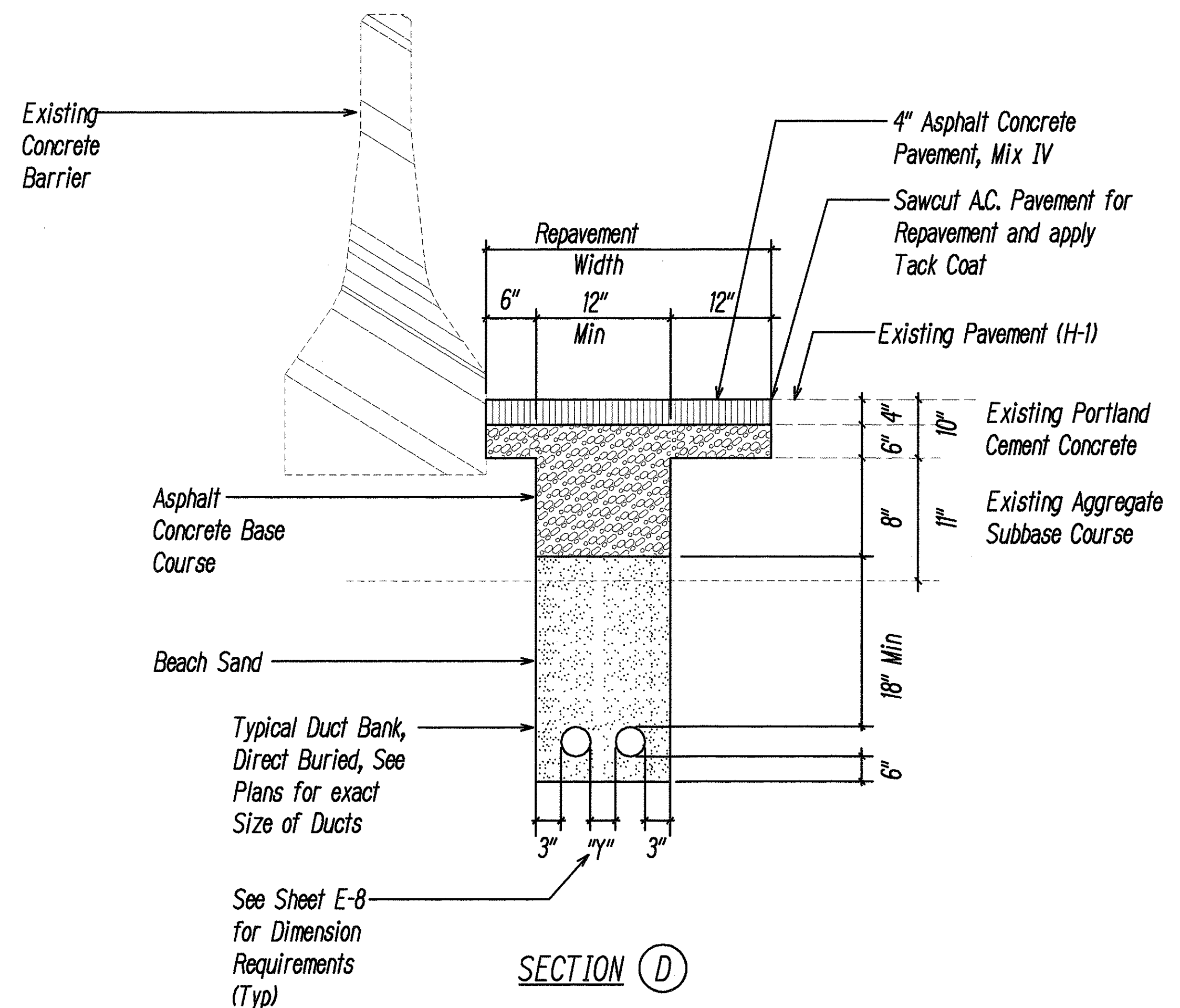
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TRACED BY	
NOTE BOOK	
QUANTITIES BY	
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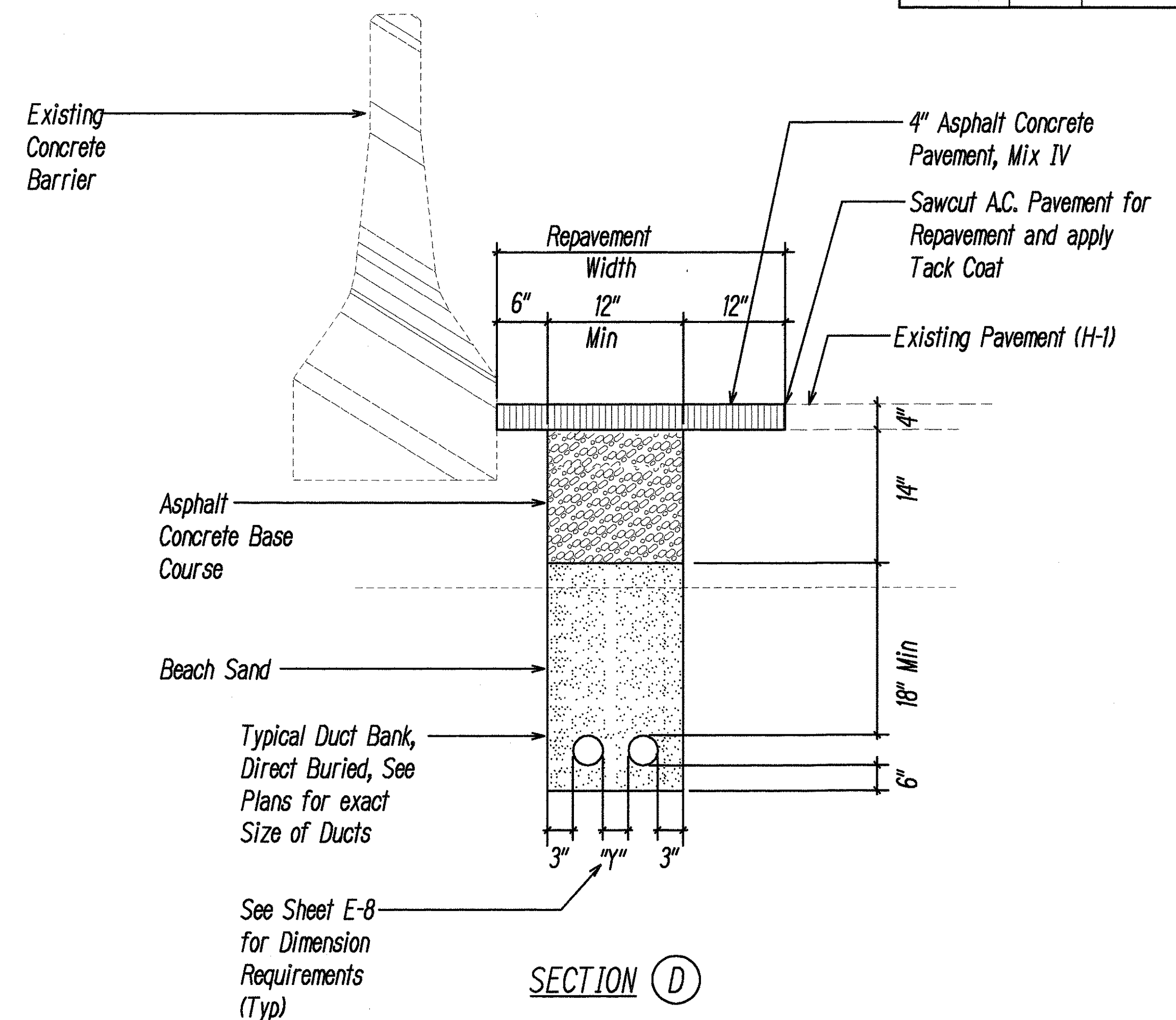
TYPICAL DUCT SECTION DETAILS
 Not to Scale

1/13/98	Revised Duct Sections C & D
Date	Revision

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 196S-1	344



FOR AREAS WITH CONCRETE PAVEMENT
Not to Scale



FOR AREAS WITH ASPHALT PAVEMENT
Not to Scale

Note: If Shoulder PCC is not tied, the entire Shoulder PCC should be Removed and Replaced after Installation of the Duct/Pipe.

DATE	
SURVEY PLOTTED BY	
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NOTE BOOK	
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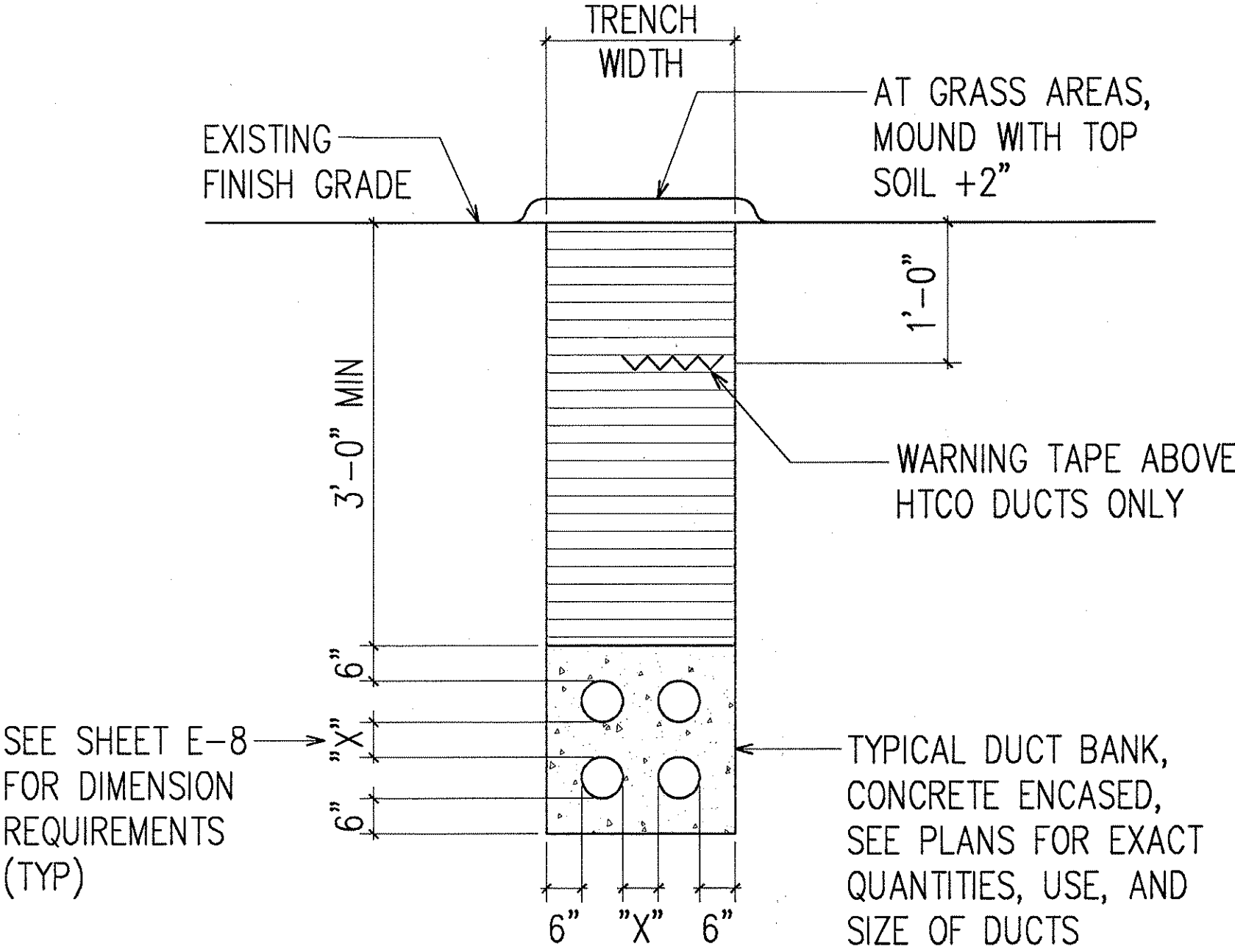
ANDREW I. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 4340-E
HAWAII, U.S.A.

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Andrew Miyasato
Registered Professional Engineer
ELECTRICAL ENGINEERS

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DUCT SECTION DETAILS III	
INTERSTATE ROUTE H-1 CONTRAFLOW AND SHOULDER LANE PROJECT NO. HIEFG-01-96	
1/13/98	Revised Duct Sections D
Date	Revision
Scale: As Noted Date: October, 1997	
SHEET No. E-9A OF SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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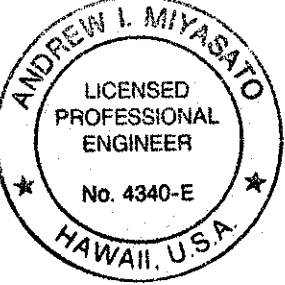


SECTION (F)

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NOTE BOOK	DESIGNED BY	
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	CHECKED BY	
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TYPICAL DUCT SECTION DETAILS
NOT TO SCALE



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Andrew L. Miyasato
2/27/98
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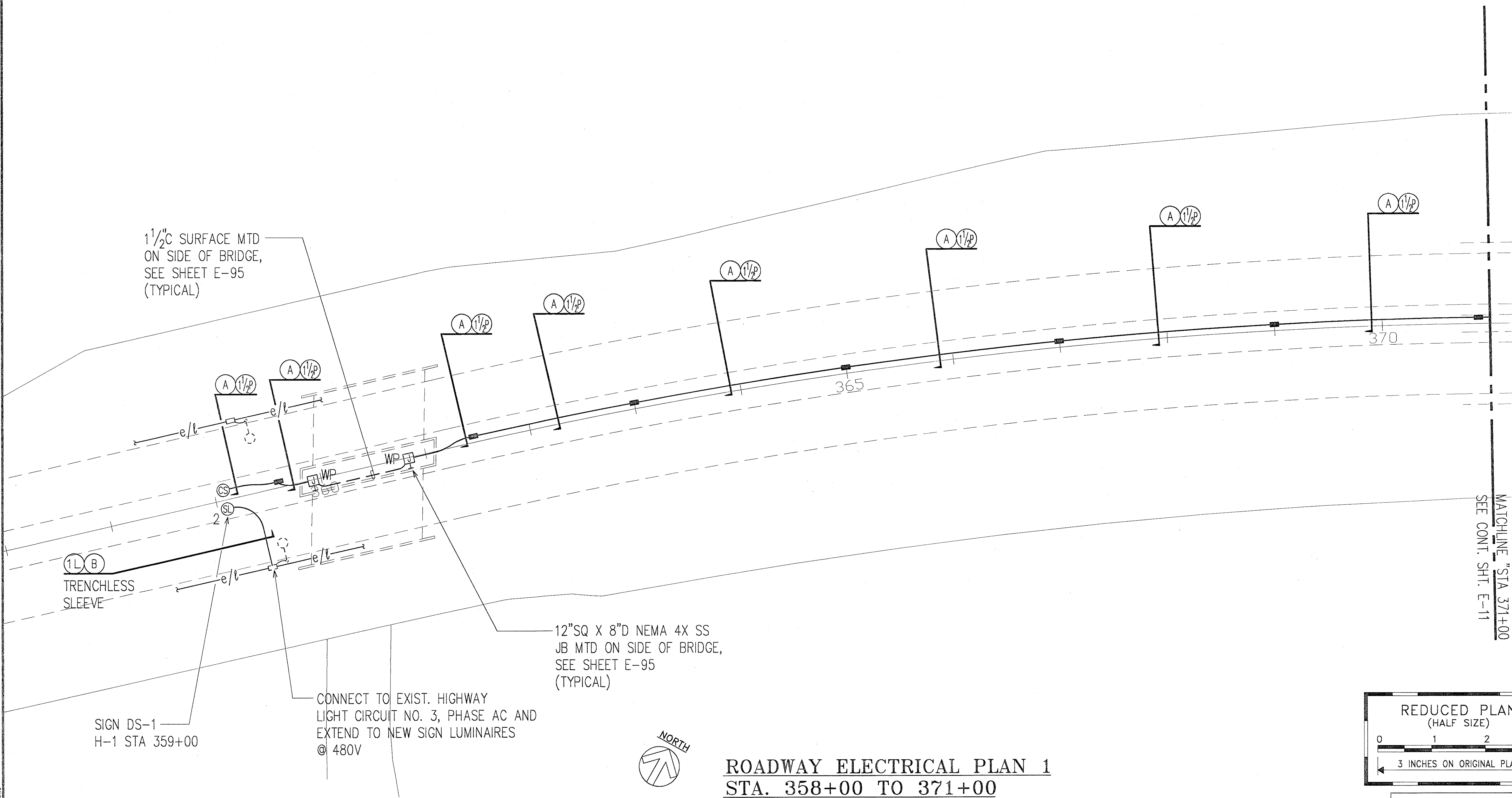
2/27/98	ADDED DUCT SECTION F
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DUCT SECTION DETAILS IV

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-9B OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	197	344



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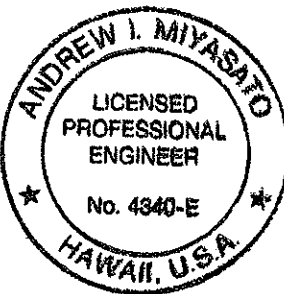
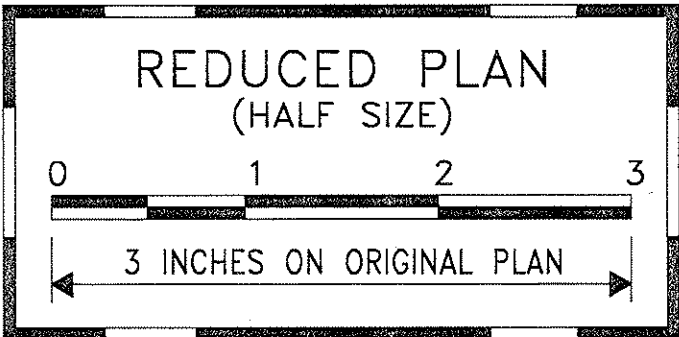
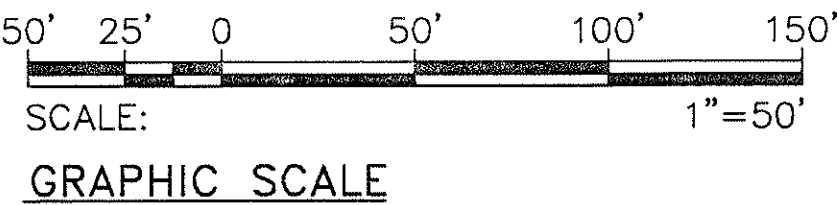
SIGN DS-1
 H-1 STA 359+00

CONNECT TO EXIST. HIGHWAY
 LIGHT CIRCUIT NO. 3, PHASE AC AND
 EXTEND TO NEW SIGN LUMINAIRES
 @ 480V

12"SQ X 8"D NEMA 4X SS
 JB MTD ON SIDE OF BRIDGE,
 SEE SHEET E-95
 (TYPICAL)



ROADWAY ELECTRICAL PLAN 1
STA. 358+00 TO 371+00
 SCALE: 1"=50'

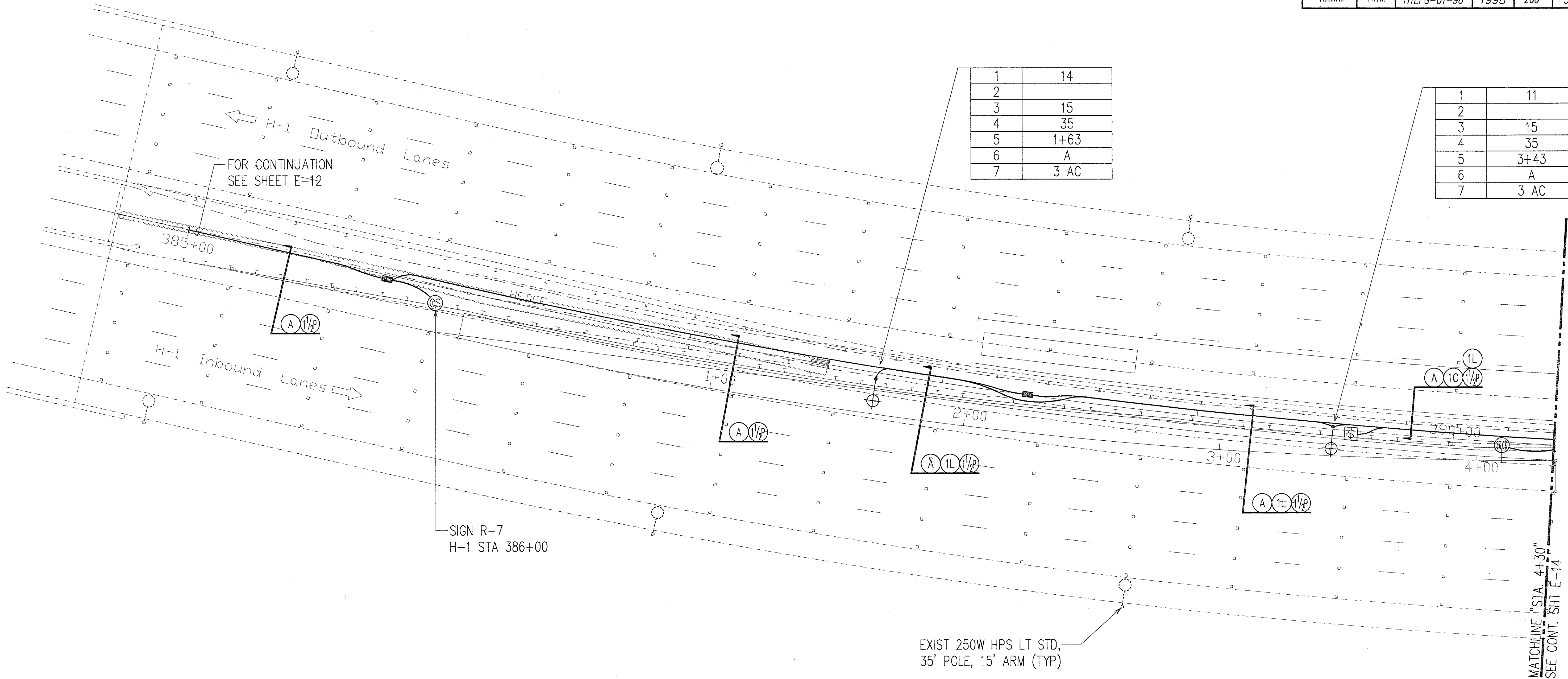


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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 1
STA. 358+00 TO 371+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-10 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	200	344



1	14
2	
3	15
4	35
5	1+63
6	A
7	3 AC

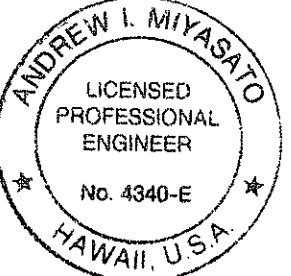
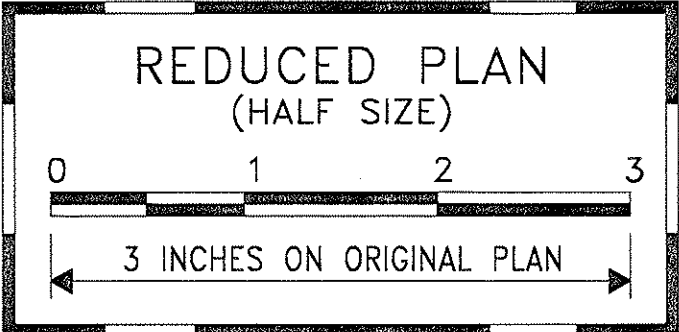
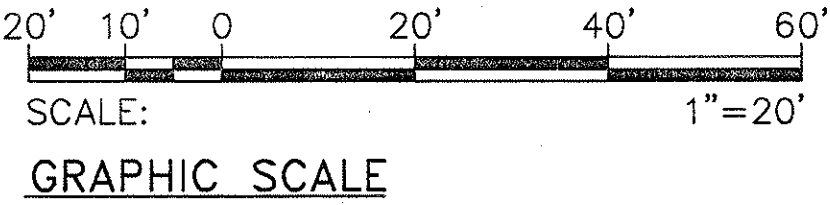
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2	
3	15
4	35
5	3+43
6	A
7	3 AC

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NOTE BOOK	DRAWN BY	
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	CHECKED BY	

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CROSSOVER NO. 1 ELECTRICAL PLAN 1
 SCALE: 1"=20'



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 ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 1 ELECTRICAL PLAN 1

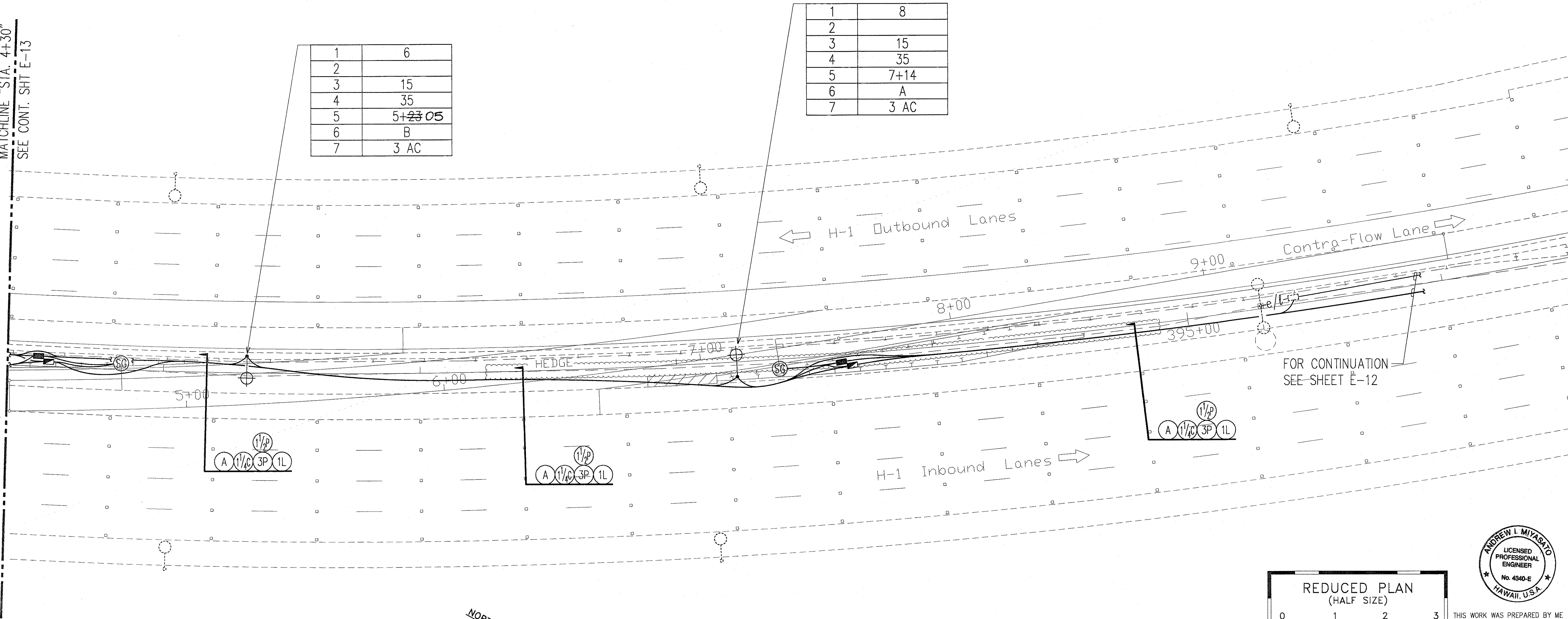
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-13 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	201	344

MATCHLINE "STA. 4+30"
SEE CONT. SHT E-13

1	6
2	
3	15
4	35
5	5+23.05
6	B
7	3 AC

1	8
2	
3	15
4	35
5	7+14
6	A
7	3 AC

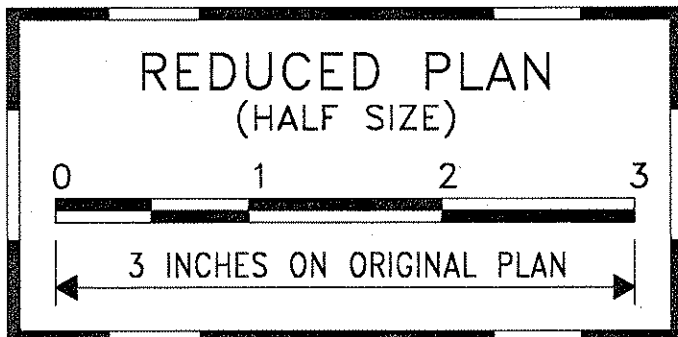


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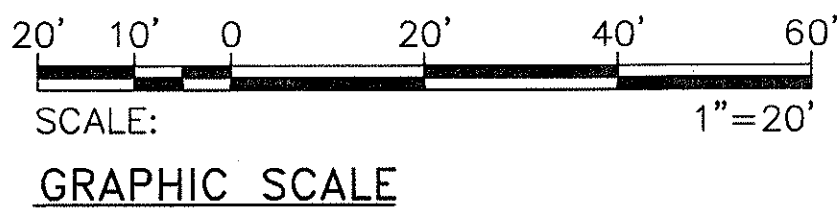
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CROSSOVER NO. 1 ELECTRICAL PLAN 2
SCALE: 1"=20'



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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



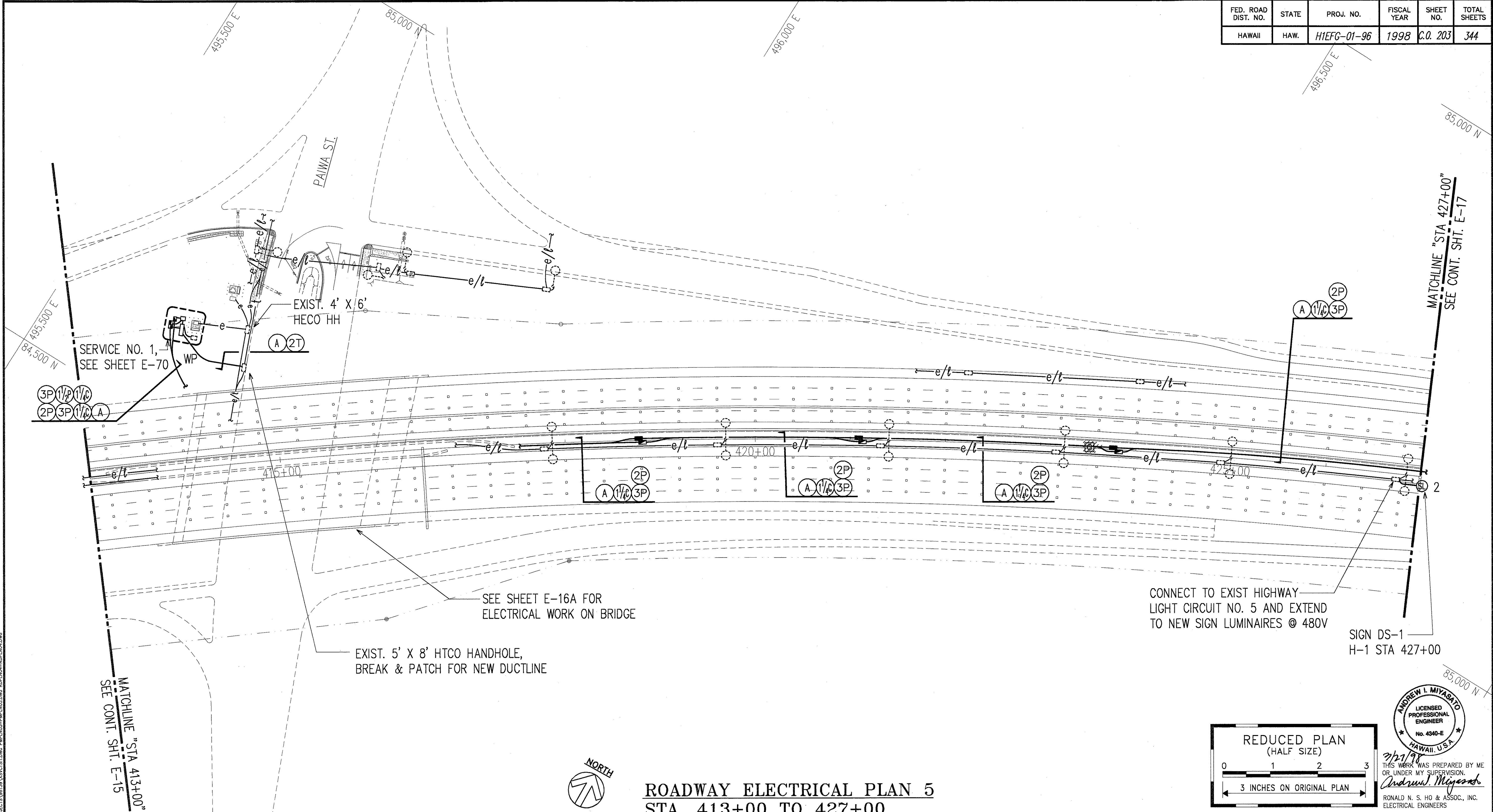
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 1 ELECTRICAL PLAN 2

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-14 OF 106 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 203	344

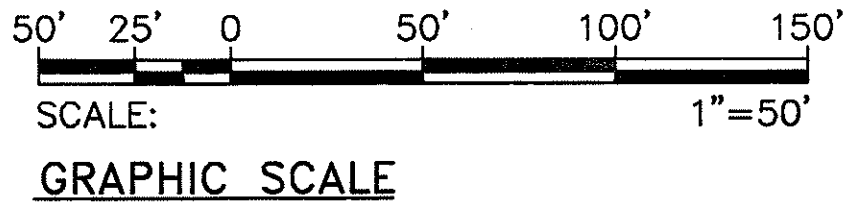


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ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

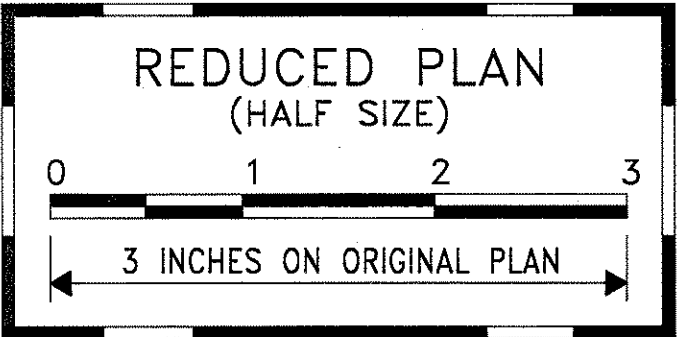


ROADWAY ELECTRICAL PLAN 5
STA. 413+00 TO 427+00
 SCALE: 1"=50'



CONNECT TO EXIST HIGHWAY
 LIGHT CIRCUIT NO. 5 AND EXTEND
 TO NEW SIGN LUMINAIRES @ 480V

SIGN DS-1
 H-1 STA 427+00



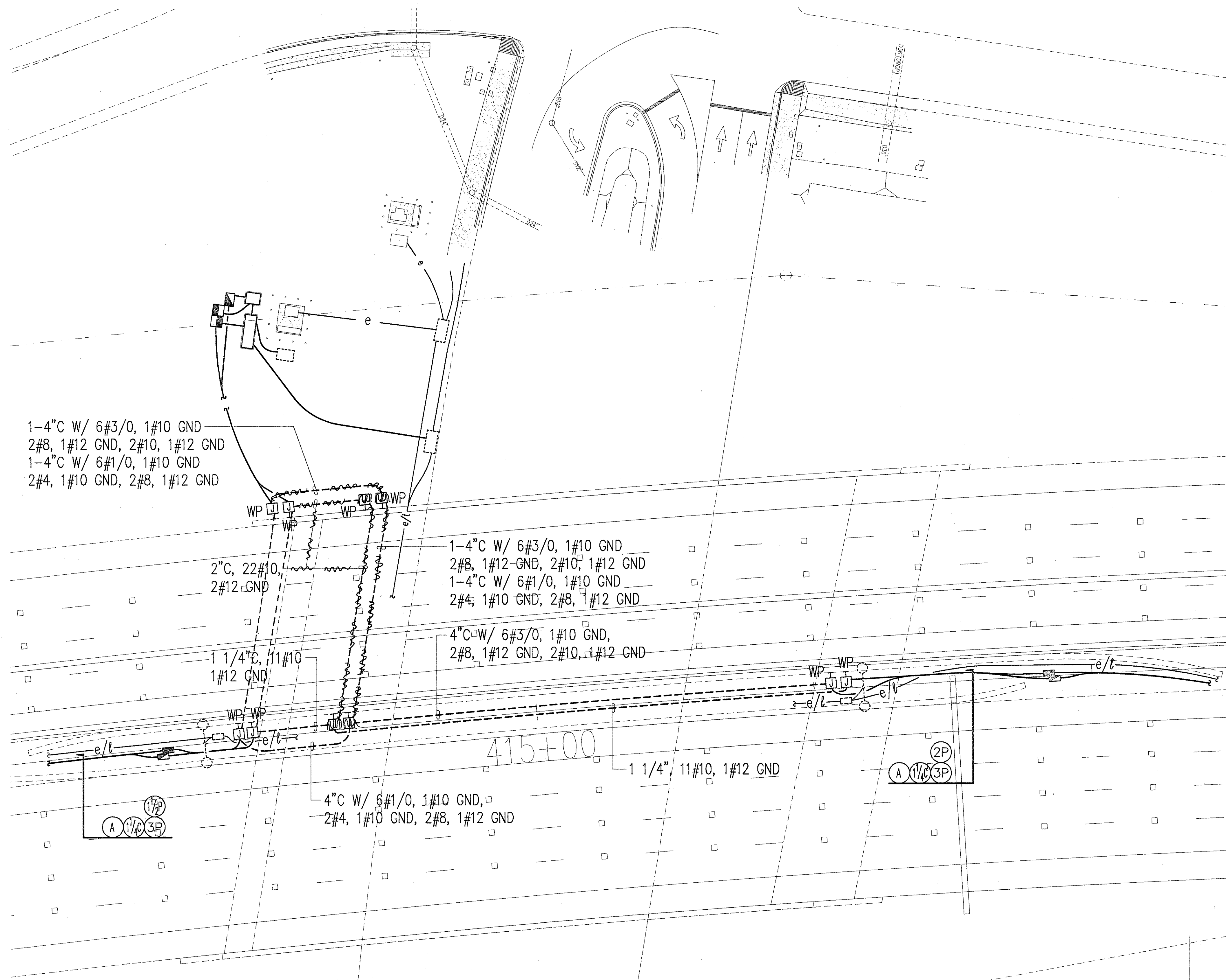
THIS WORK WAS PREPARED BY ME
 OR UNDER MY SUPERVISION.
Andrew L. Miyasato
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

3/20/98	REVISED CONDUIT RUN
2/27/98	REVISED CONDUIT RUN & REMOVED SIGNAL GENERATOR CONNECTION
DATE	REVISION

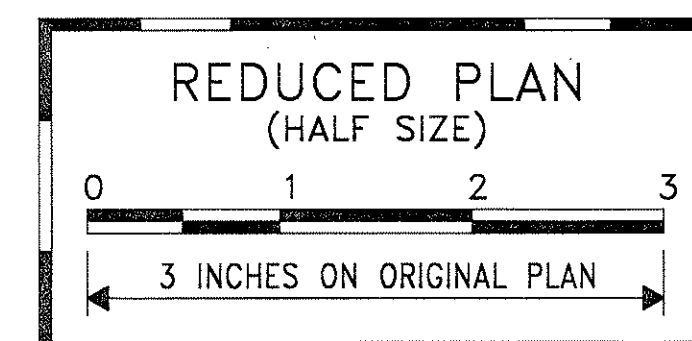
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 5
STA. 413+00 TO 427+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-16 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 203S-1	344



NOTE:
FOR MOUNTING OF CONDUIT AND J-BOXES
SEE SHEET E-16B



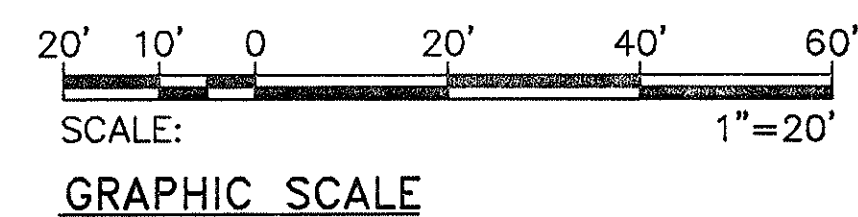
7/21/98
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Andrew I. Miyamoto
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

ORIGINAL PLAN	SURVEY PLOTTED BY	DAVE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
	IN CHARGE	

LAST SAVE: 02/20/98 @ 16:37:28 BY: LA PLOT 3812-28
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PAIWA STREET BRIDGE ELECTRICAL PLAN SCALE: 1"=20'



3/20/98	REVISED CONDUIT RUN
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PAIWA STREET BRIDGE ELECTRICAL PLAN

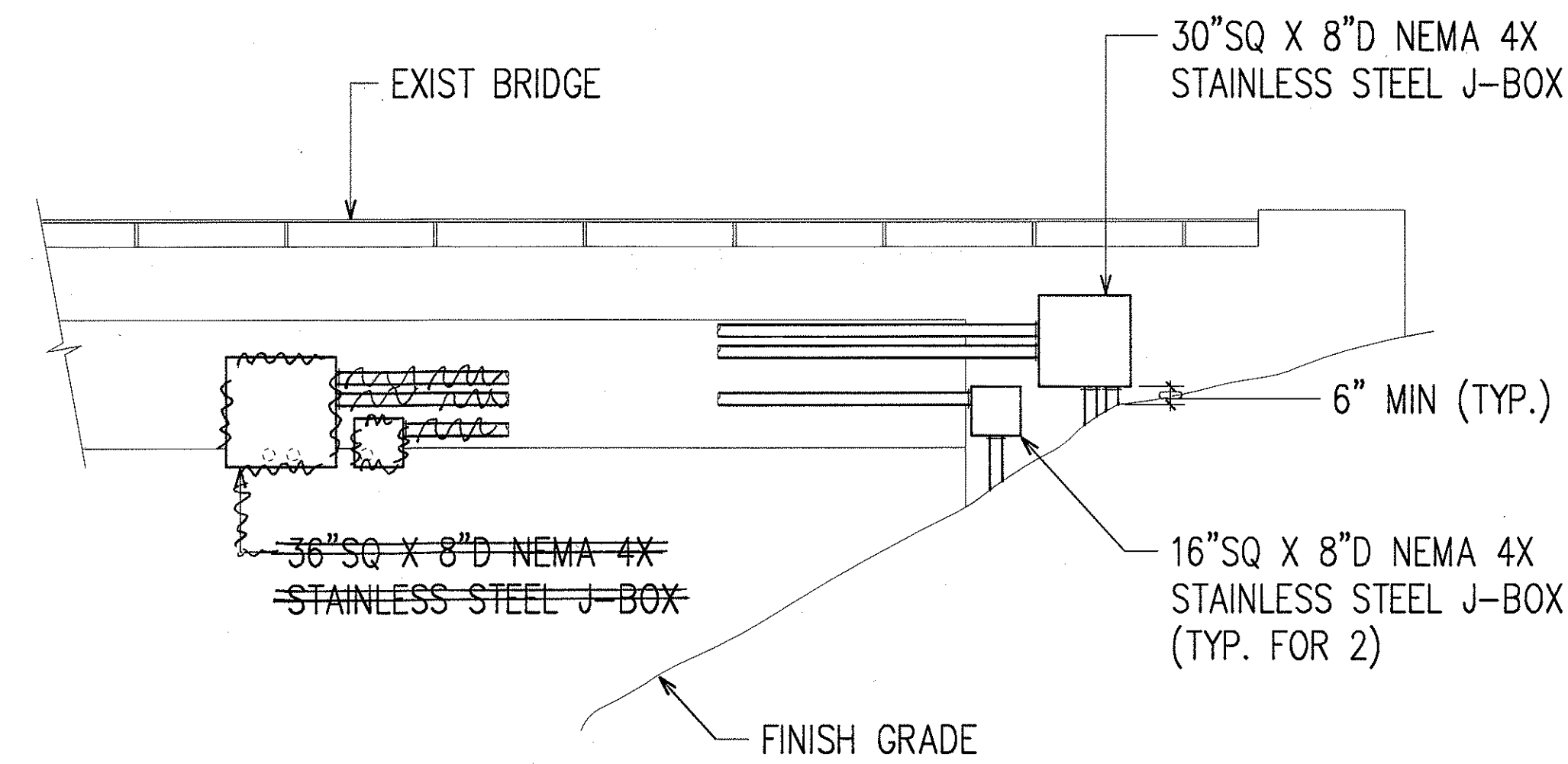
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997

SHEET No. E-16A OF 106 SHEETS

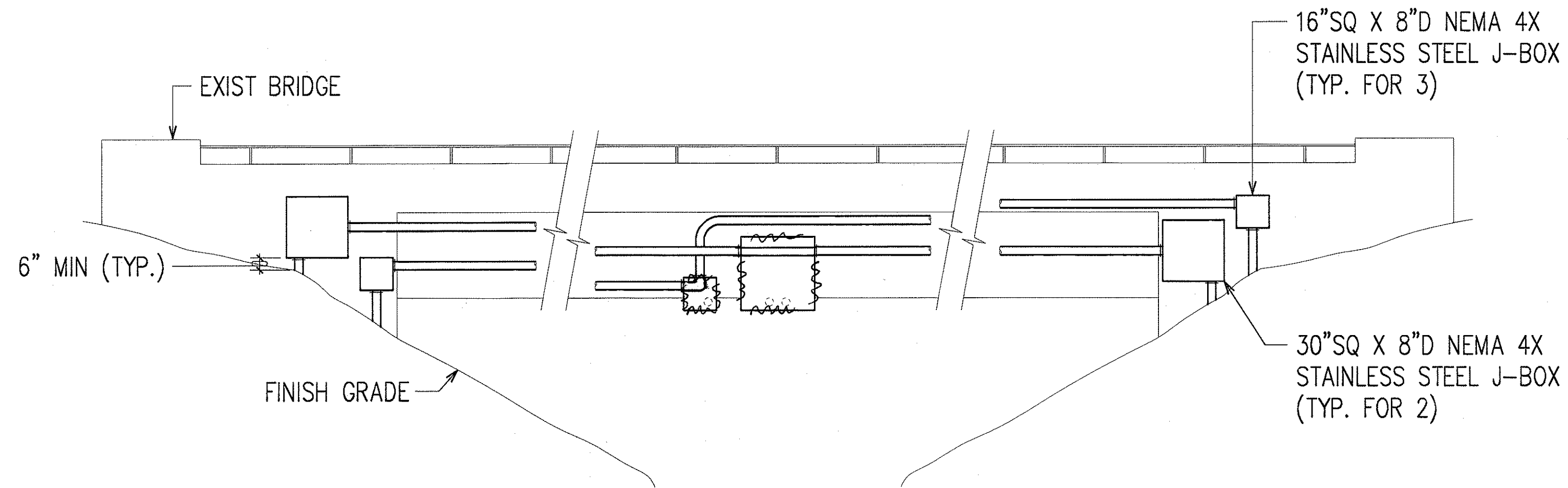
"AS-BUILT"

C.O. 203S-1

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 203S-2	



CONDUIT AND J-BOX MTG ON MAUKA SIDE OF BRIDGE
SCALE: 1/4"=1'-0"



CONDUIT AND J-BOX MTG ON MAKAI SIDE OF BRIDGE
SCALE: 1/4"=1'-0"

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

DATE: 03/20/98
BY: R. N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



7/21/98
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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

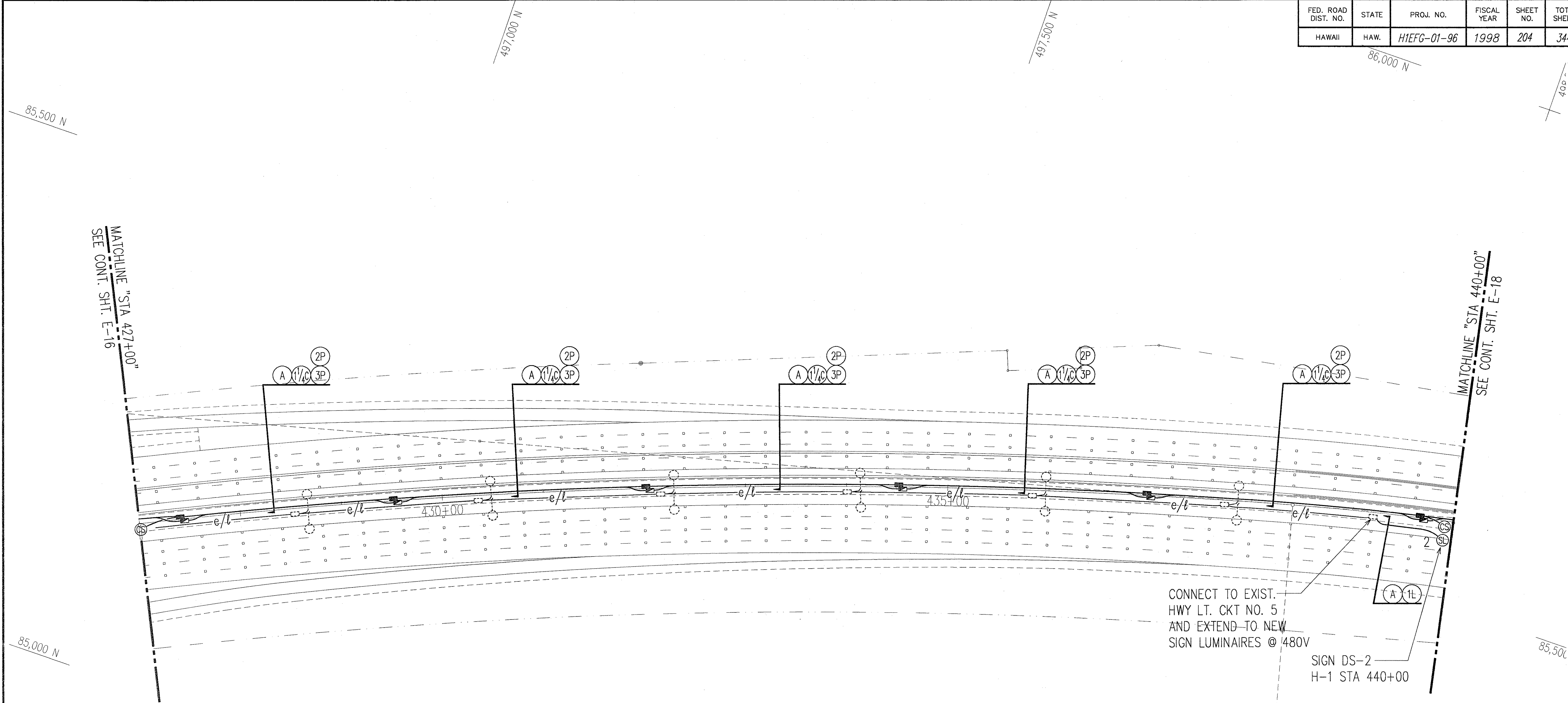
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONDUIT AND J-BOX INSTALLATION ON PAIWA STREET BRIDGE INTERSTATE ROUTE H-1 CONTRAFLOW AND SHOULDER LANE PROJECT NO. H1EFG-01-96	
3/20/98	ADDED DETAILS OF REVISED CONDUIT RUN
DATE	REVISION
SCALE: AS NOTED SHEET No. E-16B OF SHEETS	

DATE: SEPT., 1997

"AS-BUILT"

C.O. 203S-2

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	204	344

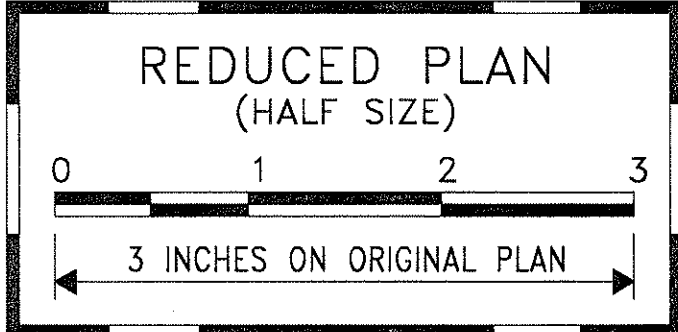
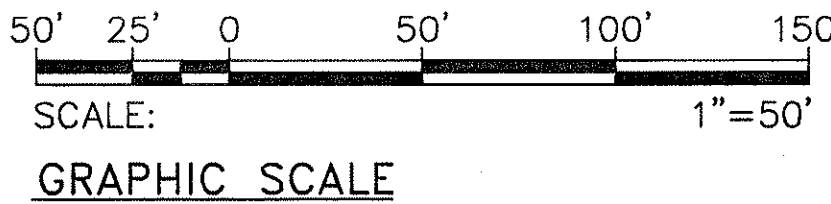


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

LAST SAVE: 10/21/97 @ 16:01:35 BY: RYAN PLOT 50' T=50' XREFS: P:\H1EFG-01-96\H1EFG-01-96.DWG



ROADWAY ELECTRICAL PLAN 6
STA. 427+00 TO 440+00
 SCALE: 1"=50'



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Andrew I. Miyasato
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

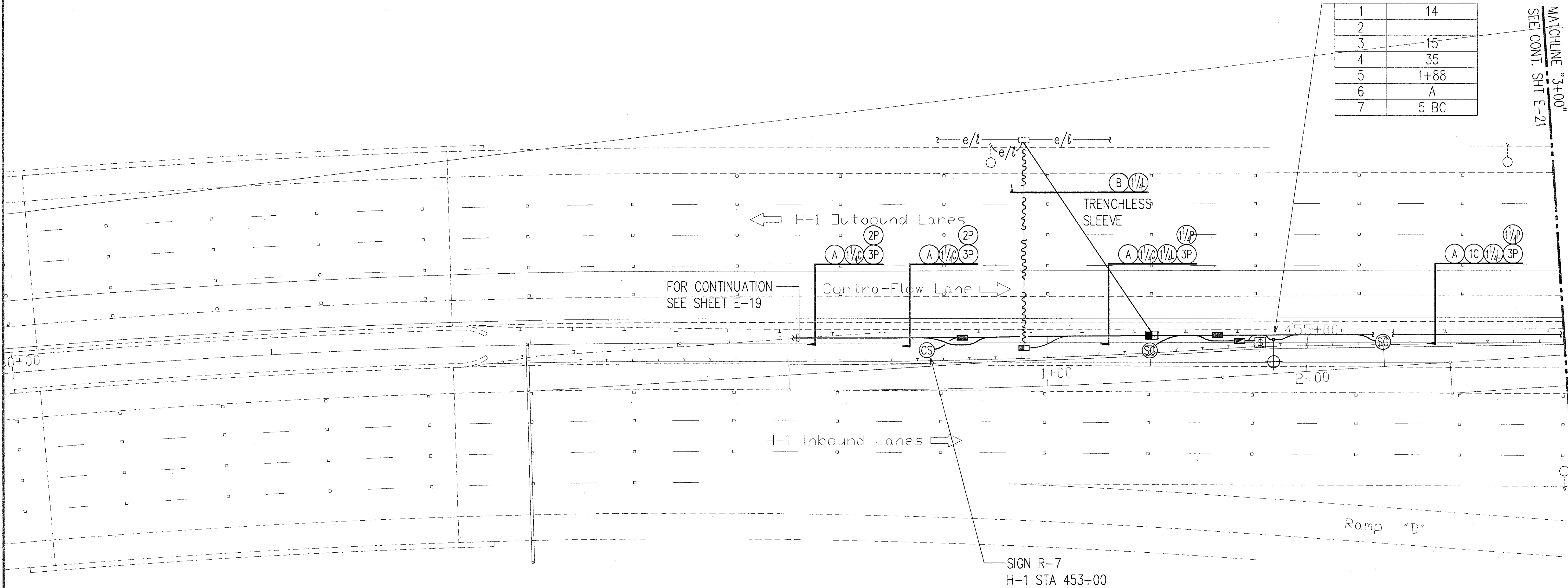
ROADWAY ELECTRICAL PLAN 6
STA. 427+00 TO 440+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-17 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	207	344

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2	
3	15
4	35
5	1+88
6	A
7	5 BC

MATCHLINE "3+00"
SEE CONT. SHT E-21

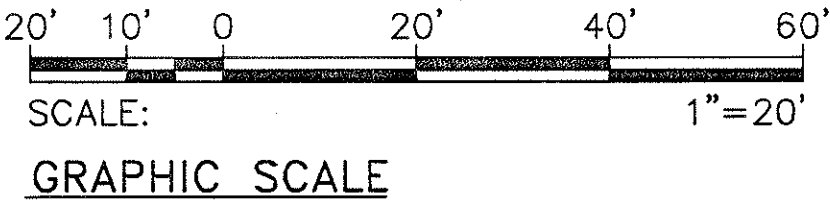


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NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

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CROSSOVER NO. 2 ELECTRICAL PLAN 1
SCALE: 1"=20'



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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 2 ELECTRICAL PLAN 1

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-20 OF 106 SHEETS

"AS-BUILT"

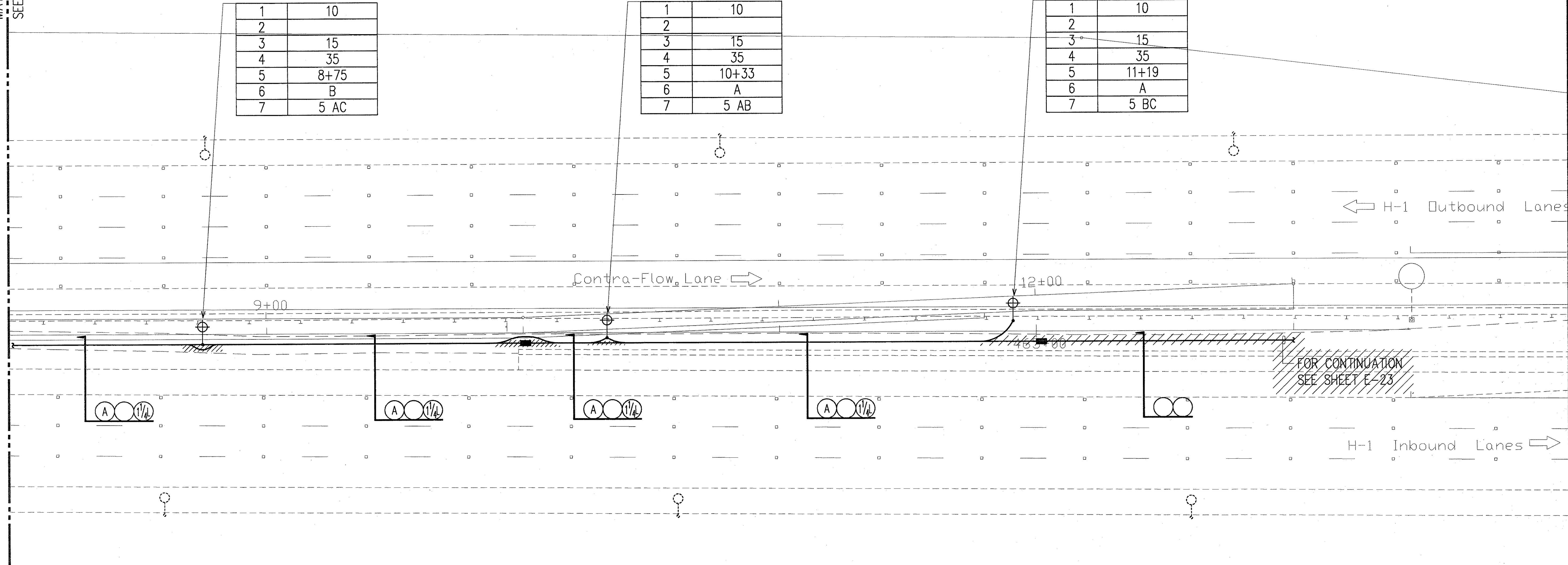
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 209	344

MATCHLINE "STA. 8+00"
SEE CONT. SHT. E-21

1	10
2	
3	15
4	35
5	8+75
6	B
7	5 AC

1	10
2	
3	15
4	35
5	10+33
6	A
7	5 AB

1	10
2	
3	15
4	35
5	11+19
6	A
7	5 BC

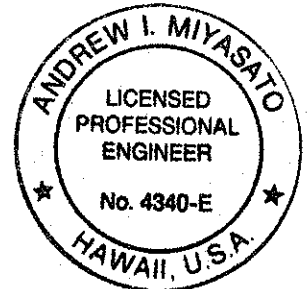
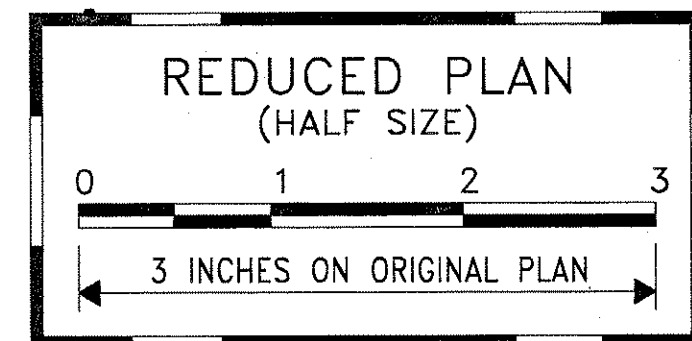
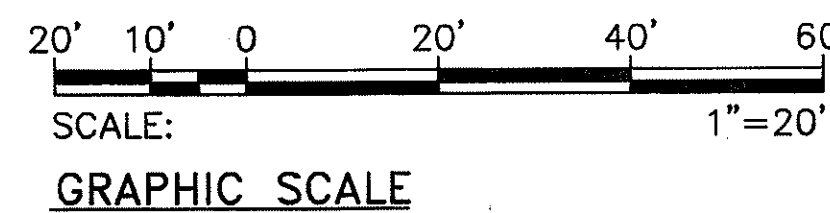


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

LAST DATE: 05/27/98
BY: [Signature]
PROJECT: HAWAIIAN ISLANDS
SHEET: E-22 OF 106 SHEETS



CROSSOVER NO. 2 ELECTRICAL PLAN 3
SCALE: 1"=20'



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Andrew I. Miyasato
2/27/98
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

2/27/98	REMOVED CONDUIT RUN DUE TO REMOVED SIGNAL GENERATOR
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 2 ELECTRICAL PLAN 3

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-22 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 210	344

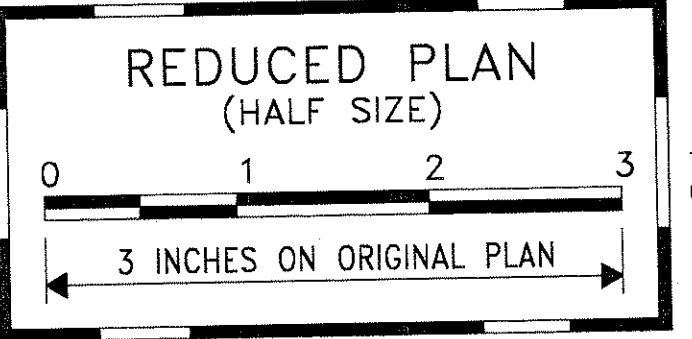
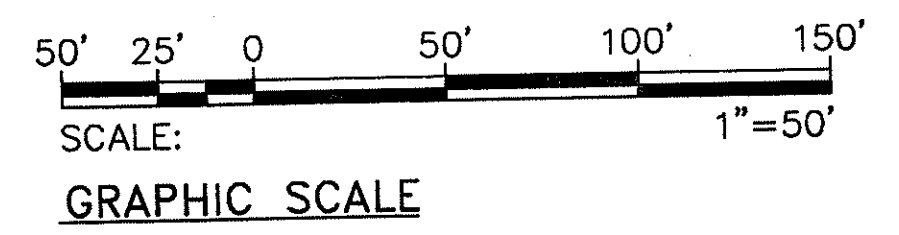
MATCHLINE "STA 466+00"
SEE CONT. SHT. E-19

MATCHLINE "STA 486+00"
SEE CONT. SHT. E-24

H-1 STA 466+45.53 (BACK)
H-1 STA 427+00 (FRWD.)



ROADWAY ELECTRICAL PLAN 9
STA. 466+00 TO 486+00
SCALE: 1"=50'



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2/27/98
RONALD K. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 9
STA. 466+00 TO 486+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

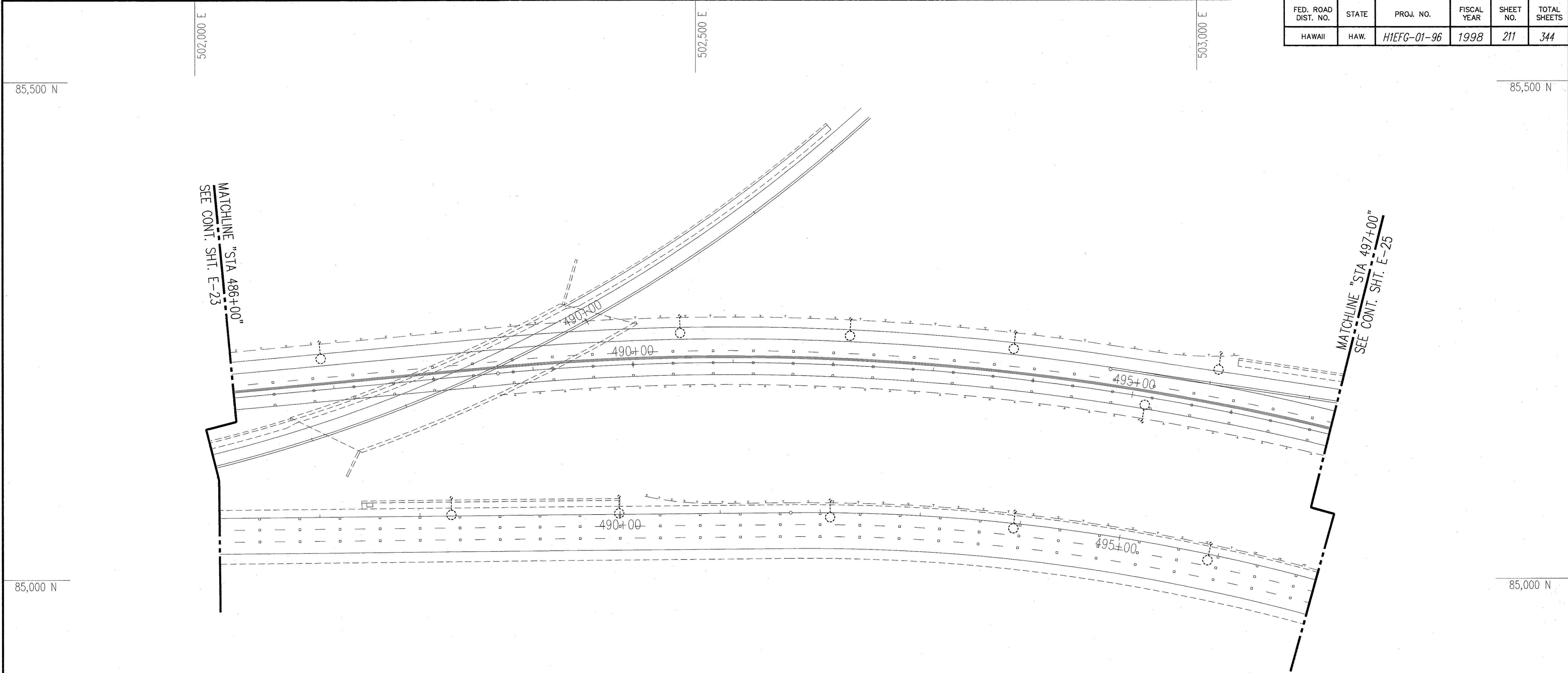
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DATE: OCTOBER 1997
SHEET No. E-23 OF 106 SHEETS

2/27/98	REMOVED CONDUIT RUN DUE TO REMOVED SIGNAL GENERATOR
DATE	REVISION

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

LAST SAVE: 02/27/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	211	344

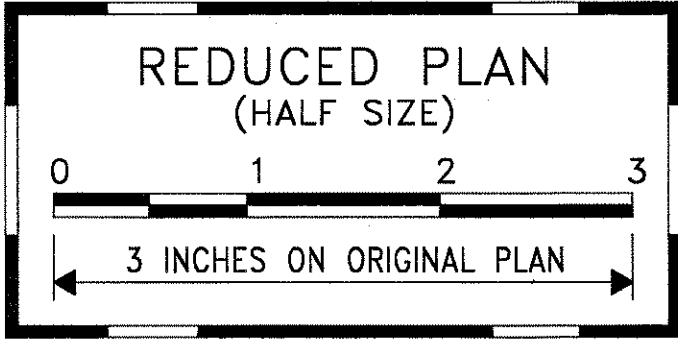
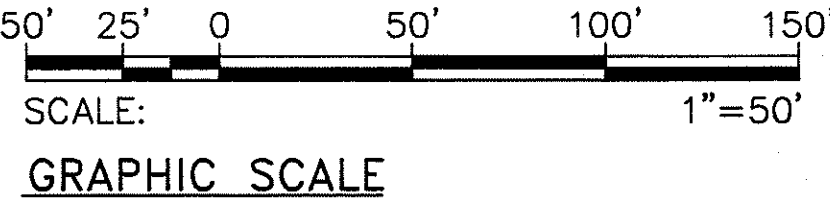


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
	CHECKED BY	

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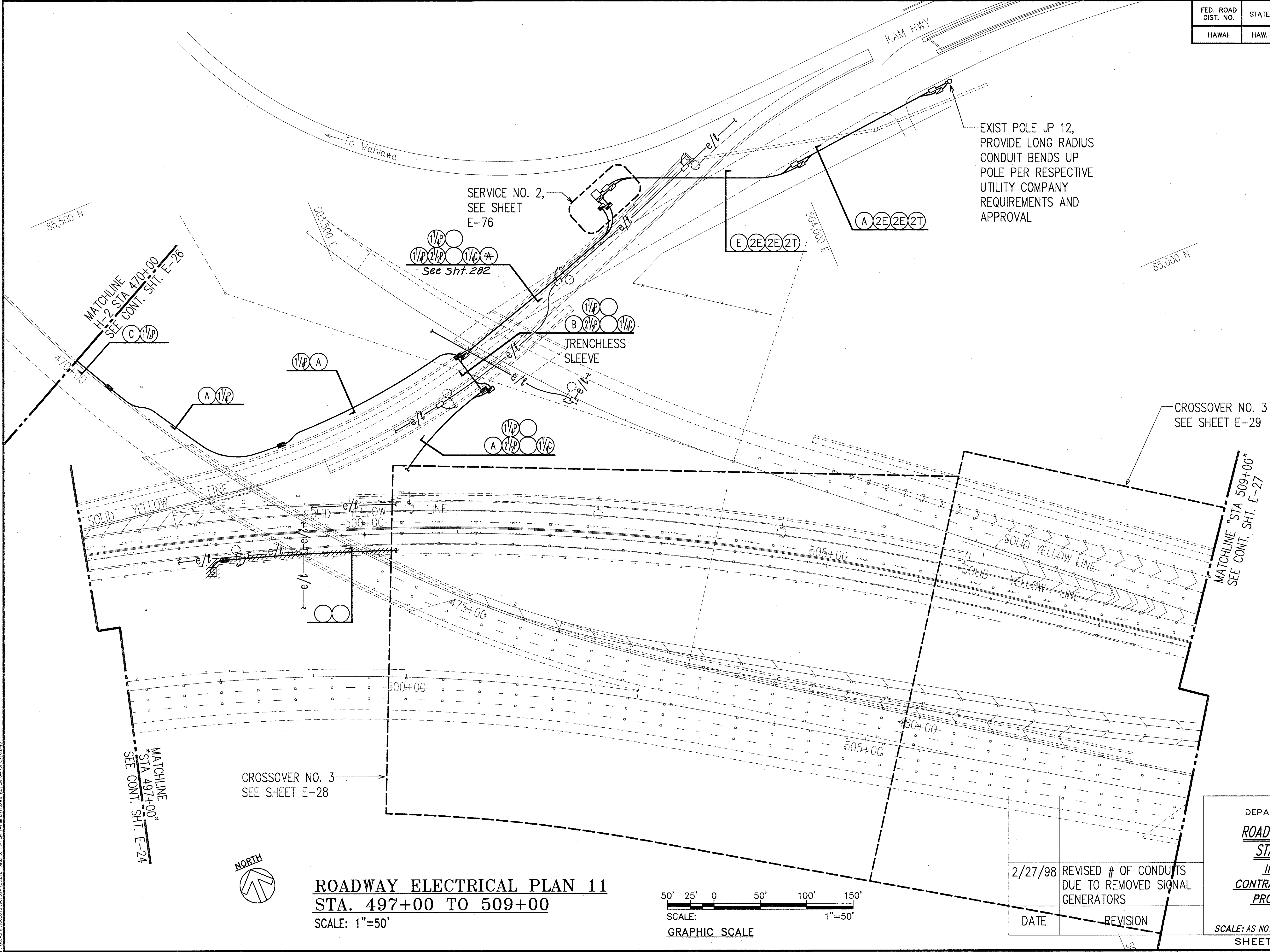
ROADWAY ELECTRICAL PLAN 10
STA. 486+00 TO 497+00
SCALE: 1"=50'



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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

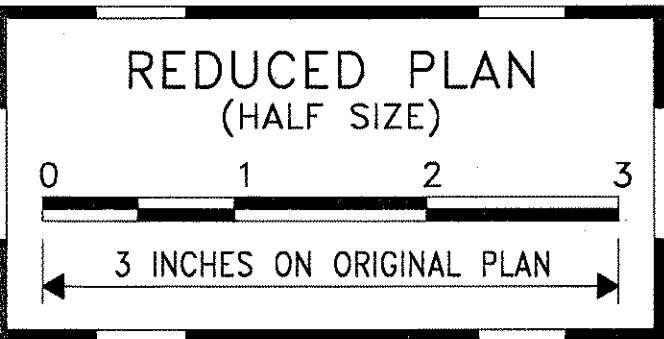
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 10
STA. 486+00 TO 497+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-24 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 212	344



ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

LAST SAVE: 02/27/98 BY: C:\PLOT\SC1.DWG
 PLOTTED: 02/27/98 BY: C:\PLOT\SC1.DWG
 PLOTTED: 02/27/98 BY: C:\PLOT\SC1.DWG



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 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 11

STA. 497+00 TO 509+00

INTERSTATE ROUTE H-1

CONTRAFLOW AND SHOULDER LANE

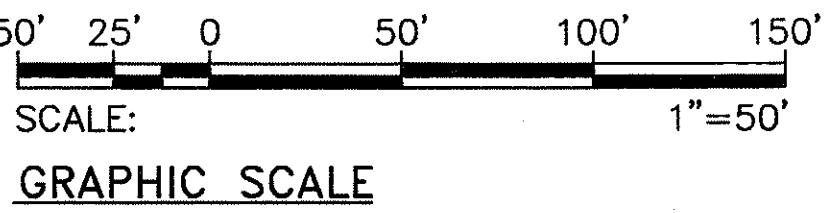
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED

DATE: OCTOBER 1997

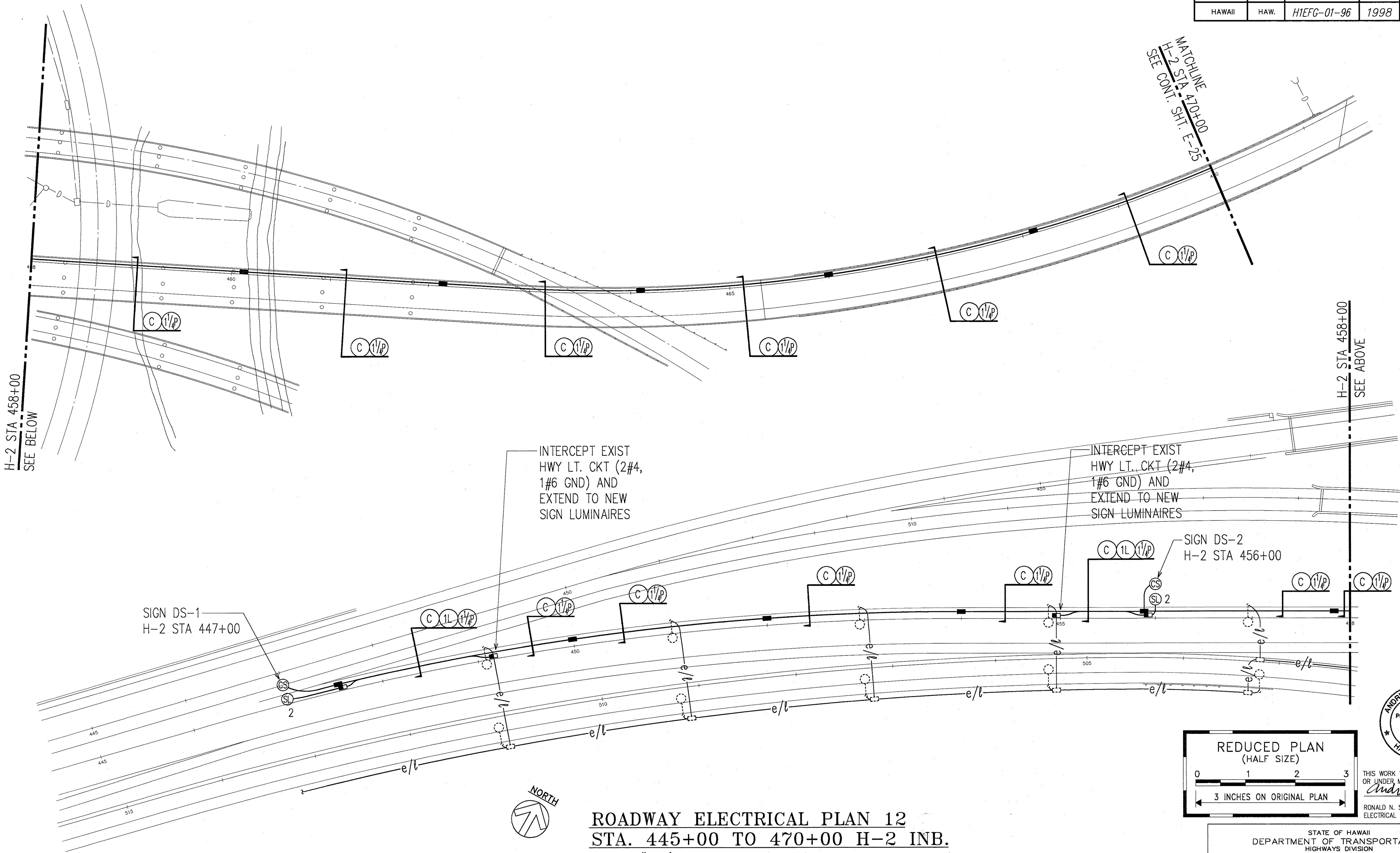
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION

ROADWAY ELECTRICAL PLAN 11
 STA. 497+00 TO 509+00
 SCALE: 1"=50'



"AS-BUILT"

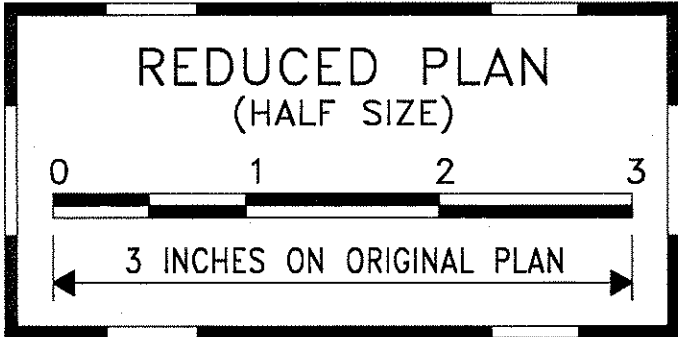
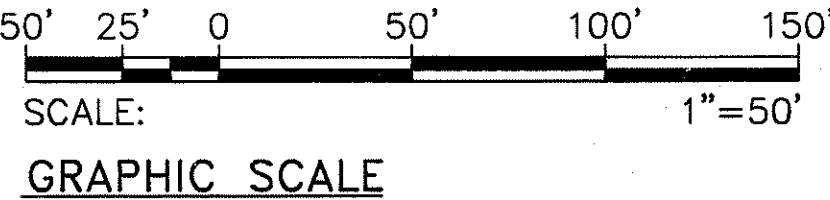
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	213	344



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

LAST SAVE: 10/23/97 8:16:28 PM
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ROADWAY ELECTRICAL PLAN 12
STA. 445+00 TO 470+00 H-2 INB.
SCALE: 1"=50'

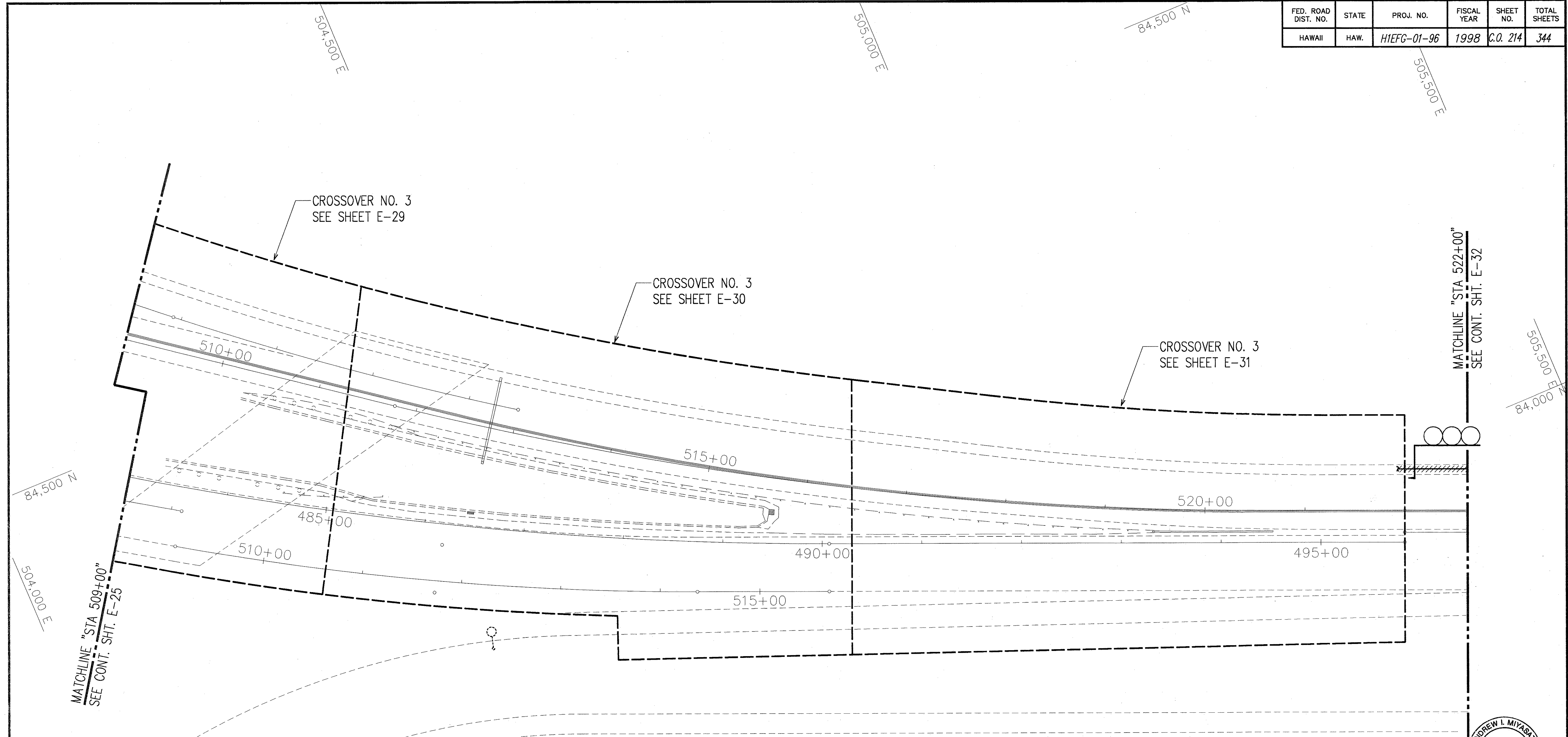


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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 12
STA. 445+00 TO 470+00 H-2 INB.
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-26 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 214	344

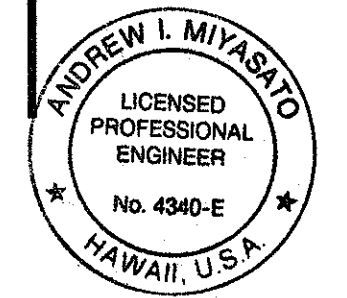
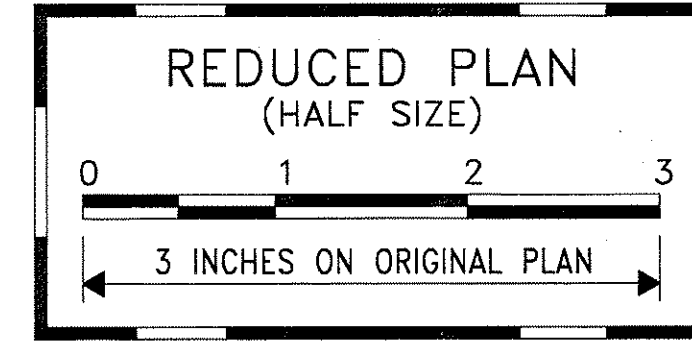
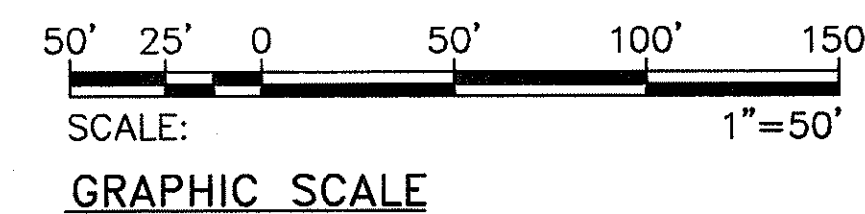


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	

LAST SMC: 02/27/98
 PAVAD PROJECTS 98039A 02214 - KRETS. RUP.NH-BRP.NH.LDNG



ROADWAY ELECTRICAL PLAN 13
STA. 509+00 TO 522+00
 SCALE: 1"=50'

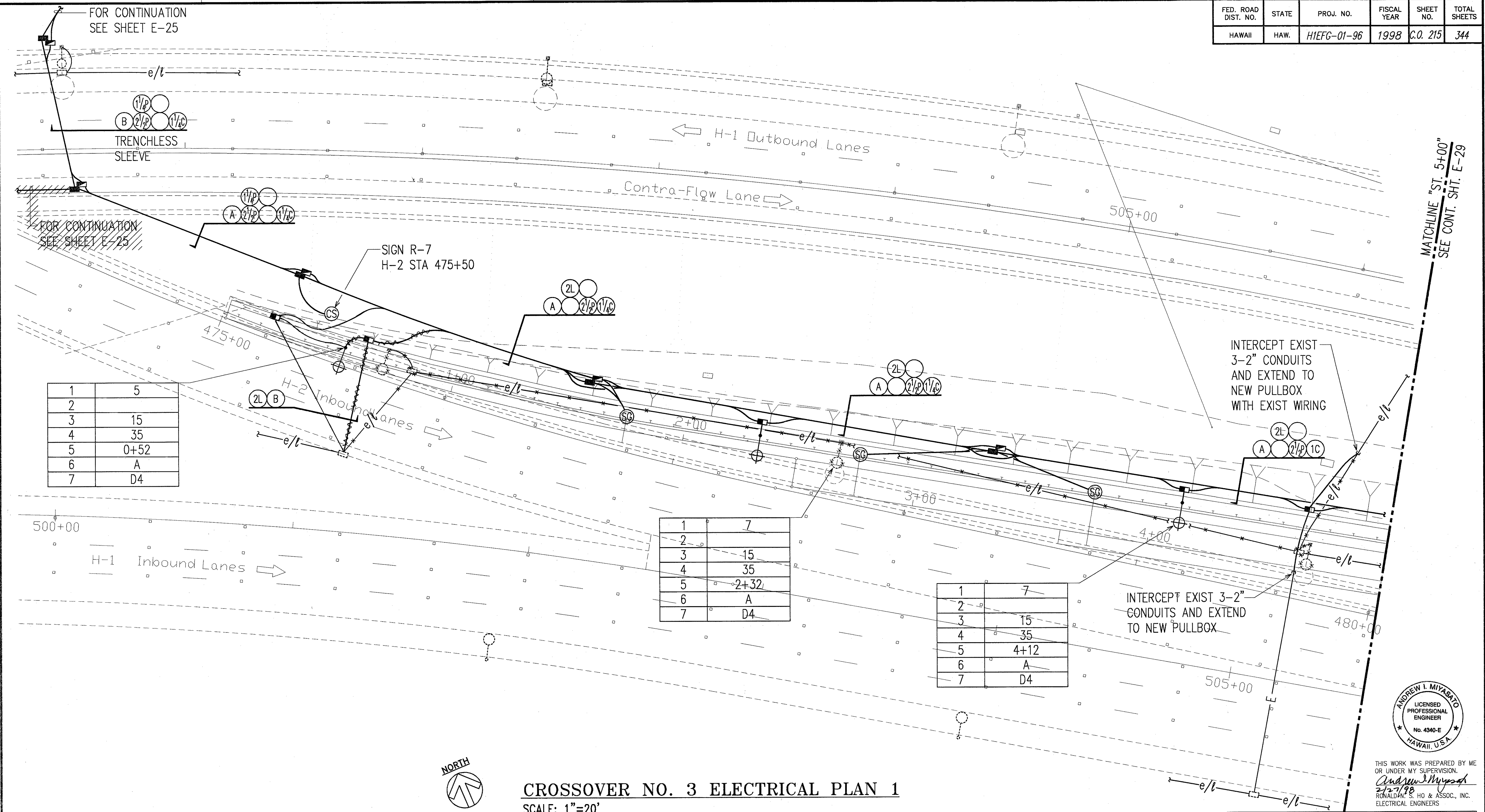


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Andrew I. Miyasato
 2/27/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	REMOVED CONDUIT RUN
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 13
STA. 509+00 TO 522+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96
 SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-27 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 215	344



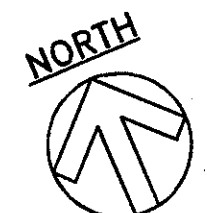
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2	
3	15
4	35
5	0+52
6	A
7	D4

1	7
2	
3	15
4	35
5	2+32
6	A
7	D4

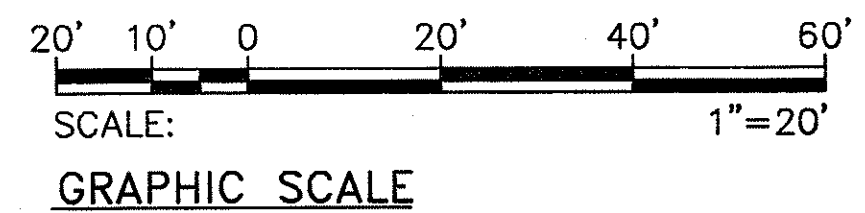
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2	
3	15
4	35
5	4+12
6	A
7	D4

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

LAST ONE 09/73
 HAWAII PROJECT 99-001-0215
 HAWAII PROJECT 99-001-0215



CROSSOVER NO. 3 ELECTRICAL PLAN 1
 SCALE: 1"=20'



2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

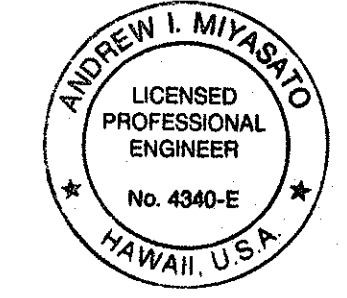
CROSSOVER NO. 3 ELECTRICAL PLAN 1

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED

DATE: OCTOBER 1997

SHEET No. E-28 OF 106 SHEETS

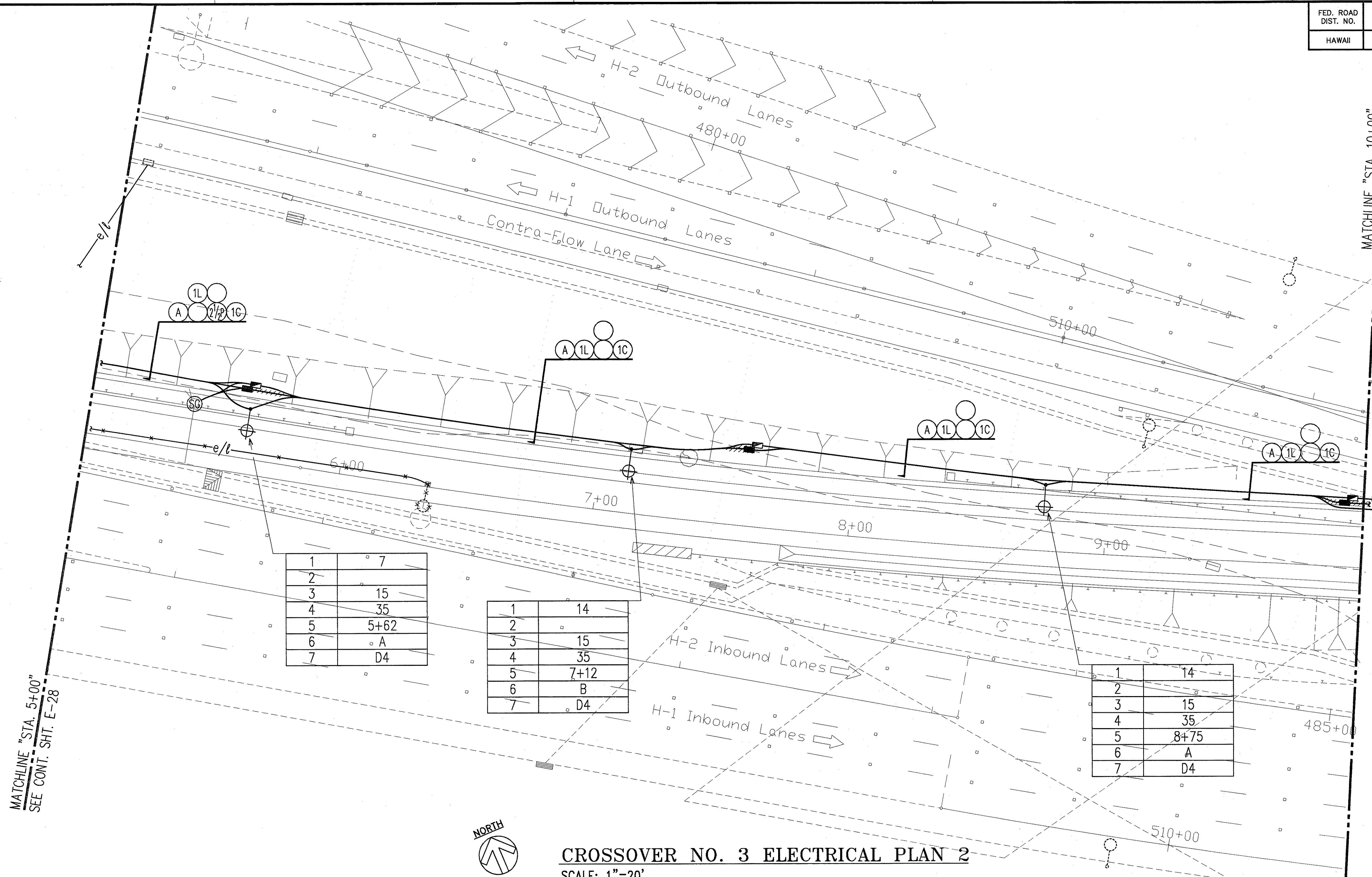


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Andrew I. Miyasato
 2/27/98
 RONALD M. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

"AS-BUILT"

C.O. 215

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 216	344



MATCHLINE "STA. 5+00"
SEE CONT. SHT. E-28

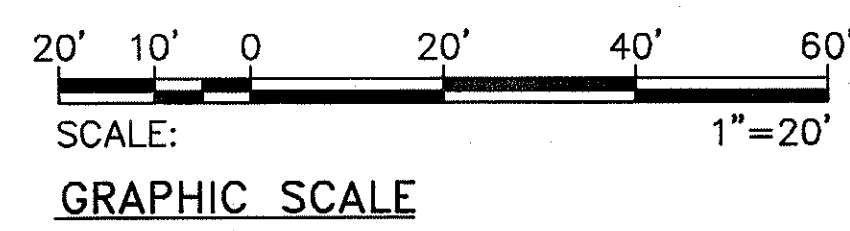
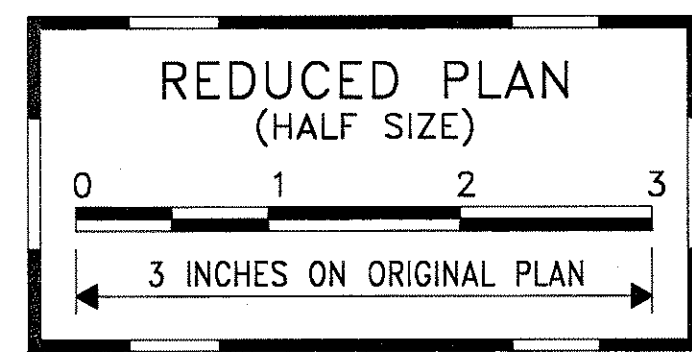
MATCHLINE "STA. 10+00"
SEE CONT. SHT. E-30

1	7
2	
3	15
4	35
5	5+62
6	A
7	D4

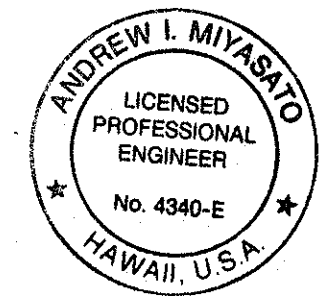
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2	
3	15
4	35
5	7+12
6	B
7	D4

1	14
2	
3	15
4	35
5	8+75
6	A
7	D4

CROSSOVER NO. 3 ELECTRICAL PLAN 2
SCALE: 1"=20'



2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyashiro
2/27/98
RONALD M. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 3 ELECTRICAL PLAN 2

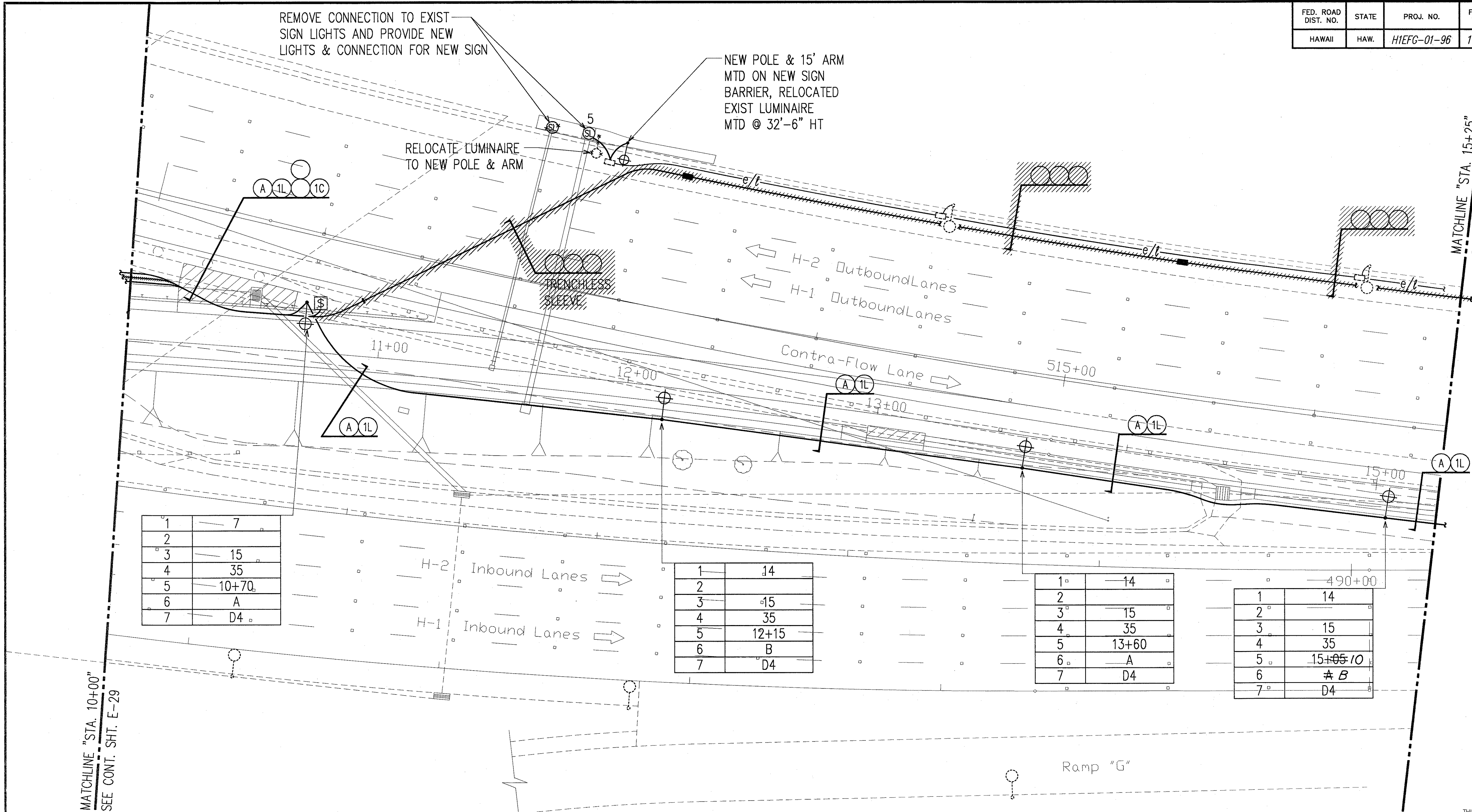
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-29 OF 106 SHEETS

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

LAST SAVE: 02/27/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 217	344



MATCHLINE "STA. 10+00"
SEE CONT. SHT. E-29

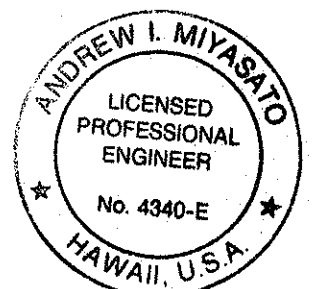
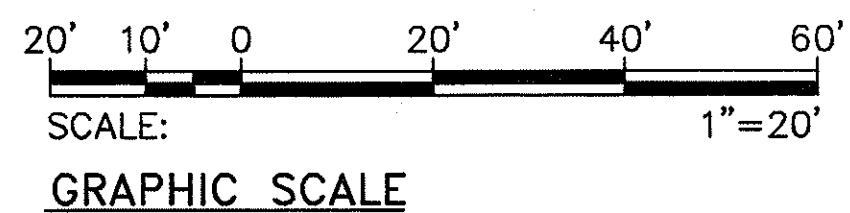
MATCHLINE "STA. 15+25"
SEE CONT. SHT. E-31

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

LAST SAVE: 02/27/98 @ 10:41:07 PM LA PLOT SET: 12-20
S:\CAD\PROJECTS\98\98A\02217 - REF'S - X02217A.DWG



CROSSOVER NO. 3 ELECTRICAL PLAN 3
SCALE: 1"=20'



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Andrew I. Miyasato
7/27/98
RONALD A. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

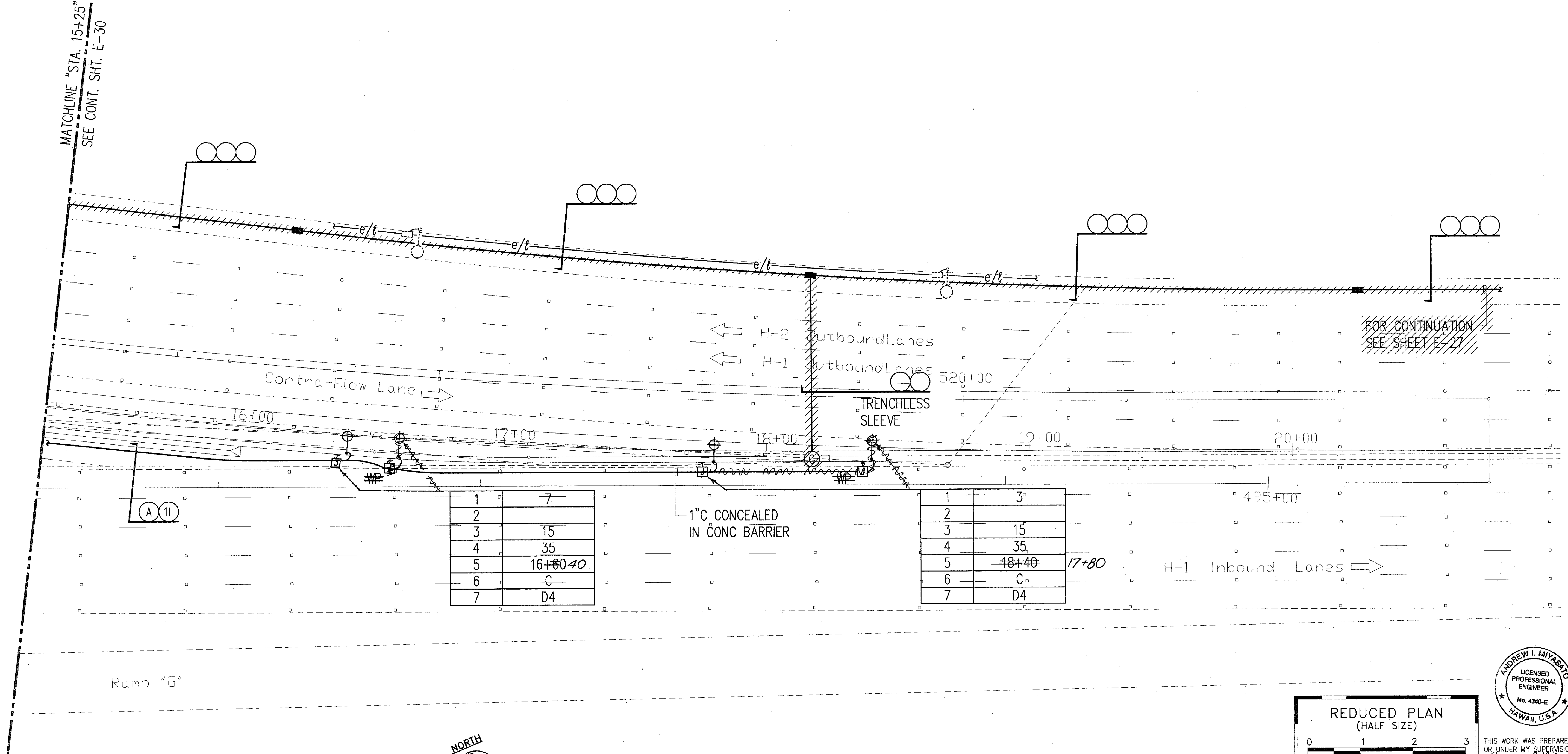
2/27/98	REMOVED CONDUIT RUN DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 3 ELECTRICAL PLAN 3

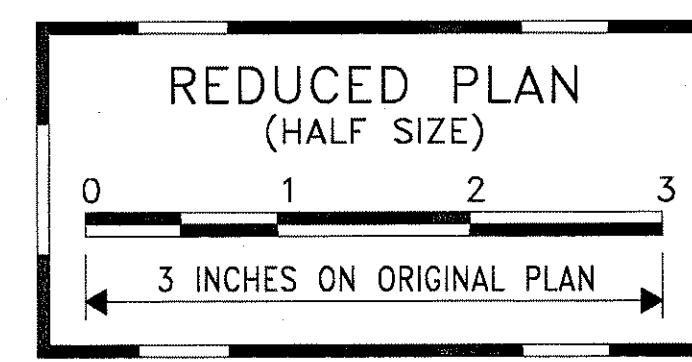
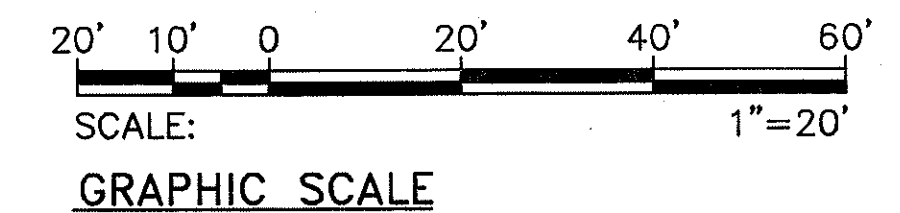
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET NO. E-30 OF 106 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 218	344



CROSSOVER NO. 3 ELECTRICAL PLAN 4
SCALE: 1"=20'



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Andrew I. Miyasato
2/27/98
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

DATE	REVISION
2/27/98	REMOVED CONDUIT RUN DUE TO REMOVED SIGNAL GENERATORS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSOVER NO. 3 ELECTRICAL PLAN 4

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-31 OF 106 SHEETS

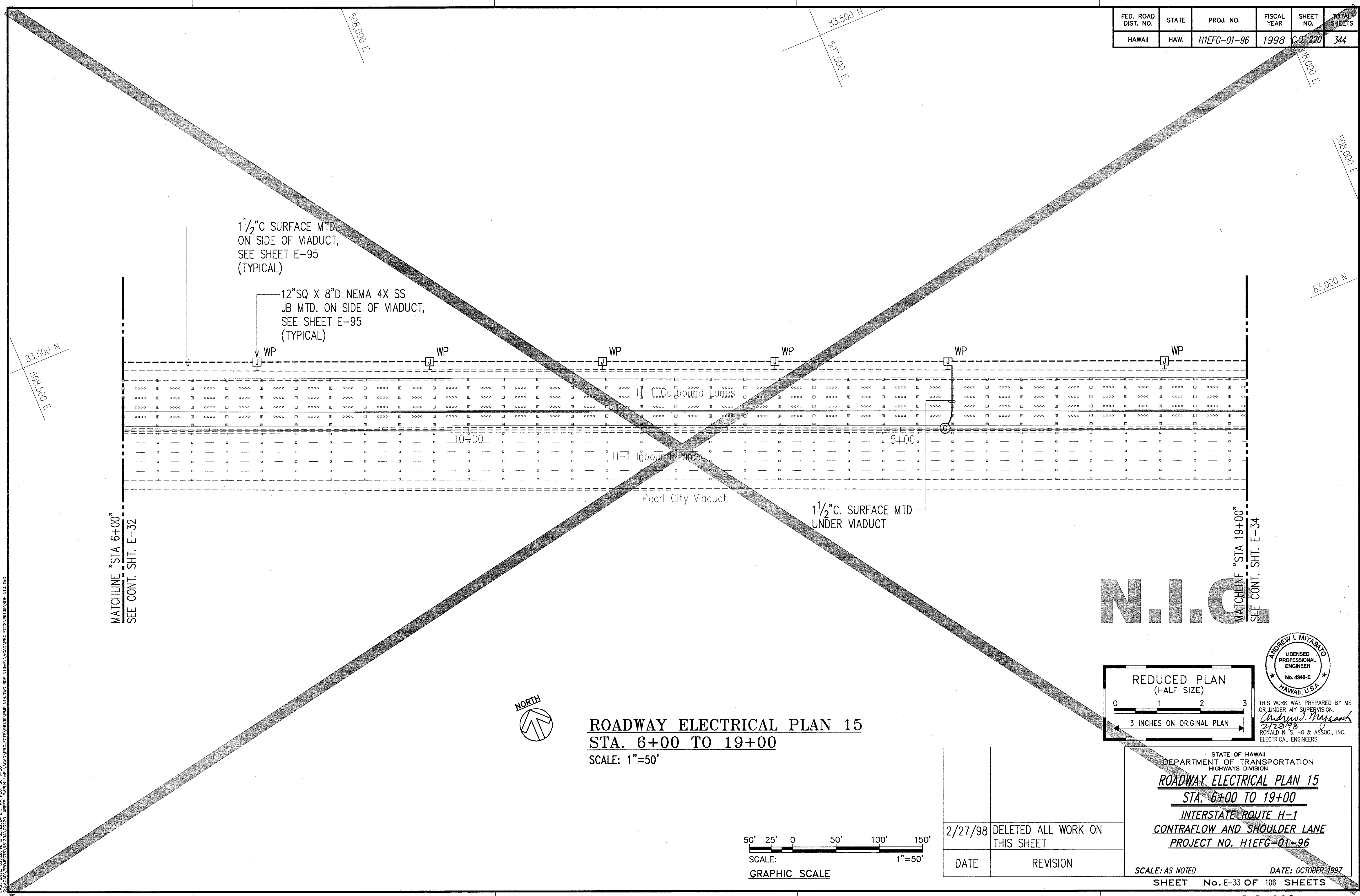
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

LAST ONE: 02/27/98
BY: ANDREW I. MIYASATO
PROJECT: H1EFG-01-96 SHEET: E-31 OF 106 SHEETS

"AS-BUILT"

C.O. 218

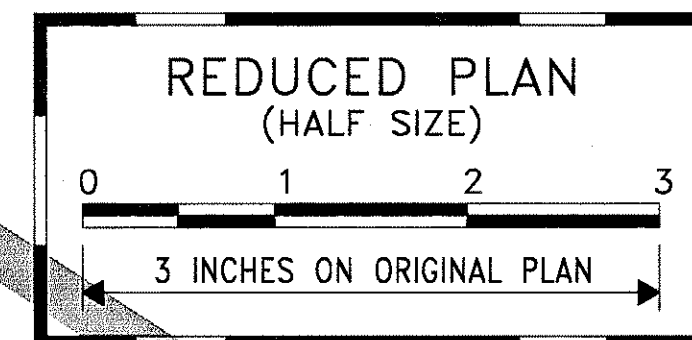
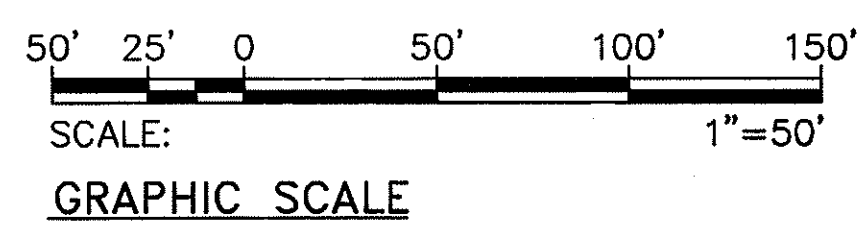
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 220	344



N.I.C.



ROADWAY ELECTRICAL PLAN 15
STA. 6+00 TO 19+00
 SCALE: 1"=50'



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Andrew I. Miyasato
 2/23/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

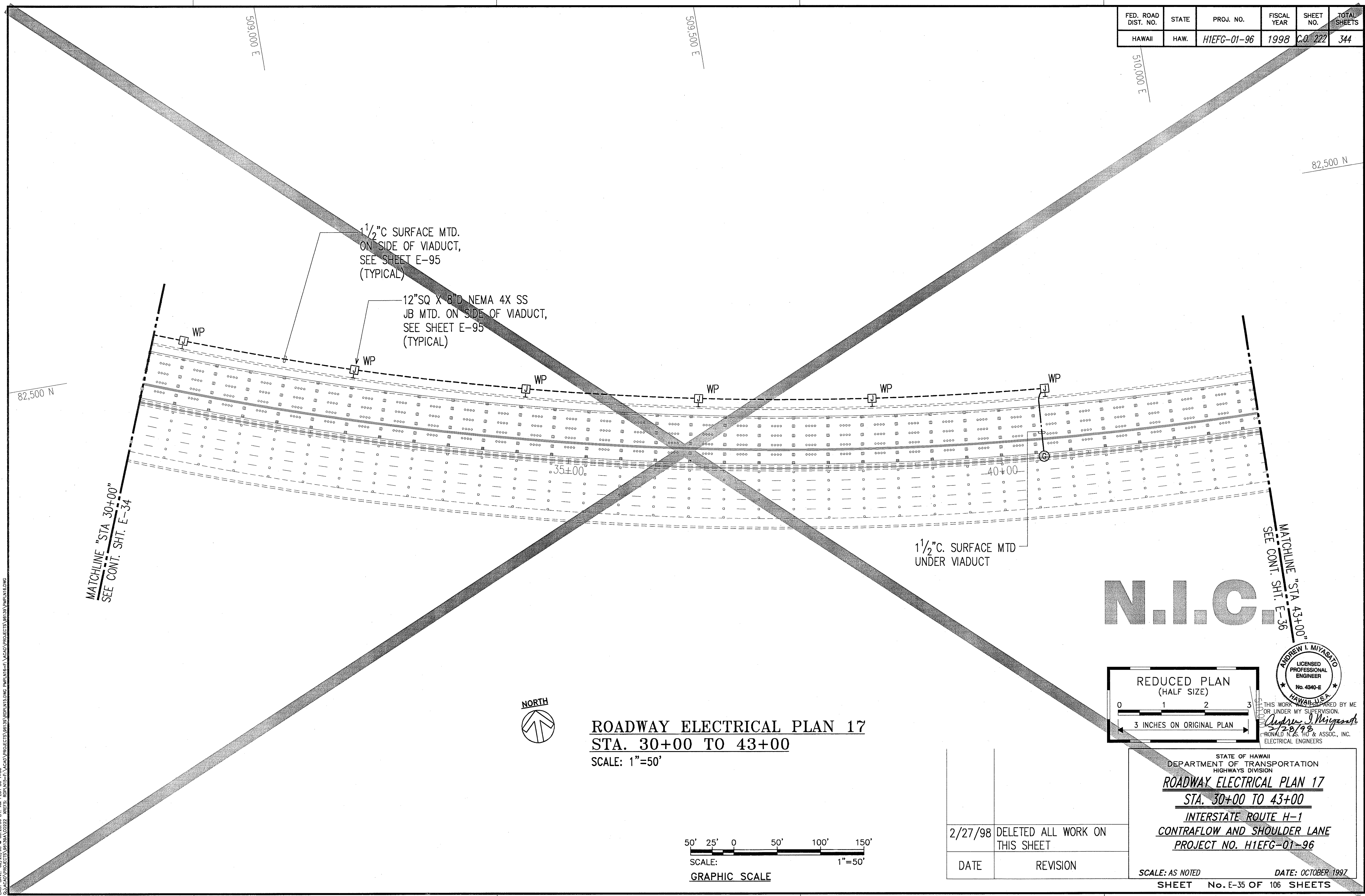
ROADWAY ELECTRICAL PLAN 15
STA. 6+00 TO 19+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-33 OF 106 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
APPROVED BY	

LAST SAVE: 02/23/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 222	344



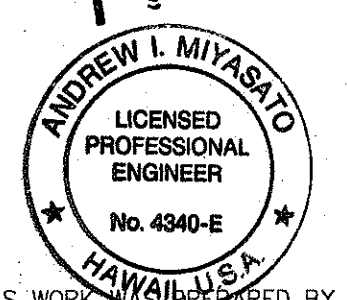
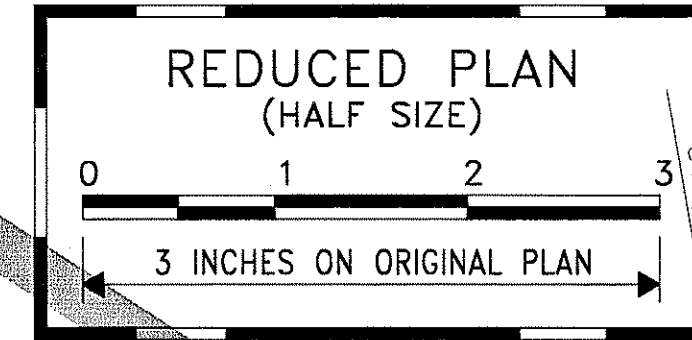
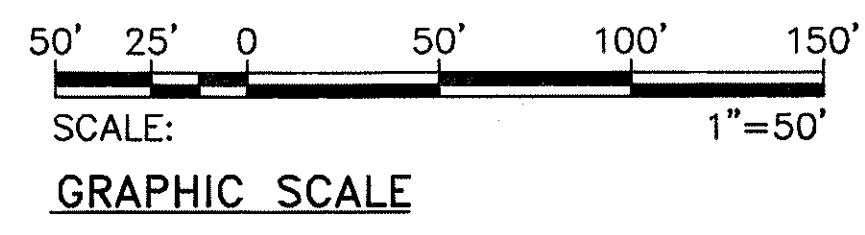
MATCHLINE "STA 30+00"
SEE CONT. SHIT. E-34

MATCHLINE "STA 43+00"
SEE CONT. SHIT. E-36

N.I.C.



ROADWAY ELECTRICAL PLAN 17
STA. 30+00 TO 43+00
SCALE: 1"=50'



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2/28/98
RONALD N. AS. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 17
STA. 30+00 TO 43+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

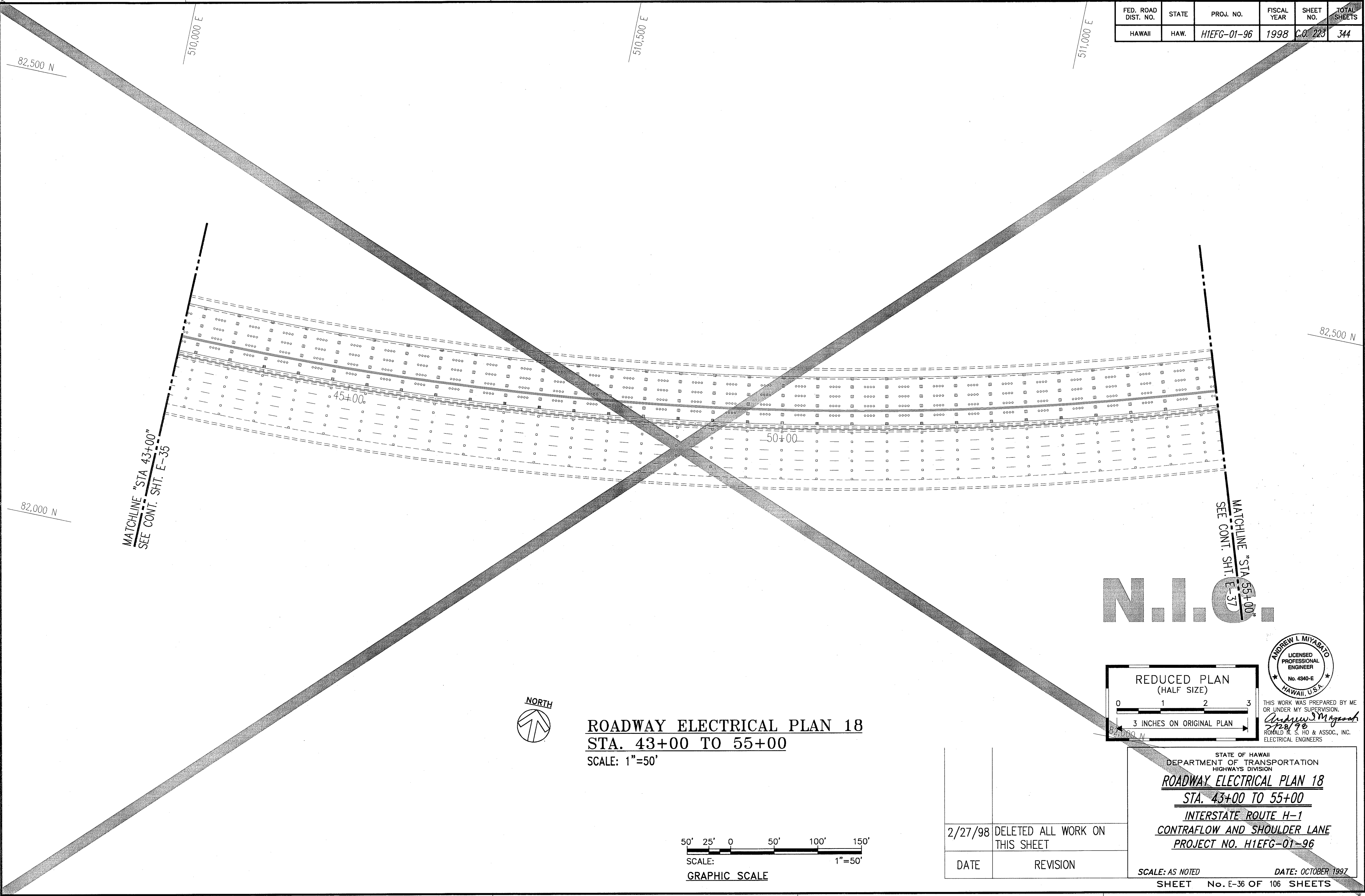
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SHEET No. E-35 OF 106 SHEETS

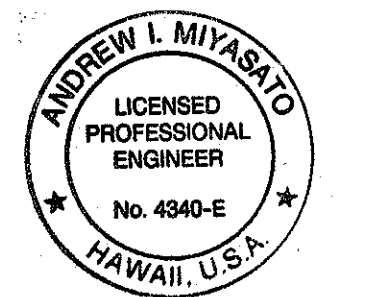
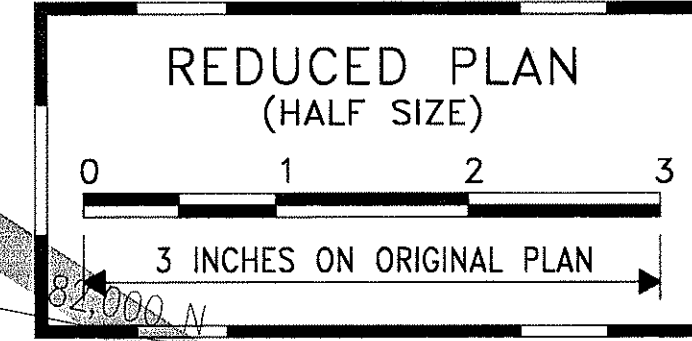
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	

LAST DATE: 02/28/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 223	344



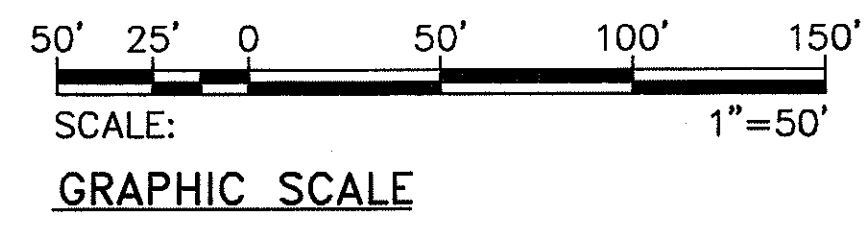
N.I.C.



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Andrew I. Miyasato
 2/28/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS



ROADWAY ELECTRICAL PLAN 18
STA. 43+00 TO 55+00
 SCALE: 1"=50'



2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 18
STA. 43+00 TO 55+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
 SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-36 OF 106 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

LAST SAVE: 02/28/98
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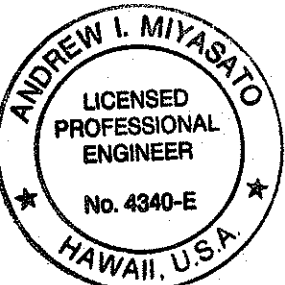
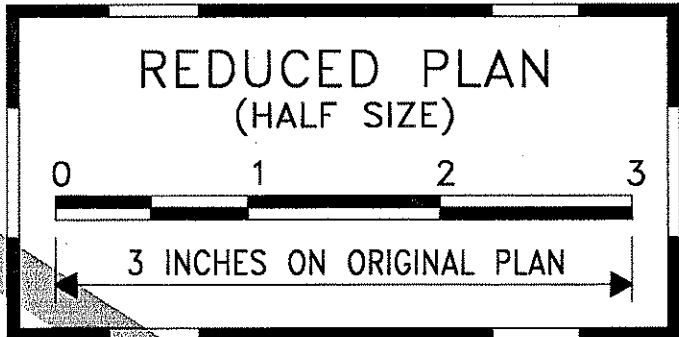
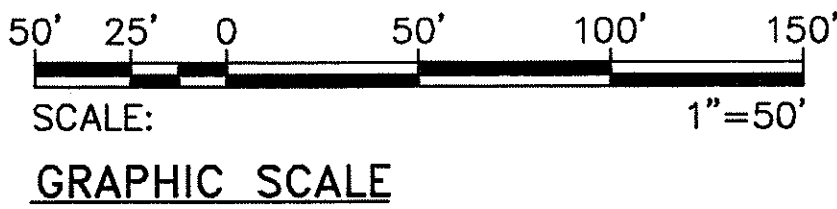
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 224	344

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

LAST SAVE: 02/10/98 08:37:19
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ROADWAY ELECTRICAL PLAN 19 **STA. 55+00 TO 67+00** SCALE: 1"=50'

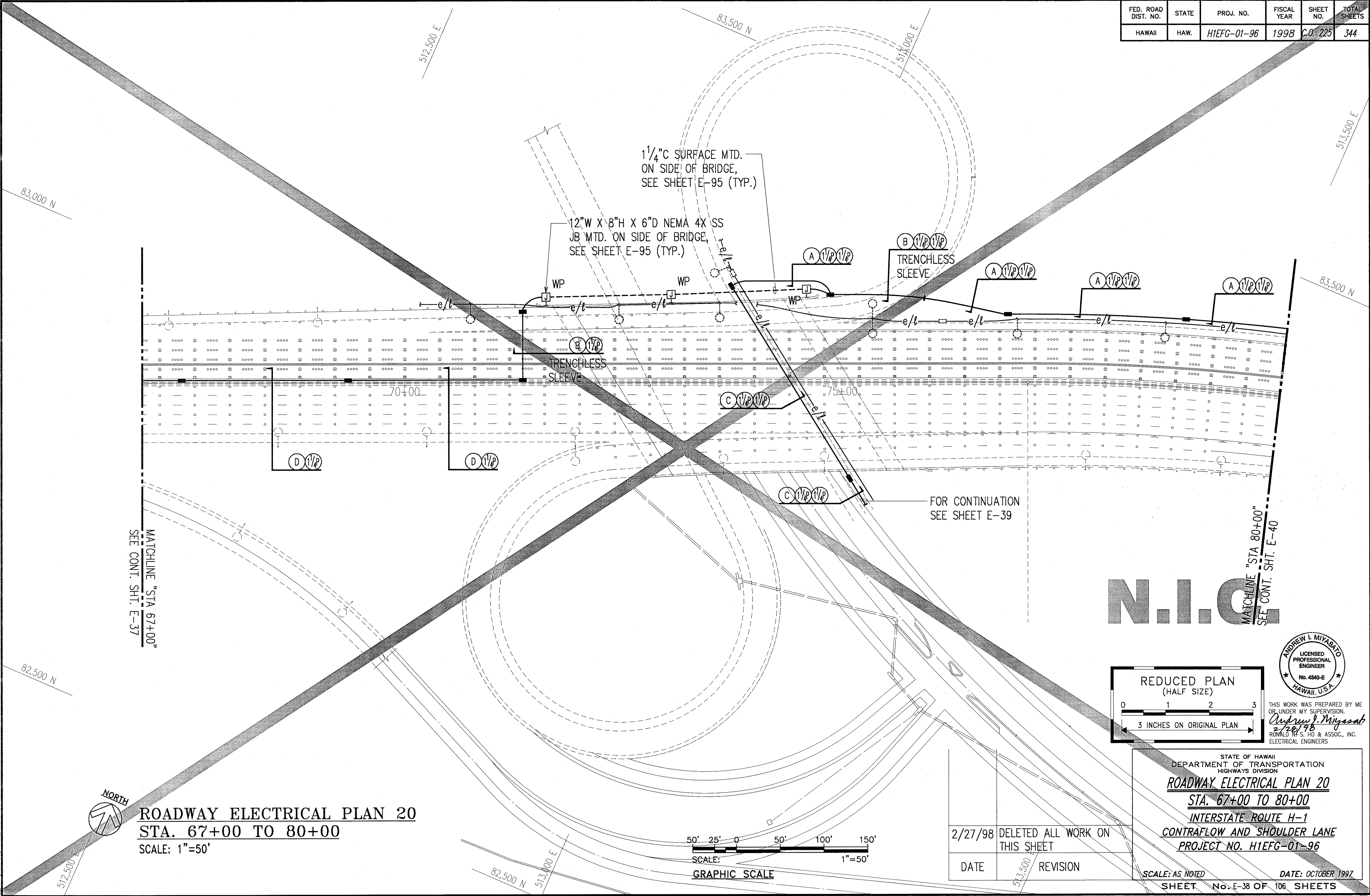


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 2/28/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 19
STA. 55+00 TO 67+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-37 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 225	344

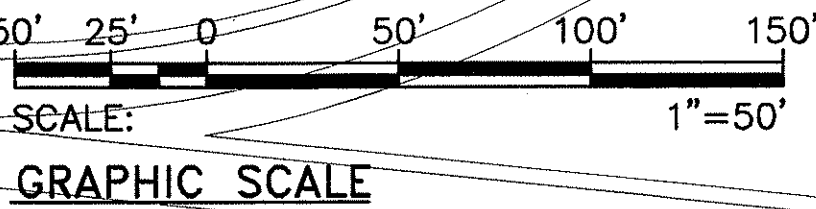


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

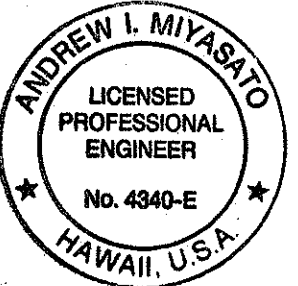
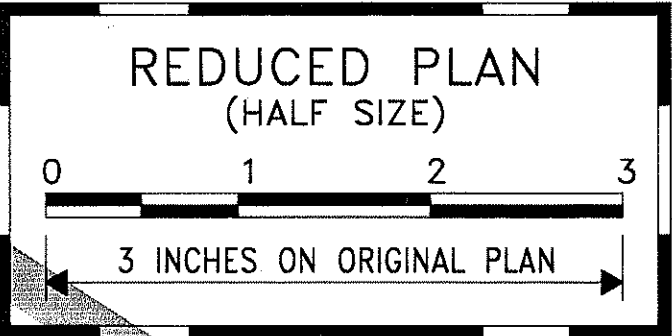
USE ONE OF THE FOLLOWING METHODS TO OBTAIN A COPY OF THIS PLAN: 1. CALL THE HAWAIIAN ELECTRICITY COMPANY (HECO) AT (808) 531-2222. 2. VISIT THE HAWAIIAN ELECTRICITY COMPANY (HECO) WEBSITE AT WWW.HECO.HI.GOV. 3. VISIT THE HAWAIIAN ELECTRICITY COMPANY (HECO) OFFICE AT 100 SOUTH KALANIANAʻOHE AVENUE, SUITE 200, HONOLULU, HI 96813.



ROADWAY ELECTRICAL PLAN 20 **STA. 67+00 TO 80+00** SCALE: 1"=50'



2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

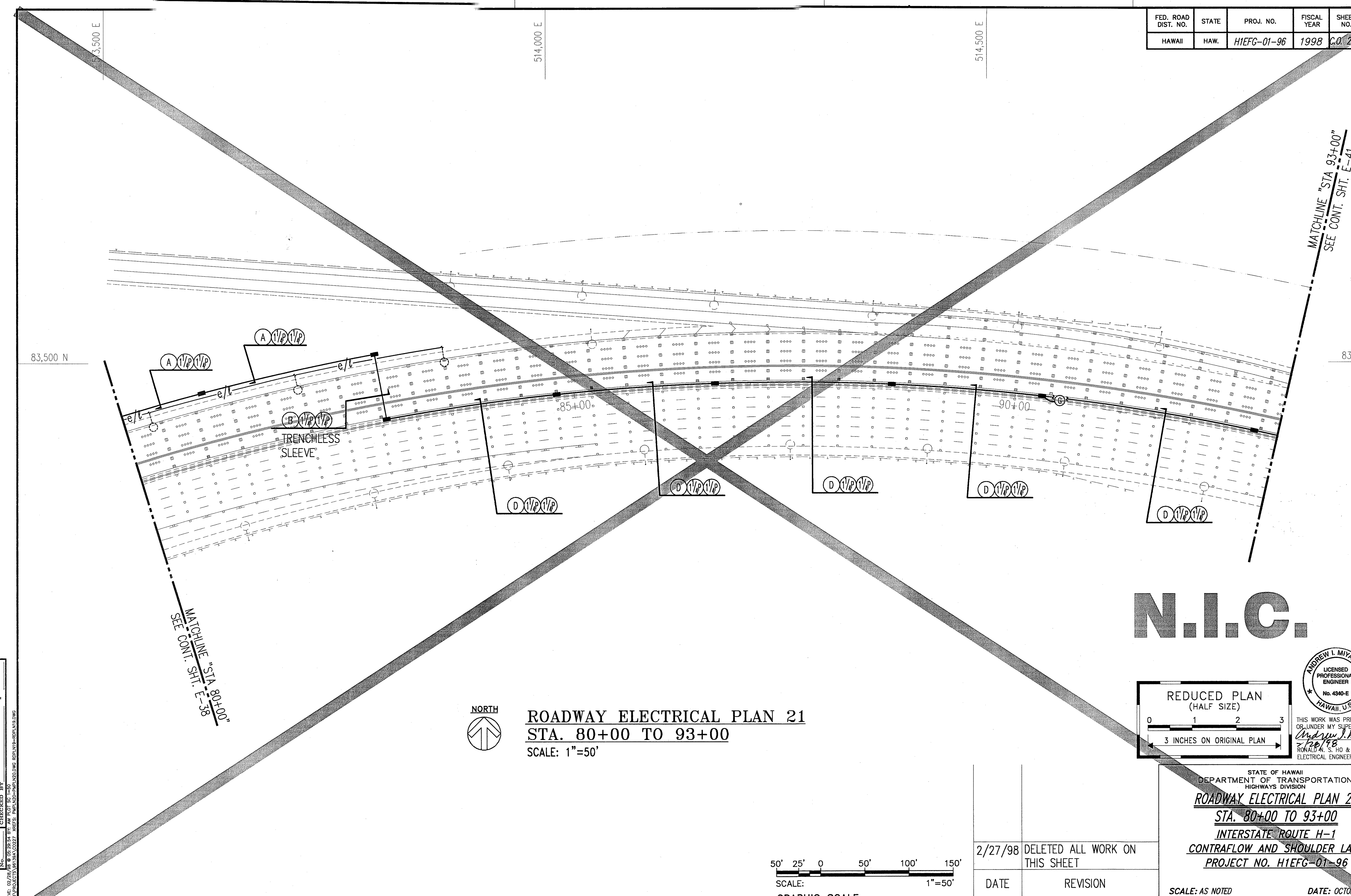


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 2/28/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 20
STA. 67+00 TO 80+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96

SCALE: AS NOTED
 SHEET No. E-38 OF 106 SHEETS
 DATE: OCTOBER 1997

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 227	344

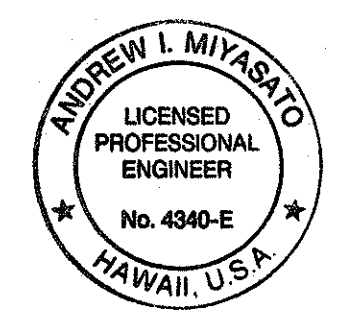
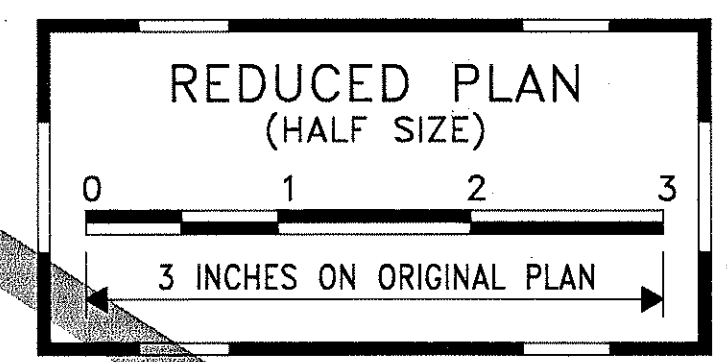
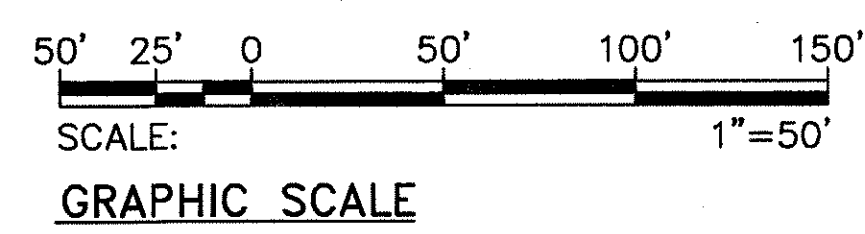


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

LAST SAVE: 09/08/98
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ROADWAY ELECTRICAL PLAN 21
STA. 80+00 TO 93+00
 SCALE: 1"=50'



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Andrew L. Miyasato
 7/26/98
 RONALD A. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

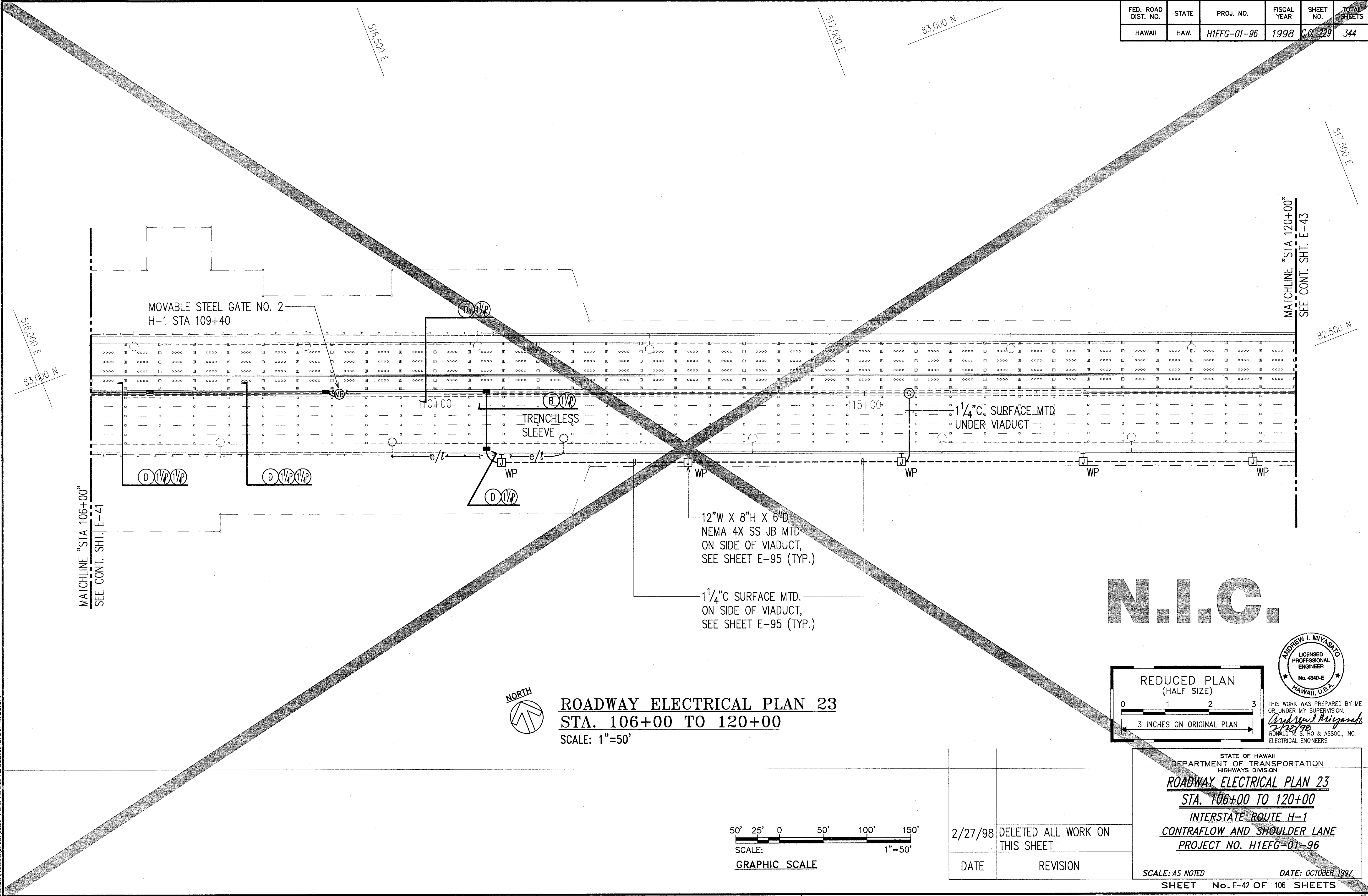
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 21
STA. 80+00 TO 93+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-40 OF 106 SHEETS

N.I.C.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 229	344



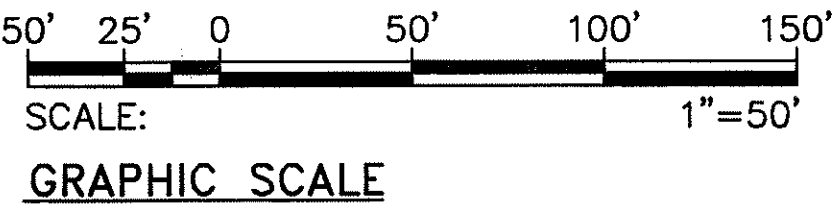
N.I.C.

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

LAST ONE OF TWO SHEETS
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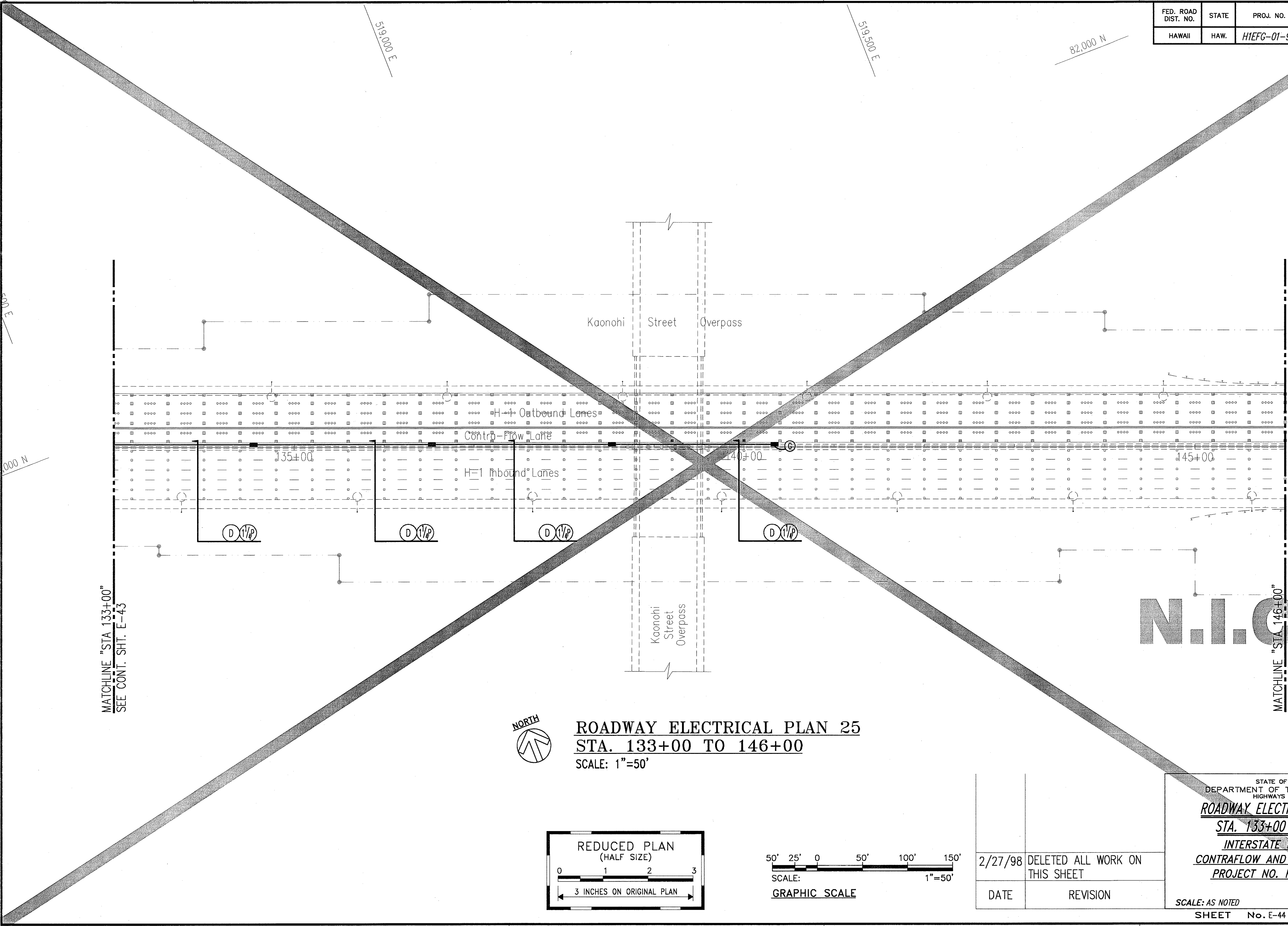
ROADWAY ELECTRICAL PLAN 23 **STA. 106+00 TO 120+00** SCALE: 1"=50'



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Andrew I. Miyasato
2/28/98
RONALD T. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY ELECTRICAL PLAN 23	
STA. 106+00 TO 120+00	
INTERSTATE ROUTE H-1	
CONTRAFLOW AND SHOULDER LANE	
PROJECT NO. H1EFG-01-96	
2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION
SCALE: AS NOTED	
DATE: OCTOBER 1997	
SHEET No. E-42 OF 106 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 231	344



N.I.C.

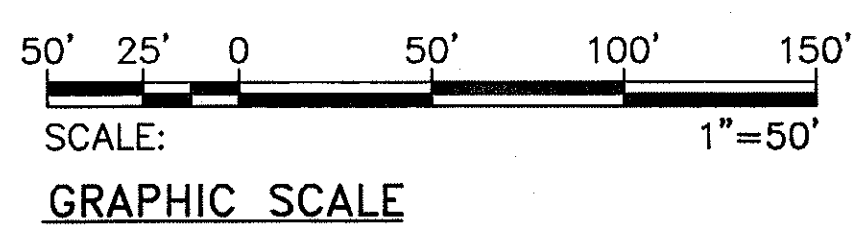
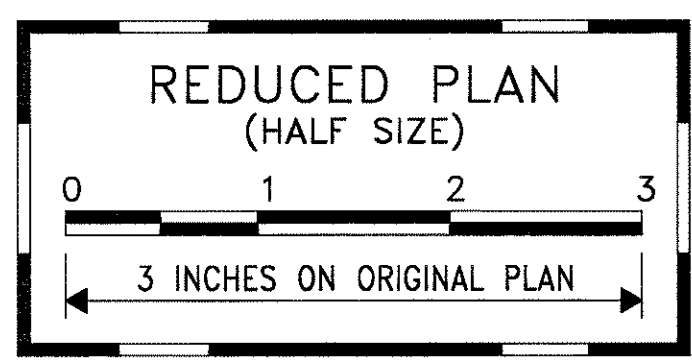
MATCHLINE "STA 146+00"
SEE CONT. SHT. E-45



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Andrew I. Miyasato
2/28/98
RONALD K. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



ROADWAY ELECTRICAL PLAN 25
STA. 133+00 TO 146+00
SCALE: 1"=50'



2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 25
STA. 133+00 TO 146+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96

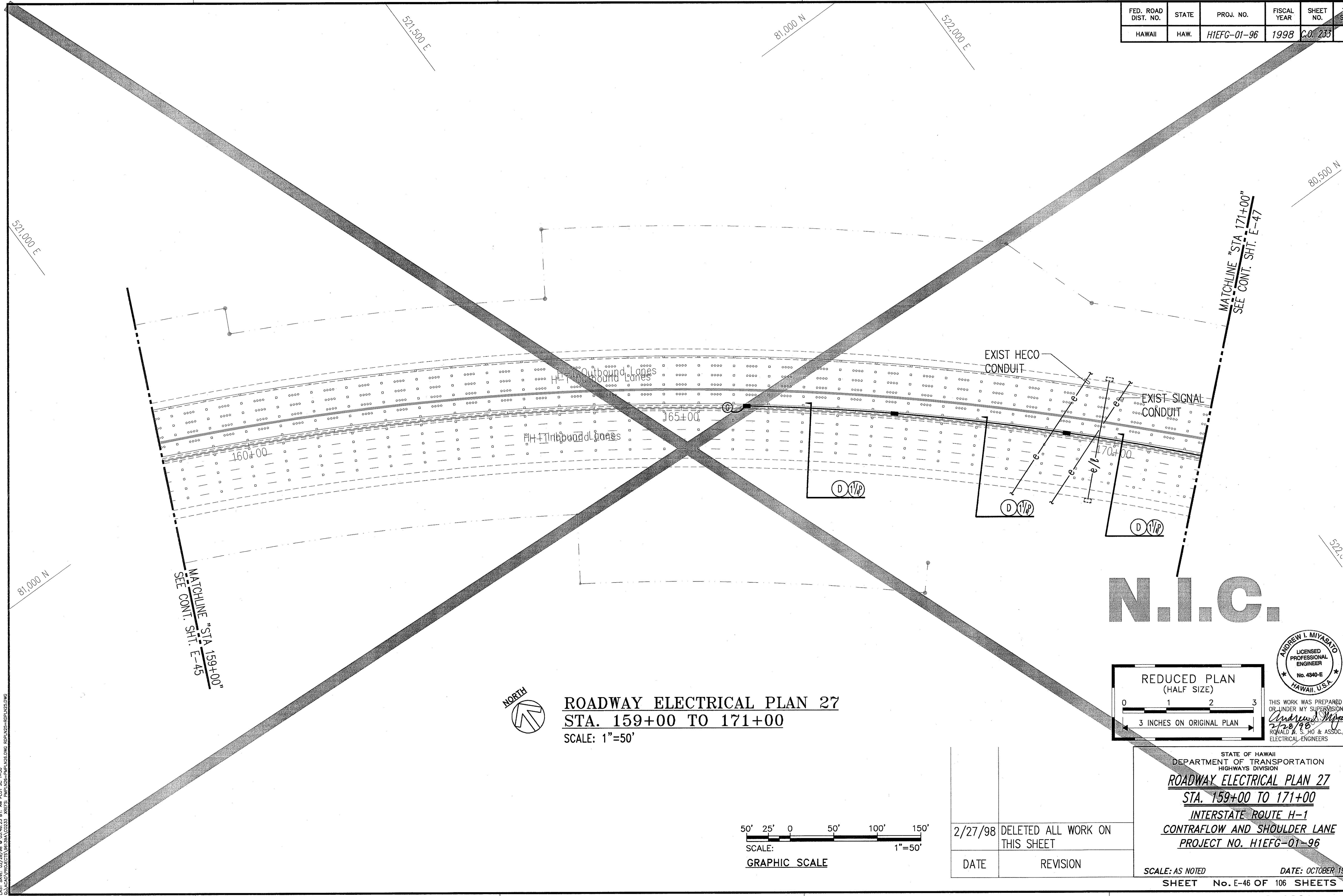
SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-44 OF 106 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
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LAST SAVE: 02/27/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 233	344

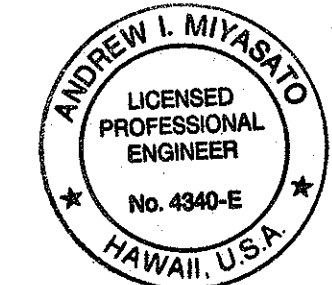
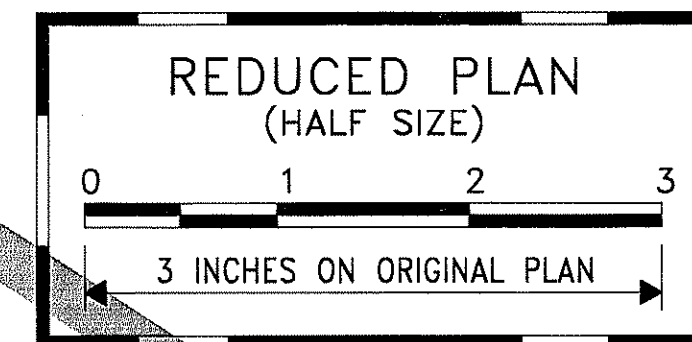
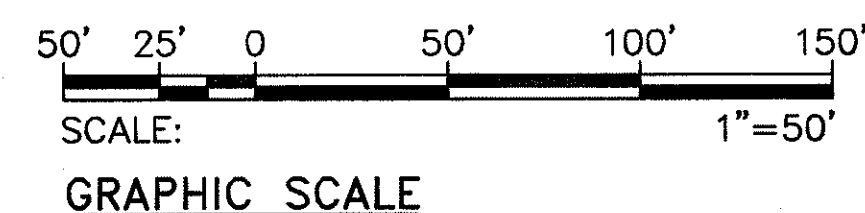


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

LAST DATE OF REVISION: 02/28/99
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ROADWAY ELECTRICAL PLAN 27
STA. 159+00 TO 171+00
 SCALE: 1"=50'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew L. Miyasato
 2/28/99
 RONALD A. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

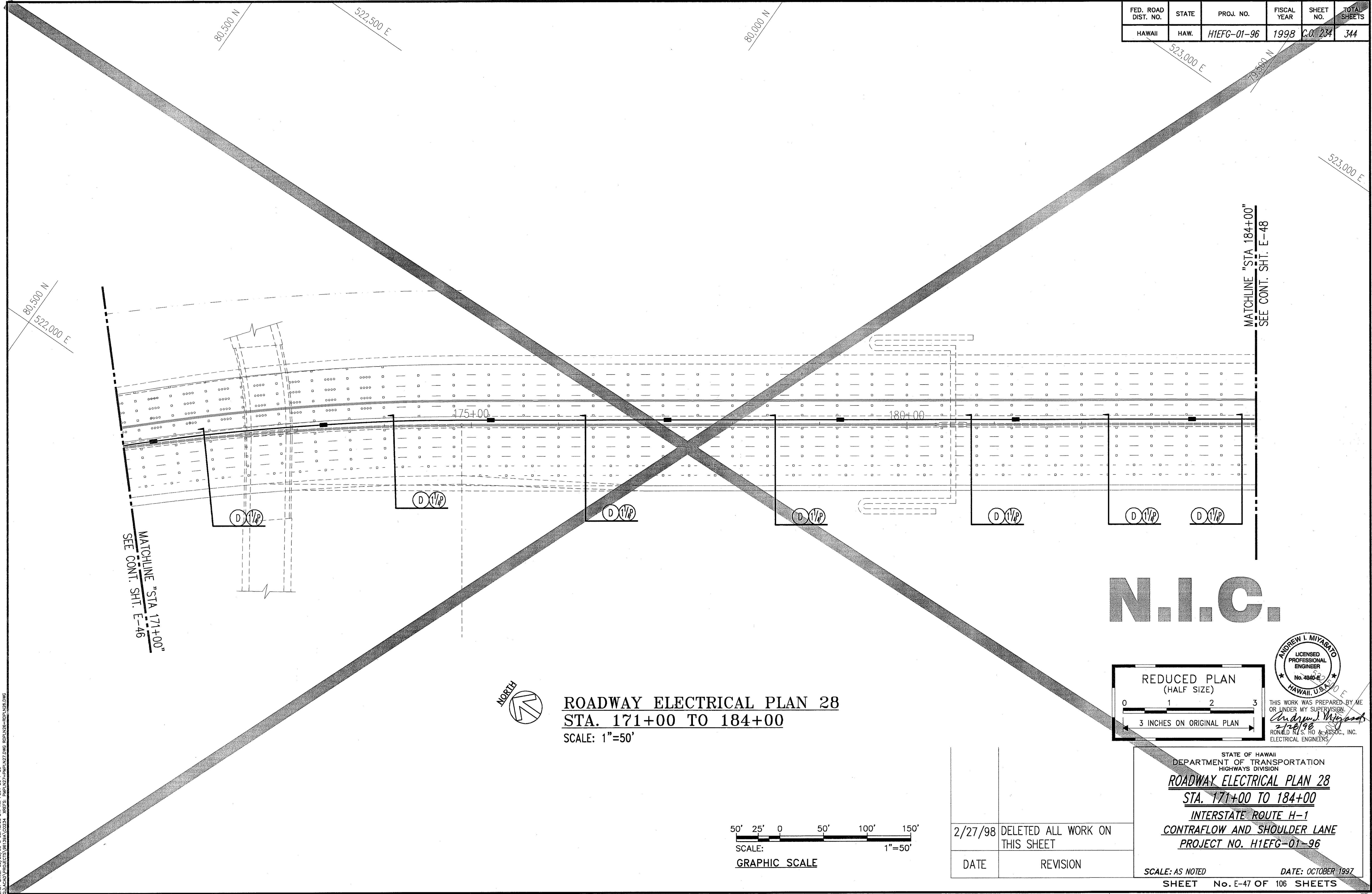
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DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

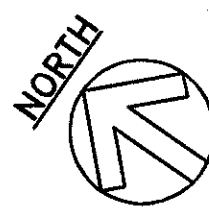
ROADWAY ELECTRICAL PLAN 27
STA. 159+00 TO 171+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-46 OF 106 SHEETS

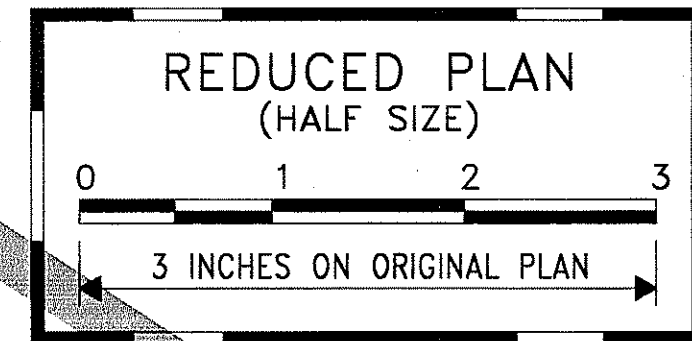
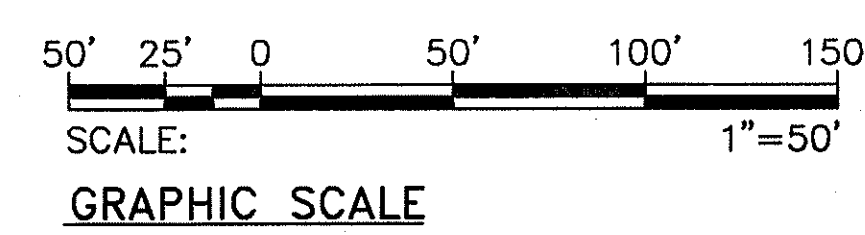
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 234	344



N.I.C.



ROADWAY ELECTRICAL PLAN 28
STA. 171+00 TO 184+00
 SCALE: 1"=50'



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Andrew I. Miyasato
 2/28/98
 RONALD R. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 28
STA. 171+00 TO 184+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

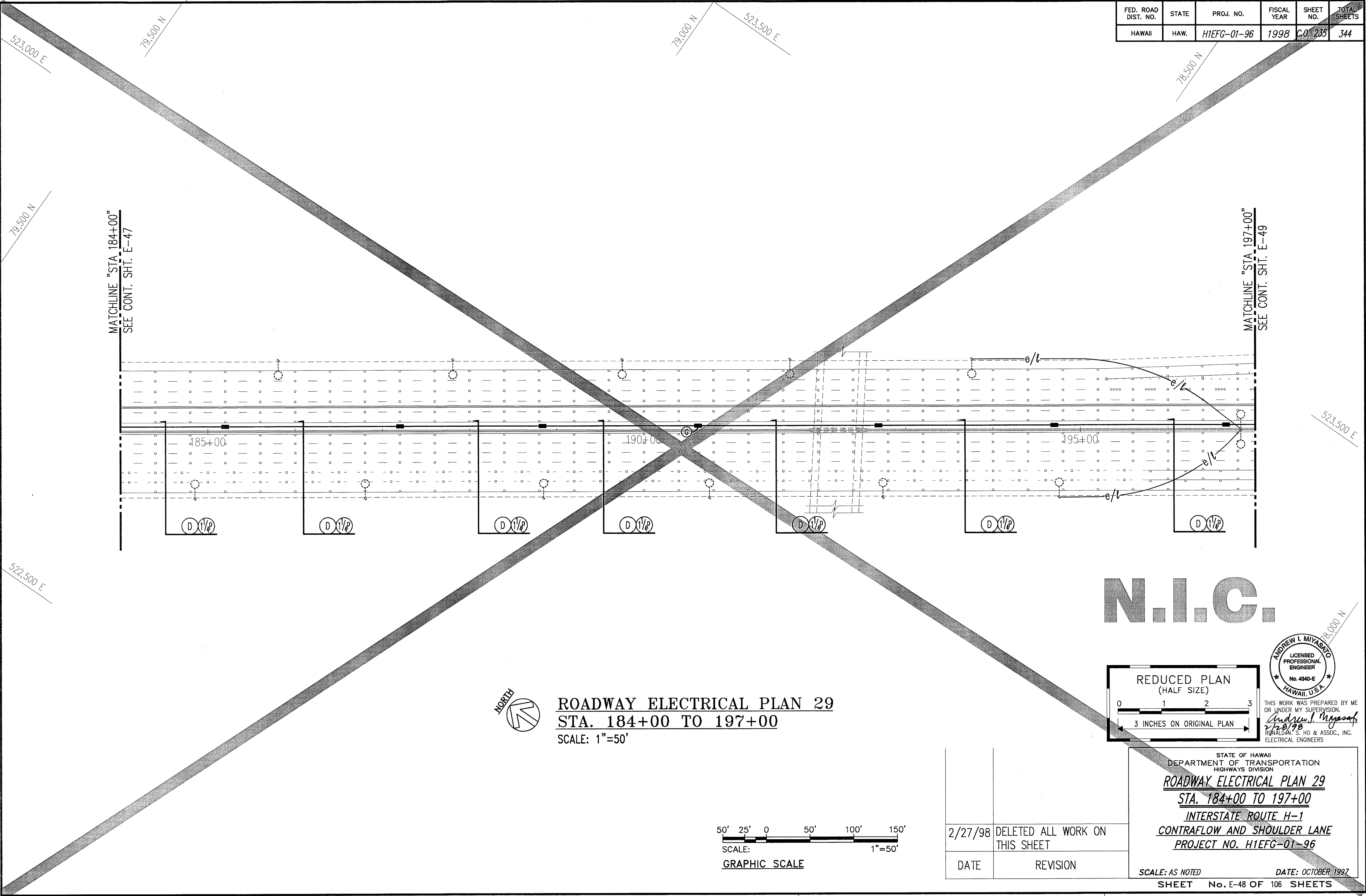
SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-47 OF 106 SHEETS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

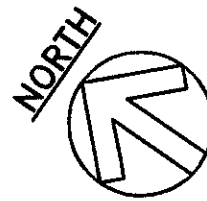
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
	APPROVED BY	

LAST SAVE: 02/28/98 BY: AM PLOT: 02/28/98 REF: P:\H1EFG-01\H1EFG-01\N27.DWG R02E-08-R02E-08.DWG
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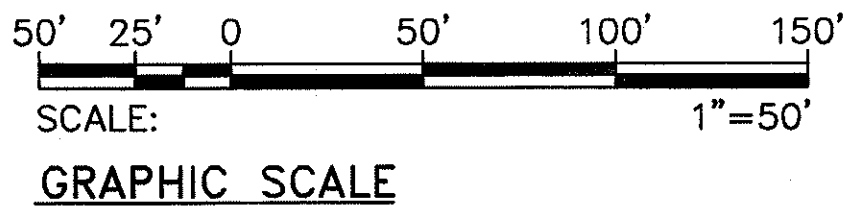
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 235	344



N.I.C.



ROADWAY ELECTRICAL PLAN 29
STA. 184+00 TO 197+00
 SCALE: 1"=50'



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Andrew I. Miyamoto
 2/28/98
 RONALD A. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 29
STA. 184+00 TO 197+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-48 OF 106 SHEETS

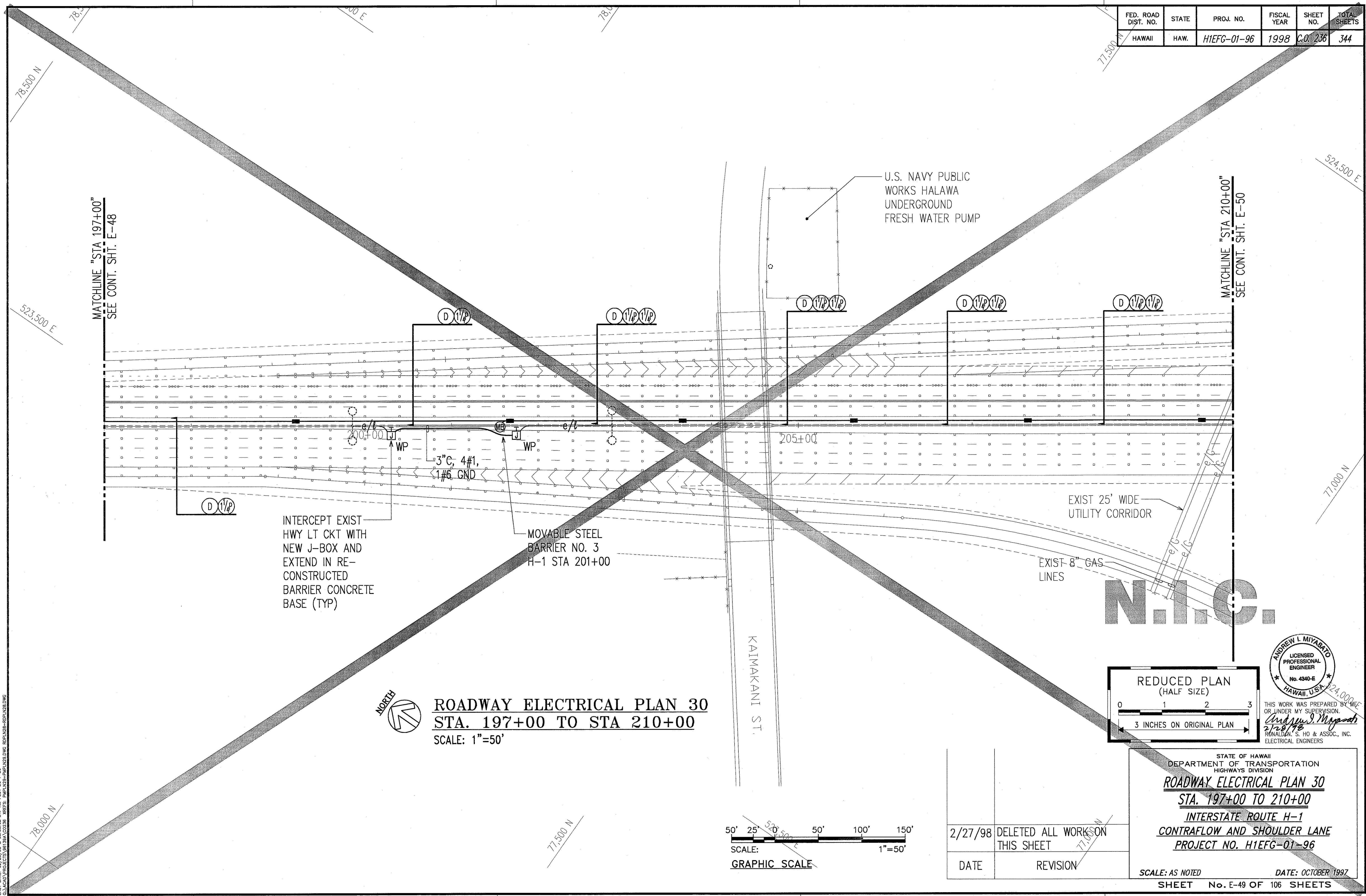
C.O. 235

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

LAST DATE OF REVISION: 02/28/98
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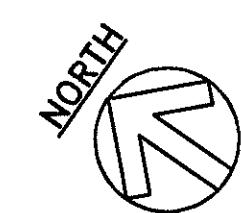
2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 236	344

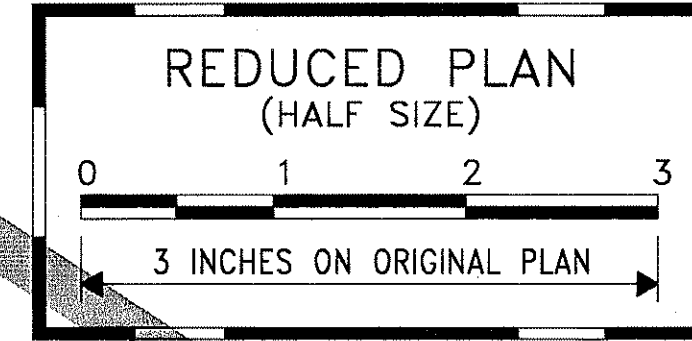
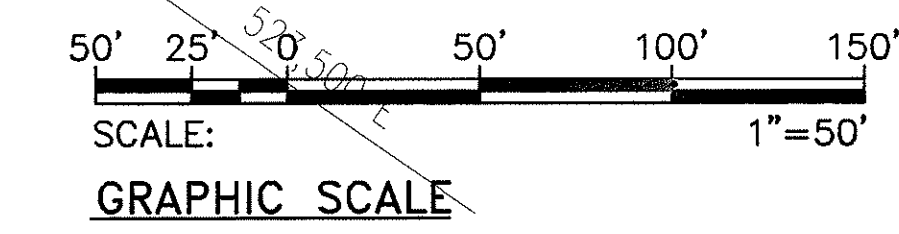


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	

LAST SAVE: 02/26/98 8:05:53 PM
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ROADWAY ELECTRICAL PLAN 30
STA. 197+00 TO STA 210+00
 SCALE: 1"=50'

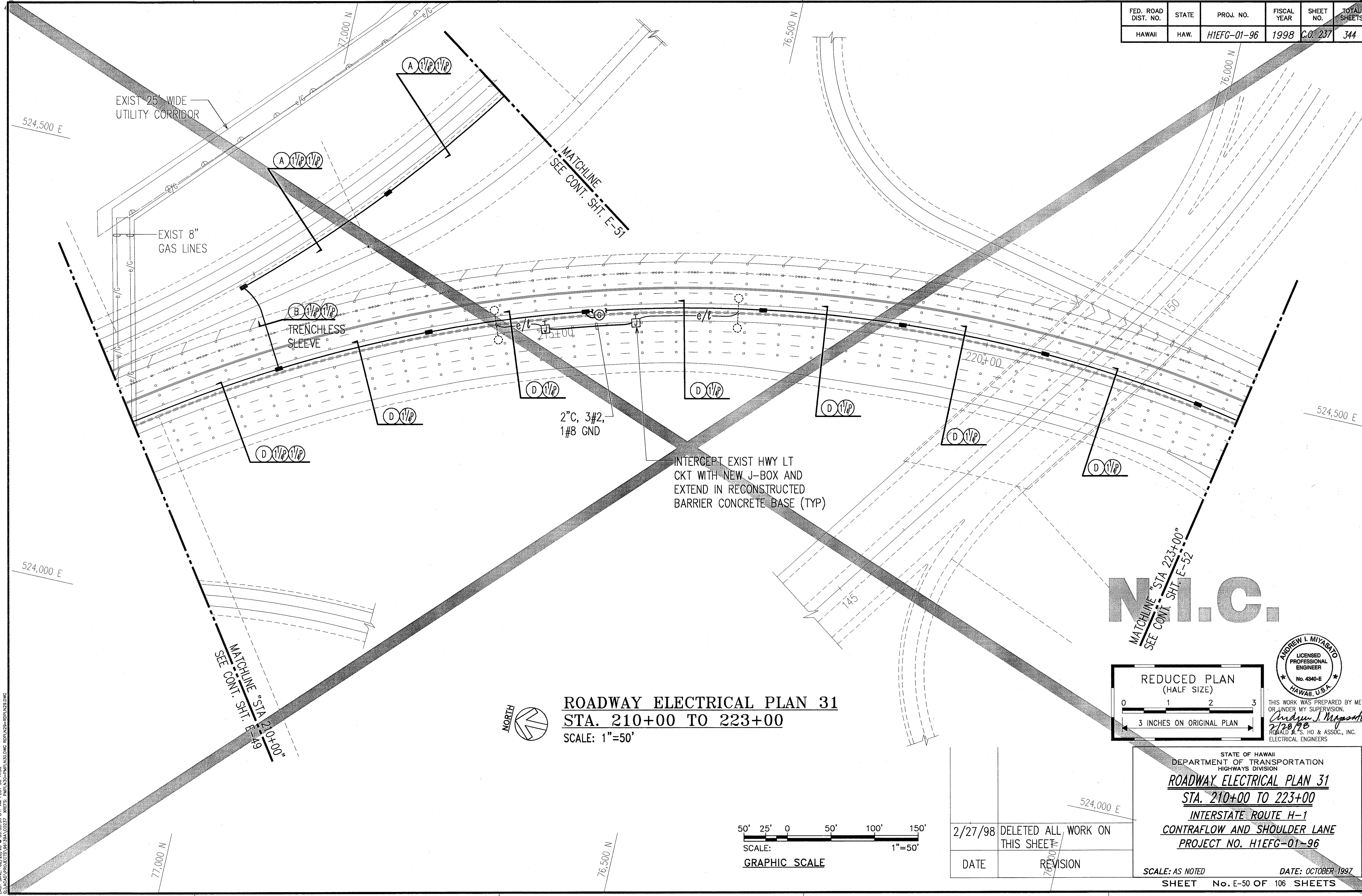


ANDREW I. MIYABATO
 LICENSED PROFESSIONAL ENGINEER
 No. 4340-E
 HAWAII, U.S.A.
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyabato
 2/28/98
 RONALDAN S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 30
STA. 197+00 TO 210+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96
 SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-49 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 237	344



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTES BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	DATE	

LAST SAVE: 02/24/98
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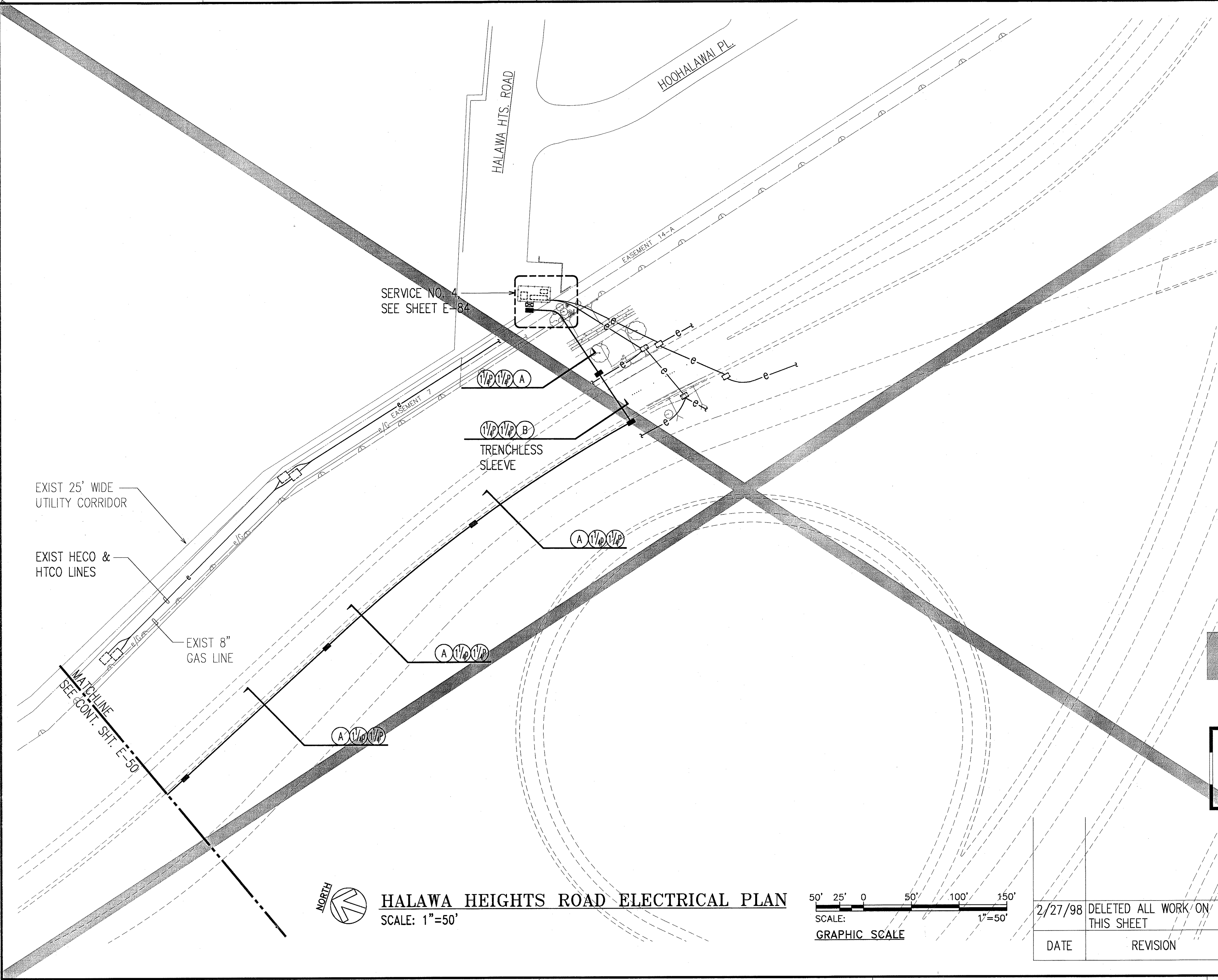
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
2/28/98
RODOLFO M. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 31
STA. 210+00 TO 223+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-50 OF 106 SHEETS

C.O. 237

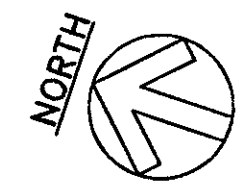
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 238	344



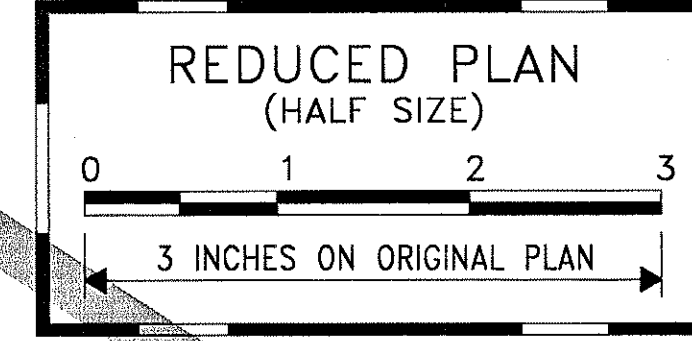
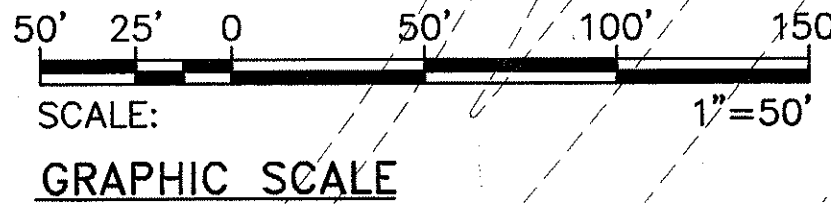
N.I.C.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

LAST SHEET OF 106 SHEETS
C.O. 238 OF 106 SHEETS
C.O. 238 OF 106 SHEETS



HALAWA HEIGHTS ROAD ELECTRICAL PLAN
SCALE: 1"=50'



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Andrew I. Miyasato
2/28/98
ROYAL S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

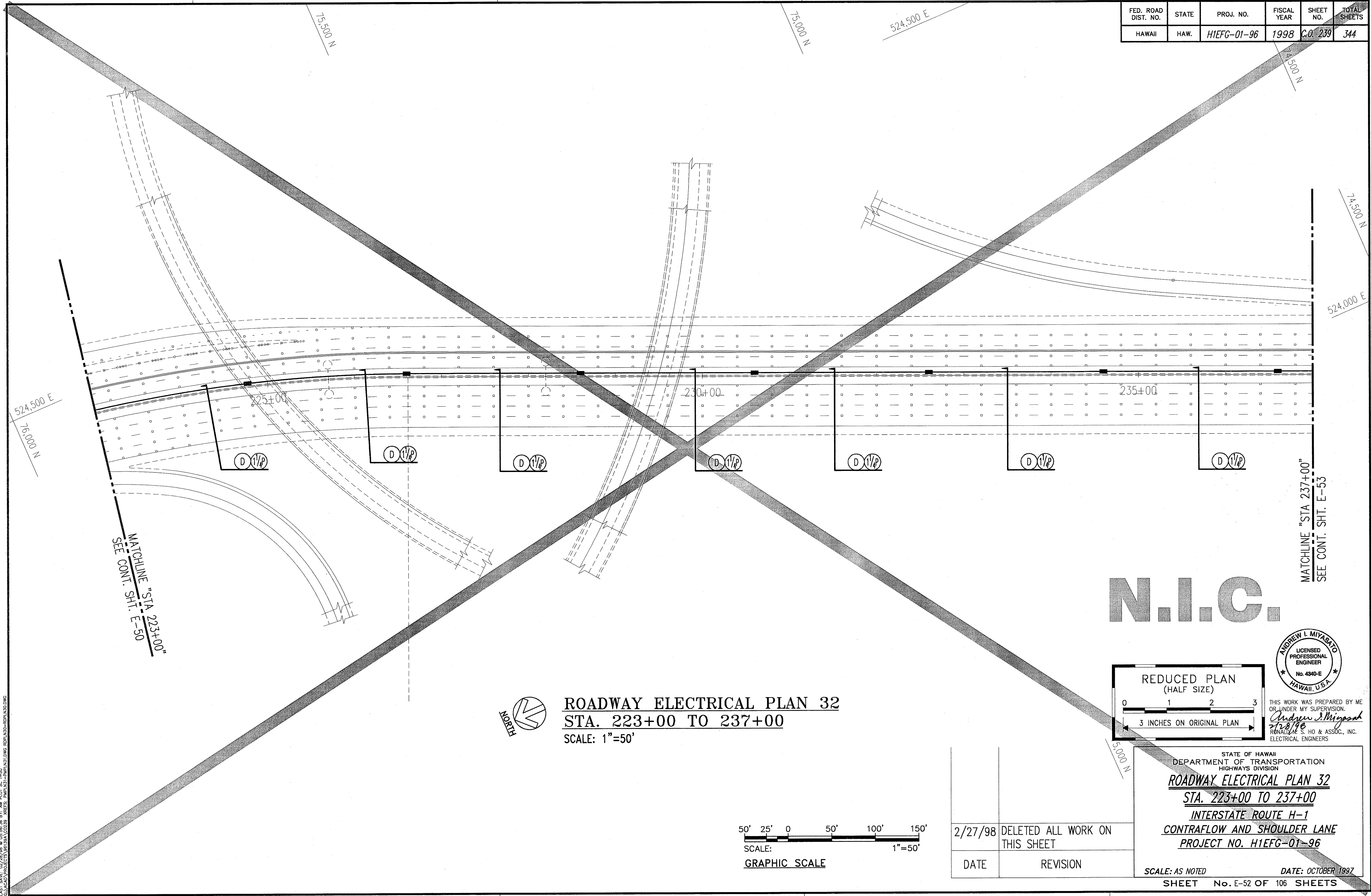
2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HALAWA HEIGHTS ROAD ELECTRICAL PLAN

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-51 OF 106 SHEETS

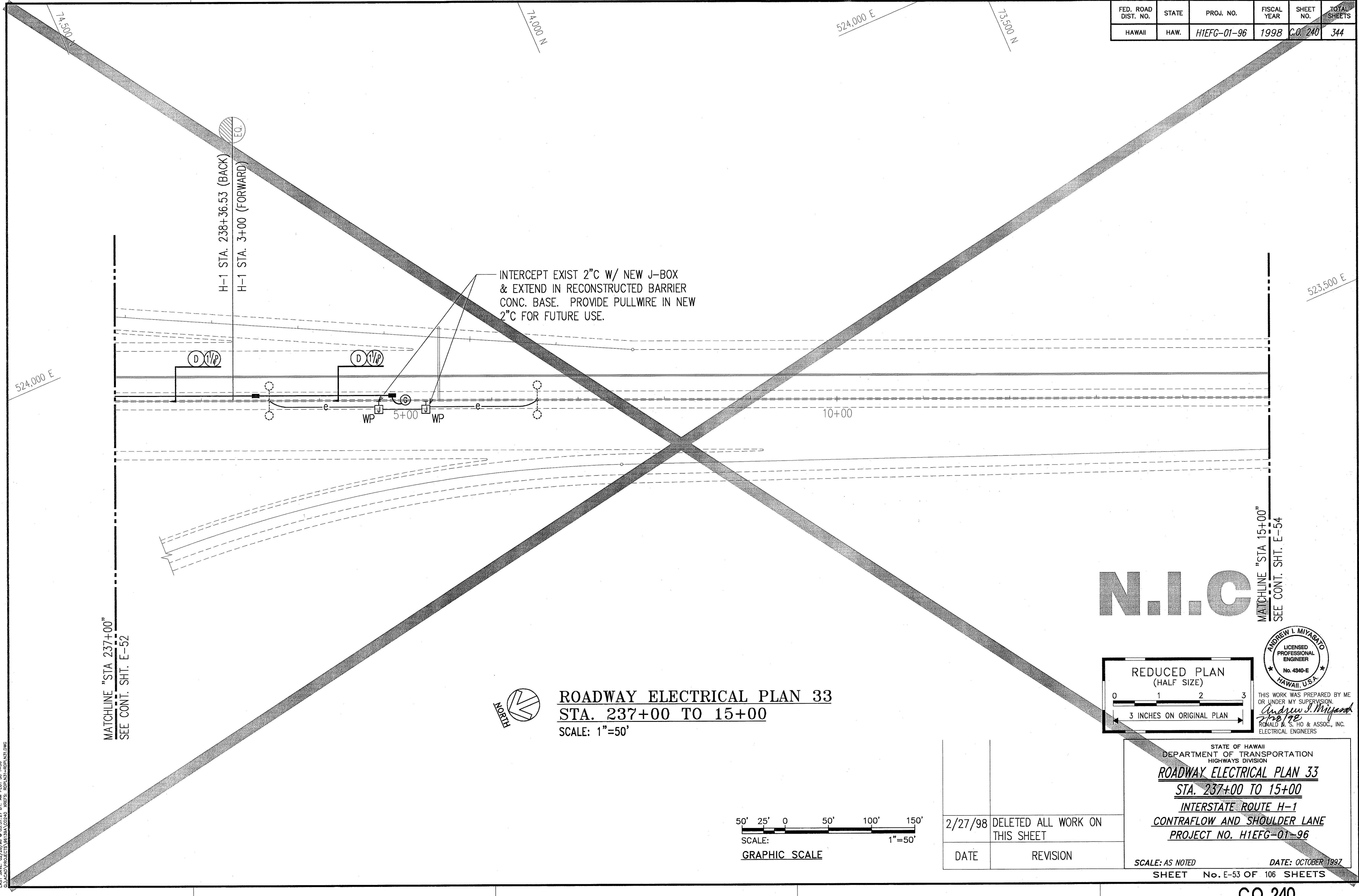
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 239	344



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

LAST SAVE: 02/27/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 240	344

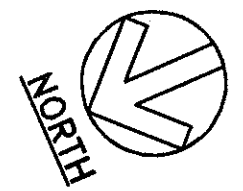


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

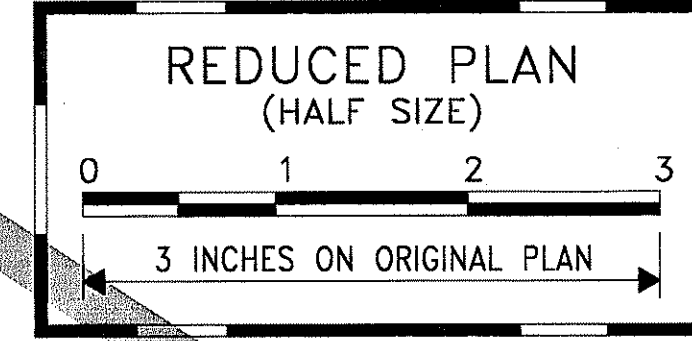
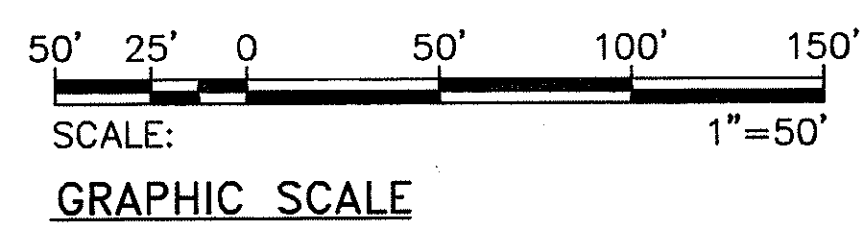
LAST SAVE: 02/28/98
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MATCHLINE "STA 237+00"
SEE CONT. SHT. E-52

MATCHLINE "STA 15+00"
SEE CONT. SHT. E-54



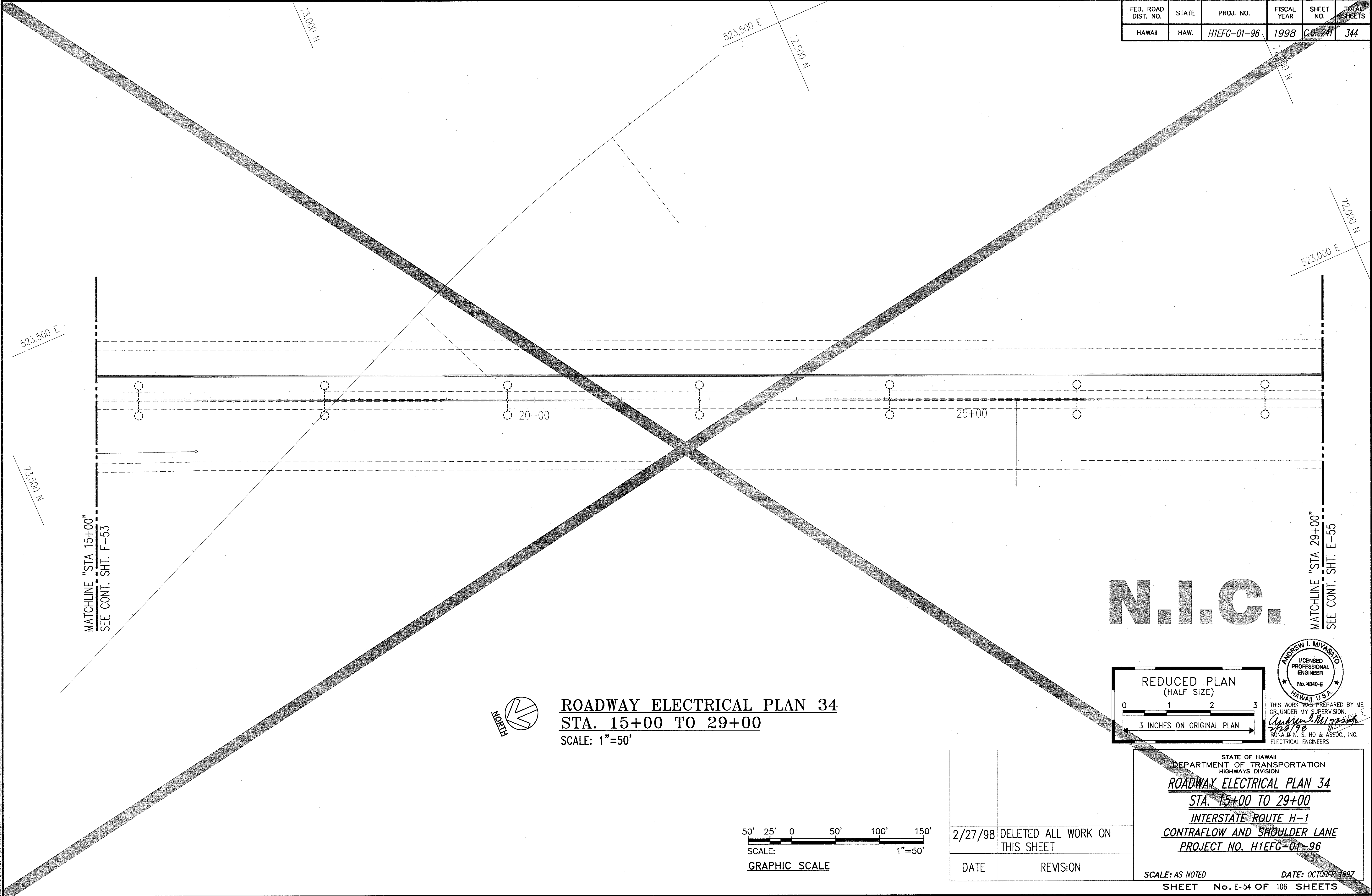
ROADWAY ELECTRICAL PLAN 33
STA. 237+00 TO 15+00
SCALE: 1"=50'



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Andrew L. Miyasato
2/28/98
RONALD M. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

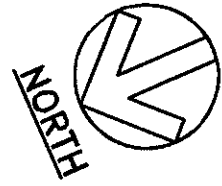
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY ELECTRICAL PLAN 33	
STA. 237+00 TO 15+00	
INTERSTATE ROUTE H-1	
CONTRAFLOW AND SHOULDER LANE	
PROJECT NO. H1EFG-01-96	
2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION
SCALE: AS NOTED	
DATE: OCTOBER 1997	
SHEET No. E-53 OF 106 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 241	344

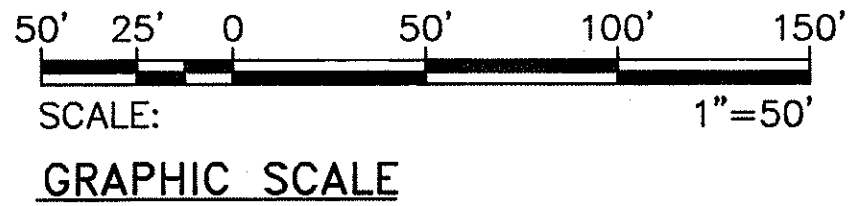


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

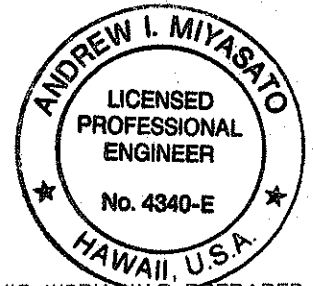
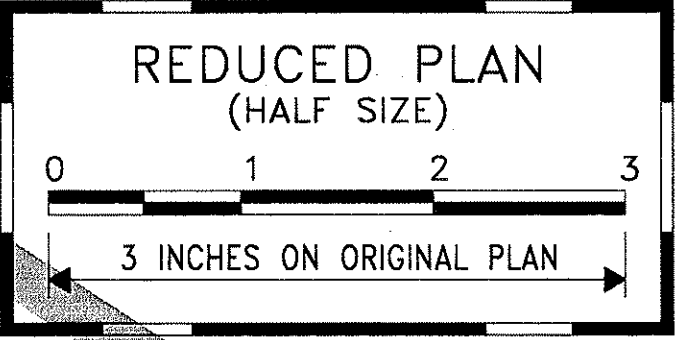
LAST SET OF PLANS FOR THIS PROJECT
DRAWN AND CHECKED BY: [Name]
DATE: [Date]



ROADWAY ELECTRICAL PLAN 34
STA. 15+00 TO 29+00
SCALE: 1"=50'



2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION



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2/28/98
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

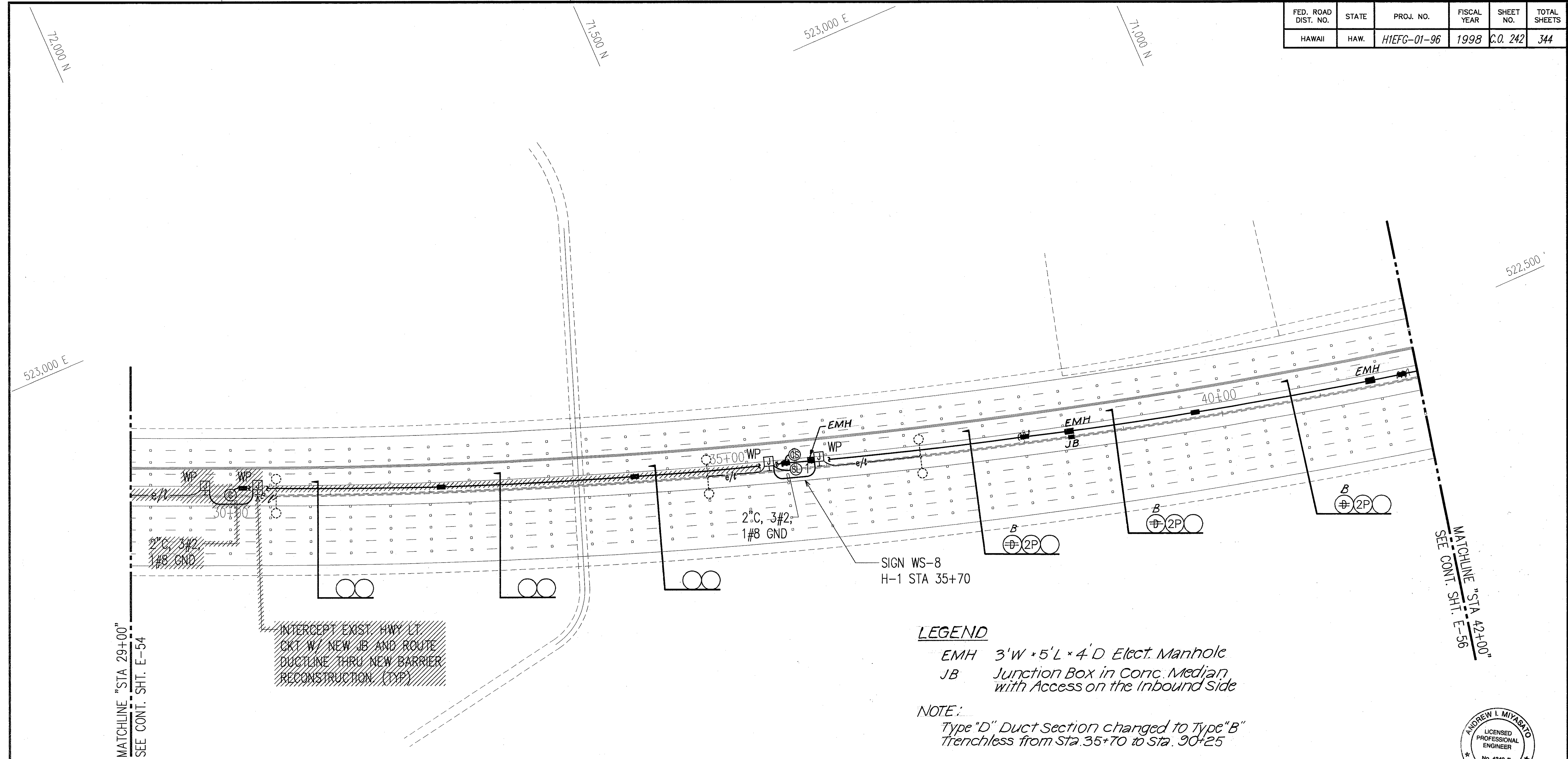
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 34
STA. 15+00 TO 29+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997

SHEET No. E-54 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 242	344



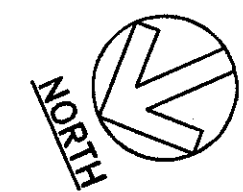
LEGEND

EMH 3'W x 5'L x 4'D Elect. Manhole

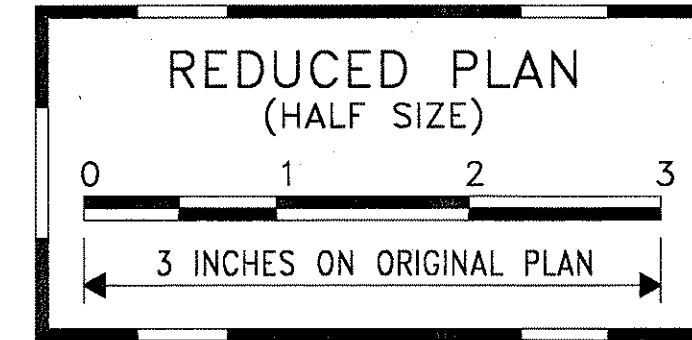
JB Junction Box in Conc. Median with Access on the Inbound Side

NOTE:

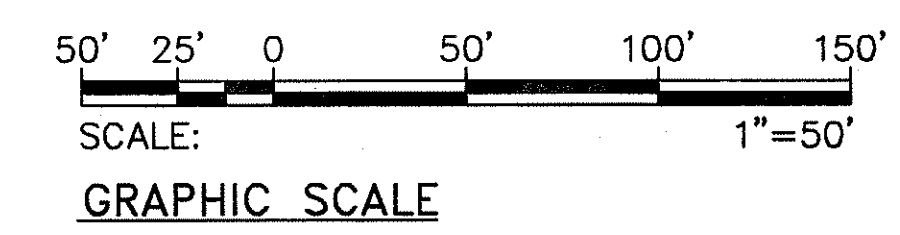
Type "D" Duct Section changed to Type "B" Trenchless from Sta. 35+70 to Sta. 30+25



ROADWAY ELECTRICAL PLAN 35
STA. 29+00 TO 42+00
 SCALE: 1"=50'



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 RONALD N. & HO & ASSOC., INC.
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2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 35
STA. 29+00 TO 42+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

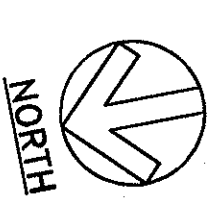
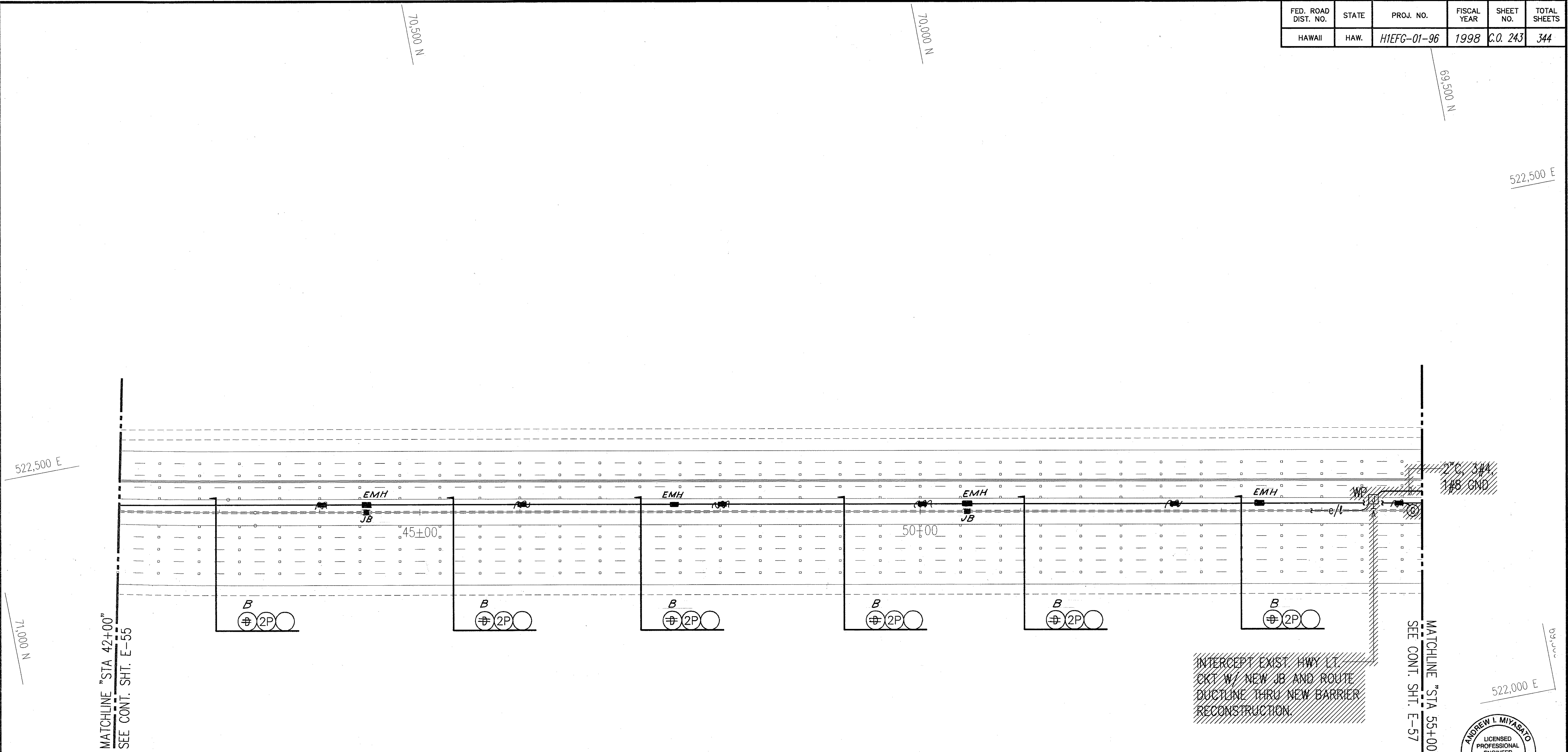
SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-55 OF 106 SHEETS

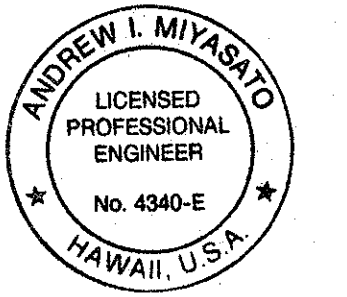
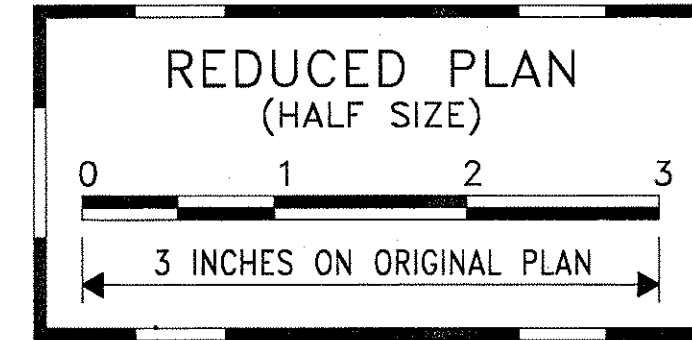
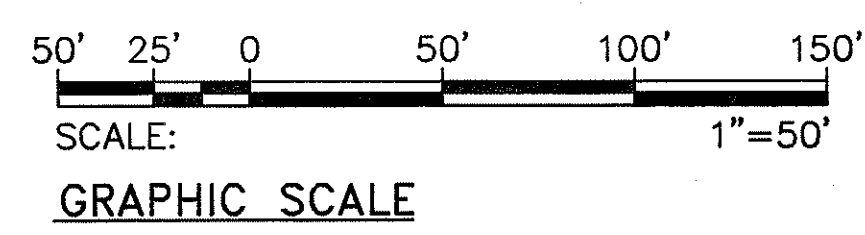
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	APPROVED BY	

LAST SAVE: 02/27/98
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 243	344



ROADWAY ELECTRICAL PLAN 36
STA. 42+00 TO 55+00
 SCALE: 1"=50'



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Andrew I. Miyasato
 2/27/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY ELECTRICAL PLAN 36 STA. 42+00 TO 55+00 INTERSTATE ROUTE H-1 CONTRAFLOW AND SHOULDER LANE PROJECT NO. H1IEFG-01-96	
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION
SCALE: AS NOTED SHEET No. E-56 OF 106 SHEETS DATE: OCTOBER 1997	

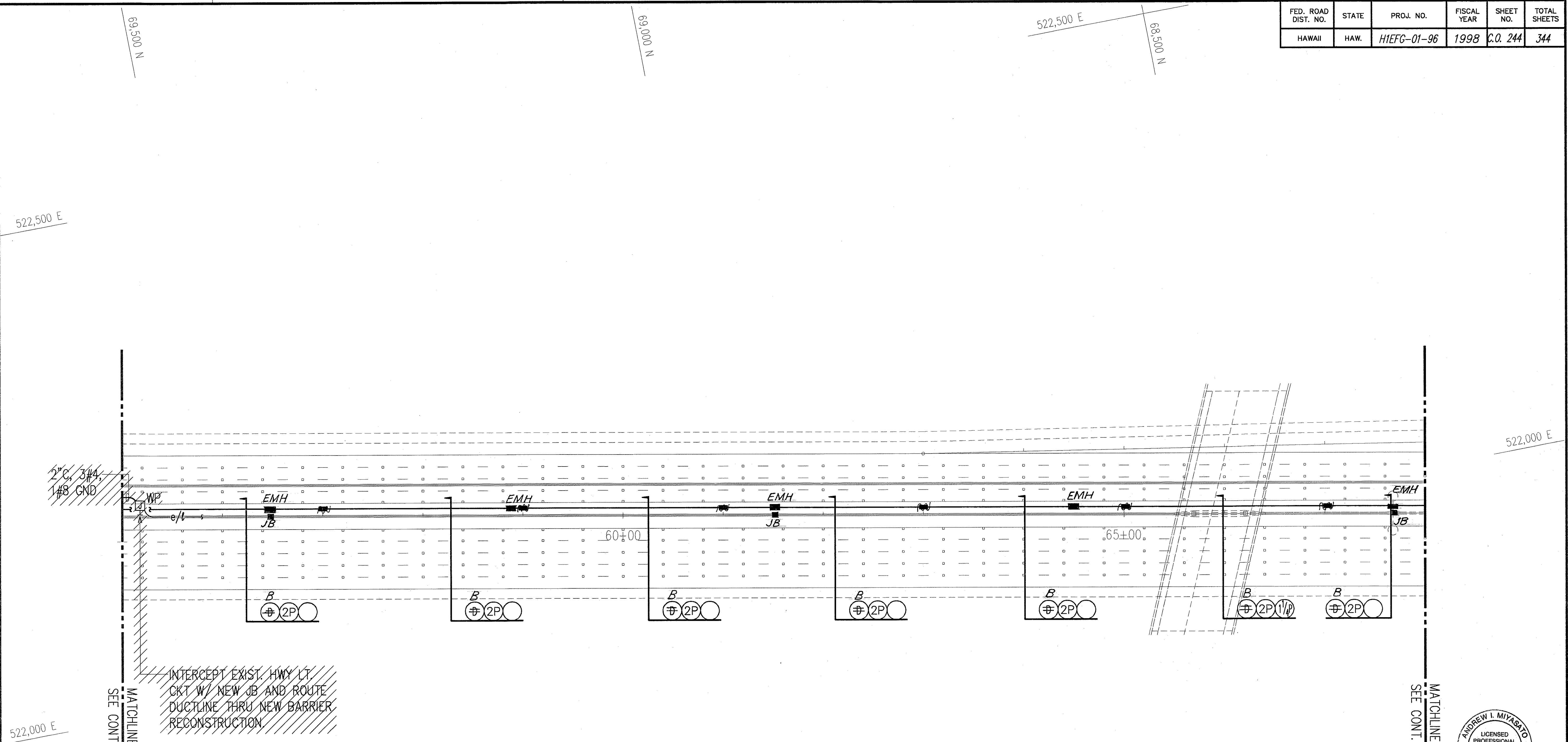
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

LAST SAVE: 02/27/98
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"AS-BUILT"

C.O. 243

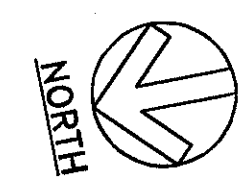
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 244	344



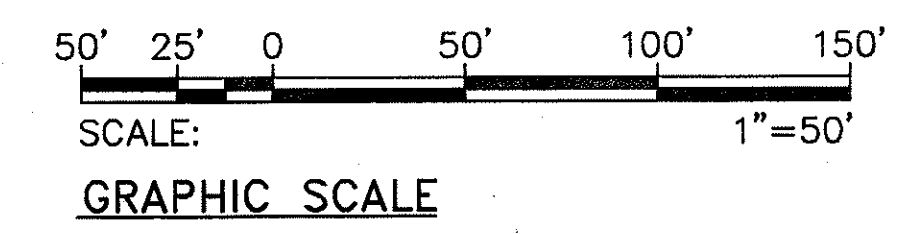
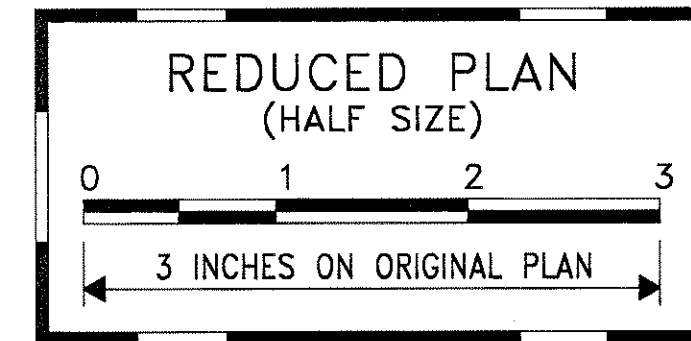
INTERCEPT EXIST. HWY LT. CKT W/ NEW JB AND ROUTE DUCTLINE THRU NEW BARRIER RECONSTRUCTION

MATCHLINE "STA 55+00"
SEE CONT. SH. E-56

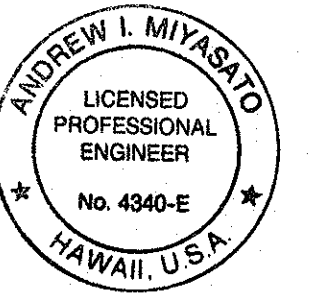
MATCHLINE "STA 68+00"
SEE CONT. SH. E-58



ROADWAY ELECTRICAL PLAN 37
STA. 55+00 TO 68+00
SCALE: 1"=50'



2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION



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Andrew I. Miyasato
2/27/98
RONALD W. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 37
STA. 55+00 TO 68+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-57 OF 106 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DAVE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	DATE	

LAST SAVE: 02/27/98
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"AS-BUILT"

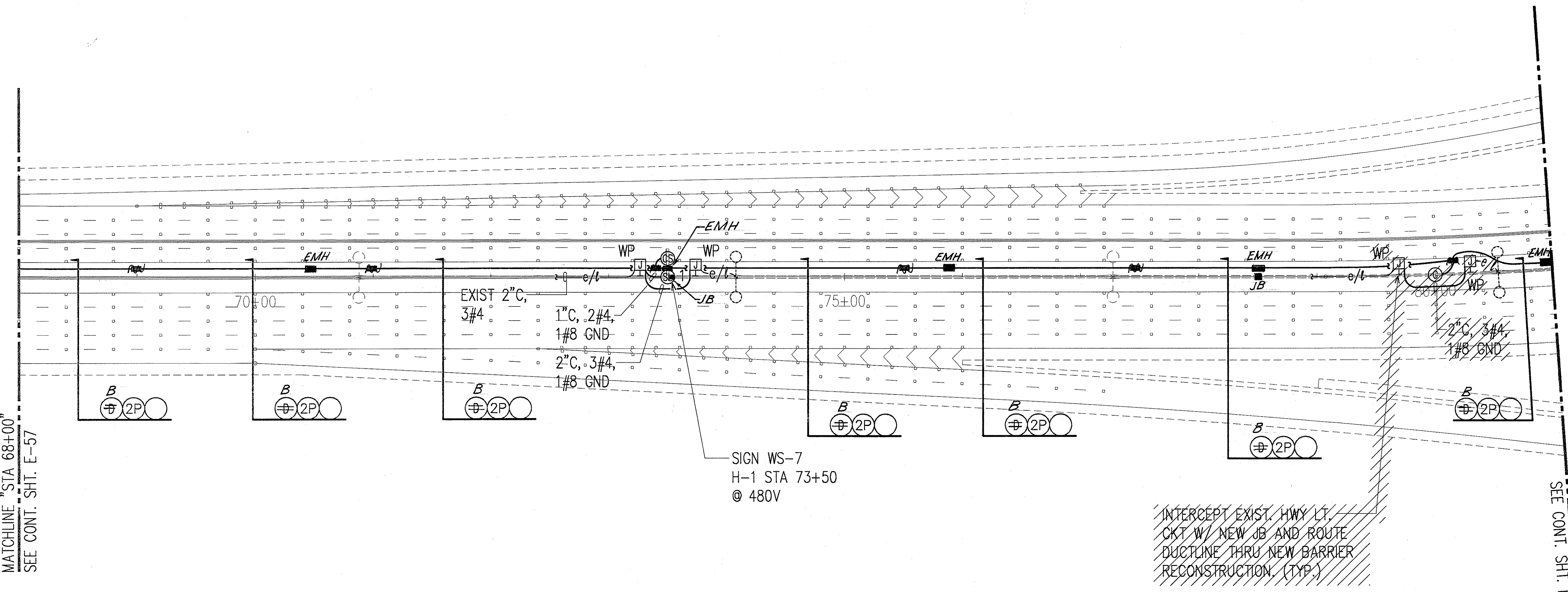
C.O. 244

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 245	344

522,000 E

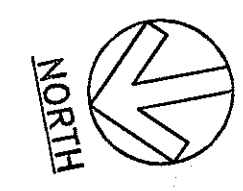
MATCHLINE "STA 68+00"
SEE CONT. SHT. E-57

68,500 N

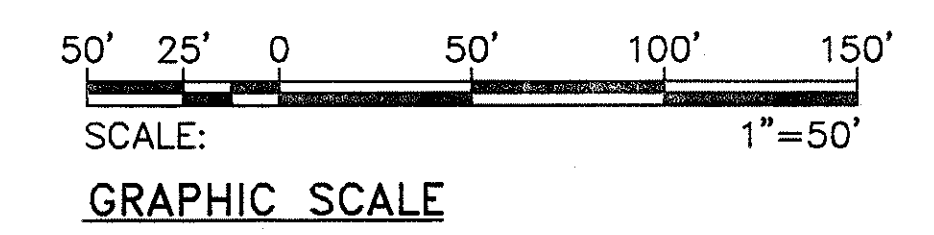
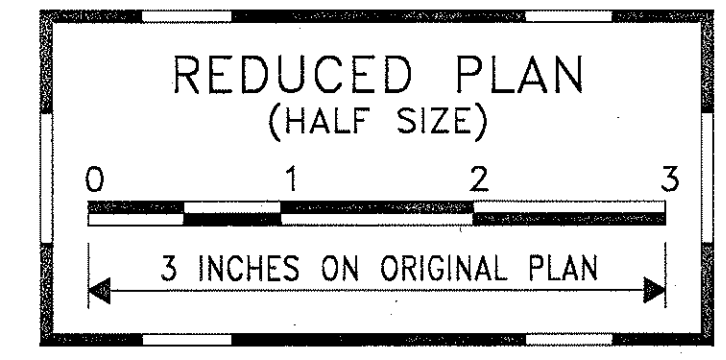


SIGN WS-7
H-1 STA 73+50
@ 480V

INTERCEPT EXIST. HWY LT.
CKT W/ NEW JB AND ROUTE
DUCTLINE THRU NEW BARRIER
RECONSTRUCTION. (TYP)



ROADWAY ELECTRICAL PLAN 38 **STA. 68+00 TO 81+00** SCALE: 1"=50'

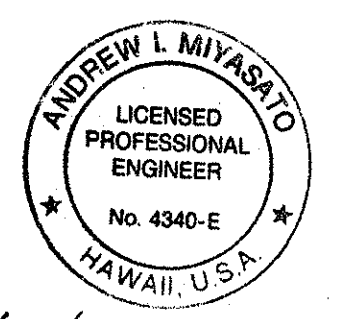


EXIST HIGHWAY LIGHTING
SERVICE EQUIPMENT,
REPLACE EXIST 3P20A BKR
W/ NEW 3P30A BKR SERVING
ON-RAMP LIGHTS (CKT #3)

DATE	REVISION
6/24/98	REPLACE BKR @ HWY LIGHT SERVICE EQUIP
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 38
STA. 68+00 TO 81+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-58 OF 106 SHEETS



6/25/98
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
Andrew L. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

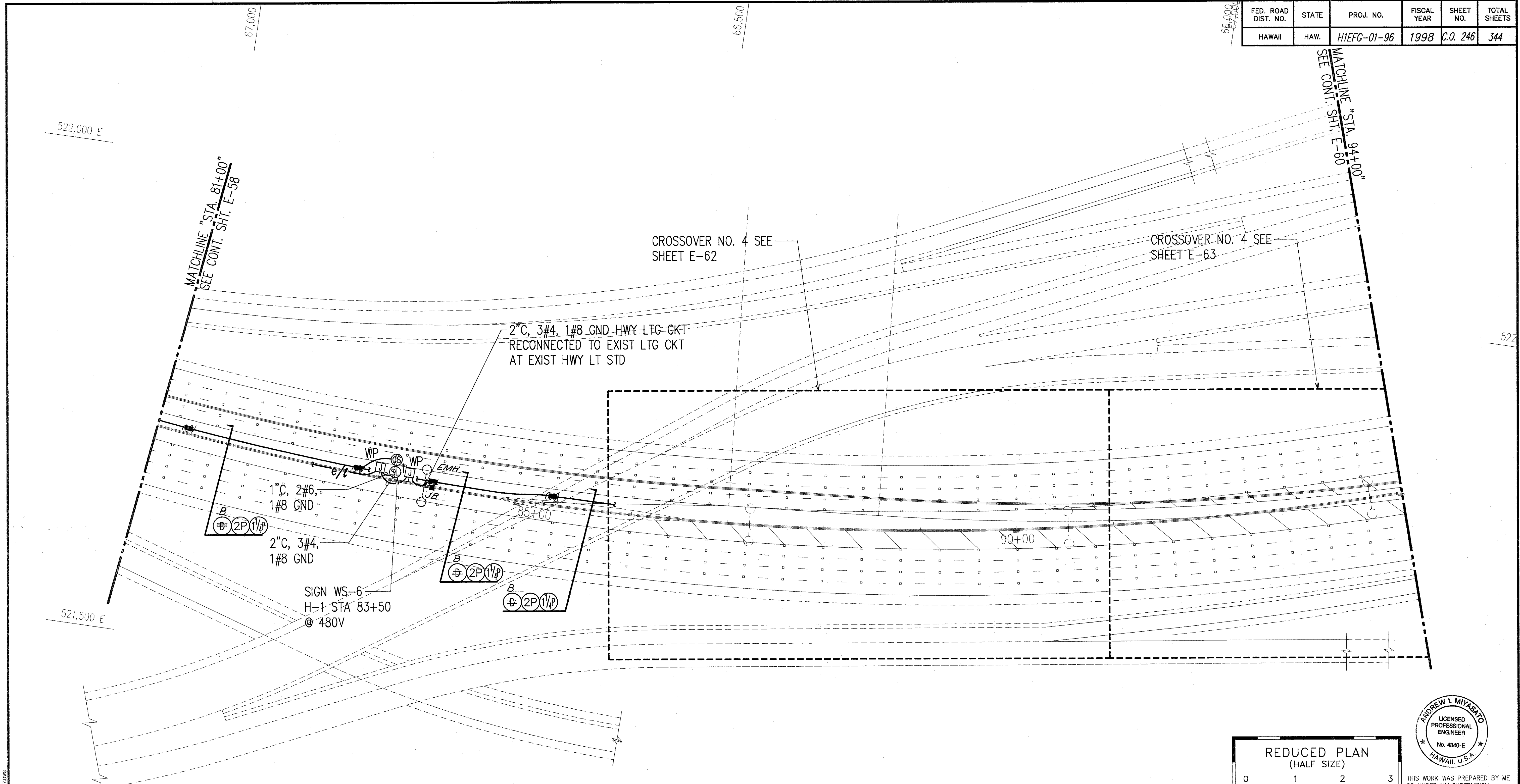
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

LAST SAVE: 06/24/98
Z:\ACAD\PROJECTS\H1EFG\H1EFG-01-96\H1EFG-01-96-058.DWG

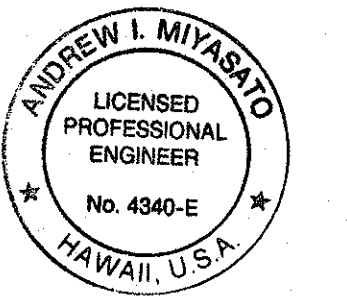
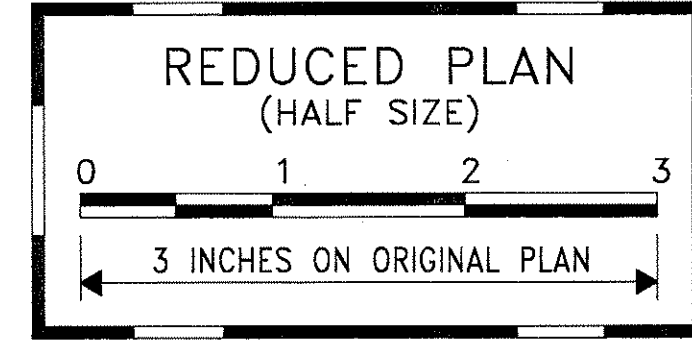
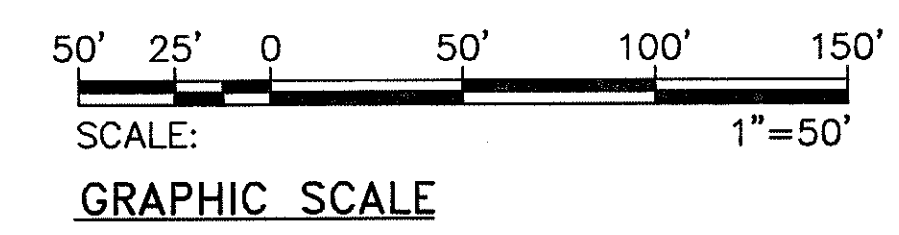
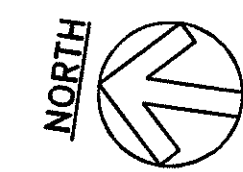
"AS-BUILT"

C.O. 245

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 246	344



ROADWAY ELECTRICAL PLAN 39
STA. 81+00 TO 94+00
 SCALE: 1"=50'



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Andrew I. Miyasato
 2/27/98
 ROKALDAN, S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 39
STA. 81+00 TO 94+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-59 OF 106 SHEETS

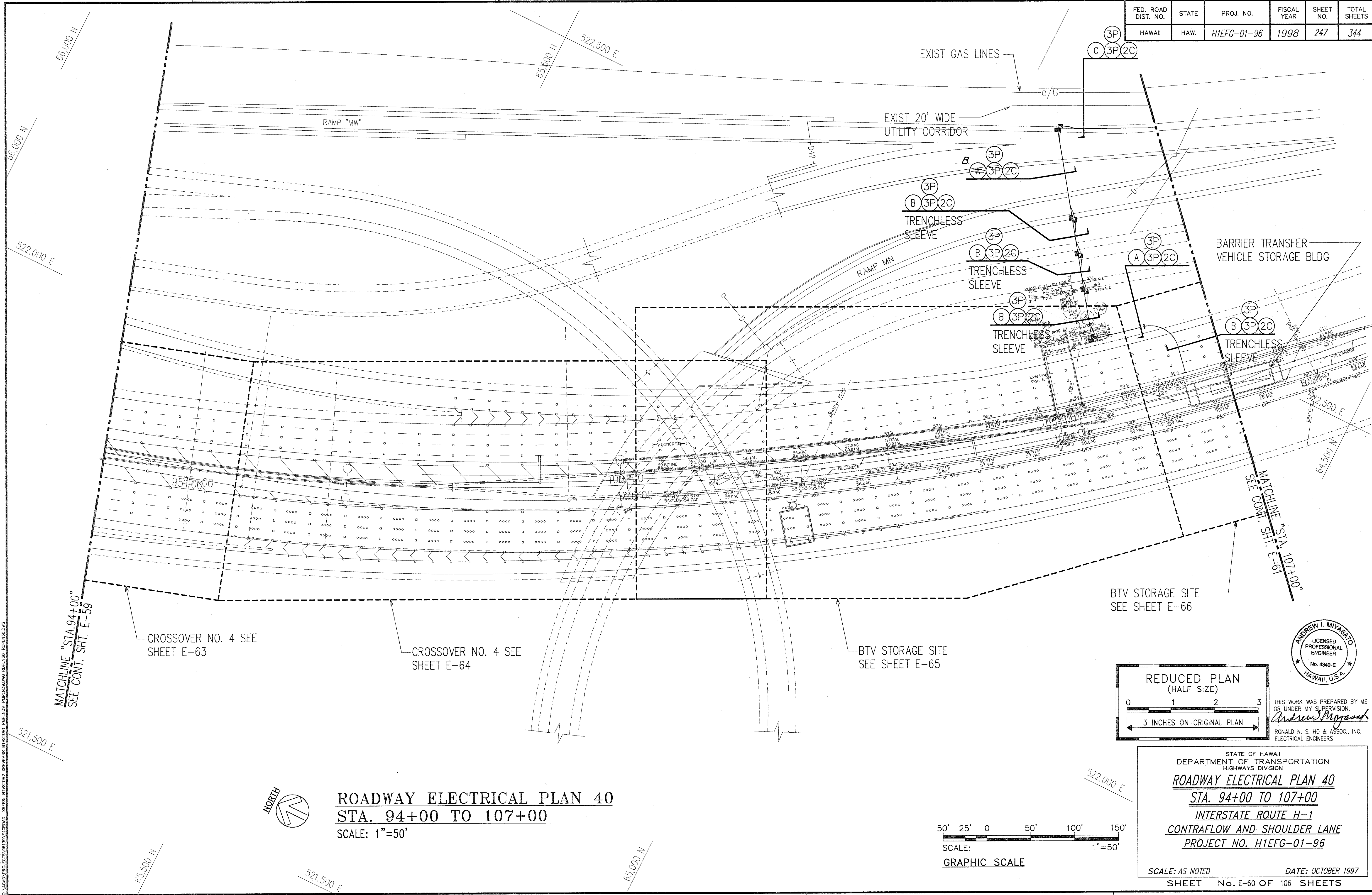
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	BY	

LAST SAVE: 02/27/98 @ 09:18:45 PM
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"AS-BUILT"

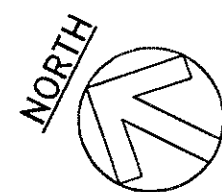
C.O. 246

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	247	344

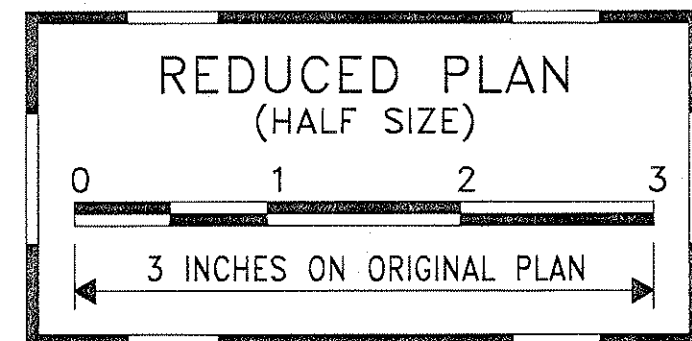
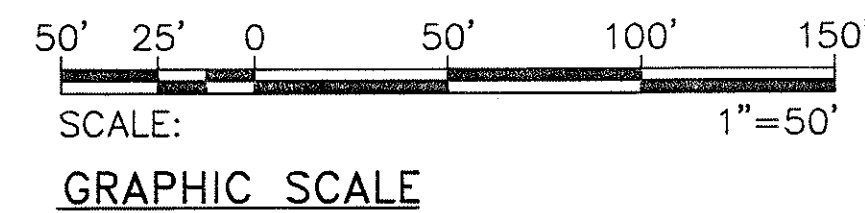


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

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ROADWAY ELECTRICAL PLAN 40
STA. 94+00 TO 107+00
 SCALE: 1"=50'

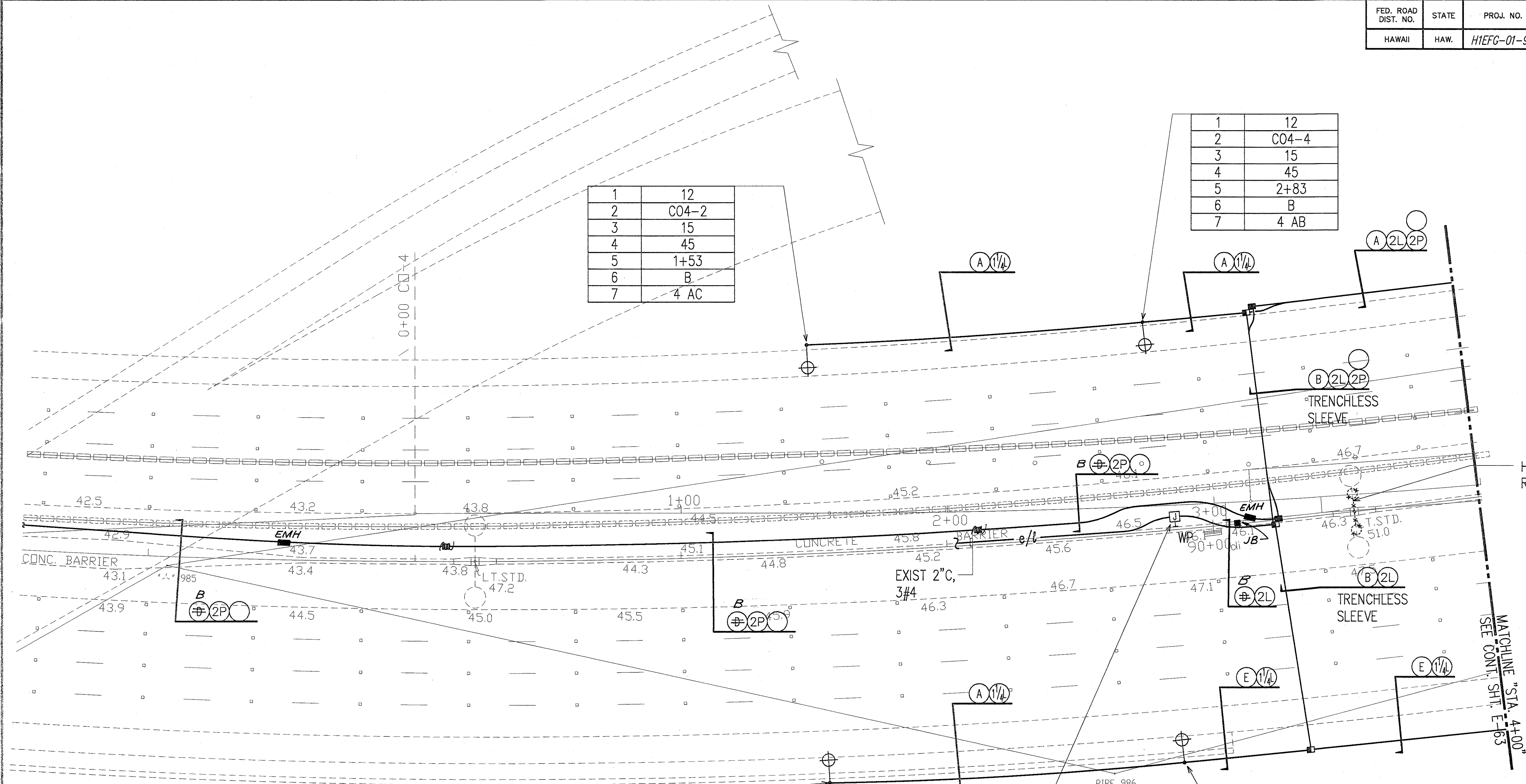


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY ELECTRICAL PLAN 40
STA. 94+00 TO 107+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
 SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-60 OF 106 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 249	344



1	12
2	C04-2
3	15
4	45
5	1+53
6	B
7	4 AC

1	12
2	C04-4
3	15
4	45
5	2+83
6	B
7	4 AB

1	20
2	C04-1
3	15
4	45
5	1+53
6	B
7	4 AB

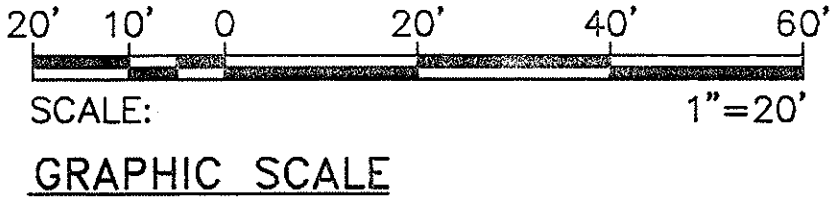
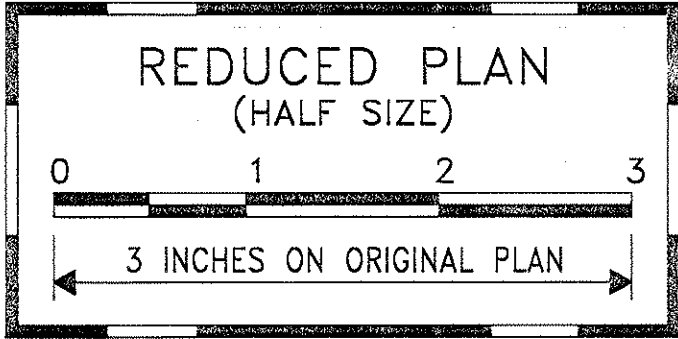
1	20
2	C04-3
3	15
4	45
5	2+83
6	A
7	4 BC

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NOTED BY	
APPROVED BY	

LAST DATE OF FIELD WORK: 6/25/98
Z:\ACAD\PROJECTS\H1EFG\H1EFG-01-96\H1EFG-01-96.DWG

EXISTING SWALE

INTERCEPT EXIST HWY LT CKT (3#4, 1#8 GND) WITH NEW JB AND ROUTE DUCTLINE THRU NEW BARRIER RECONSTRUCTION (TYP)

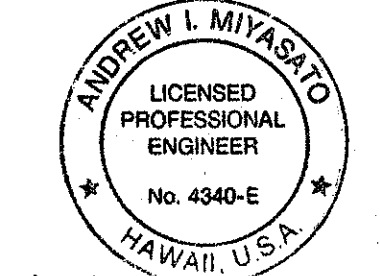


DATE	REVISION
6/24/98	MOVED LIGHTS BEHIND SWALE & REVISED DUCT SECTIONS
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 4 ELECTRICAL PLAN 1

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
SHEET No. E-62 OF 106 SHEETS
DATE: OCTOBER 1997



6/25/98
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

"AS-BUILT"

C.O. 249

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 250	344

1	12
2	C04-6
3	15
4	45
5	4+13
6	B
7	4 BC

1	12
2	C04-8
3	15
4	45
5	5+44
6	B
7	4 AC

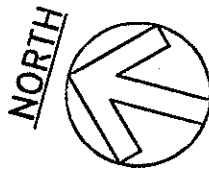
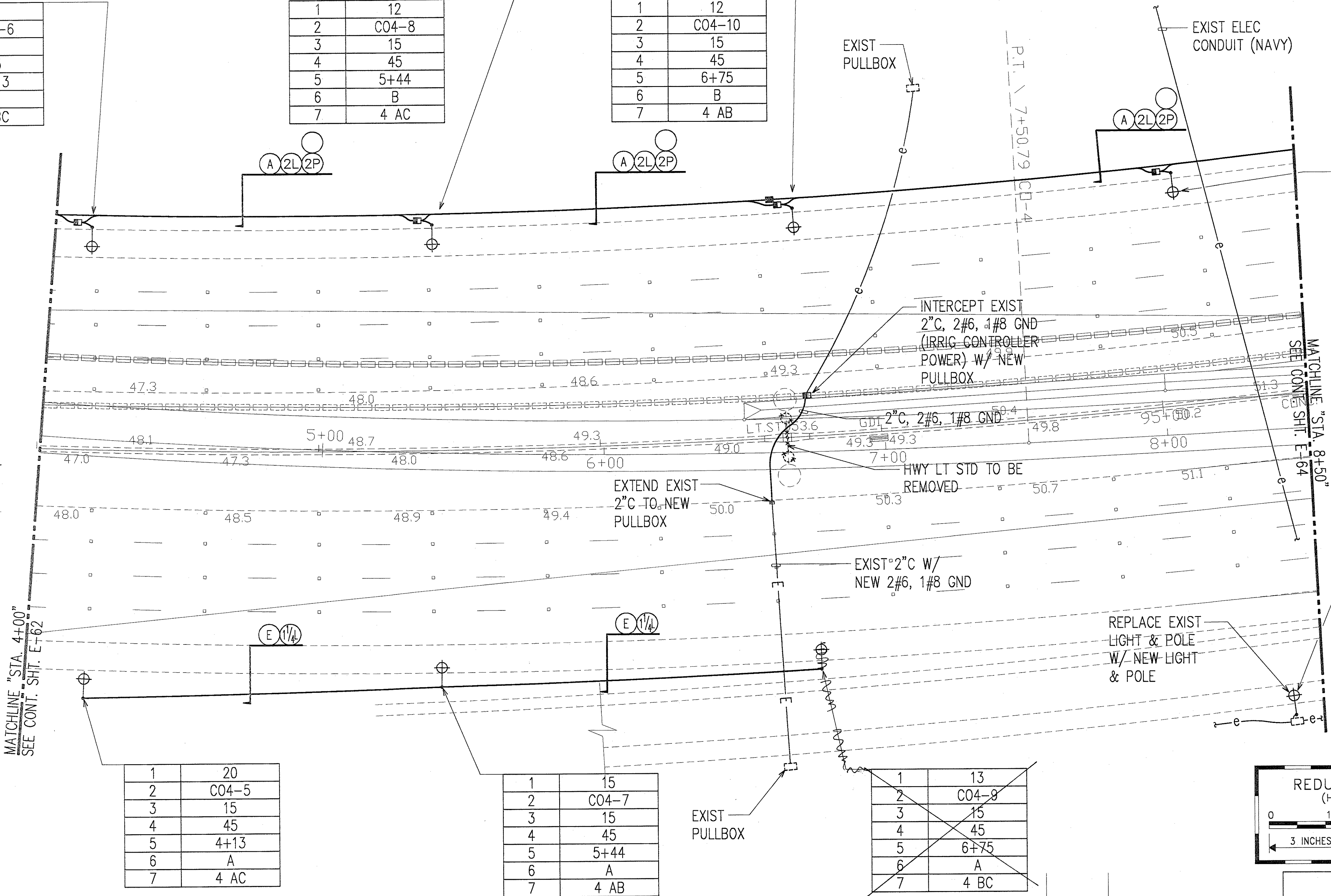
1	12
2	C04-10
3	15
4	45
5	6+75
6	B
7	4 AB

1	12
2	C04-12
3	15
4	45
5	8+06
6	B
7	10 AB

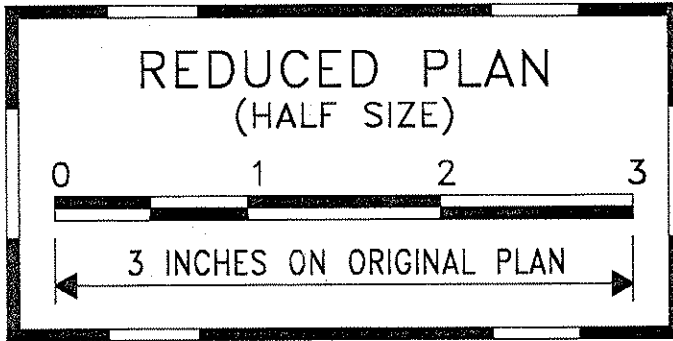
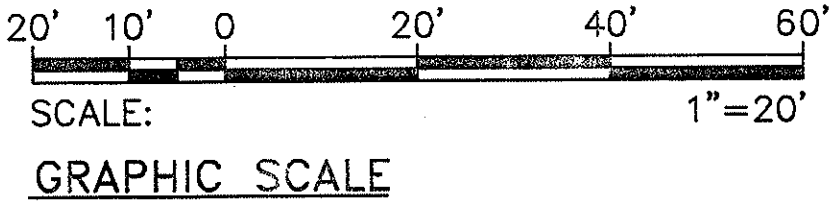
1	2' BEHIND GUARDRAIL
2	C04-11
3	15
4	45
5	8+33
6	A
7	3 (EXIST)

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

LAST SAVE: 06/24/98 09:15:39 BY: JN PLOT 56 120
 C:\ROADS\H1EFG\01\96\H1EFG01\PROJECTS\H1EFG01\H1EFG01.DWG COMP2



CROSSOVER NO. 4 ELECTRICAL PLAN 2
 SCALE: 1"=20'



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Andrew L. Miyasato
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

DATE	REVISION
6/24/98	MOVED & ADDED LIGHTS BEHIND GUARDRAIL & REVISED DUCT SECTIONS
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS

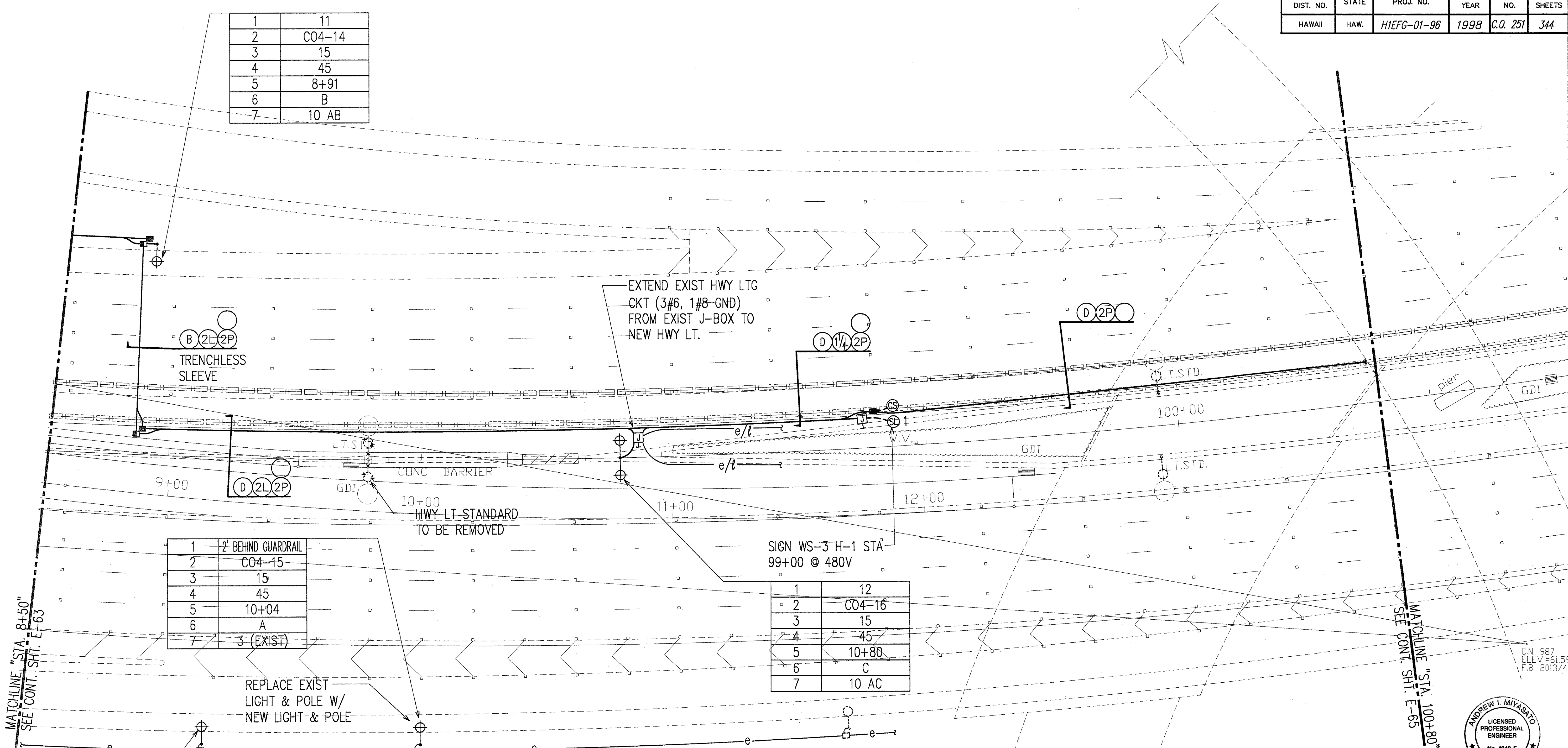
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
CROSSOVER NO. 4 ELECTRICAL PLAN 2
 INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. H1EFG-01-96
 SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-63 OF 106 SHEETS

"AS-BUILT"

C.O. 250

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 251	344

1	11
2	C04-14
3	15
4	45
5	8+91
6	B
7	10 AB



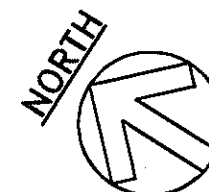
1	2' BEHIND GUARDRAIL
2	C04-15
3	15
4	45
5	10+04
6	A
7	3 (EXIST)

1	12
2	C04-16
3	15
4	45
5	10+80
6	C
7	10 AC

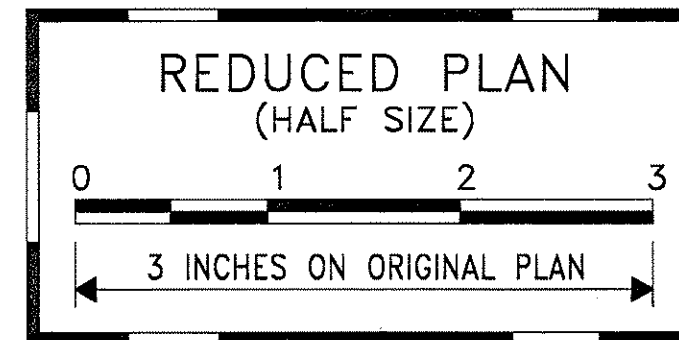
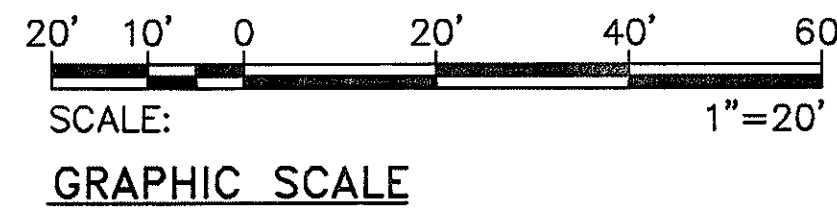
1	2' BEHIND GUARDRAIL
2	C04-13
3	15
4	45
5	9+21
6	A
7	3 AB

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NO. 1	

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CROSSOVER NO. 4 ELECTRICAL PLAN 3 SCALE: 1"=20'

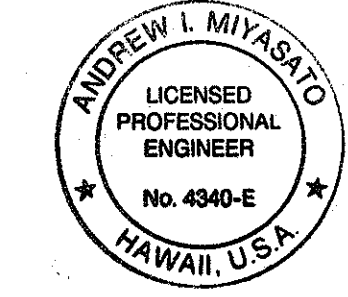


DATE	REVISION
7/02/98	RELOCATED LIGHT TO STA. 10+80
6/24/98	ADDED LIGHTS & REMOVED LIGHT @ STA 8+60
2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSSOVER NO. 4 ELECTRICAL PLAN 3

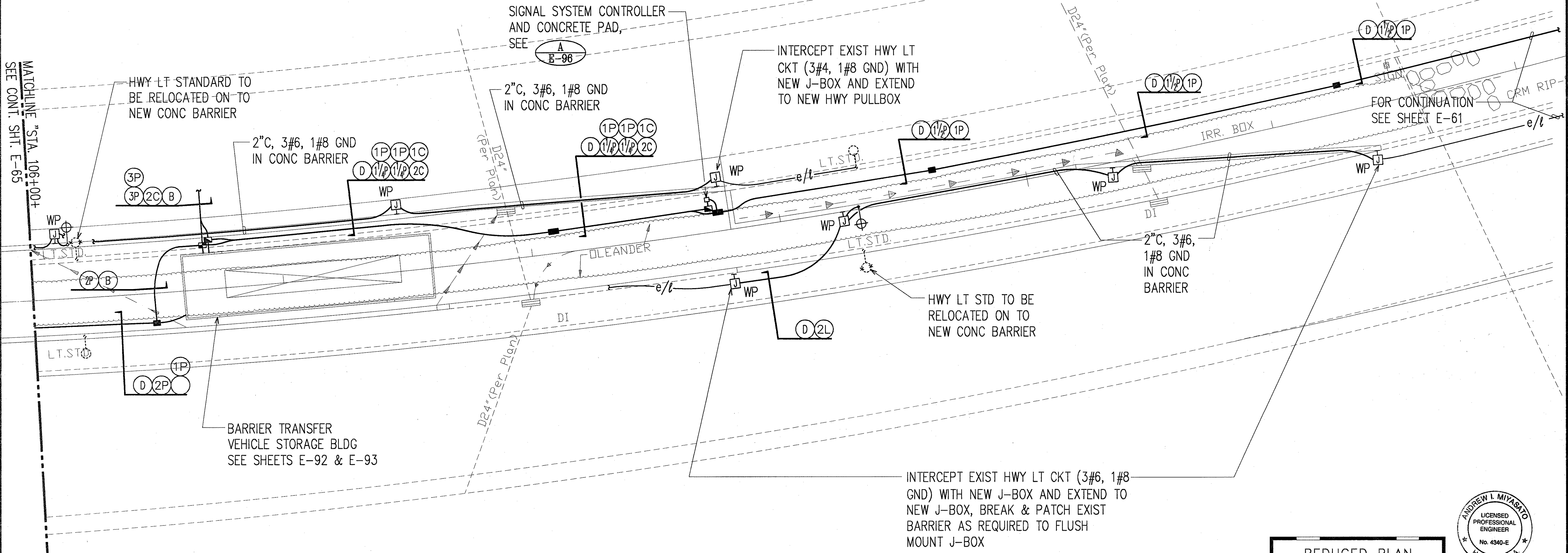
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-64 OF 106 SHEETS

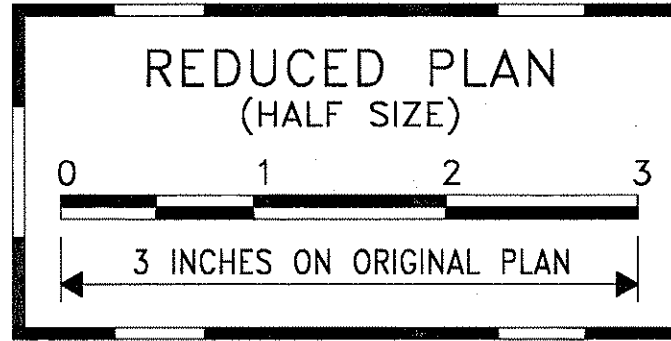


7/6/98
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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 253	344



MATCHLINE STA. 106+00+ SEE CONT. SHT. E-65



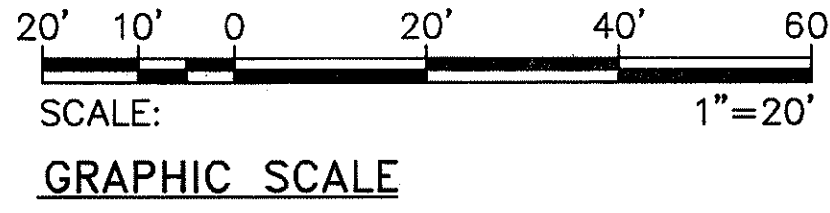
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 2/27/98
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
BTV STORAGE SITE ELECTRICAL PLAN 2

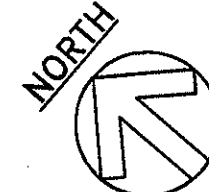
**INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-66 OF 106 SHEETS

2/27/98	REVISED # OF CONDUITS DUE TO REMOVED SIGNAL GENERATORS
DATE	REVISION



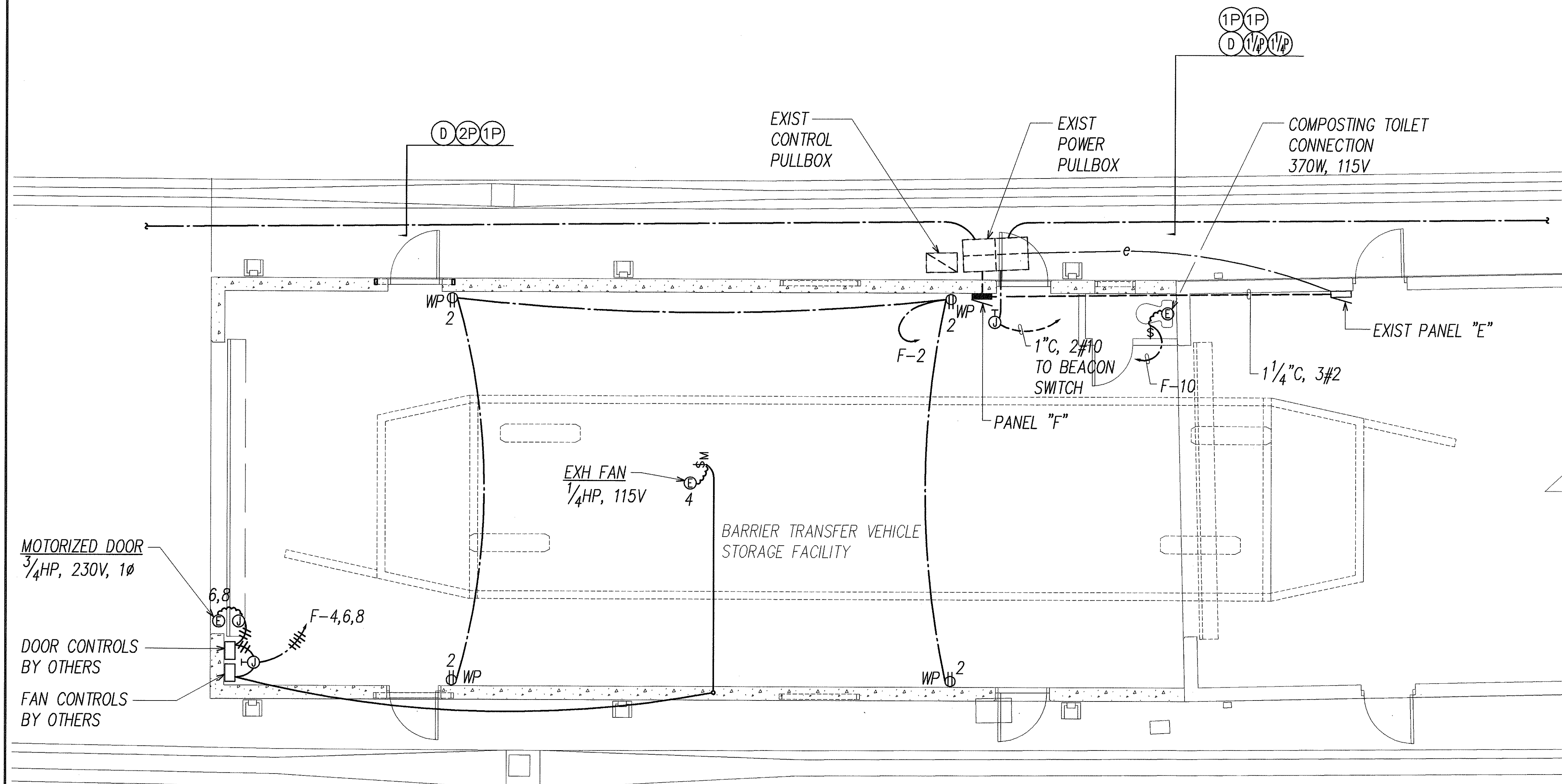
BTV STORAGE SITE ELECTRICAL PLAN 2
 SCALE: 1"=20'



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

LAST SAVE: 02/27/98 08:18:01 BY: C:\PLOT\81220 F:\ACAD\PROJECTS\H1EFG-01\96\REV\H1EFG-01\96\BTVSTOR2.DWG

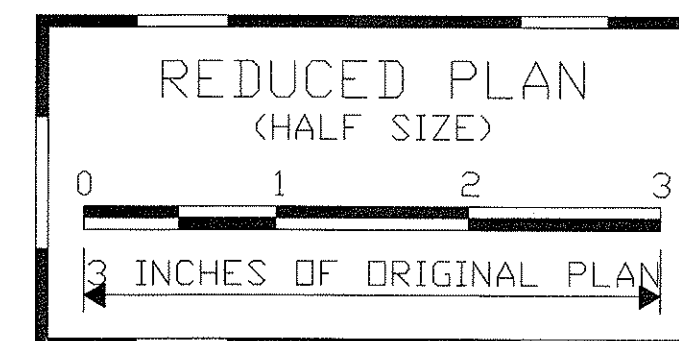
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	CO253S-2	



A
E-66B **BTV STORAGE EXTENSION POWER & SIGNAL PLAN**
SCALE: 1/4"=1'-0"

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

LAST SAVE: 03/02/00 @ 12:38:41 BY: AM PLOT: 55 1/4"=1'
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3/01/00	Added BTV Building Addition.
DATE	REVISION

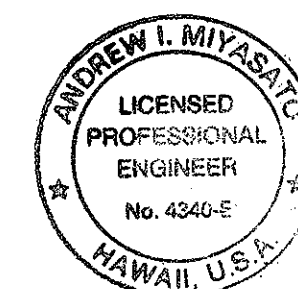
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**BTV STORAGE EXTENSION
POWER & SIGNAL PLAN**

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

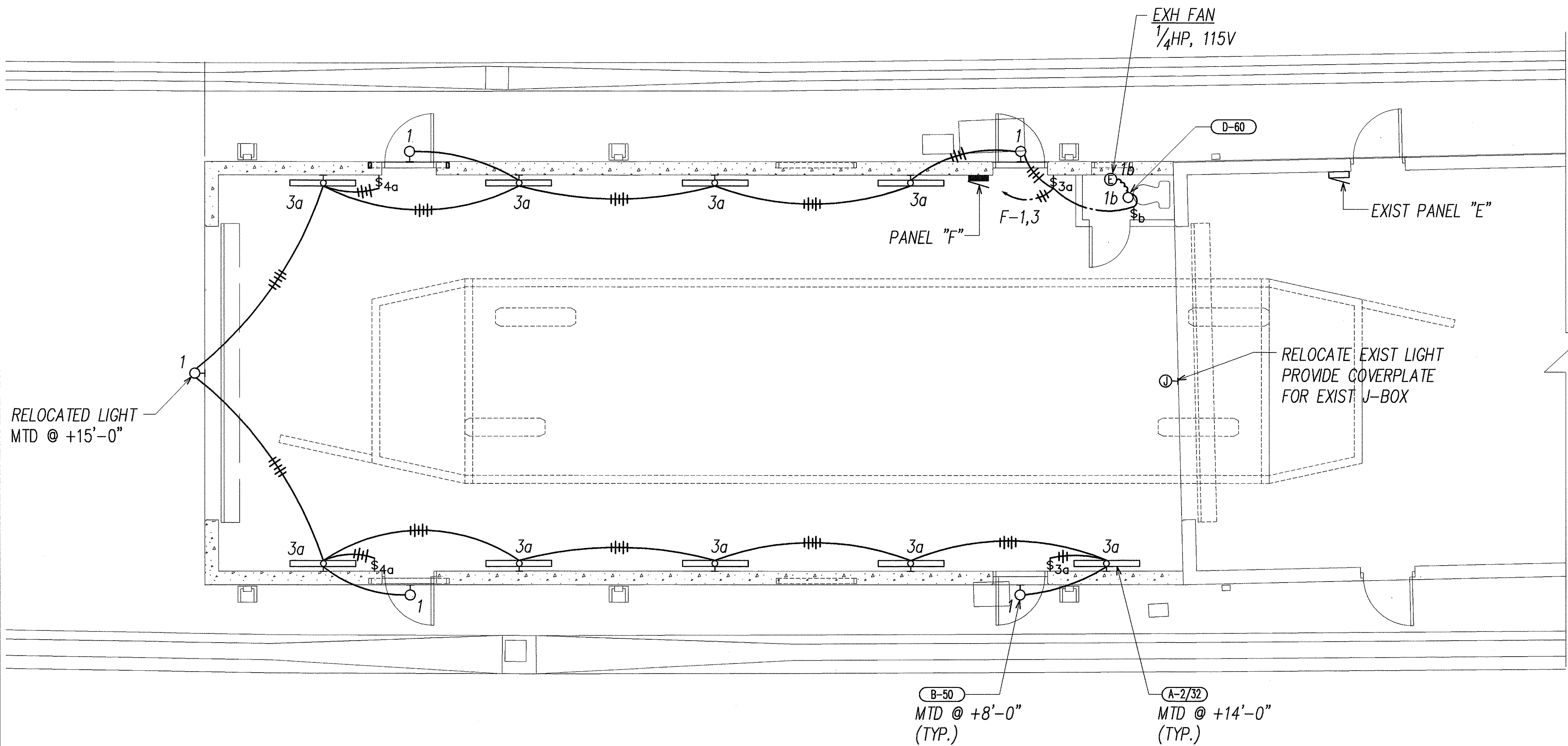
SCALE: AS NOTED DATE:

SHEET No. E-66B OF 344 SHEETS

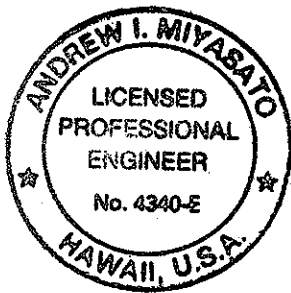
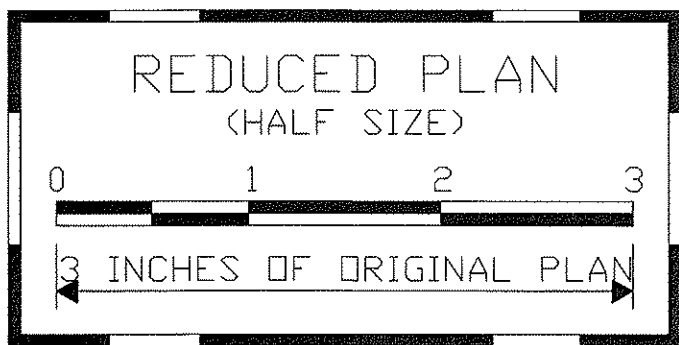


THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
7/2/2000
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	00253S-3	



A
E-66C **BTV STORAGE EXTENSION LIGHTING PLAN**
SCALE: 1/4"=1'-0"



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OR UNDER MY SUPERVISION.
Andrew I. Miyazaki
3/2/2000
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BTV STORAGE EXTENSION
LIGHTING PLAN
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

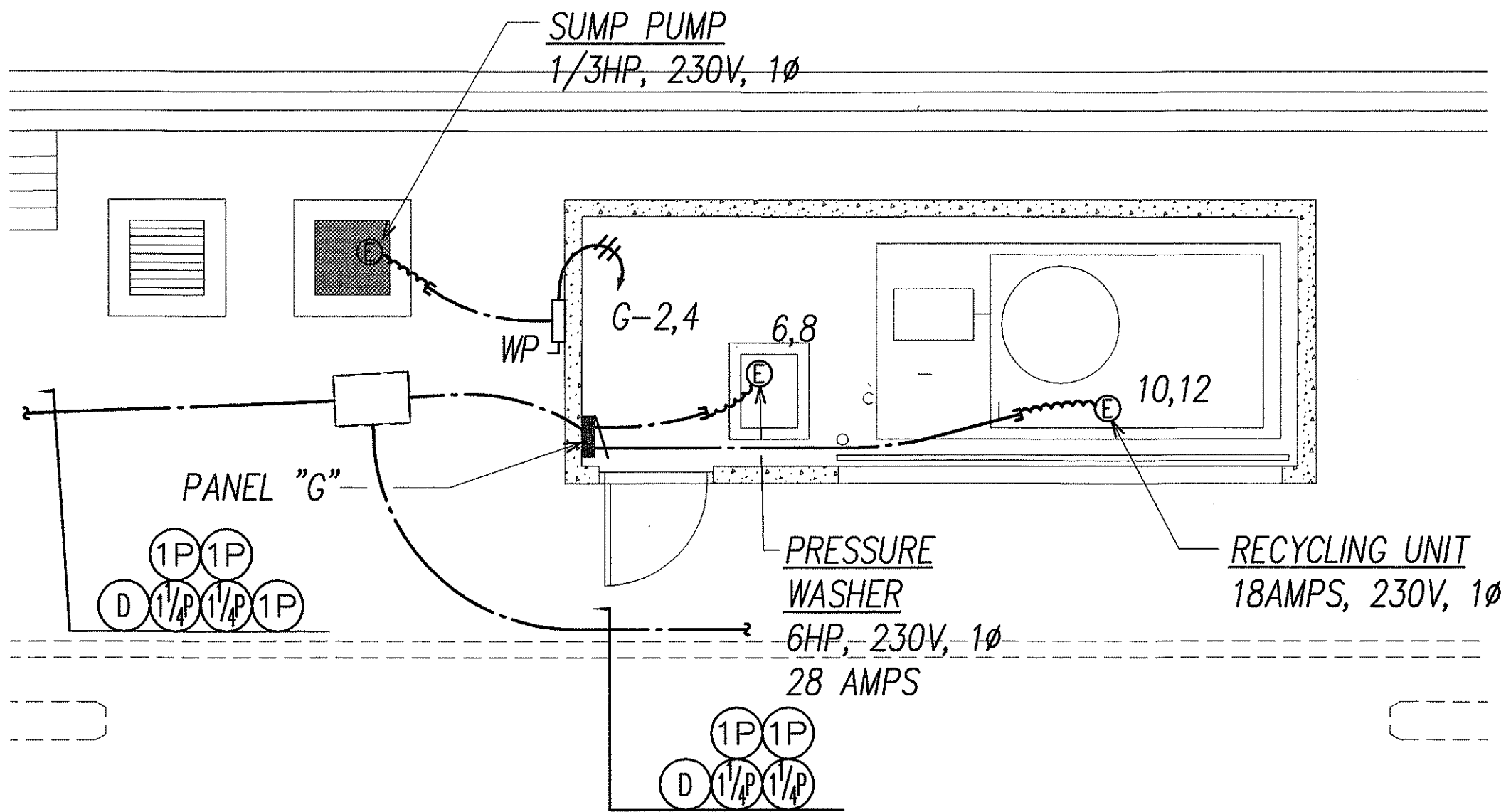
SCALE: AS NOTED DATE:
SHEET No.E-66C OF 344 SHEETS

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

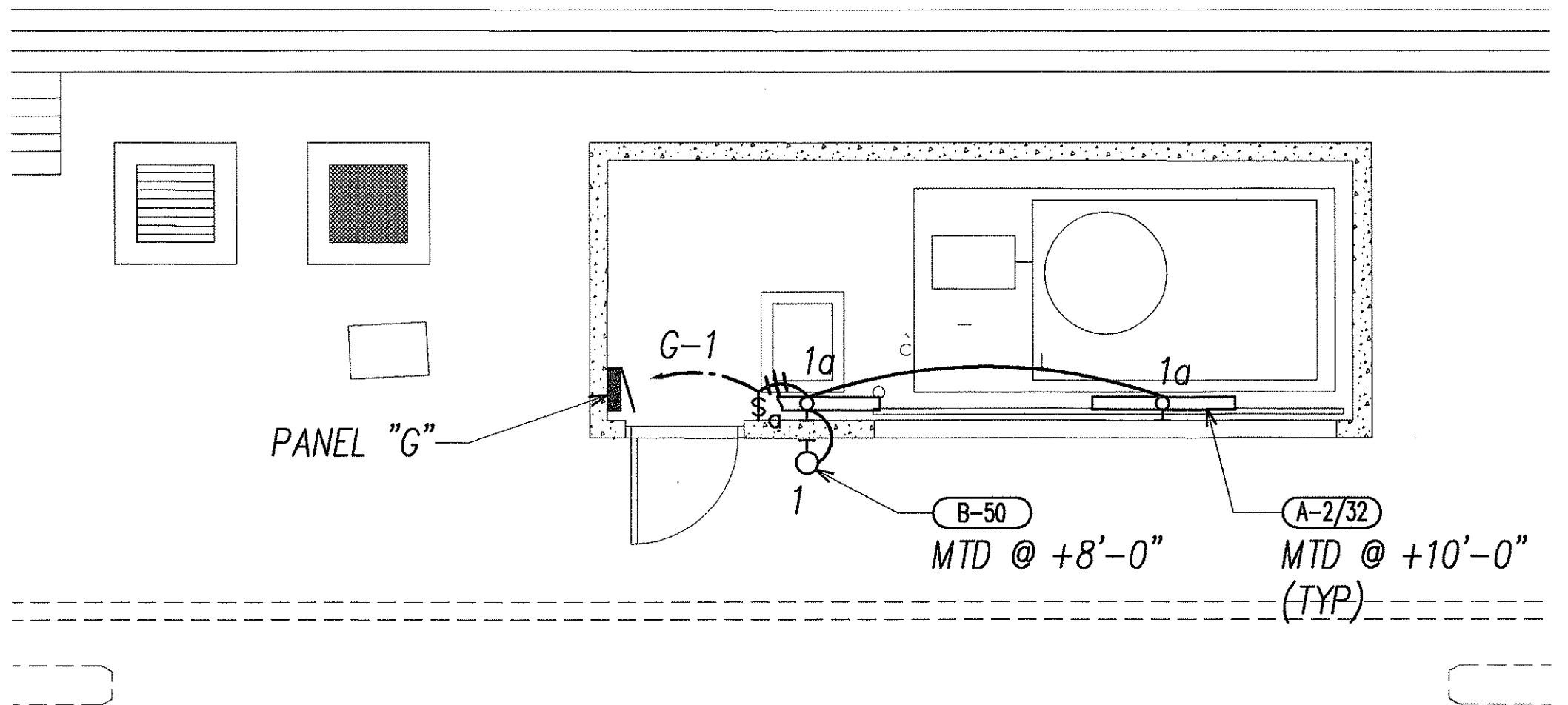
LAST SAVE: 03/02/00 @ 13:35:38 BY: AMI PLOT SIZE: 1/4"=1'
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3/01/00 Added BTV Building Addition.
DATE REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	00253S-4	



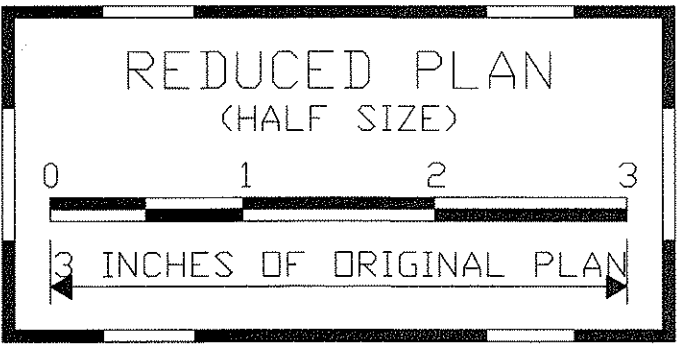
CLP STORAGE SHED POWER & SIGNAL PLAN
 SCALE: 1/4"=1'-0"



CLP STORAGE SHED LIGHTING PLAN
 SCALE: 1/4"=1'-0"

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

LAST SAVE: 03/02/00 @ 13:40:20 BY: AM PLOT SC: 1/4"=1'
 Z:\AG00\PROJECTS\H1EFG\01\0253S4.XREFS: XREFV



3/01/00	Added BTV Building Addition.
DATE	REVISION



THIS WORK WAS PREPARED BY ME
 OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 3/2/2000
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CLP STORAGE SHED ELECTRICAL PLANS	
INTERSTATE ROUTE H-1 CONTRAFLOW AND SHOULDER LANE PROJECT NO. H1EFG-01-96	
SCALE: AS NOTED	DATE:
SHEET No.E-66D OF 344	SHEETS

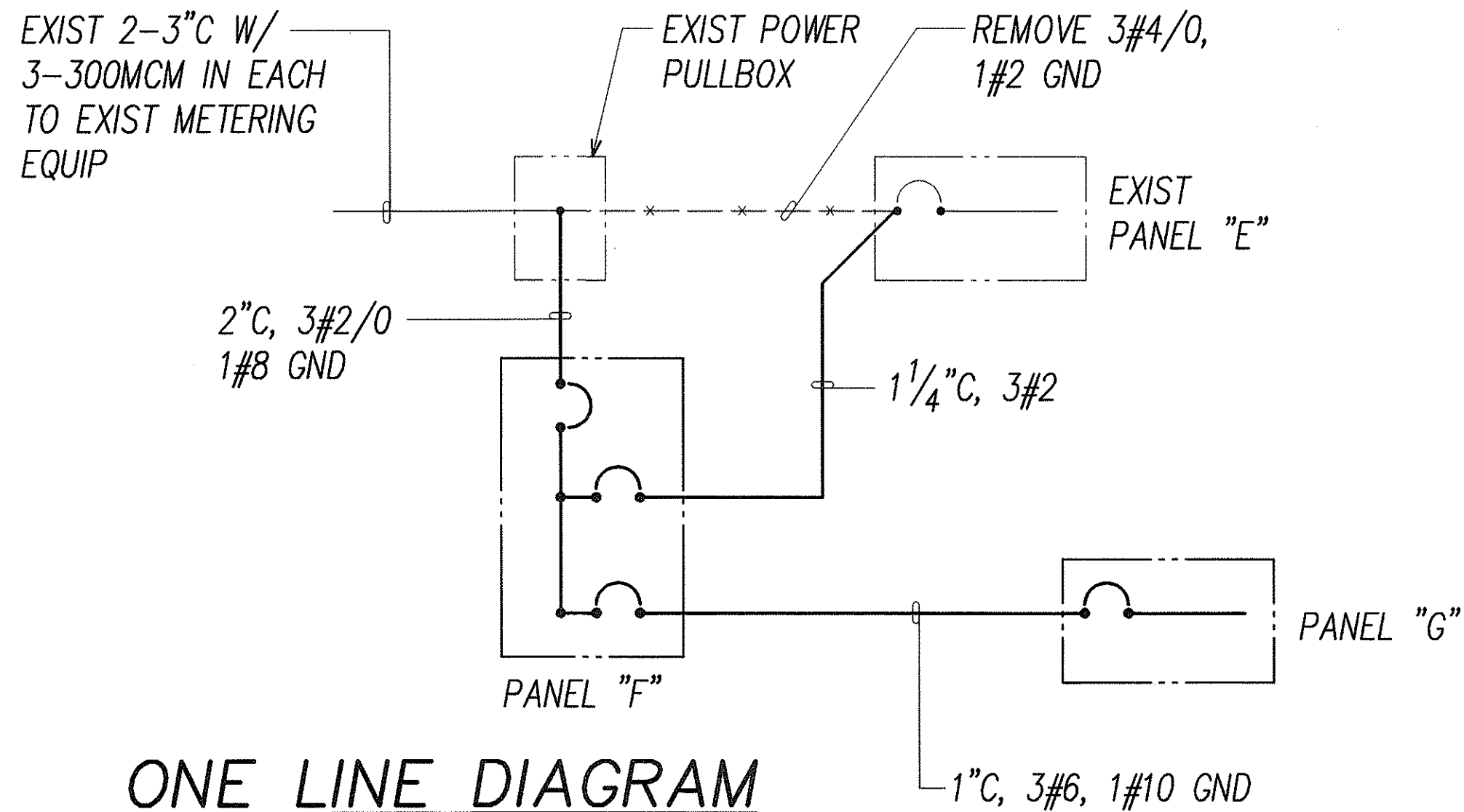
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	CO253S-5	

PANEL "F"						
2P150A MAIN BREAKER, 120/240V, 1 PHASE, 3 WIRE, 10,000 A.I.C., PANELBOARD TYPE, BOLT-ON BREAKERS, SURFACE MOUNTED, NEMA 1 ENCLOSURE						
CKT. NO.	BREAKER		USE: L-LTS, R-RECEP, PFB-PROV. FUT. BKR., S-SPARE	KVA ON BUSSES		WIRE SIZE
	POLE	AMPS		L1	L2	
1	1	20	L	0.5		12
2	1	20	R	0.7		12
3	1	20	L		0.9	12
4	1	20	EXHAUST FAN		0.7	12
5	1	20	S	1.0		
6,8	2	15	MOTORIZED DOOR	0.8	0.8	12
7	1	20	S		1.0	
9	1	20	S	1.0		
10	1	20	COMPOSTING TOILET	0.4		12
11	1	20	S		1.0	
12	1	20	S		1.0	
13	1		PFB			
14	1		PFB			
15	1		PFB			
16	1		PFB			
17,19	2	60	PANEL "G"	8.0	8.0	6
18,20	2	100	PANEL "E"	13.0	13.0	2
TOTAL LOAD PER LEG				25.4	26.4	HIGH
TOTAL CONNECTED LOAD					51.8	LEG
DEMAND FACTOR					0.60	AMP
TOTAL DEMAND LOAD					31.1	132

NOTES:

- ALL PANELS SHALL BE LABELLED WITH ENGRAVED PLASTIC LABELS ON OUTSIDE OF PANEL.
- ALL CIRCUITS SHALL BE LABELLED INSIDE, IDENTIFYING CIRCUIT & ITEM SERVED BY CIRCUIT.

PANEL "G"2P60A MAIN BREAKER, 120/240V, 1 PHASE, 3 WIRE, 10,000 A.I.C., PANELBOARD TYPE, BOLT-ON BREAKERS, SURFACE MOUNTED, NEMA 1 ENCLOSURE						
CKT. NO.	BREAKER		USE: L-LTS, R-RECEP, PFB-PROV. FUT. BKR., S-SPARE	KVA ON BUSSES		WIRE SIZE
	POLE	AMPS		L1	L2	
1	1	20	L	0.3		12
2,4	2	15	SUMP PUMP	0.4	0.4	12
3	1	20	S		0.5	
5	1	20	S	1.0		
6,8	2	60	PRESSURE WASHER	3.2	3.2	8
7	1	20	S		1.0	
9	1	20	S	1.0		
10,12	2	30	RECYCLING UNIT	2.1	2.1	10
11	1	20	S		1.0	
TOTAL LOAD PER LEG				8.0	8.2	HIGH
TOTAL CONNECTED LOAD					16.2	LEG
DEMAND FACTOR					0.7	AMP
TOTAL DEMAND LOAD					11.3	48



ONE LINE DIAGRAM
for BTV STORAGE EXTENSION



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
3/2/2000
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**BTV STORAGE EXTENSION ONE LINE
DIAGRAM & PANEL SCHEDULE**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE:
SHEET No. E-66E OF SHEETS

3/01/00 Added BTV Building Addition.

DATE REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	255	344

64,000 N

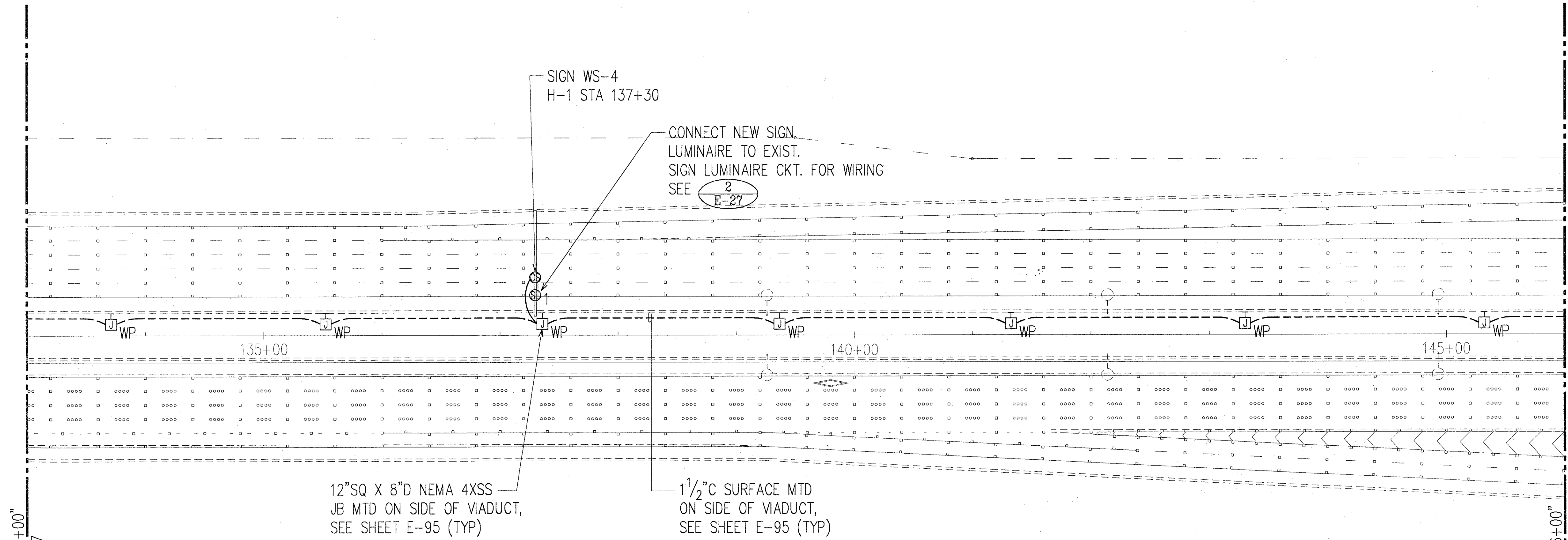
525,000 E

525,500 E

64,000 N

526,000 E

63,500 N



MATCHLINE "STA. 133+00"
SEE CONT. SHT. E-67

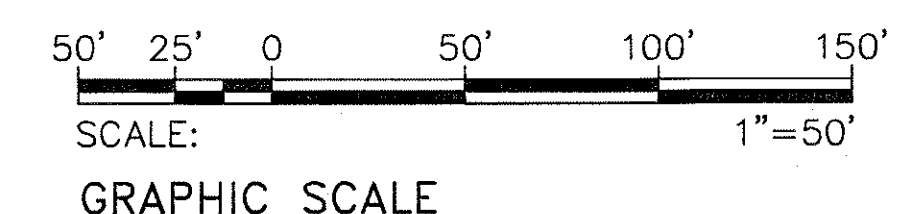
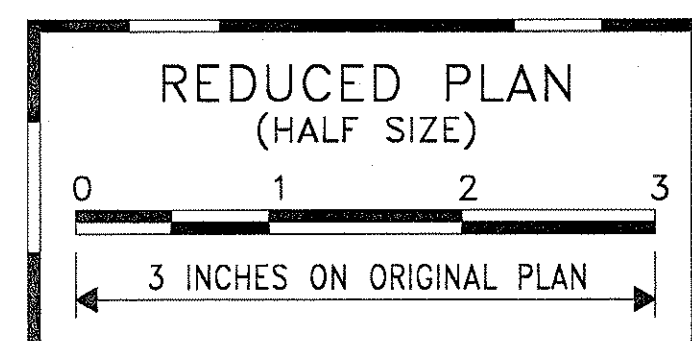
MATCHLINE "STA. 146+00"
SEE CONT. SHT. E-69

12"SQ X 8"D NEMA 4XSS
JB MTD ON SIDE OF VIADUCT,
SEE SHEET E-95 (TYP)

1 1/2"C SURFACE MTD
ON SIDE OF VIADUCT,
SEE SHEET E-95 (TYP)



ROADWAY ELECTRICAL PLAN 43
STA. 133+00 TO 146+00
SCALE: 1"=50'



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

LAST SAVE: 10/22/97 @ 17:07:31 BY: RN FLOT SG T-50
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Andrew L. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 43
STA. 133+00 TO 146+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

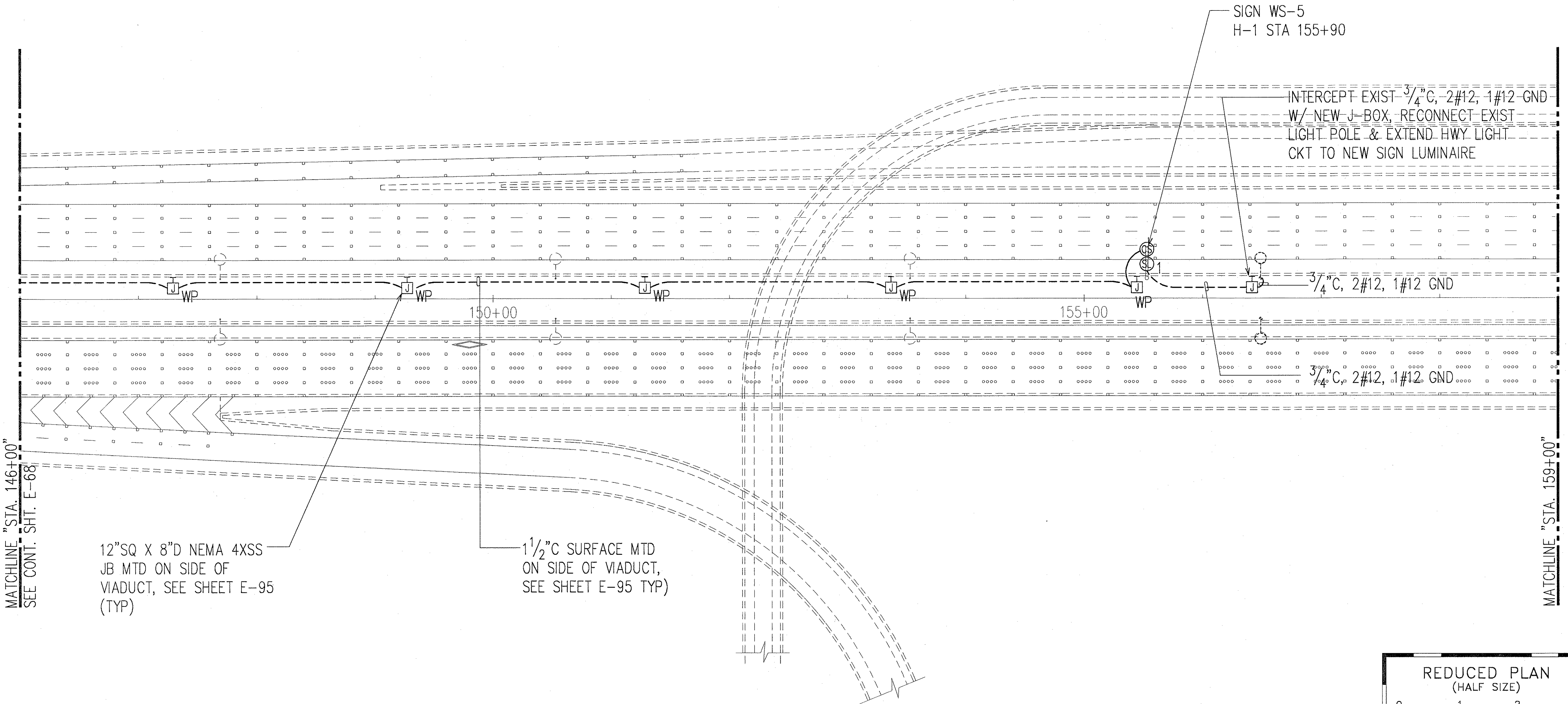
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DATE: OCTOBER 1997
SHEET No. E-68 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	256	344

527,500 E
63,500 N

526,000 E
63,500 N

527,500 E
63,000 N



MATCHLINE "STA. 146+00"
SEE CONT. SHT. E-68

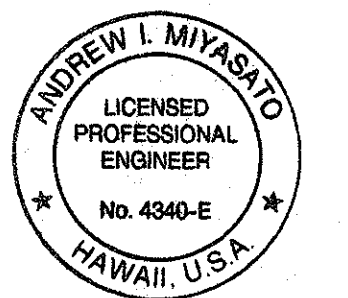
MATCHLINE "STA. 159+00"

12"SQ X 8"D NEMA 4XSS
JB MTD ON SIDE OF
VIADUCT, SEE SHEET E-95
(TYP)

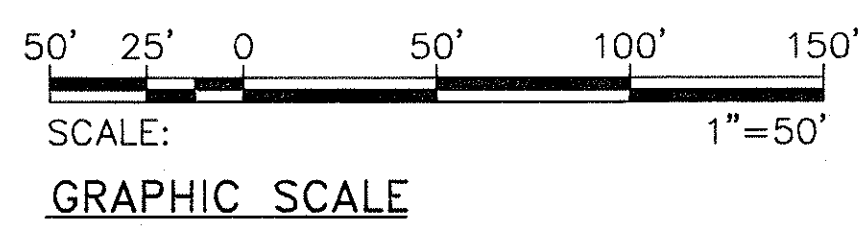
1 1/2" C SURFACE MTD
ON SIDE OF VIADUCT,
SEE SHEET E-95 TYP)



ROADWAY ELECTRICAL PLAN 44
STA. 146+00 TO 159+00
SCALE: 1"=50'



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OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY ELECTRICAL PLAN 44
STA. 146+00 TO 159+00
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1IEFG-01-96

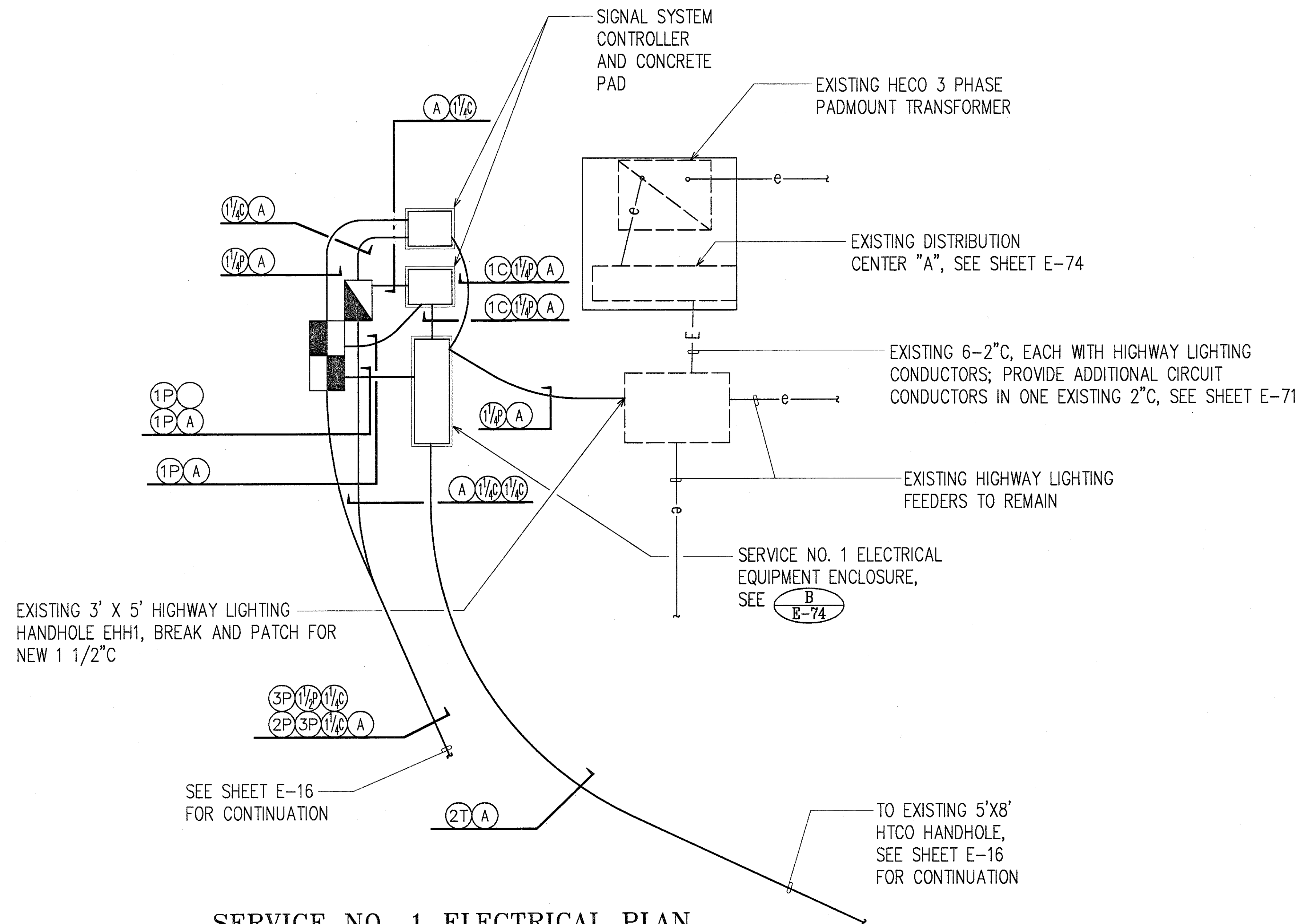
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DATE: OCTOBER 1997
SHEET No. E-69 OF 106 SHEETS

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NOTE BOOK	DRAWN BY	
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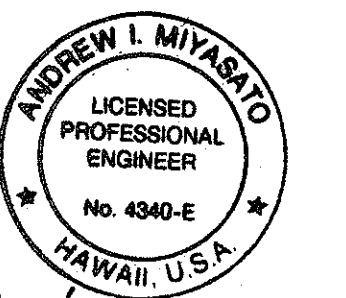
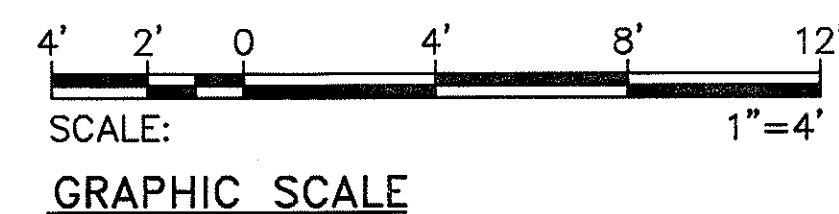
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63,000 N

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 257	344



SERVICE NO. 1 ELECTRICAL PLAN
SCALE: 1"=4'



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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

3/20/98	ADDED SIGNAL SYSTEM CONTROLLER
2/27/98	REVISED CONDUIT ROUTES
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SERVICE NO. 1 ELECTRICAL PLAN

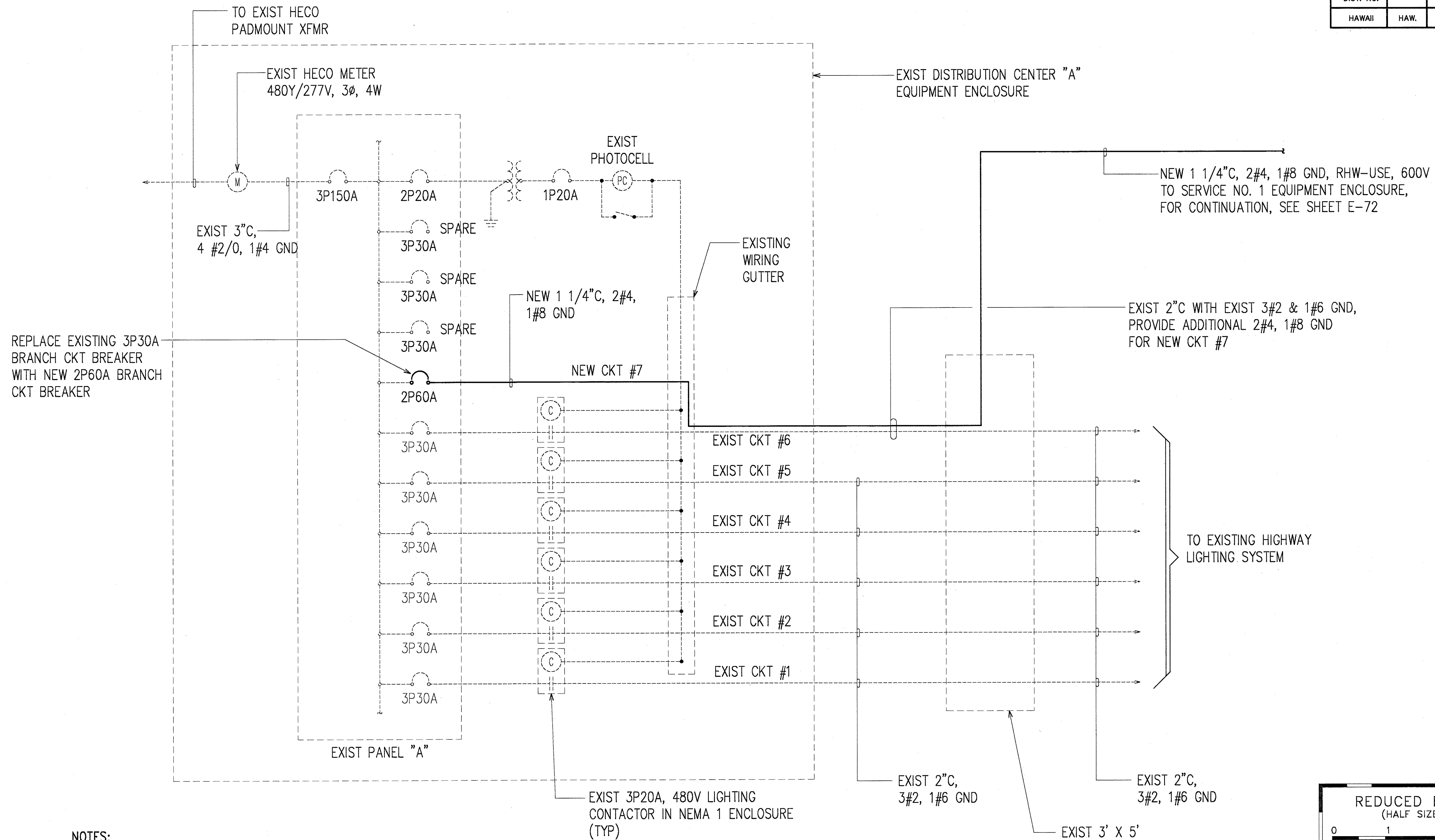
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-70 OF 106 SHEETS

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

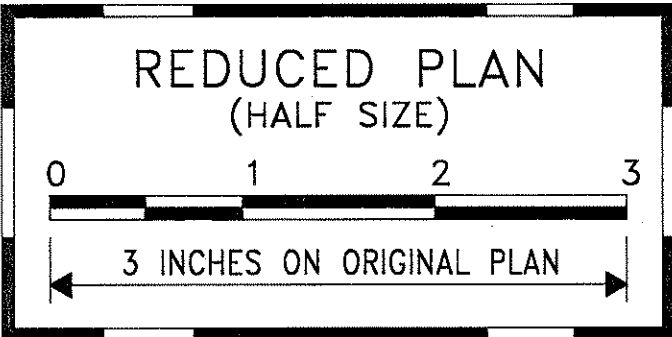
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SEE SHEET E-16 FOR CONTINUATION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 258	344



- NOTES:**
- ALL ITEMS SHOWN ARE NEW UNLESS OTHERWISE INDICATED.

DISTRIBUTION CENTER "A" ONE-LINE DIAGRAM WITH MODIFICATIONS



3/21/98
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RONALD N. S. HO & ASSOC., INC.
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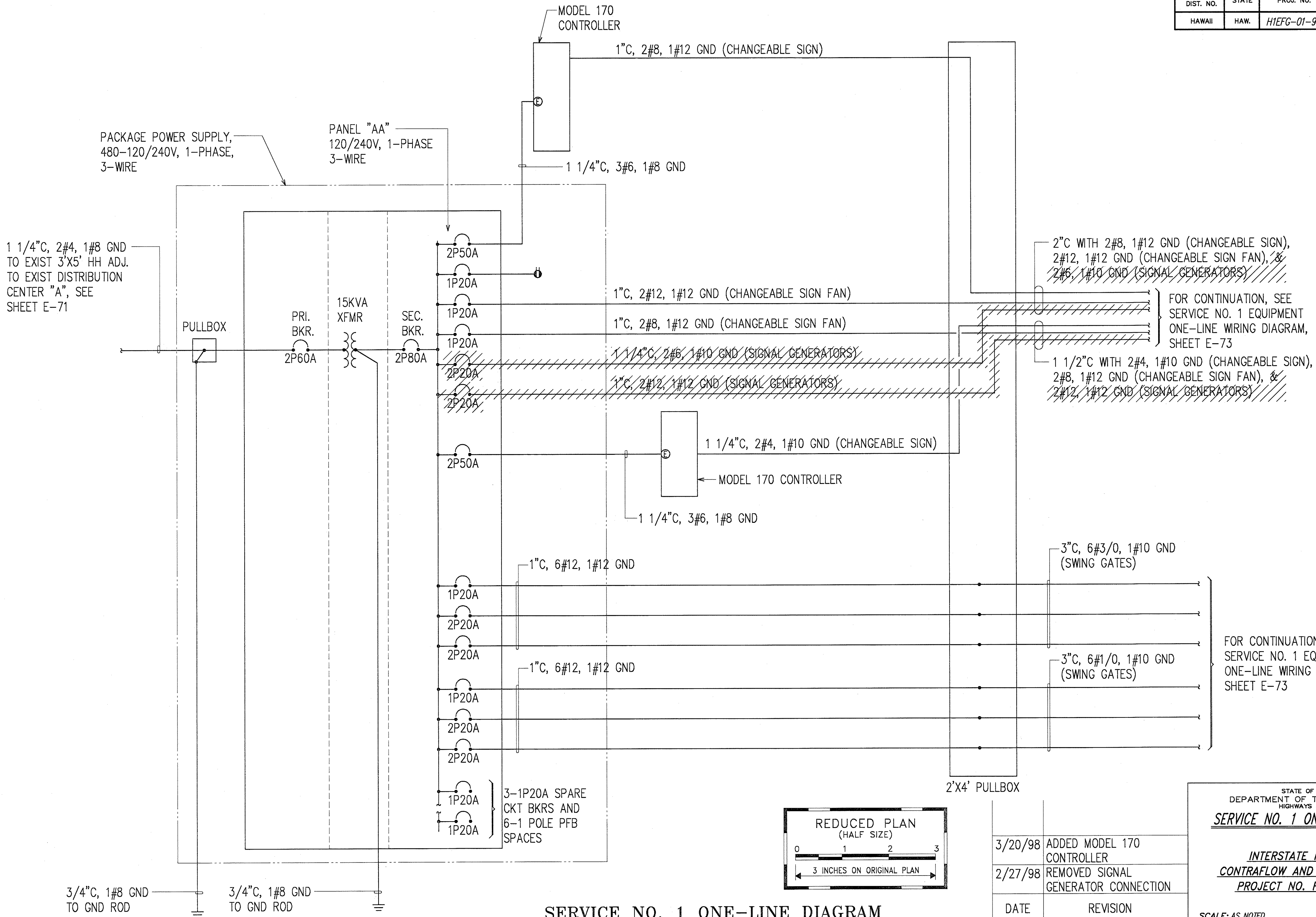
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**DISTRIBUTION CENTER "A" ONE-LINE
DIAGRAM WITH MODIFICATIONS**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

3/20/98 REVISED CONDUIT FROM 1
1/2" TO 1 1/4"

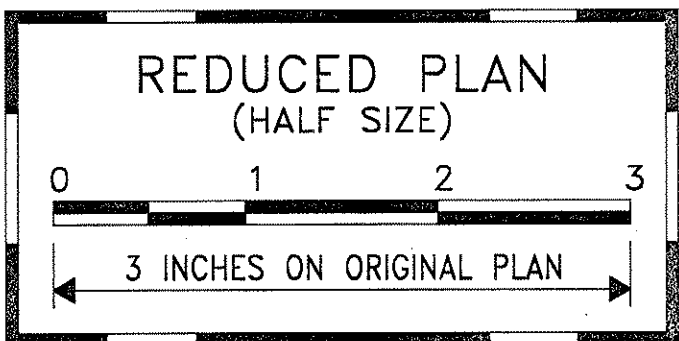
DATE REVISION

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-71 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 259	344



SERVICE NO. 1 ONE-LINE DIAGRAM



DATE	REVISION
3/20/98	ADDED MODEL 170 CONTROLLER
2/27/98	REMOVED SIGNAL GENERATOR CONNECTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

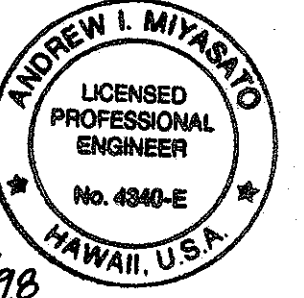
SERVICE NO. 1 ONE-LINE DIAGRAM

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED DATE: OCTOBER 1997

SHEET NO. E-72 OF 106 SHEETS

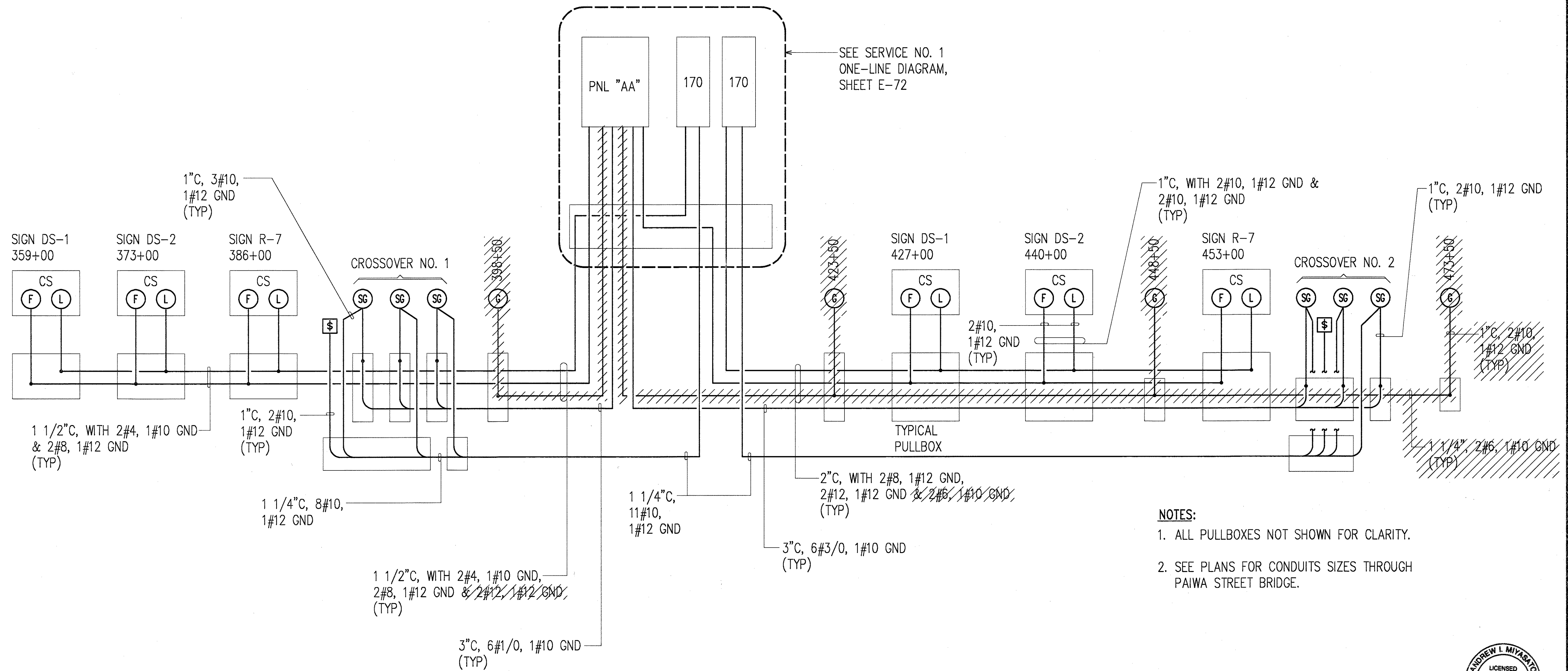
7/21/98
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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



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

LAST CASE NO. 10/1/98
BY: LAF/10/1/98

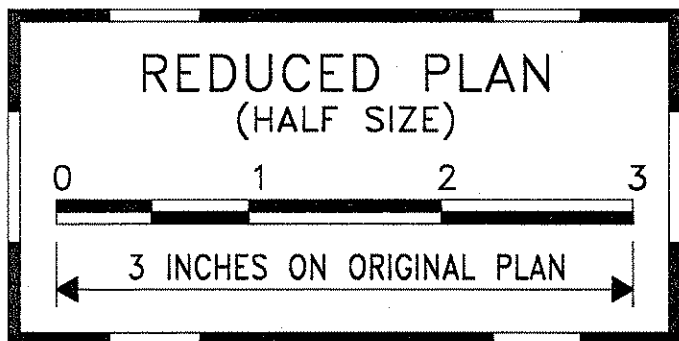
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 260	344



NOTES:

1. ALL PULLBOXES NOT SHOWN FOR CLARITY.
2. SEE PLANS FOR CONDUITS SIZES THROUGH PAIWA STREET BRIDGE.

SERVICE NO. 1 EQUIPMENT ONE-LINE WIRING DIAGRAM



3/27/98
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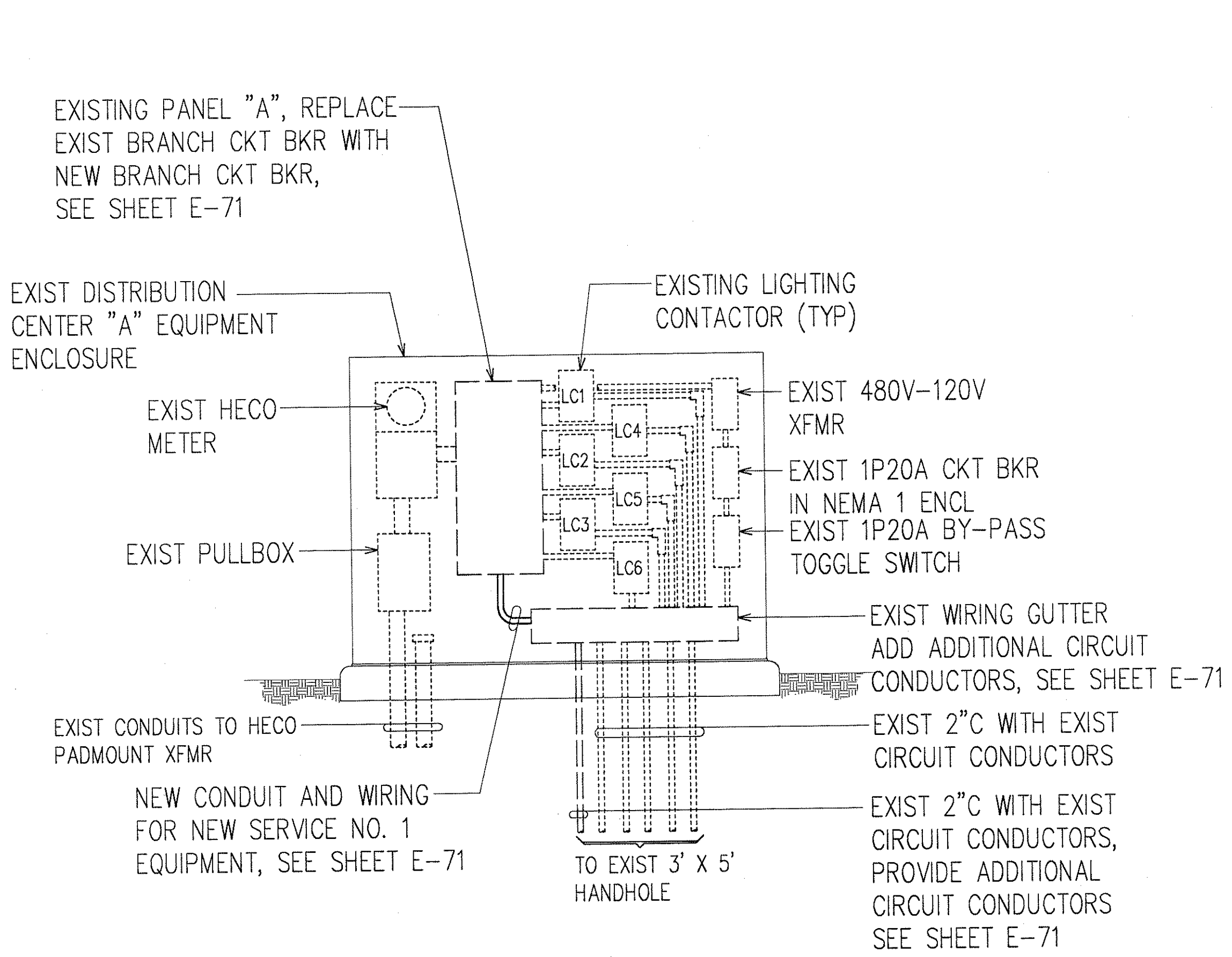
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SERVICE NO. 1 EQUIPMENT
ONE-LINE WIRING DIAGRAM**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-73 OF 106 SHEETS

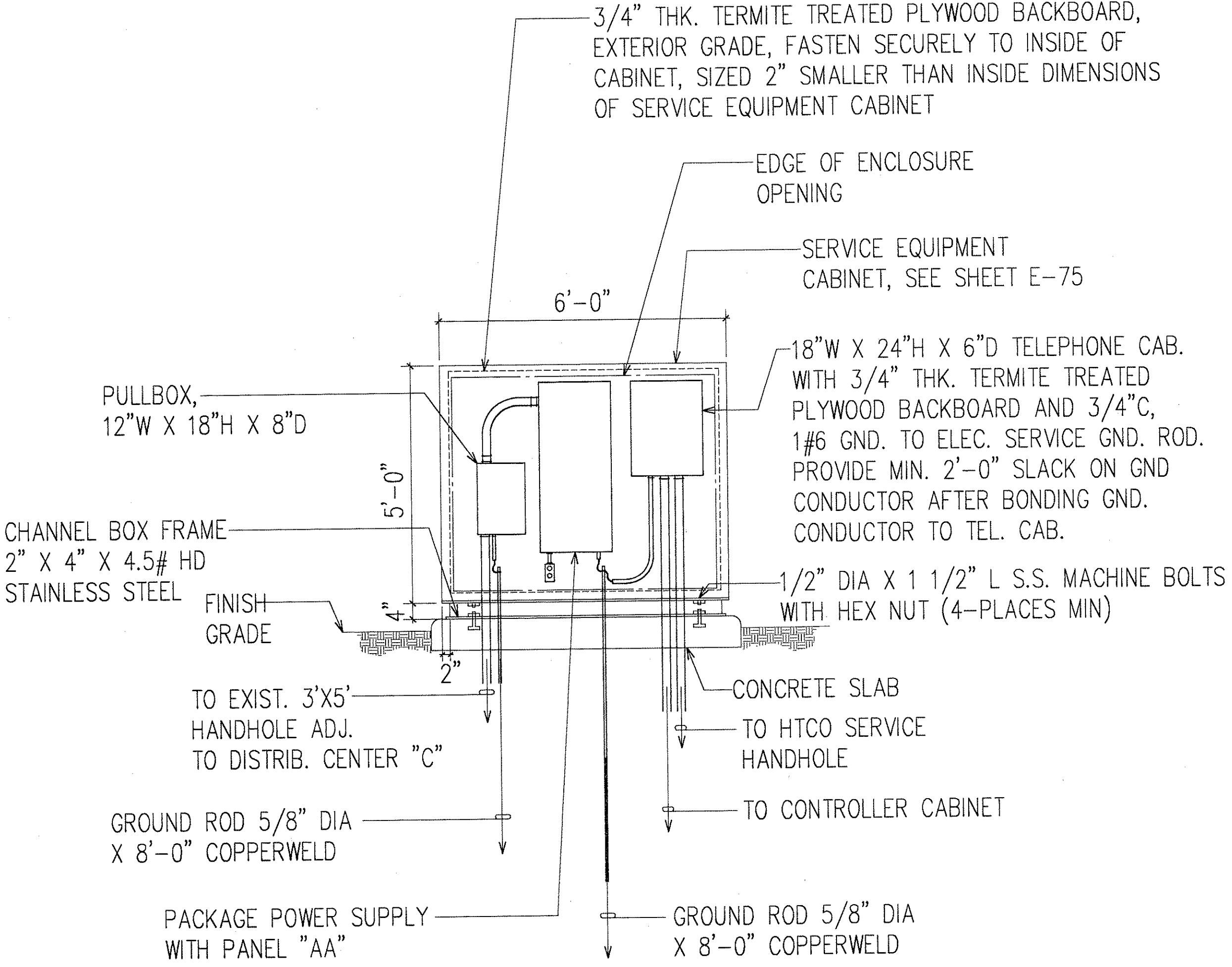
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	261	344



A
E-74 **EXISTING DISTRIBUTION CENTER "C" EQUIPMENT ELEVATION**
NOT TO SCALE

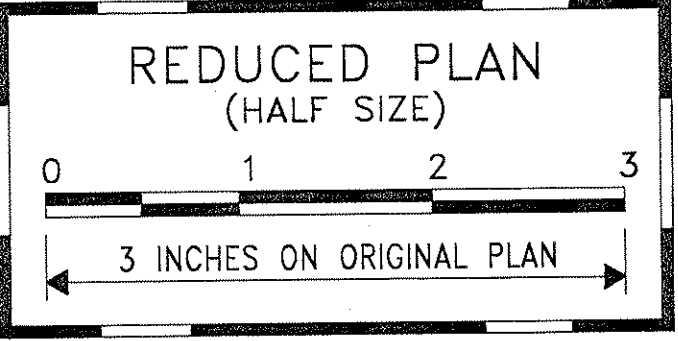


- NOTES:**
1. ALL EQUIPMENT ENCLOSURE IN SERVICE EQUIPMENT CABINET SHALL BE NEMA 1 TYPE.
 2. CONTRACTOR SHALL VERIFY EQUIPMENT ENCLOSURE SIZE.

B
E-74 **SERVICE NO. 1 EQUIPMENT ELEVATION**
NOT TO SCALE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
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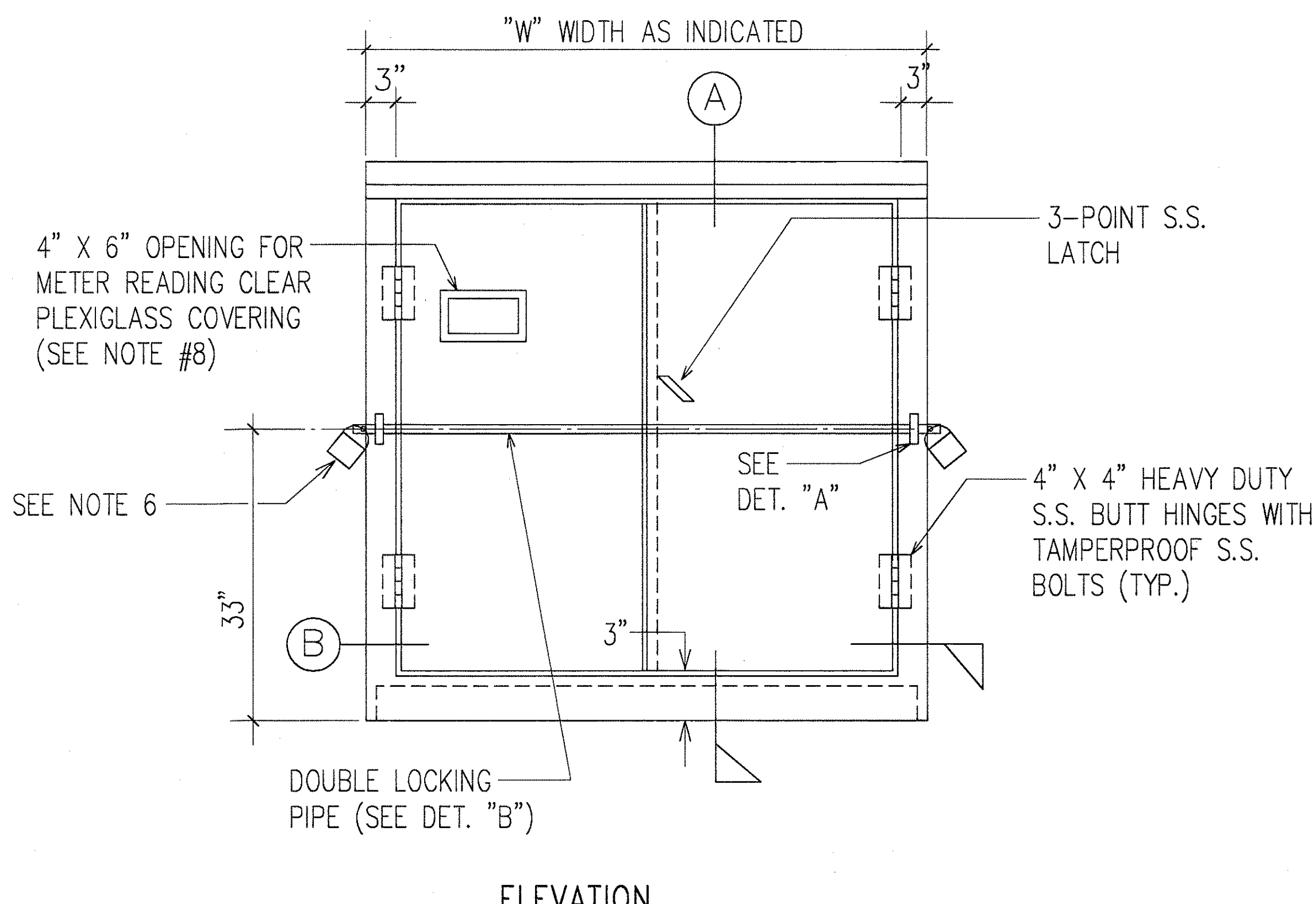
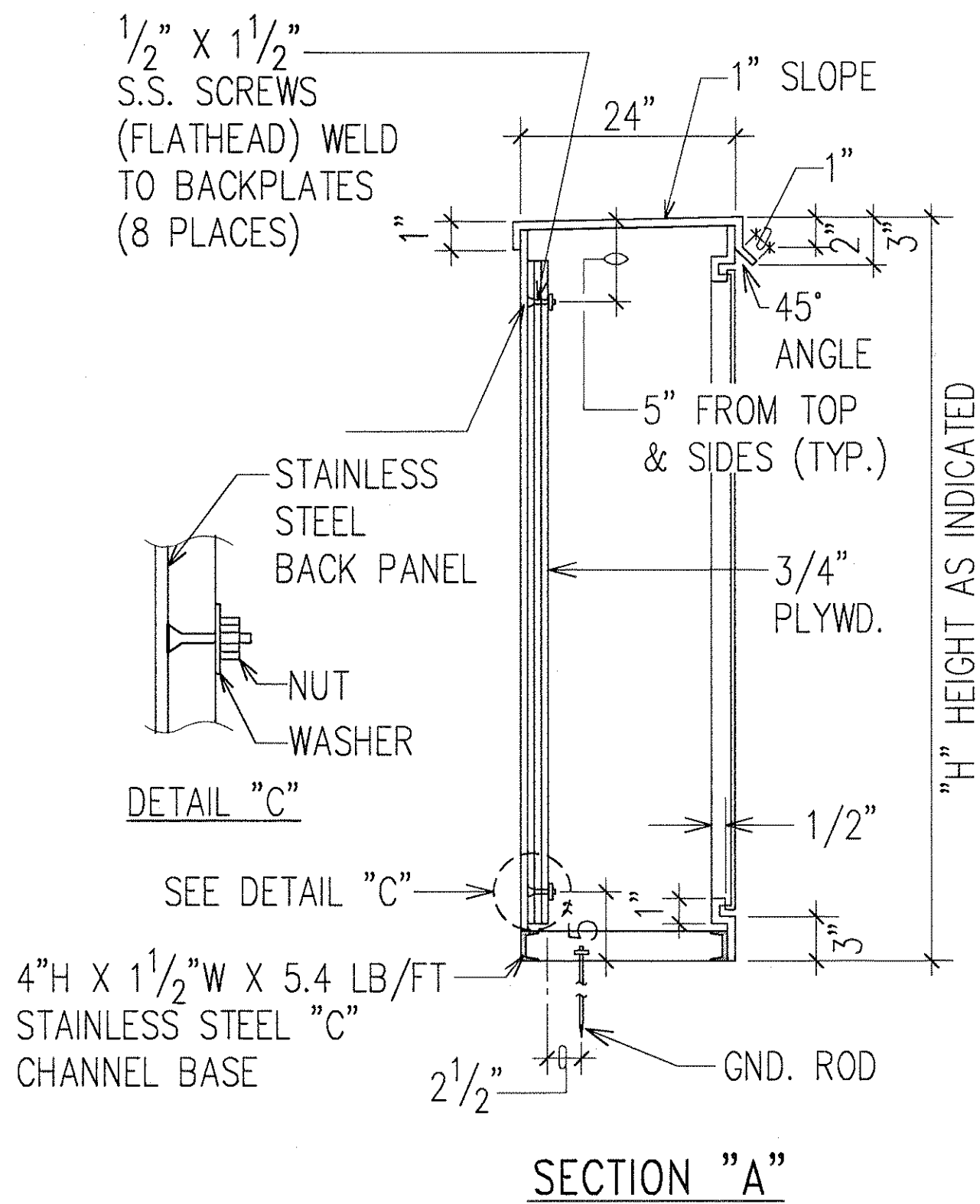


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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**EXISTING DISTRIBUTION CENTER "C" AND
SERVICE NO. 1 EQUIPMENT ELEVATIONS**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

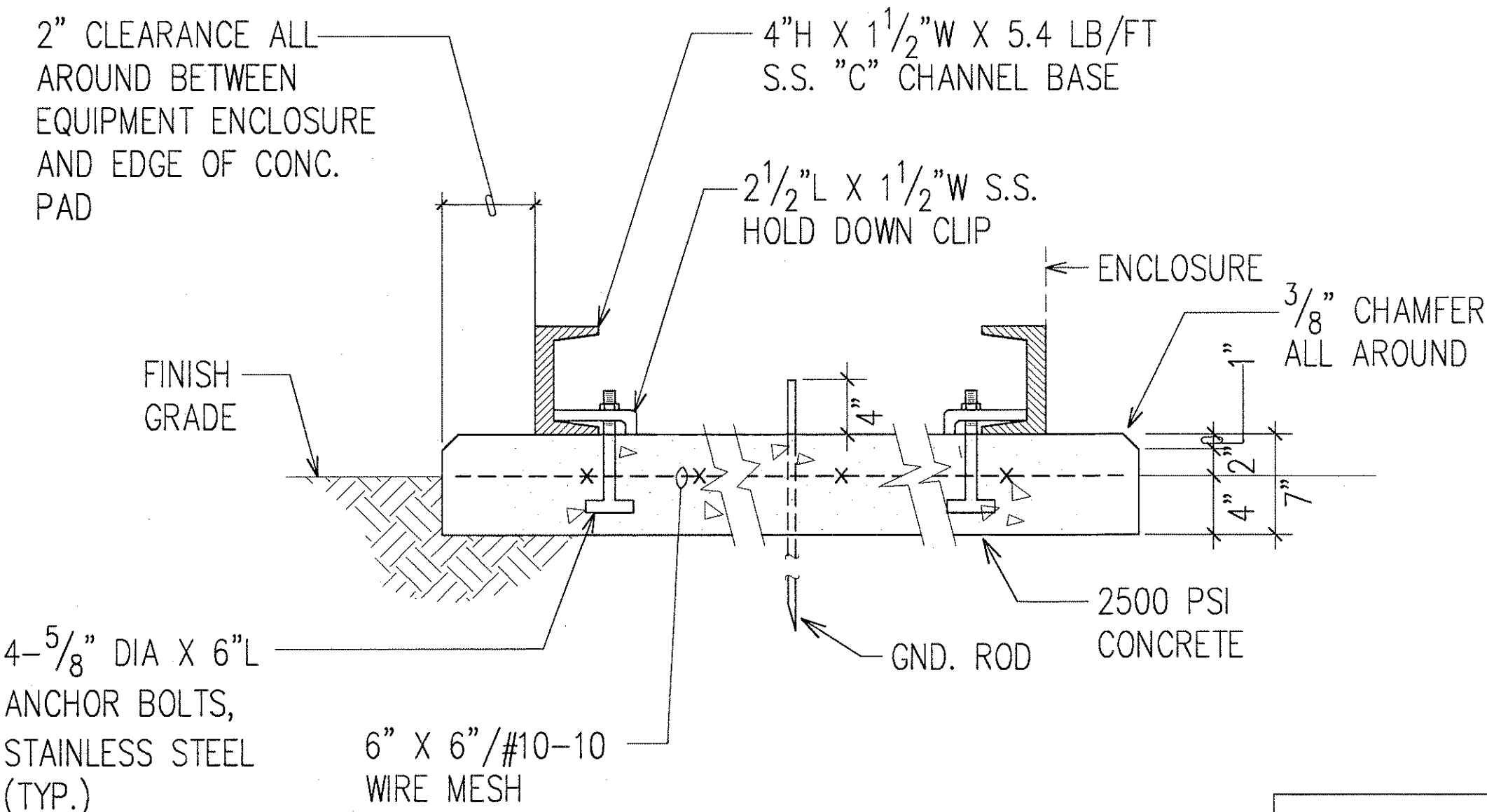
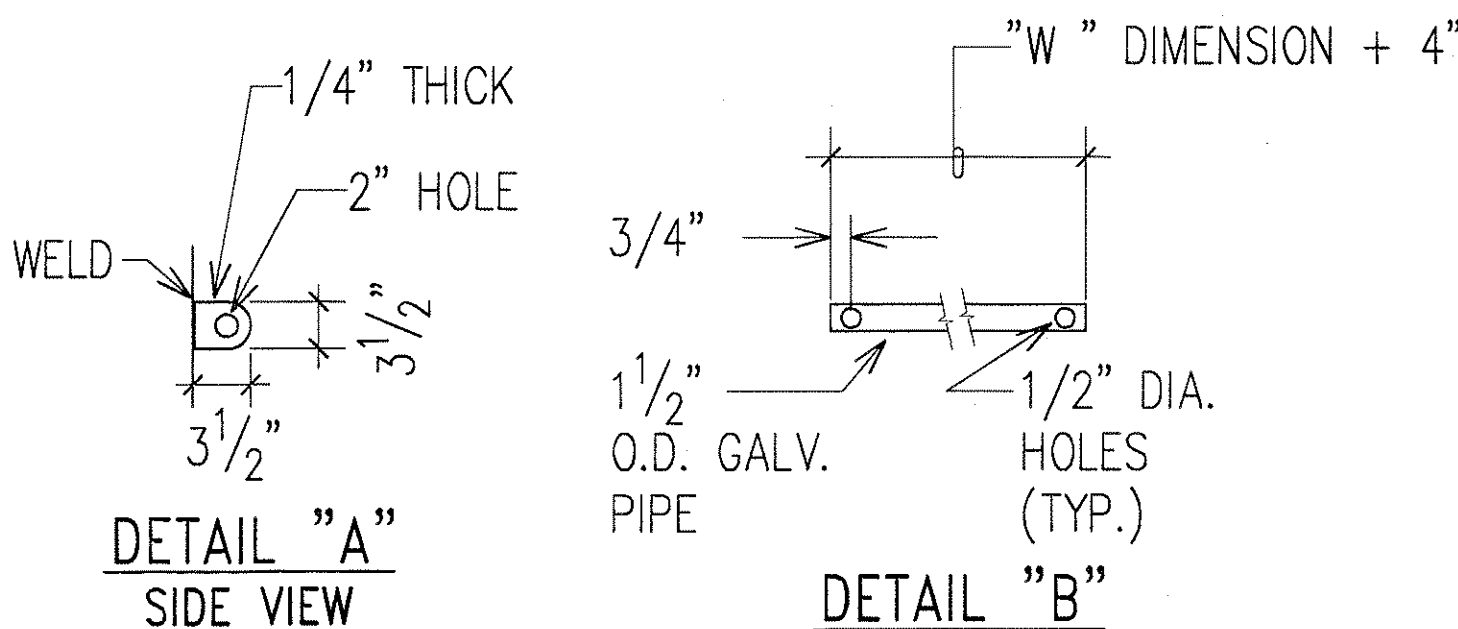
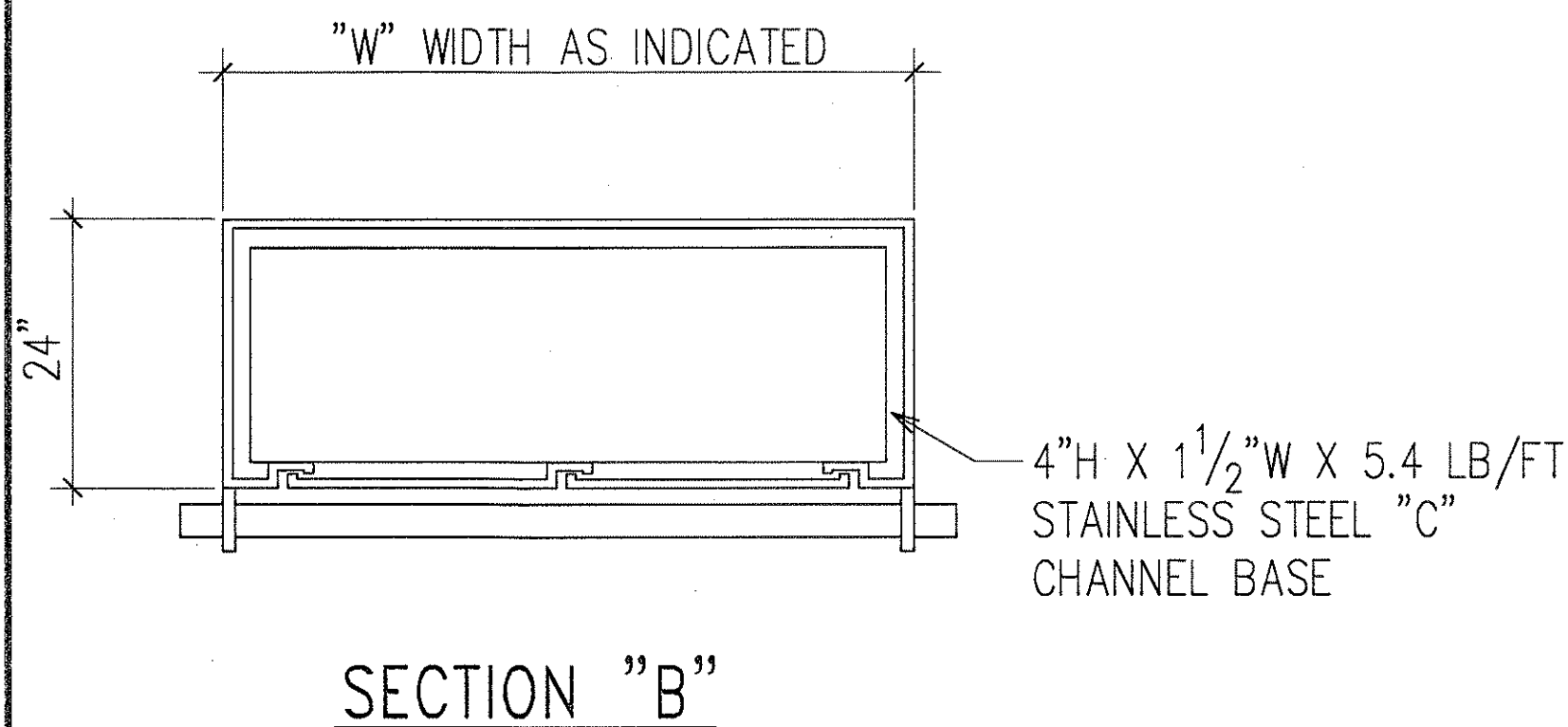
SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-74 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	262	344



ELECTRICAL EQUIPMENT CABINET NOTES:

- CABINET TO BE PRIMED WITH ONE COAT SHOP PRIMER.
- PLYWOOD TO BE TREATED (WOLMANIZED) PLYWOOD, EXTERIOR GRADE, 3/4" THICK.
- CABINET SHALL BE MADE FROM 10 GAUGE STAINLESS STEEL.
- TWO COATS OF ACRYLIC, OUTSIDE, COLOR AS SELECTED BY ENGINEER. SEE SPECIFICATIONS FOR REQUIREMENTS.
- ENCLOSURE SHALL BE NEMA 3R CONSTRUCTED WITH NEOPRENE GASKETING.
- PADLOCKS:
 - 1 - HECO FURNISHED
 - 2 - CONTRACTOR FURNISHED. BRASS CORBIN SESAME COMBINATION.
- NOTE: FOR SERVICE NO. 1 CABINET, CONTRACTOR SHALL FURNISH TWO PADLOCKS.
- SHOP FABRICATION DRAWINGS SHALL BE SUBMITTED FOR APPROVAL. CONTRACTOR SHALL PROVIDE HEIGHT AND WIDTH OF CABINET AS REQUIRED ACCORDING TO SIZES OF EQUIPMENT BEING INSTALLED IN CABINET.
- LOCATION OF OPENING FOR METER READER TO CORRESPOND WITH LOCATION OF METER.
- MOUNT EQUIPMENT SECURELY TO PLYWOOD BACKBOARD.
- FOR "H" AND "W" DIMENSIONS, REFER TO SPECIFIC SERVICE EQUIPMENT ELEVATION DETAIL DIMENSIONS.

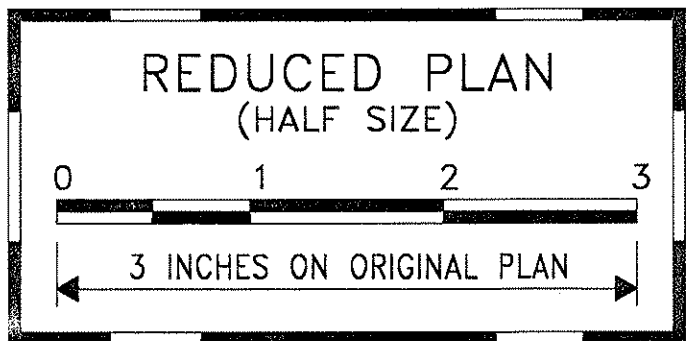


SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	

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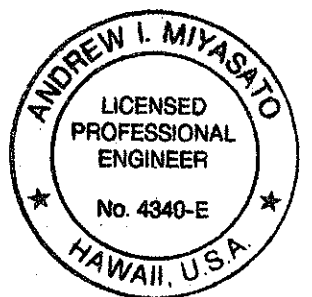
TYPICAL ELECTRICAL SERVICE EQUIPMENT CABINET AND CONCRETE PAD DETAILS

NOT TO SCALE



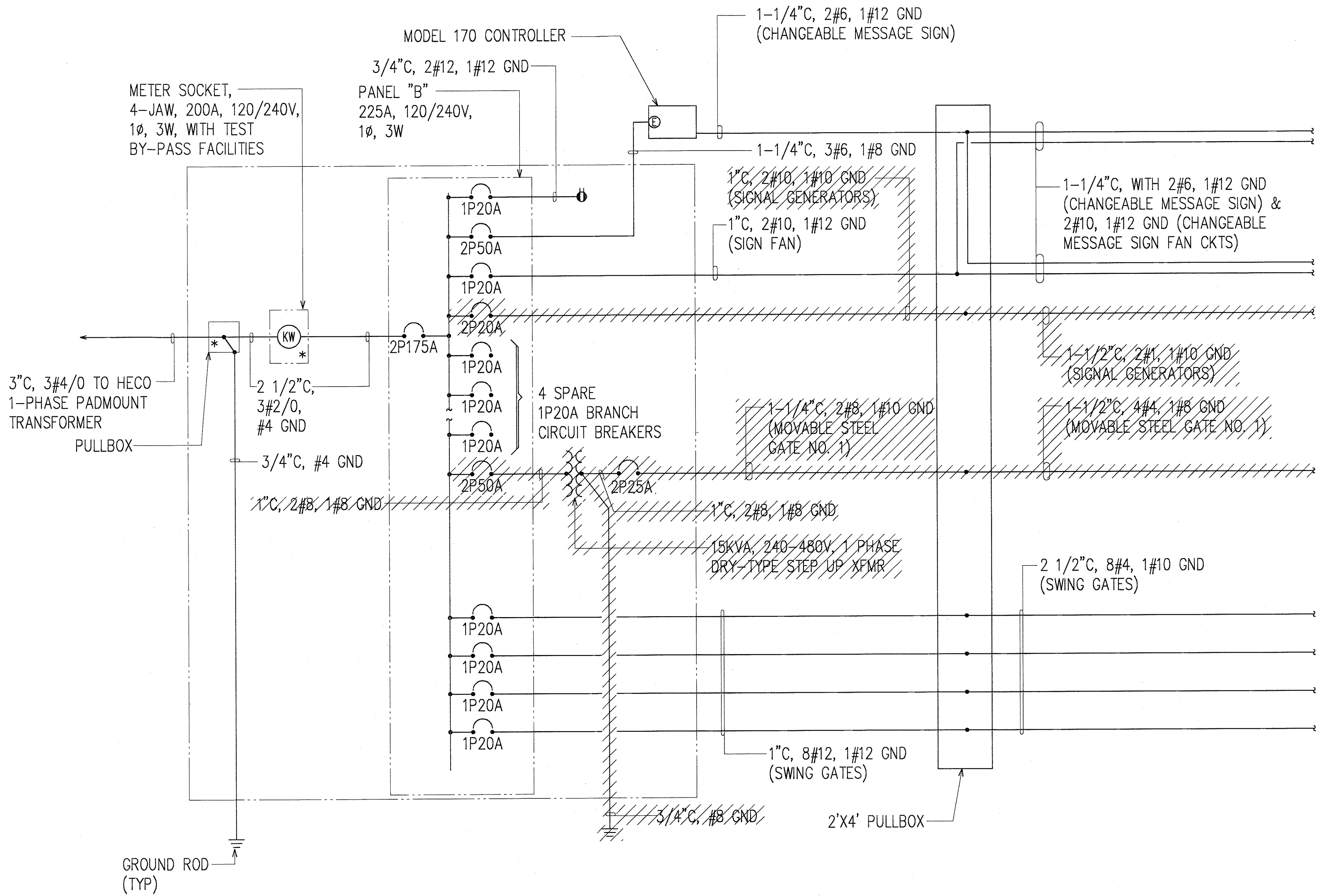
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TYPICAL SERVICE EQUIPMENT CABINET
AND CONCRETE PAD DETAILS**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-75 OF 106 SHEETS



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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

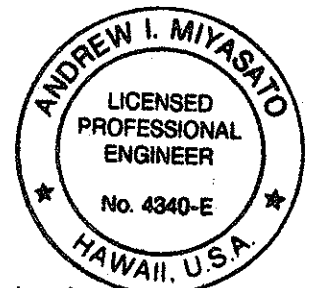
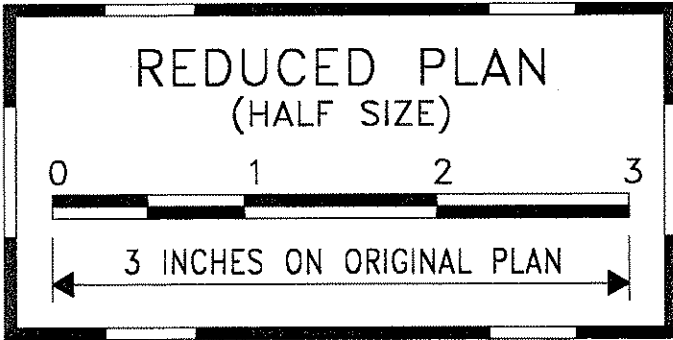
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 264	344



FOR CONTINUATION,
SEE SERVICE NO. 2
EQUIPMENT ONE-LINE
WIRING DIAGRAM,
SHEET E-78

NOTE:
* INDICATES PROVISION FOR HECO SEALS AND
OBTAIN HECO APPROVALS

SERVICE NO. 2 ONE-LINE DIAGRAM



5/14/98
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

DATE	REVISION
5/14/98	ADDED CONDUIT FOR COORDINATION
2/27/98	REMOVED SIGNAL GENERATOR & MOVEABLE STEEL GATE CONNECTIONS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SERVICE NO. 2 ONE-LINE DIAGRAM

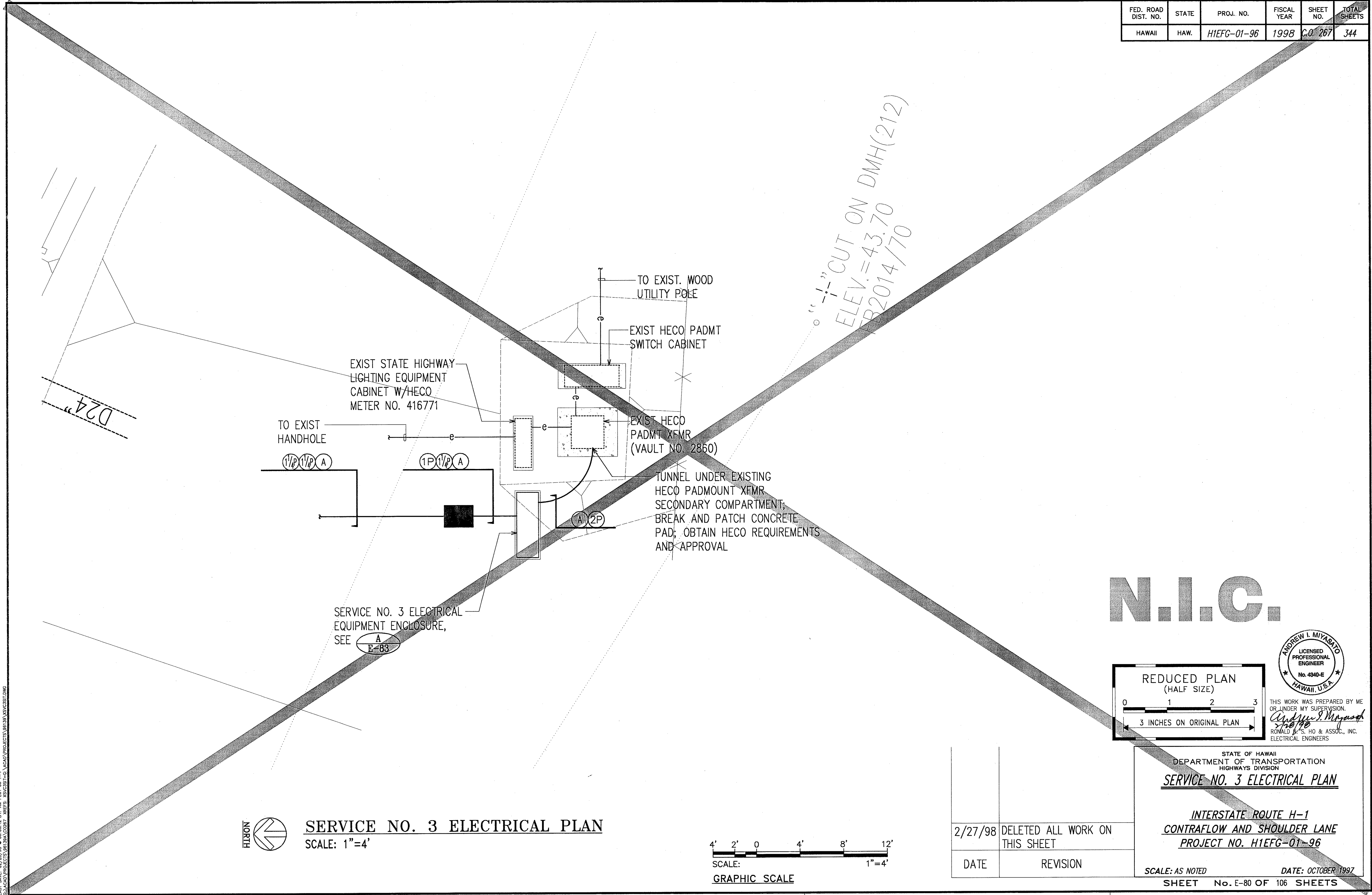
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-77 OF 106 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

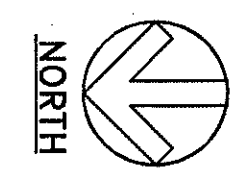
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 267	344

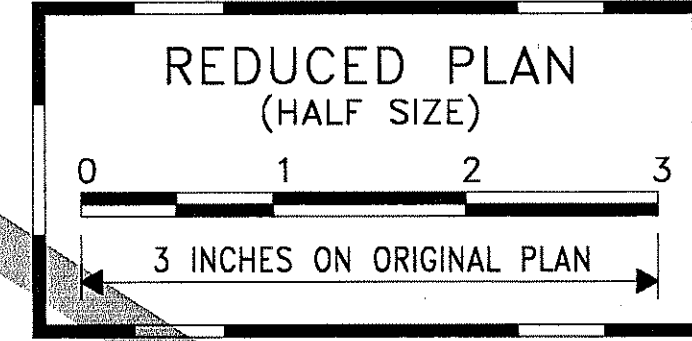
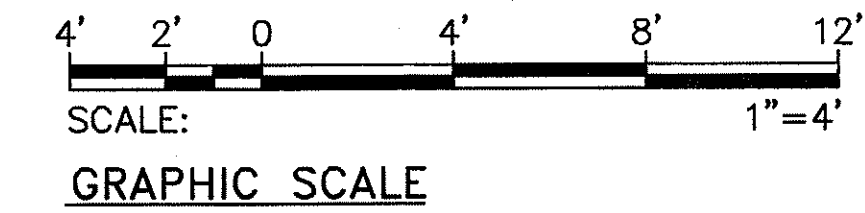


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NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	NO.	

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SERVICE NO. 3 ELECTRICAL PLAN
 SCALE: 1"=4'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 RONALD B. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

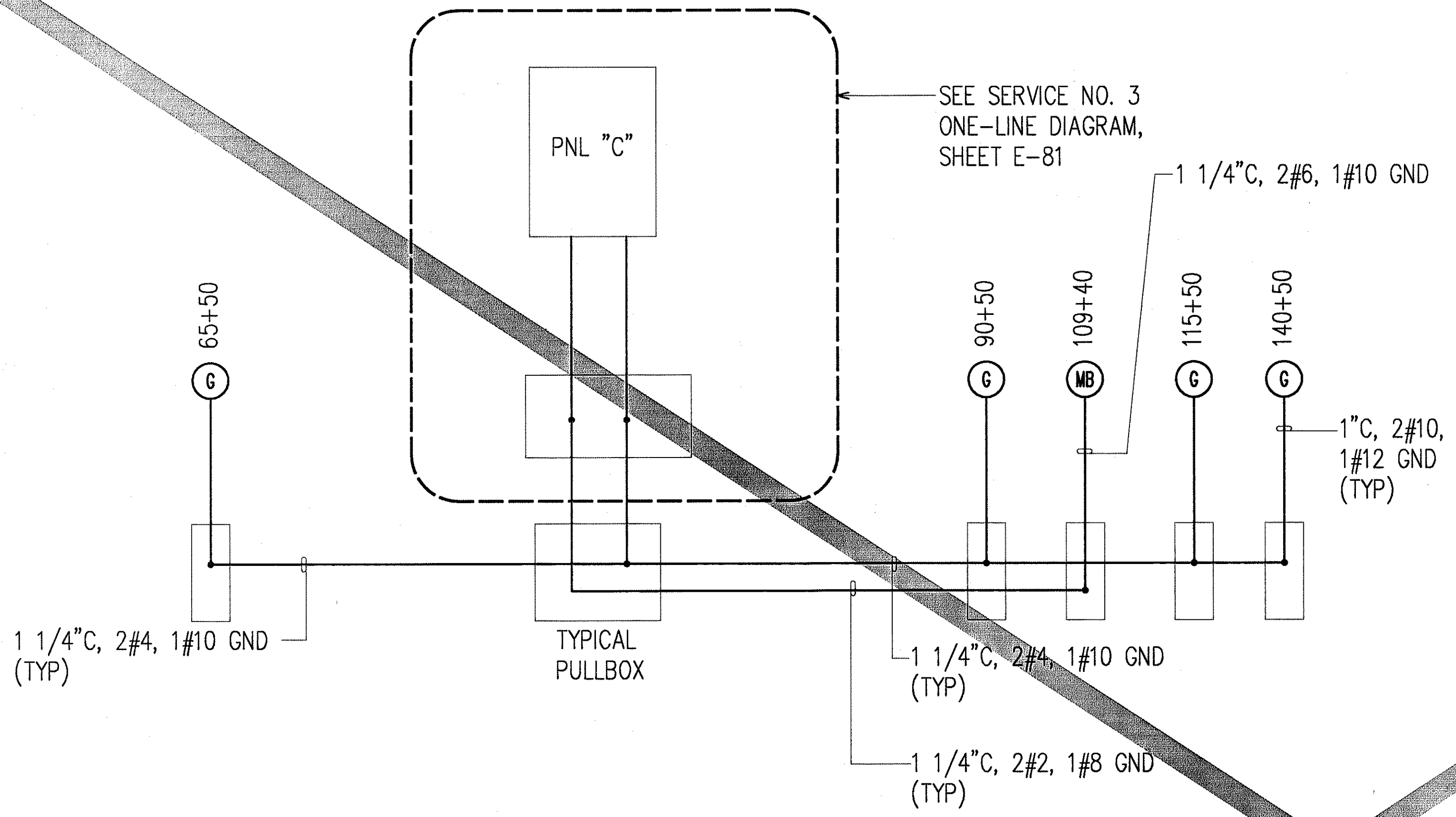
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

SERVICE NO. 3 ELECTRICAL PLAN

INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
 SHEET No. E-80 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 269	344



SERVICE NO. 3 EQUIPMENT ONE-LINE WIRING DIAGRAM

N.I.C.

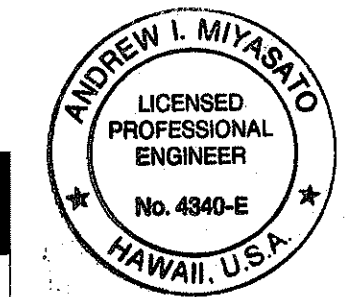
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

LAST SAVE: 02/28/98 08:07:54 BY: AM PLOT: 267-0-41
C:\ACAD\PROJECTS\96139A\02269

REDUCED PLAN
(HALF SIZE)

0 1 2 3

3 INCHES ON ORIGINAL PLAN



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Andrew I. Miyasato
2/28/98
RONALD M. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

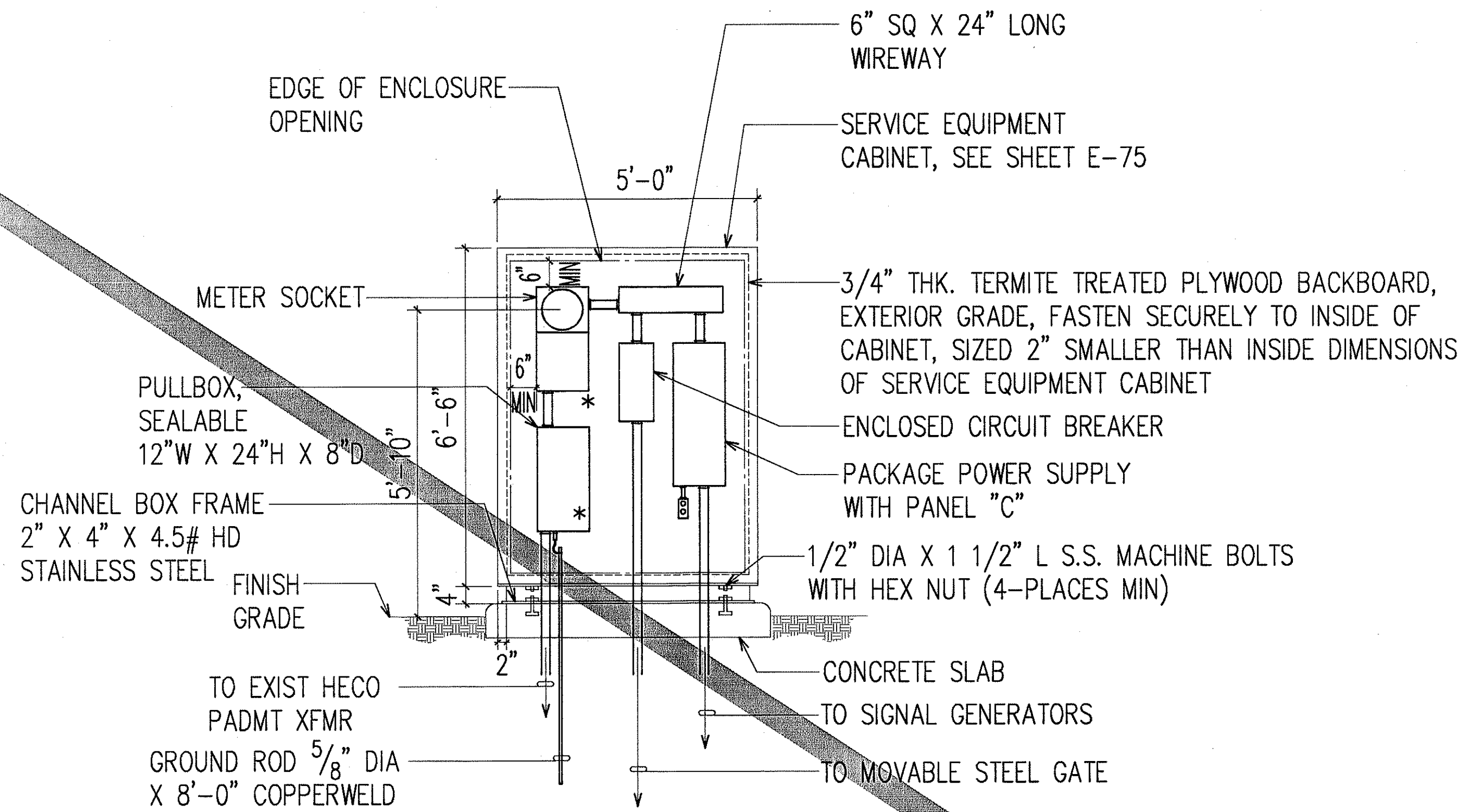
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SERVICE NO. 3 EQUIPMENT
ONE-LINE WIRING DIAGRAM
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997

SHEET No. E-82 OF 106 SHEETS

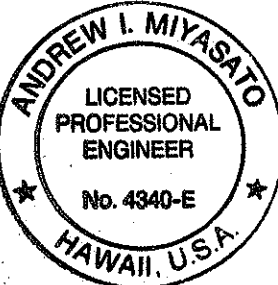
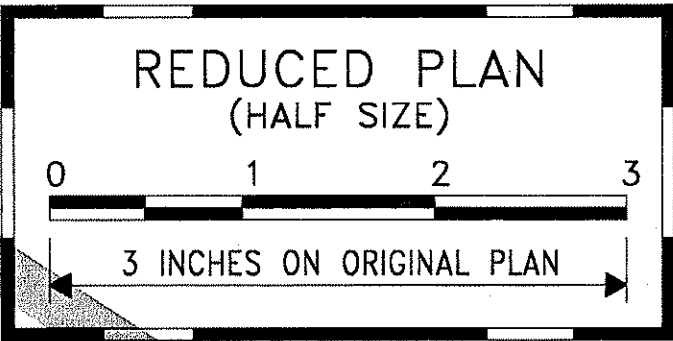
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 270	344



- NOTES:
- "*" INDICATES PROVISION FOR HECO SEALS.
 - ALL EQUIPMENT ENCLOSURE IN SERVICE EQUIPMENT CABINET SHALL BE NEMA 1 TYPE.
 - CONTRACTOR SHALL VERIFY EQUIPMENT ENCLOSURE SIZE.

A
E-83 **SERVICE NO. 3 EQUIPMENT ELEVATION**
NOT TO SCALE

N.I.C.



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Andrew I. Miyasato
2/28/98
RONALD S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SERVICE NO. 3 EQUIPMENT ELEVATION

**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

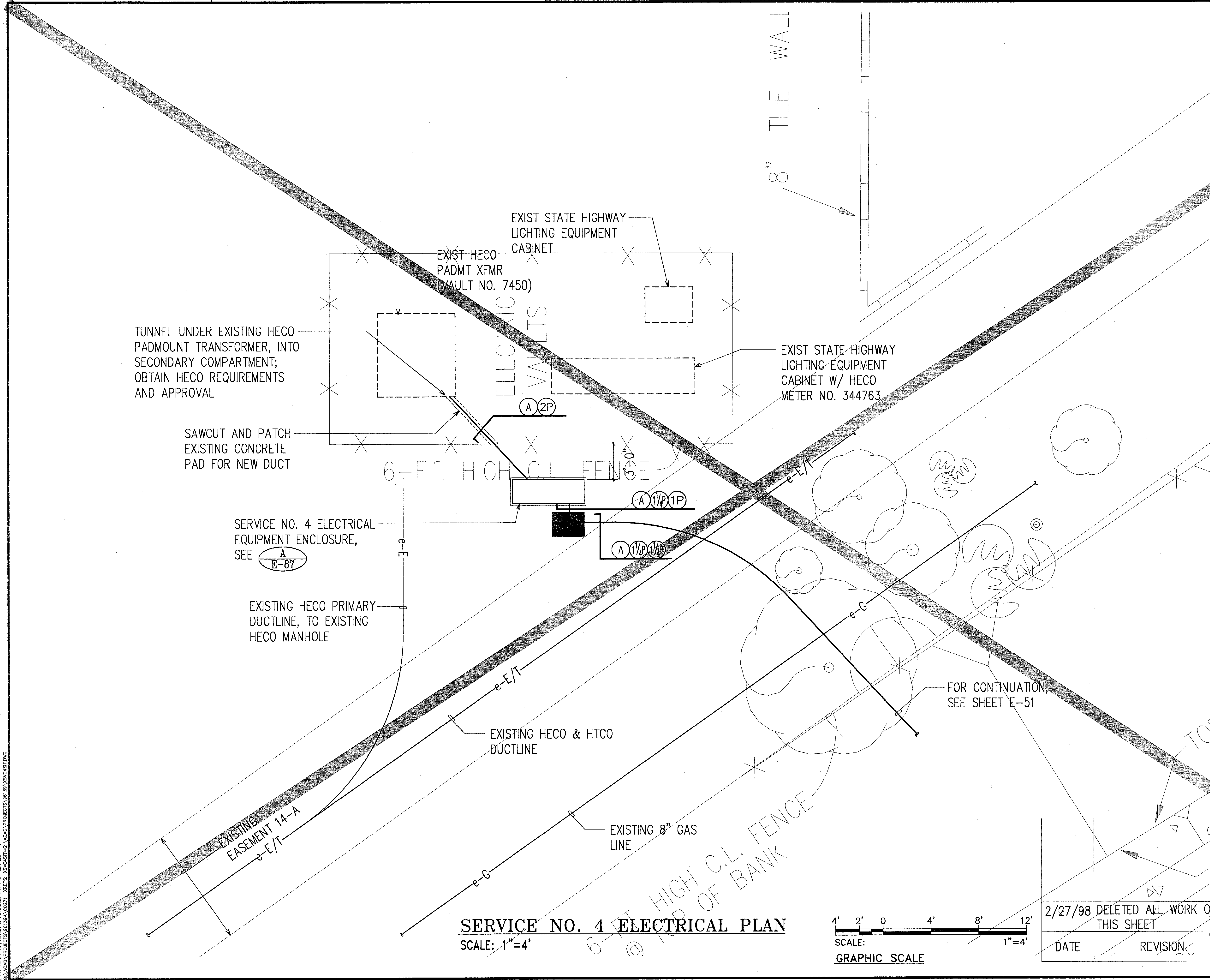
2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-83 OF 106 SHEETS

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

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1IEFG-01-96	1998	C.O. 271	344

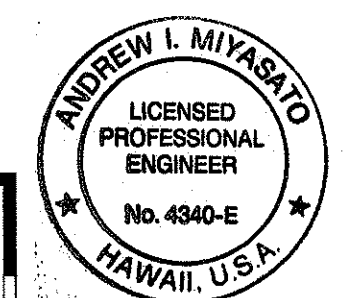
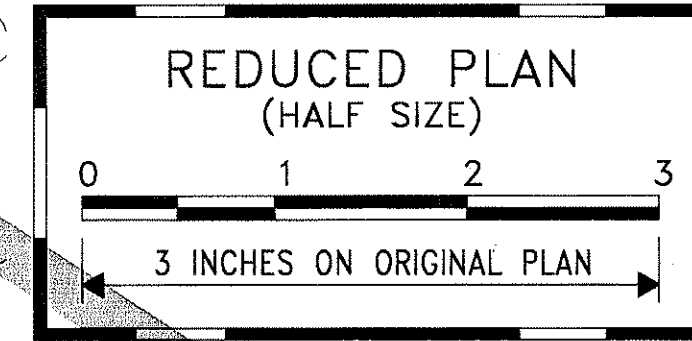
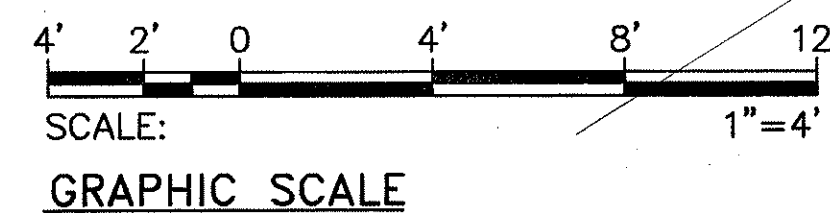


N.I.C.

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

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SERVICE NO. 4 ELECTRICAL PLAN
 SCALE: 1"=4'



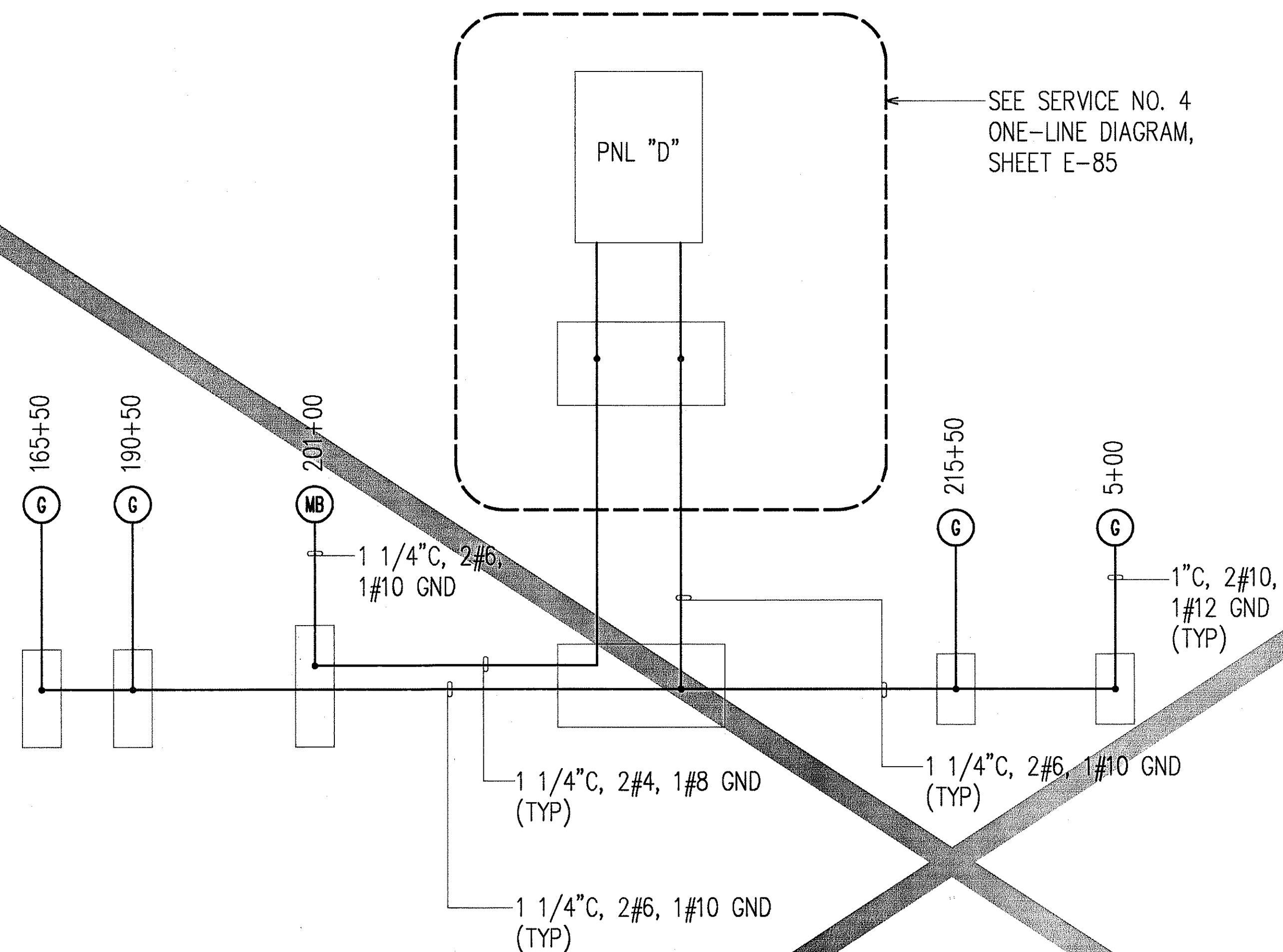
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 2-28-98
 RONALD A. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
SERVICE NO. 4 ELECTRICAL PLAN

 INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. H1IEFG-01-96

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 273	344



SERVICE NO. 4 EQUIPMENT ONE-LINE WIRING DIAGRAM

N.I.C.

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	

DATE: 02/27/98
BY: AM
PROJECT: H1EFG-01-96



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Andrew L. Miyasato
2/28/98
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

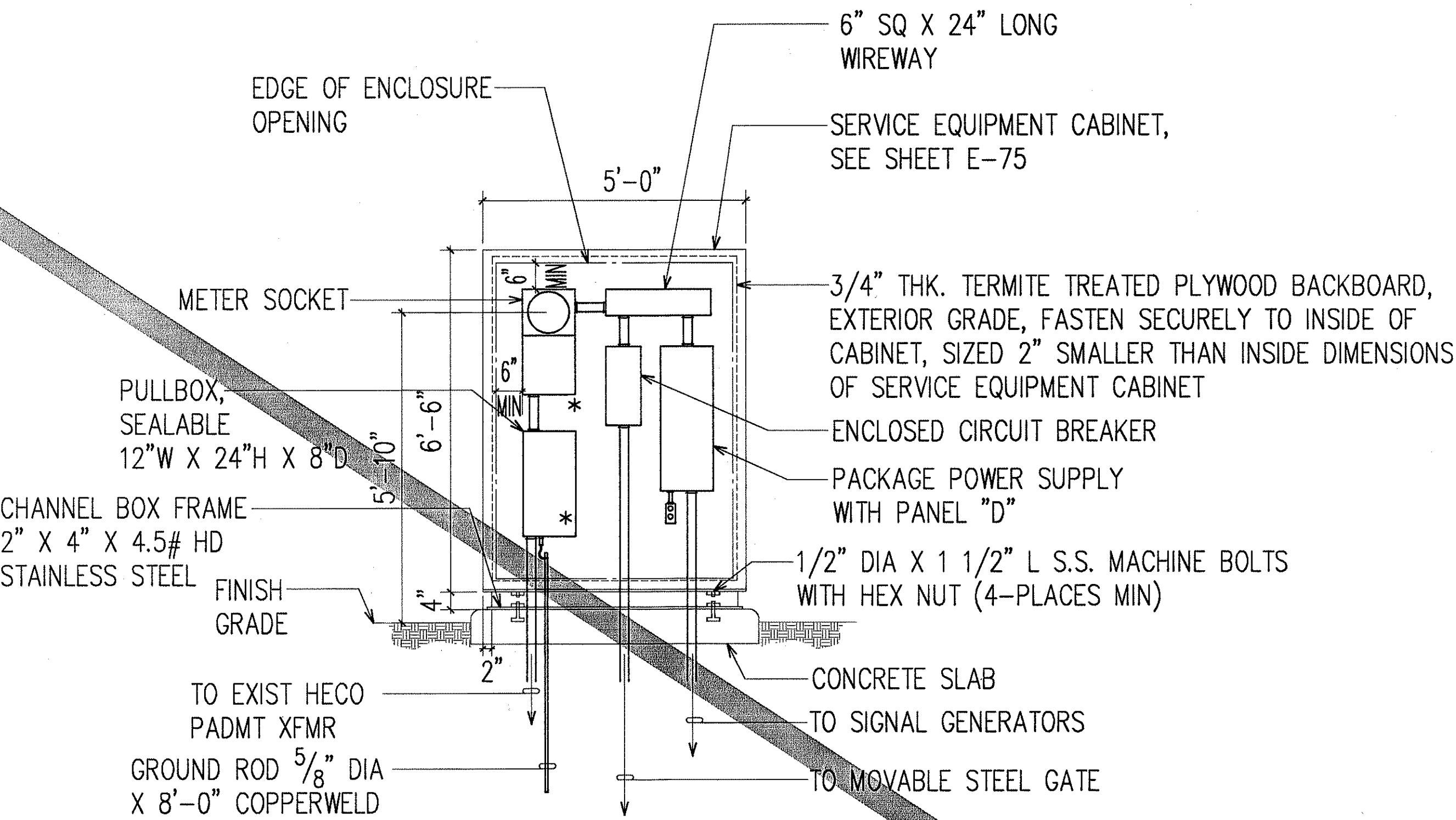
2/27/98 DELETED ALL WORK ON THIS SHEET

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**SERVICE NO. 4 EQUIPMENT
ONE-LINE WIRING DIAGRAM**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-86 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 274	344



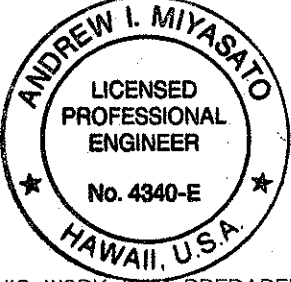
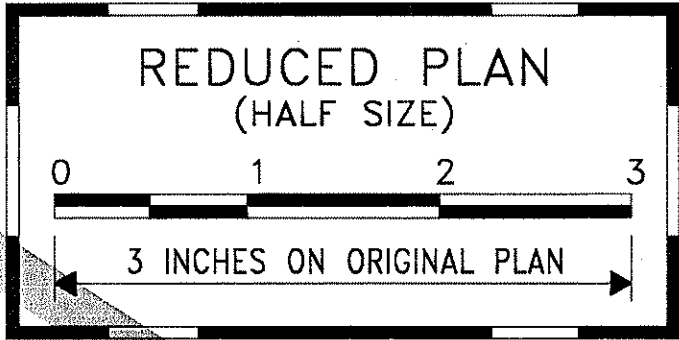
- NOTES:
- "*" INDICATES PROVISION FOR HECO SEALS.
 - ALL EQUIPMENT ENCLOSURE IN SERVICE EQUIPMENT CABINET SHALL BE NEMA 1 TYPE.
 - CONTRACTOR SHALL VERIFY EQUIPMENT ENCLOSURE SIZE.

A
E-87 **SERVICE NO. 4 EQUIPMENT ELEVATION**
NOT TO SCALE

N.I.C.

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

LAST ONE OF TWO SHEETS OF AM PL01 36 172-11
CAUTION: PROJECT NO. H1EFG-01-96



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Andrew L. Miyasato
2/28/98
RONALD A. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

2/27/98	DELETED ALL WORK ON THIS SHEET
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

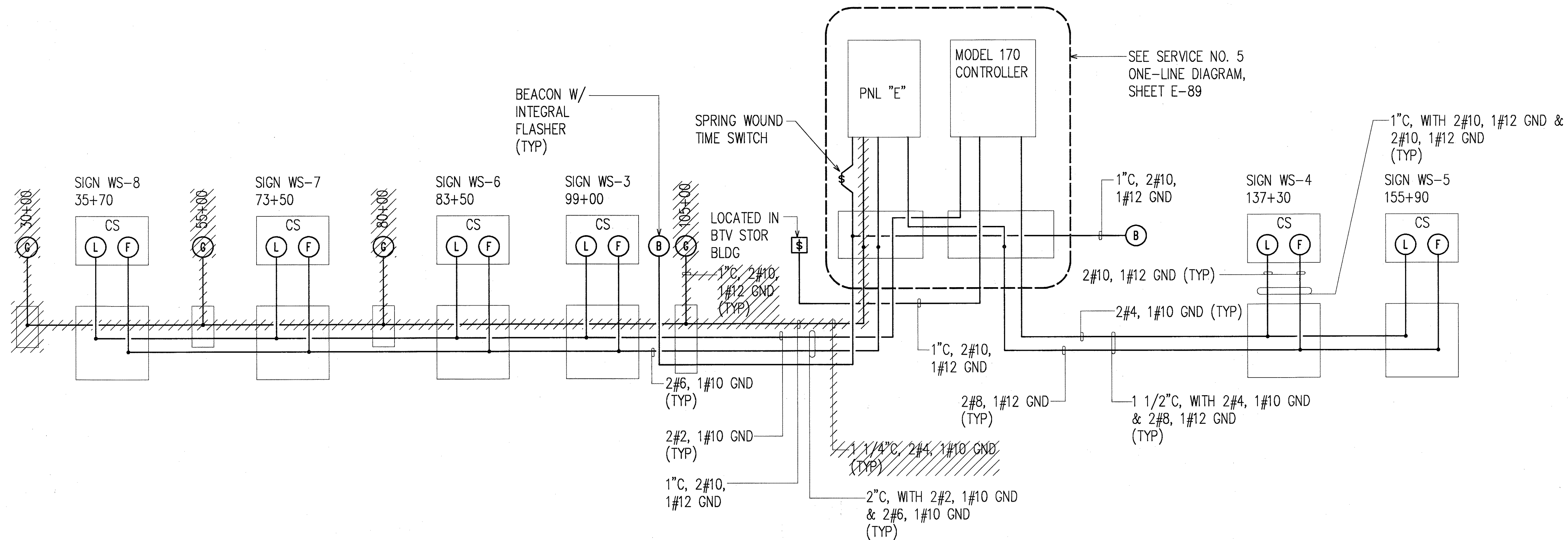
SERVICE NO. 4 EQUIPMENT ELEVATION

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-87 OF 106 SHEETS

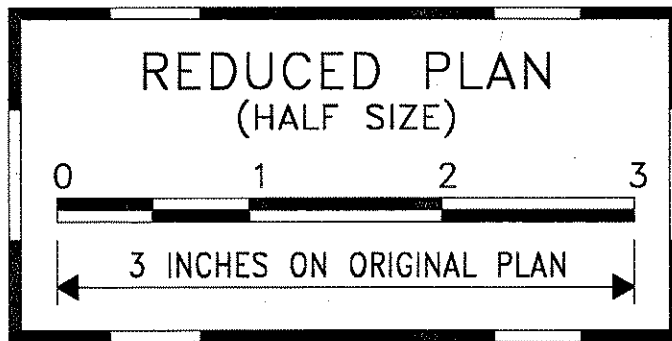
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 277	344



SERVICE NO. 5 EQUIPMENT ONE-LINE WIRING DIAGRAM

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

LAST SAVE: 02/27/98 @ 09:05:28 BY: C:\PLOT\361-961
F:\ACAD\PROJECTS\981961\981961.DWG



ANDREW I. MIYASHIRO
LICENSED PROFESSIONAL ENGINEER
No. 4340-E
HAWAII, U.S.A.

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Andrew I. Miyashiro
2/27/98
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

2/27/98	REMOVED SIGNAL GENERATOR CONNECTIONS
DATE	REVISION

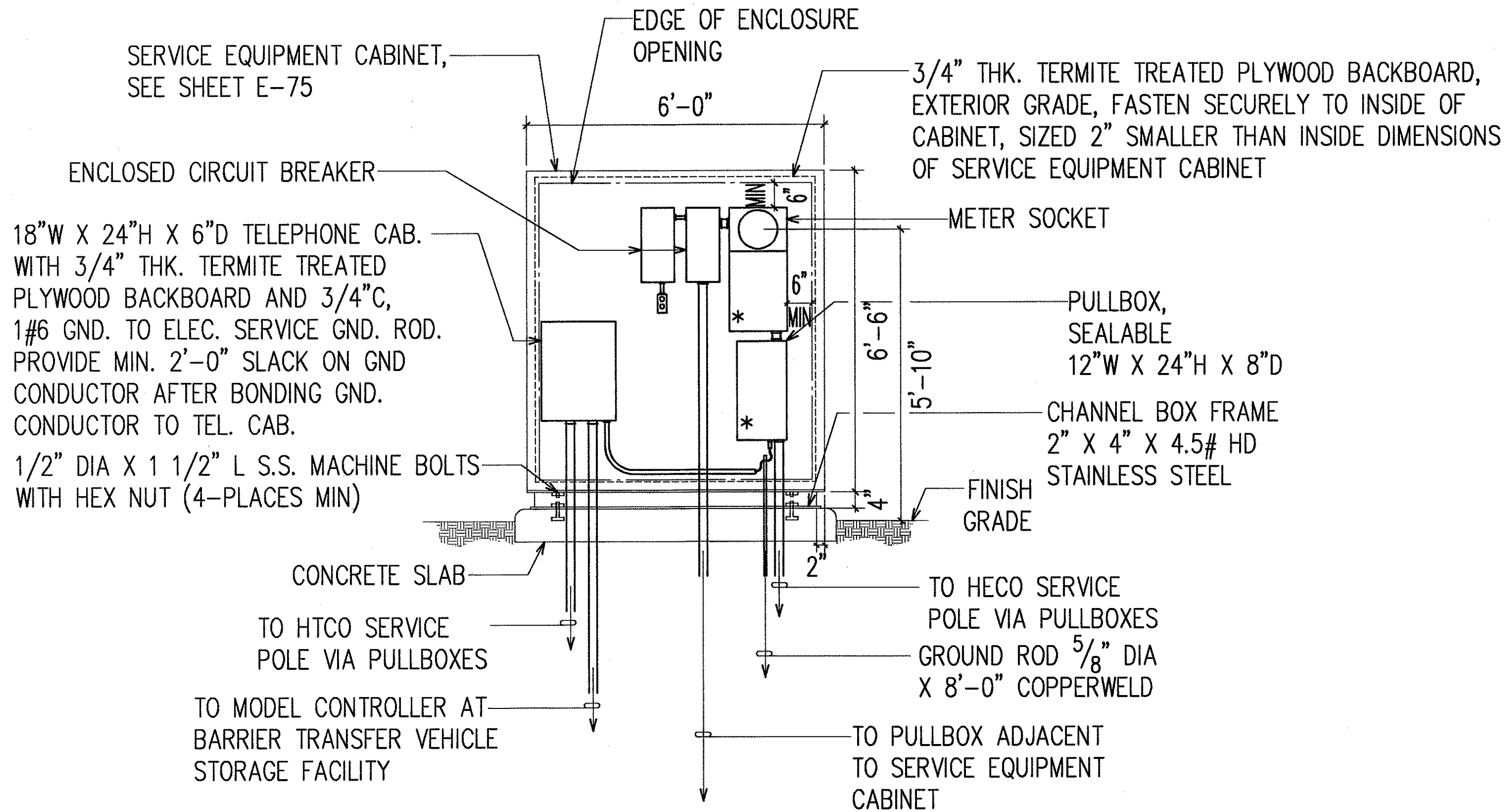
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SERVICE NO. 5 EQUIPMENT
ONE-LINE WIRING DIAGRAM
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED
DATE: OCTOBER 1997

SHEET No. E-90 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 278	344

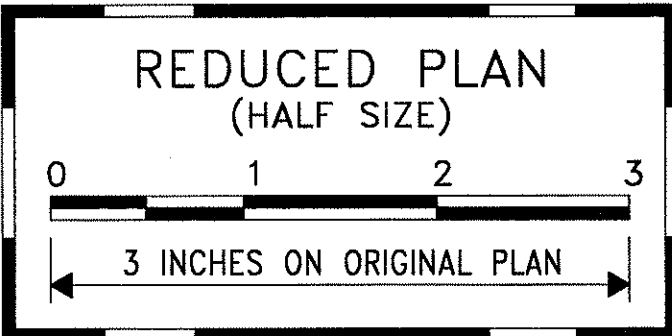
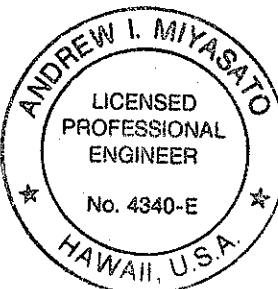


- NOTES:
- "*" INDICATES PROVISION FOR HECO SEALS.
 - ALL EQUIPMENT ENCLOSURE IN SERVICE EQUIPMENT CABINET SHALL BE NEMA 1 TYPE.
 - CONTRACTOR SHALL VERIFY EQUIPMENT ENCLOSURE SIZE.

A
E-91 **SERVICE NO. 5 EQUIPMENT ELEVATION**
NOT TO SCALE

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

LAST SAVE: 12/22/97 @ 15:02:27 BY: 60101 38172-01
S:\CAD\PROJECTS\86159\385VCD



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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

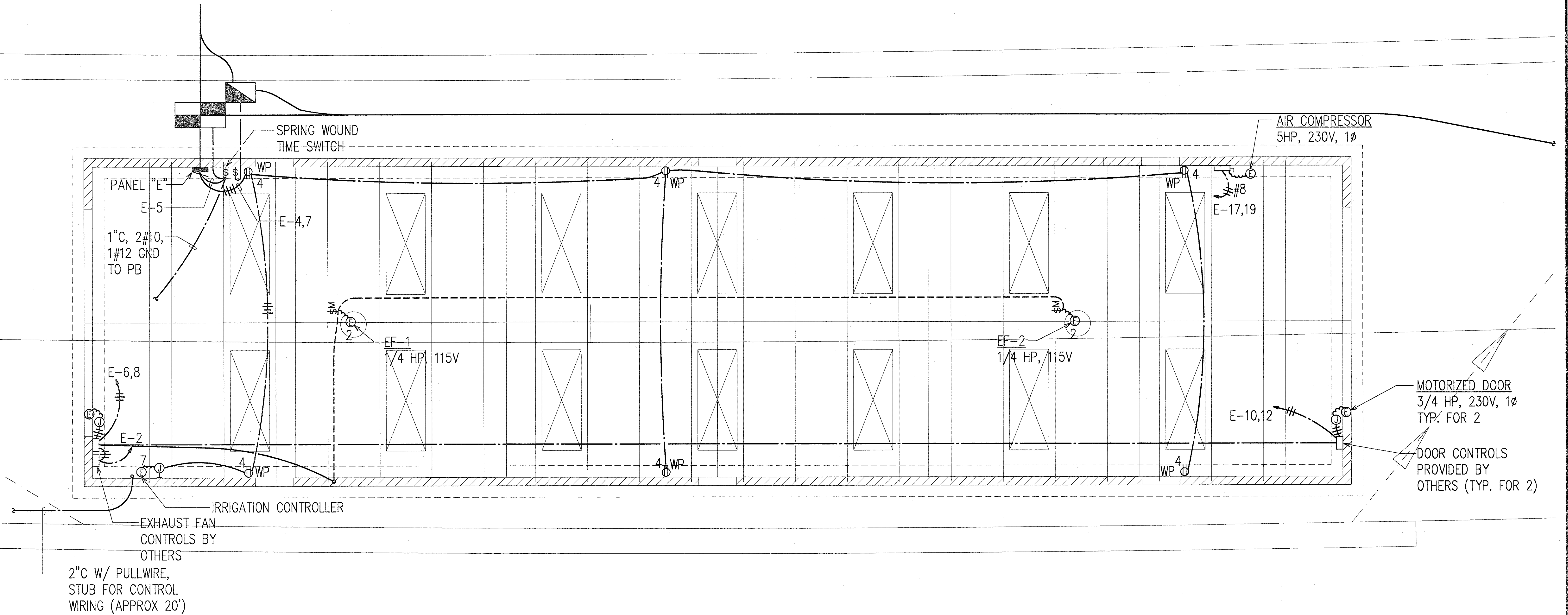
12/19/97	REVERSED ORDER OF EQUIP MTD IN ENCLOSURE
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SERVICE NO. 5 EQUIPMENT ELEVATION

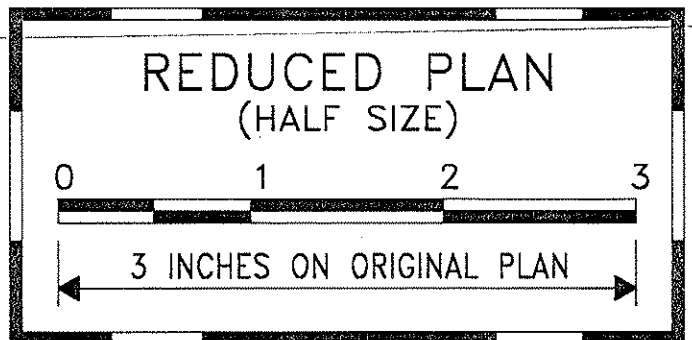
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-91 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 279	344



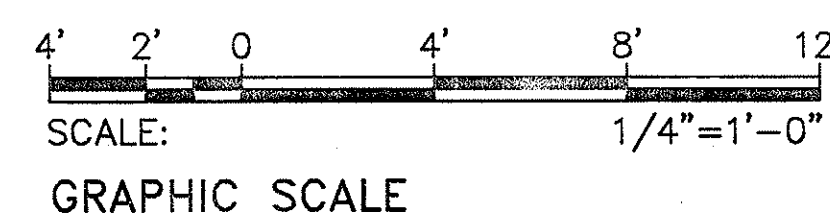
BARRIER TRANSFER VEHICLE STORAGE FACILITY POWER AND SIGNAL PLAN
 SCALE: 1/4"=1'-0"



ANDREW I. MIYASATO
 LICENSED PROFESSIONAL ENGINEER
 No. 4340-E
 HAWAII, U.S.A.
 6/25/98
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Andrew I. Miyasato
 RONALD N. S. HO & ASSOC., INC.
 ELECTRICAL ENGINEERS

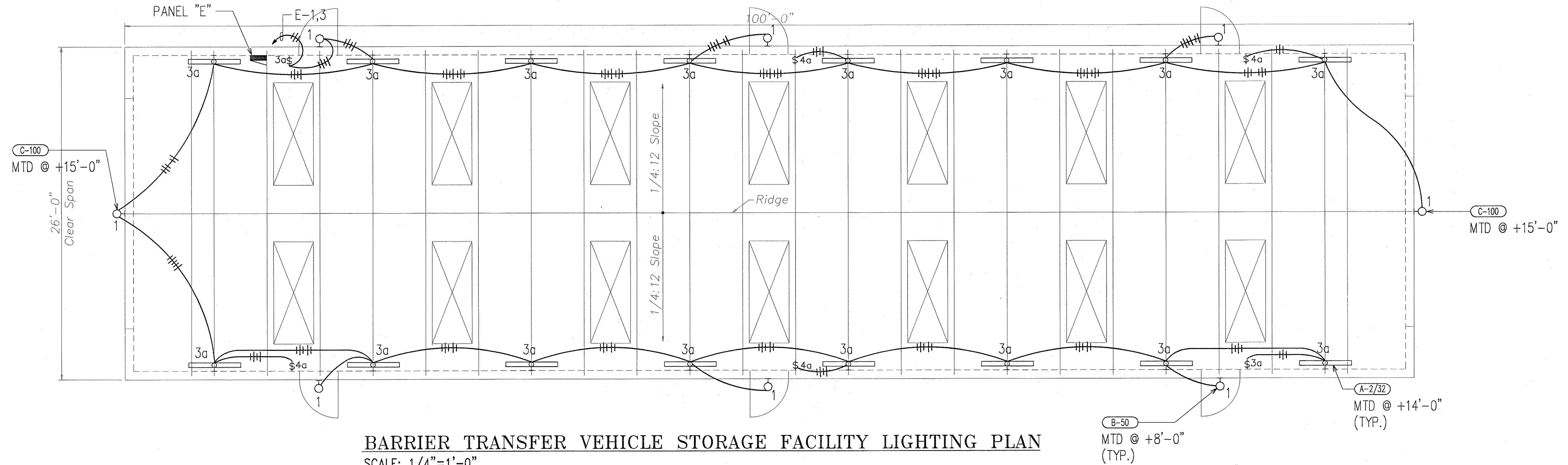
6/24/98	ADDED IRRIG. CONTROLLER CONNECTION
6/3/98	ADDED ELEC EQUIP FOR AIR COMPRESSOR
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
BARRIER TRANSFER VEHICLE STORAGE FACILITY POWER AND SIGNAL PLAN
 INTERSTATE ROUTE H-1
 CONTRAFLOW AND SHOULDER LANE
 PROJECT NO. H1EFG-01-96
 SCALE: AS NOTED
 DATE: OCTOBER 1997
 SHEET No. E-92 OF 106 SHEETS



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	IN CHARGE	

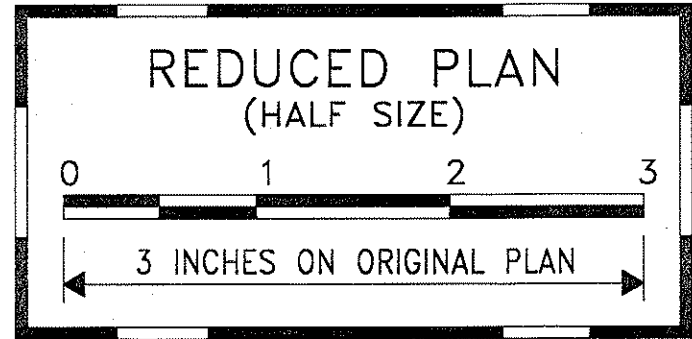
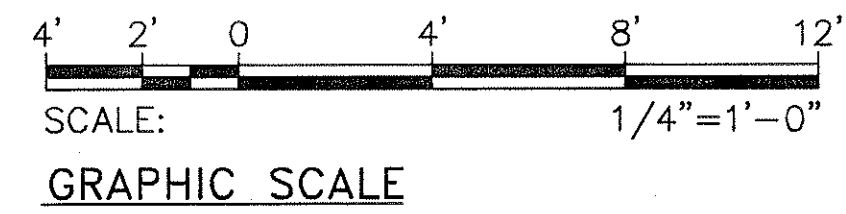
LAST SAE: 06/25/98
 Z:\ACAD\PROJECTS\98\H1EFG-01-96\H1EFG-01-96.E



LIGHT FIXTURE SCHEDULE				
NOTES:				
1. COORDINATE RECESSED MOUNTING HARDWARE WITH ARCHITECTURAL CEILING INSTALLATION.				
2. CONTRACTOR SHALL VERIFY ALL CEILING FINISH WITH GENERAL CONTRACTOR AND/OR ARCHITECT PRIOR TO ORDERING LIGHT FIXTURES.				
TYPE	LAMPS	MOUNTING	DESCRIPTION	MANUFACTURER OR APPROVED EQUAL
A	2-F32T8 4100K	WALL SURFACE	FLUORESCENT, 5"H X 4"D X 4'L NOMINAL, STEEL HOUSING, BAKED WHITE ENAMEL FINISH, WHITE ACRYLIC DIFFUSER, 120V ELECTRONIC BALLAST	COLUMBIA W4-2 SERIES, METALUX, LITHONIA, OR DAYBRITE
B	50W HPS	WALL SURFACE	HID WALL LIGHT, 11"H X 5-1/4"D X 7"W NOMINAL, DIE CAST ALUMINUM BASE, ONE-PIECE POLYCARBONATE FRONT HOUSING, WET LOCATION LISTED, PHOTO ELECTRIC CONTROL, 120V BALLAST	GENERAL ELECTRIC WL-05 SERIES, MWC, LITHONIA, OR BROWNLEE
C	100W HPS	WALL SURFACE	HID WALL LIGHT, 13"H X 8"D X 15"W NOMINAL, DIE CAST ALUMINUM HOUSING, VANDAL RESISTANT POLYCARBONATE REFRACTOR, WET LOCATION LISTED, PHOTO ELECTRIC CONTROL, 120V BALLAST, TYPE III DISTRIBUTION	GENERAL ELECTRIC W1LR-10 SERIES, MWC, OR LITHONIA

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

LAST SAVE: 10/21/97 @ 17:26:58 BY: RN PLOT 32 T-4
G:\ACAD\PROJECTS\06139\06139L2

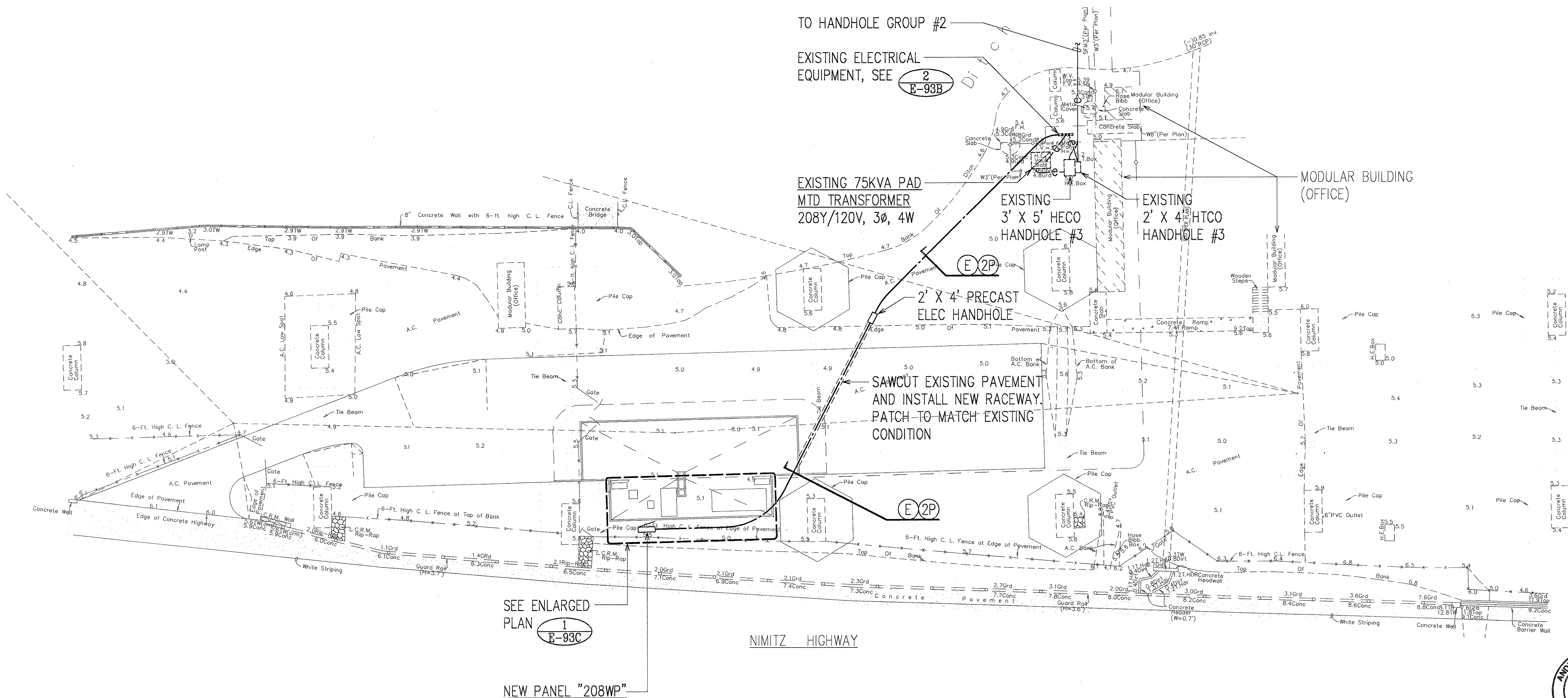


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BARRIER TRANSFER VEHICLE STORAGE FACILITY LTG PLAN, LT FIXTURE SCHEDULE
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-93 OF 106 SHEETS

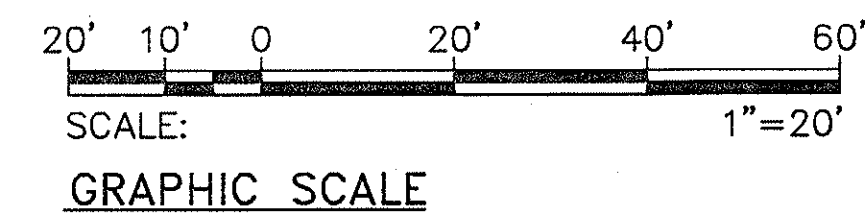


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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	CO280S-1	344



1 WASH PAD SITE ELECTRICAL PLAN
E-93A SCALE: 1"=20'



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

LAST SAVE: 07/20/98 9:05:19.25 BY: LA RICH SC 1220
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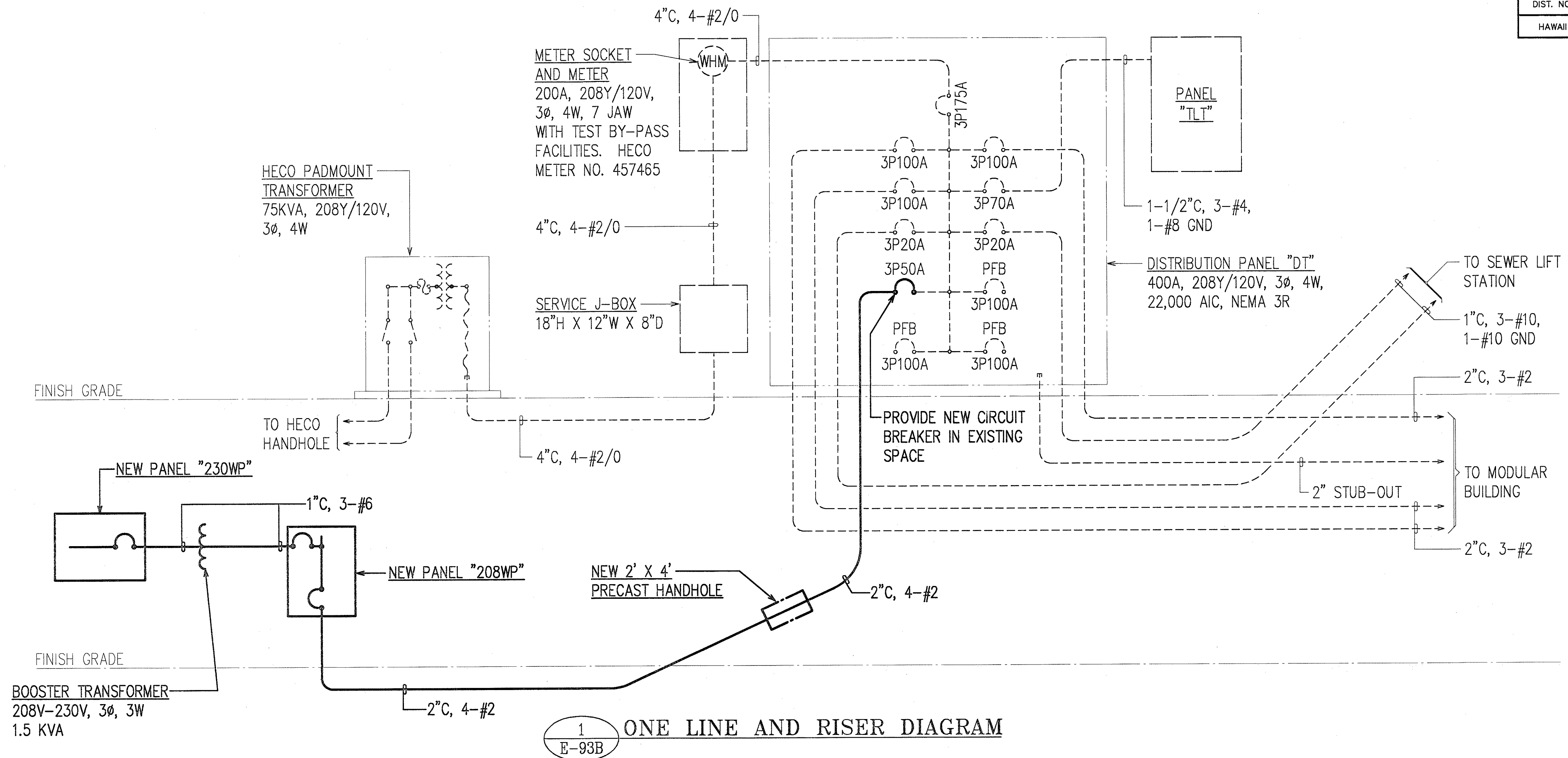
7/29/98
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WASH PAD SITE ELECTRICAL PLAN

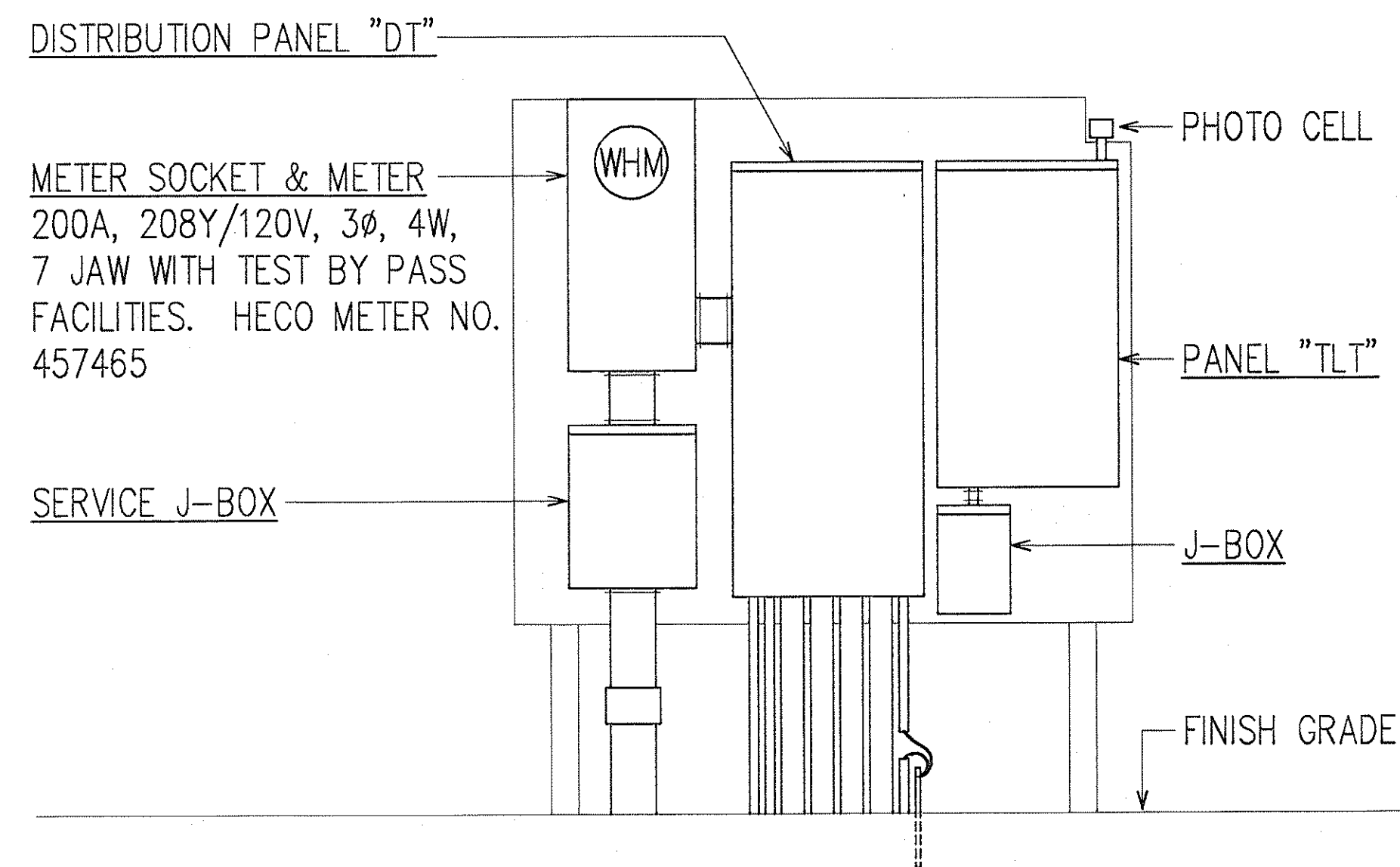
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE:
SHEET No. E-93A OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	CO280S-2	344

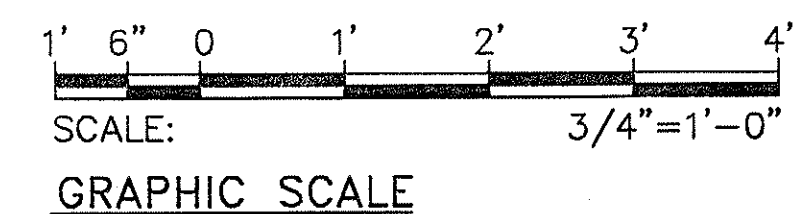


ONE LINE AND RISER DIAGRAM



ELEVATION - EXISTING ELECTRICAL EQUIPMENT

SCALE: 3/4"=1'-0"

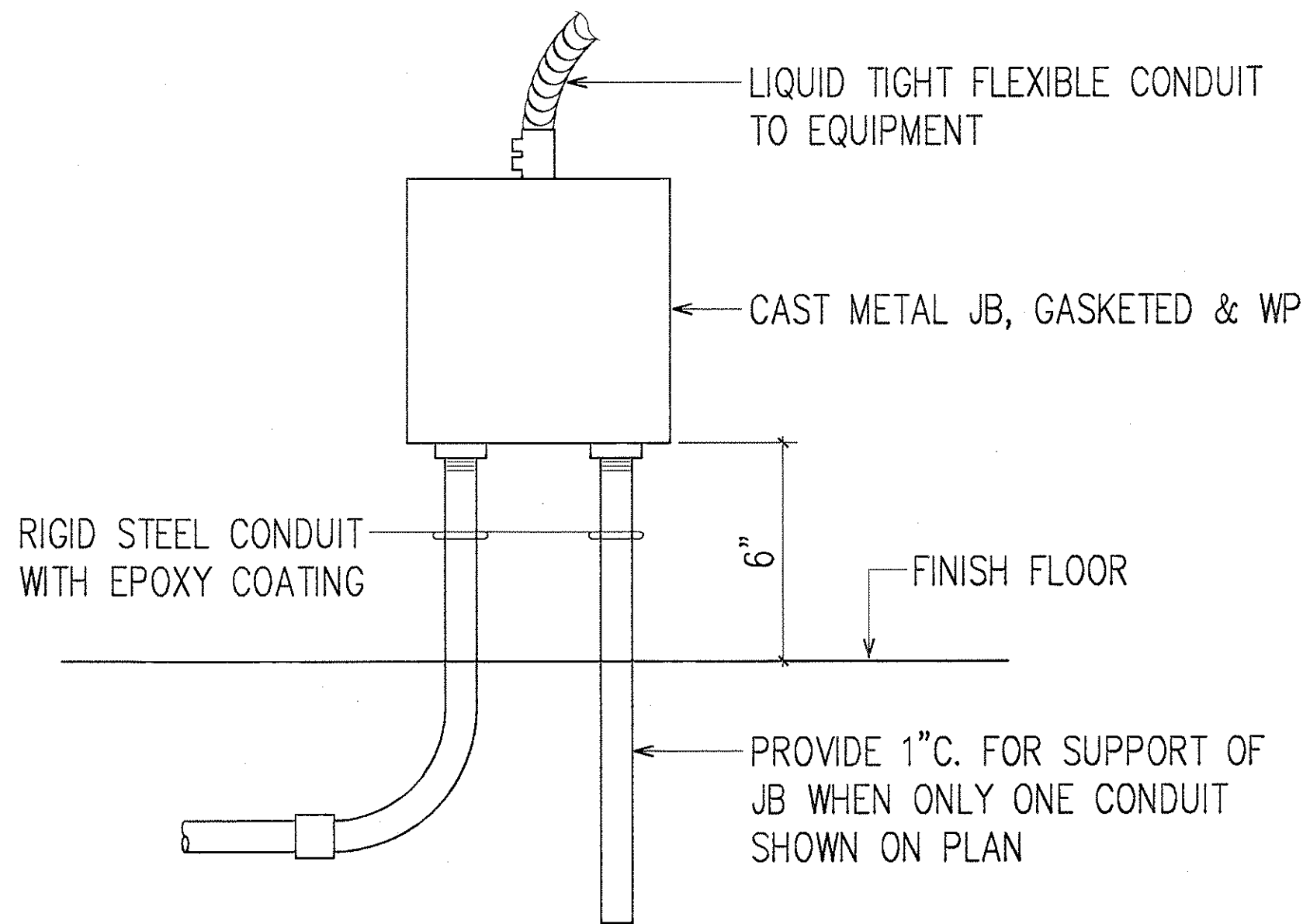


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**ONE LINE AND RISER DIAGRAM,
ELEVATION**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

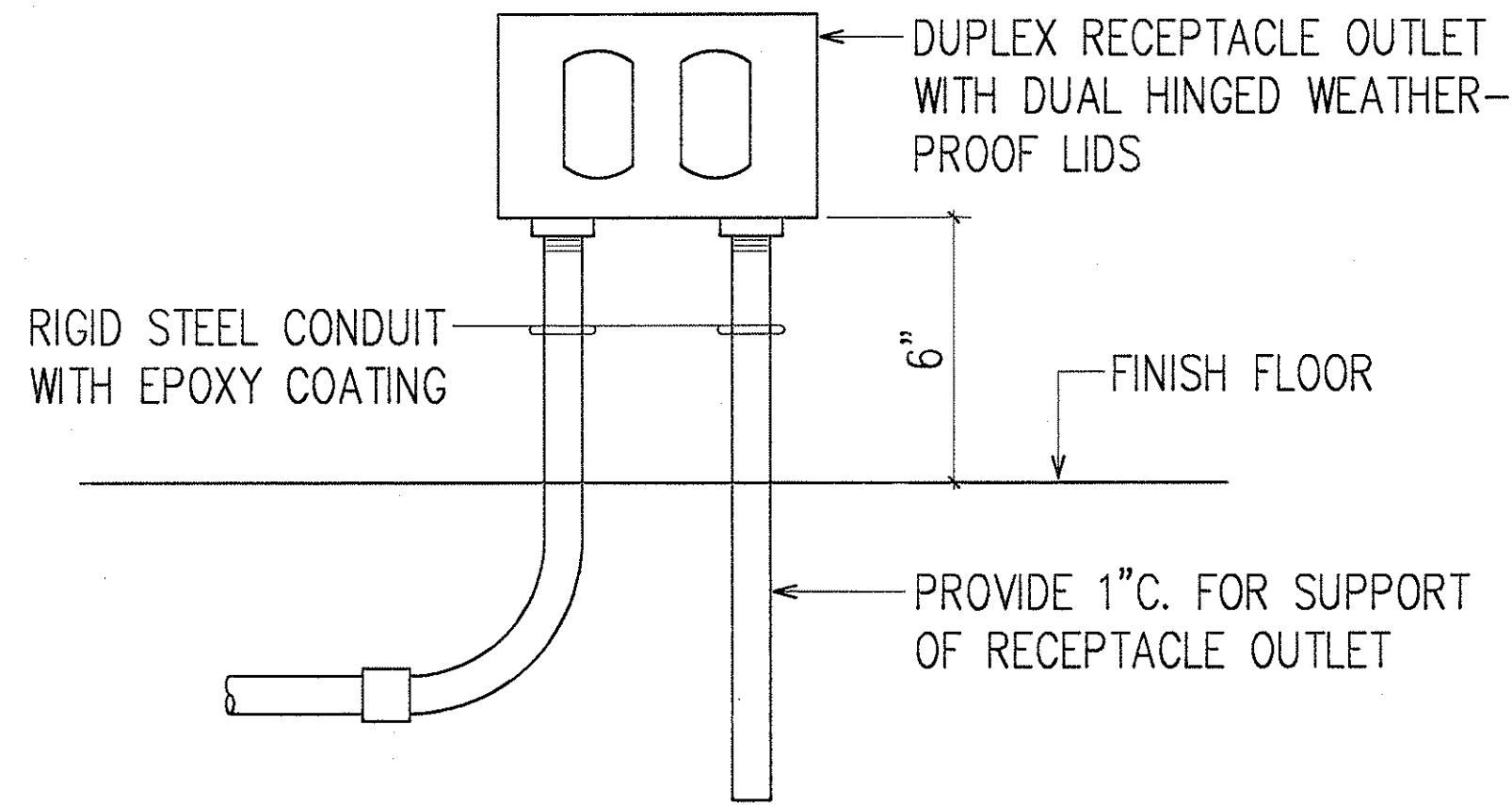
SCALE: AS NOTED DATE:
SHEET No. E-93B OF 106 SHEETS



7/24/98
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS



1 CONDUIT MOUNTED JUNCTION BOX DETAIL
E-93D NOT TO SCALE



2 CONDUIT MOUNTED RECEPTACLE DETAIL
E-93D NOT TO SCALE

PANEL "208WP"		3P60A MAIN BREAKER, 208Y/120V, 3 PHASE, 4 WIRE, 10,000 A.I.C. INDUSTRIAL-BOLTED TYPE, SURFACE MOUNTED, NEMA 3R					
CKT. NO.	BREAKER		USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	KVA ON BUSSES			WIRE SIZE
	POLE	AMPS		A	B	C	
1	1	20	S	1.0			
2	1		PFB	0.0			
3	1	20	S		1.0		
4	1		PFB		0.0		
5	1	20	S			1.0	
6	1	20	R			1.2	12
7,9,11	3	50	BOOSTER TRANSFORMER	5.1	5.1	2.8	6
8	1		PFB	0.0			
10	1		PFB		0.0		
12	1		PFB			0.0	
TOTAL LOAD PER LEG				6.1	6.1	5.0	HIGH LEG AMP 46
TOTAL CONNECTED LOAD					17.2 KVA		
DEMAND FACTOR					90%		
TOTAL DEMAND LOAD					15.5 KVA		

PANEL "230WP"		3P50A MAIN BREAKER, 230V, 3 PHASE, 3 WIRE, 10,000 A.I.C. INDUSTRIAL-BOLTED TYPE, SURFACE MOUNTED, NEMA 3R					
CKT. NO.	BREAKER		USE: L-LTS, R-RECEP, PFB-PROVISION FUTURE BKR., S-SPARE, F-FAN, W-WARMER	KVA ON BUSSES			WIRE SIZE
	POLE	AMPS		A	B	C	
1,3	2	20	SUMP PUMP	0.2	0.2		12
2,4	2	30	VEHICLE WASH & RECYCLE UNIT	2.1	2.1		10
5	1		PFB			0.0	
6	1		PFB			0.0	
7,9,11	3	20	CA-1	1.2	1.2	1.2	12
8,10,12	3	30	PRESSURE WASHER	1.6	1.6	1.6	10
TOTAL LOAD PER LEG				5.1	5.1	2.8	HIGH LEG AMP 43
TOTAL CONNECTED LOAD					13.0 KVA		
DEMAND FACTOR					100%		
TOTAL DEMAND LOAD					13.0 KVA		

SURVEY PLOTTED BY	DATE
DRAWN BY	
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QUANTITIES BY	
CHECKED BY	
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NOTE BOOK	
No.	

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Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PANEL SCHEDULES
MISCELLANEOUS DETAILS
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED DATE:
SHEET No. E-93D OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 281	344

HAWAII MODEL ENERGY CODE LIGHTING COMPLIANCE CALCULATION CODE YEAR: 1993

PROJECT: H-1 CONTRA FLOW BARRIER TRANSFER VEHICLE STORAGE FACILITY DATE: JULY 1997 BY:

Gross Lighted Area of Building 2475 sq ft

BUILDING DESIGN
Interior Lighting Power 896 W 0.362 W/gross sq ft
Exterior Lighting Power 518 W

PRESCRIPTIVE CRITERIA
Unit Lighting Power Allowance (ULPA) 0.500 W/gross sq ft
Interior Lighting Power Allowance (ILPA) 1238 W

SYSTEM PERFORMANCE CRITERIA
Unit Power Density (UPD) 0.000 W/gross sq ft
Interior Lighting Power Allowance (ILPA) 0 W

EXTERIOR LIGHTING CRITERIA
Exterior Lighting Power Allowance (ELPA) 1080 W

* * * PASSES * * *

Prescriptive Method

Area No.	Building Type	L (ft)	W (ft)	Area (sf)	ULPA (W/sf) table 6-5	ILPA (W)
1	STORAGE	99.0	25.0	2475.0	0.50	1237.50
Total				2475		1238

System Performance Method

Area No.	Description or "unlisted"	L (ft)	W (ft)	Area (sf)	Unlisted Area (sf)	Ceiling Height (ft)	ILP (W)	Add Tasks	Control Points Installed table 6-2	Control Points Required table 6-6	UPD (W/sf) table 6-3	PAF table 6-3	AF	Pb	LPB (W)	ALP (W)
1				0.0	0.0			0		1			0.00	0.00	0.00	0.00
Total				0	0		0								0	0

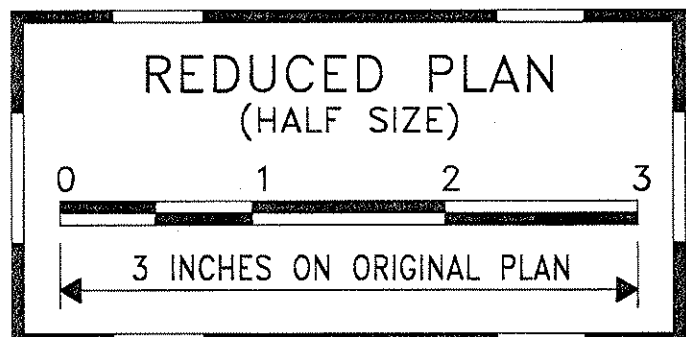
Exterior Lighting Requirements

Area No.	Description	L (ft)	or	Area (sf)	UPA (W/sf or W/lf) table 6-1	ELPA (W)
1	ENTRANCE	12.0			30.00	360.00
2	LOADING DOOR	36.0			20.00	720.00
Total						1080

PANEL "E" 2P100A MAIN BREAKER, 120/240V, 1 PHASE, 3 WIRE, 10,000 A.I.C., PANELBOARD TYPE, BOLT-ON BREAKERS, SURFACE MOUNTED

CKT. NO.	BREAKER		USE: L-LTS, R-RECEP, PFB-PROV. FUT. BKR., S-SPARE	KVA ON BUSSES		WIRE SIZE
	POLE	AMPS		L1	L2	
1	1	20	L-EXTERIOR	0.6		12
2	1	20	EXHAUST FANS	1.3		12
3	1	20	L		1.6	12
4	1	20	R		1.1	12
5	1	20	FLASH. BEACONS VIA TIME SW.	1.0		10
6,8	2	15	MOTORIZED DOOR	0.8	0.8	12
7	1	20	IRRIGATION CONTROLLER		1.0	12
9	1	20	CHANGEABLE SIGN FAN	1.0		12
10,12	2	15	MOTORIZED DOOR	0.8	0.8	12
11	1	20	CHANGEABLE SIGN FAN		1.0	8
13,15	2	20	SIGNAL GENERATOR	1.0	1.0	12
14,16	2	50	MODEL 170 CONTROLLER	3.0	3.0	6
17,19	2	60	AIR COMPRESSOR	3.3	3.3	8
18	1		PFB			
20	1		PFB			
TOTAL LOAD PER LEG				12.8	13.6	HIGH
TOTAL CONNECTED LOAD					26.4	LEG
DEMAND FACTOR					0.7	AMP
TOTAL DEMAND LOAD					18.5	79

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
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CHECKED BY
DATE
NOTE BOOK
LAST ONE OF TWO
2. AGARD PROJECT 98/09/02/01



6/25/98
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ELECTRICAL ENGINEERS

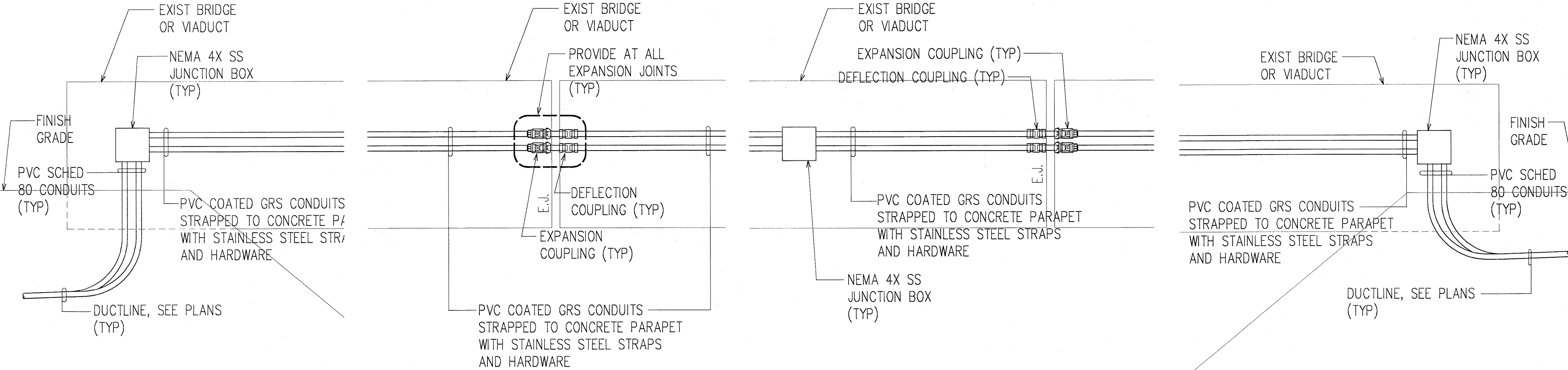
6/24/98	ADDED CKTS TO PNL E FOR IRRIGATION CONTROLLER
6/3/98	ADDED CKTS TO PNL E FOR AIR COMPRESSOR
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ENERGY CALCULATIONS, PANEL SCHEDULE

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-94 OF 106 SHEETS

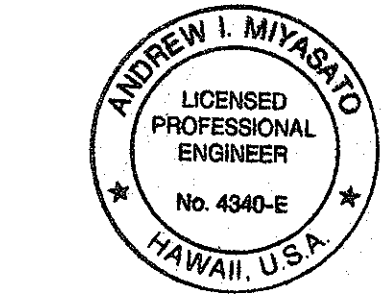
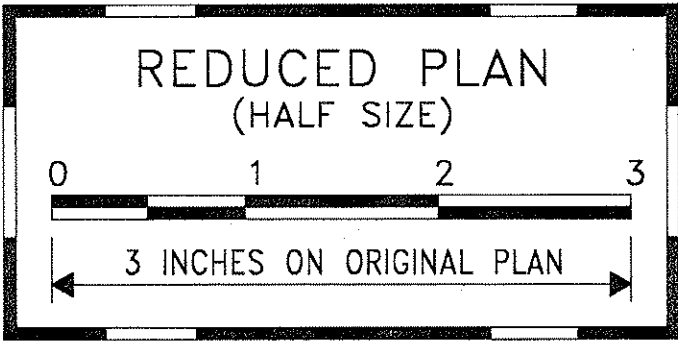
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	282	344



TYPICAL CONDUIT INSTALLATION ON SIDE OF EXISTING BRIDGE/VIADUCT
NOT TO SCALE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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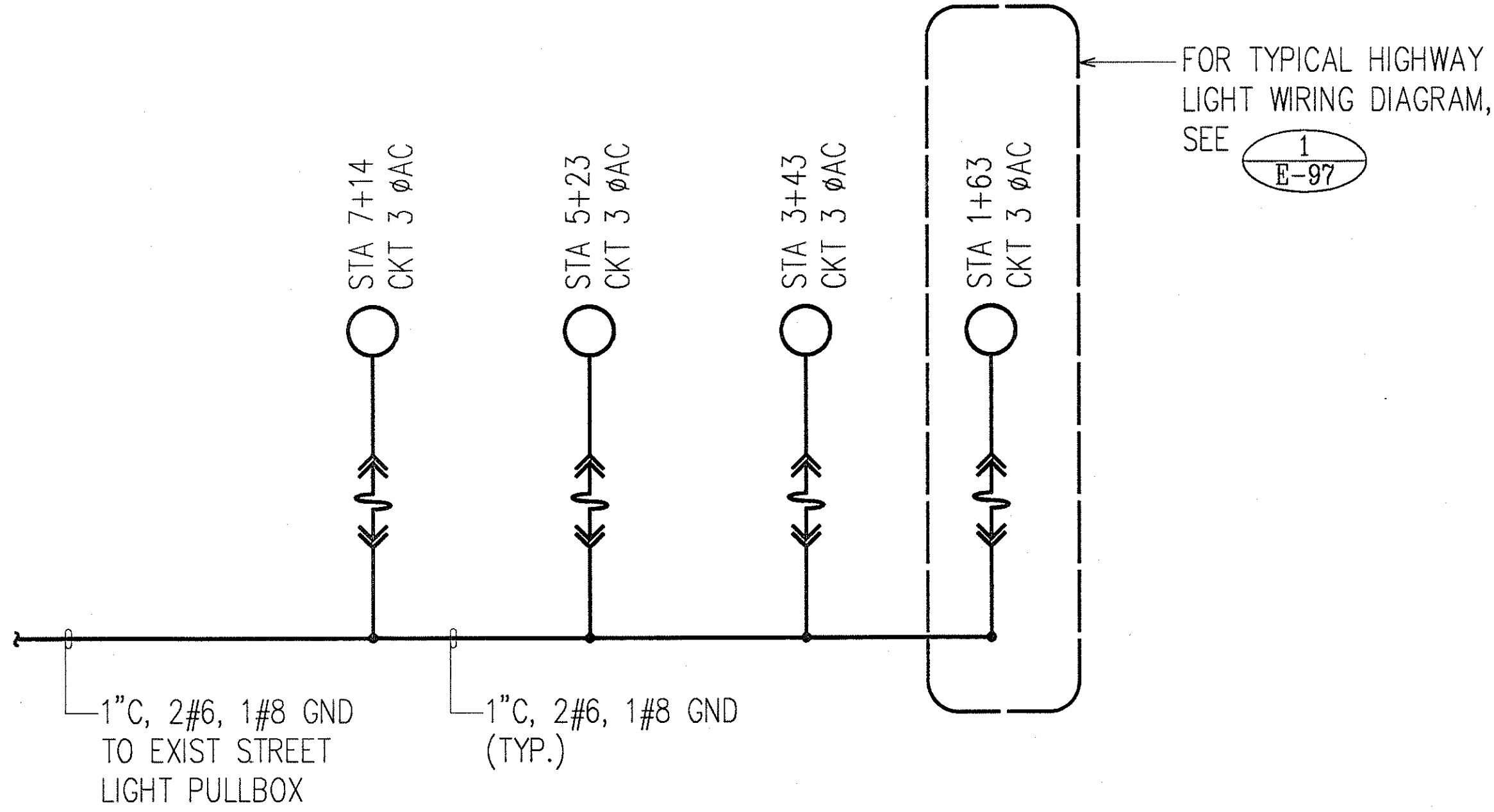


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RONALD N. S. HO & ASSOC., INC.
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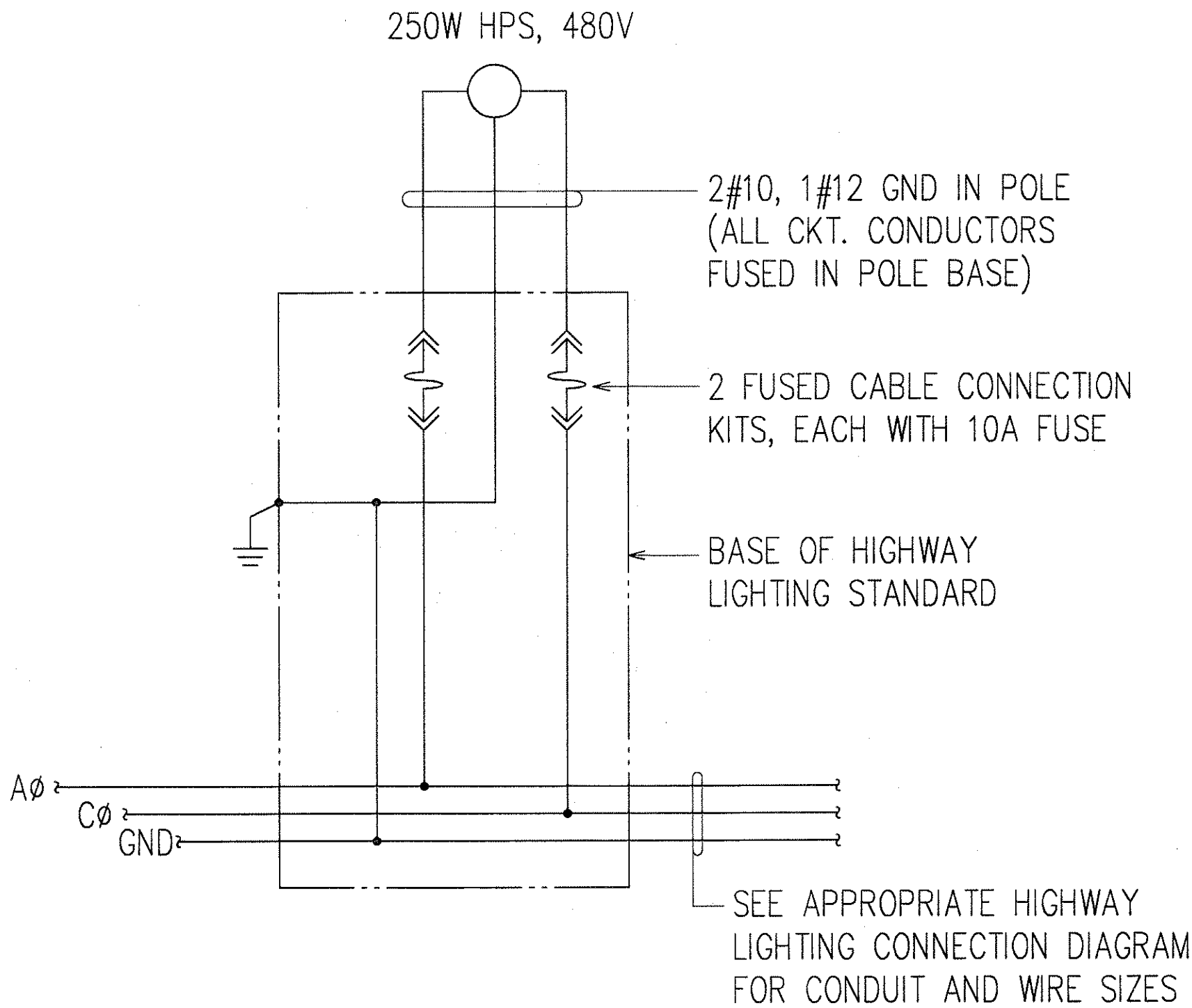
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TYPICAL CONDUIT INSTALLATION ON
SIDE OF EXISTING BRIDGE/VIADUCT**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-95 OF 106 SHEETS

282

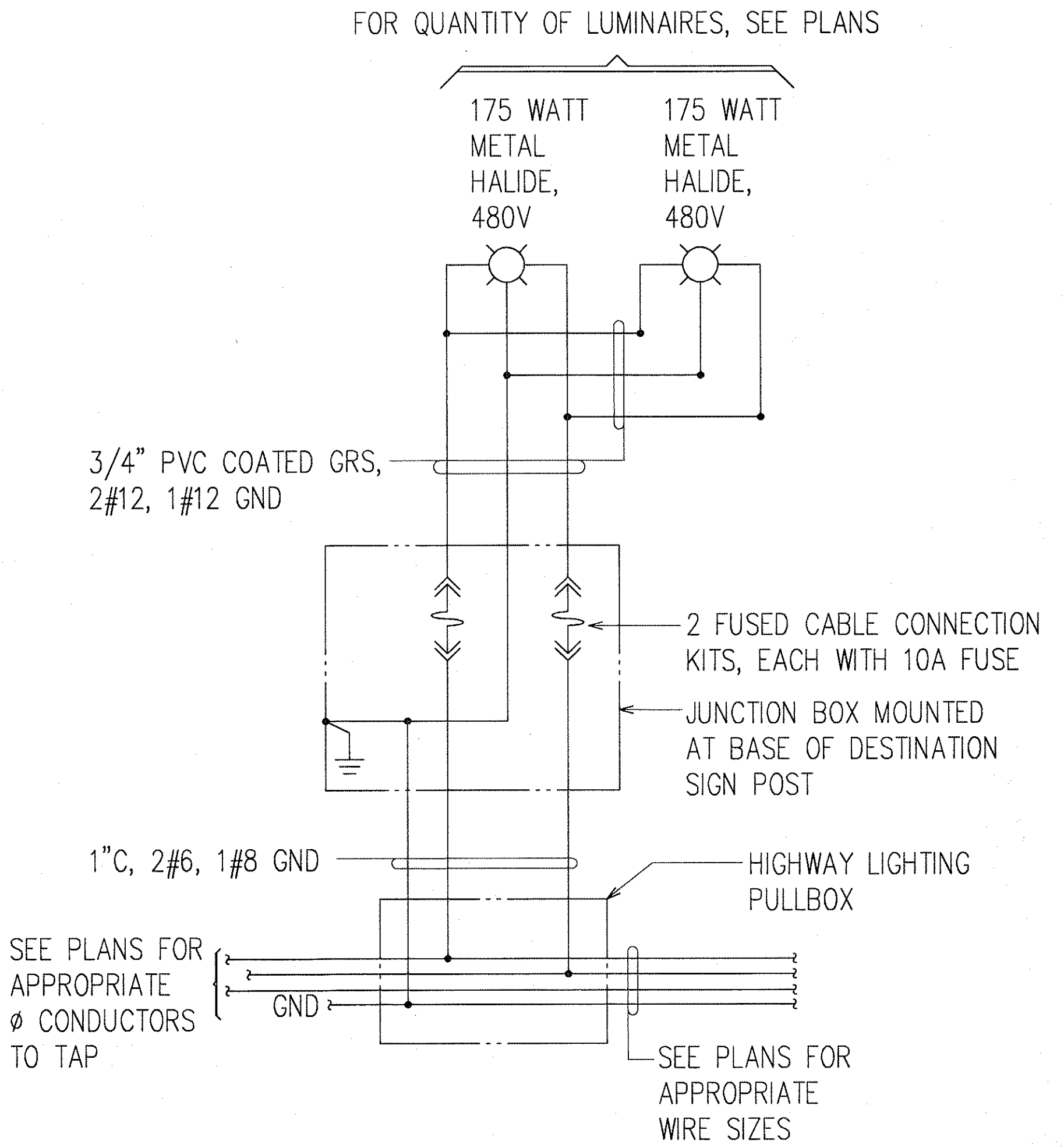
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	284	344



**HIGHWAY LIGHTING CONNECTION DIAGRAM
@ Crossover 1**



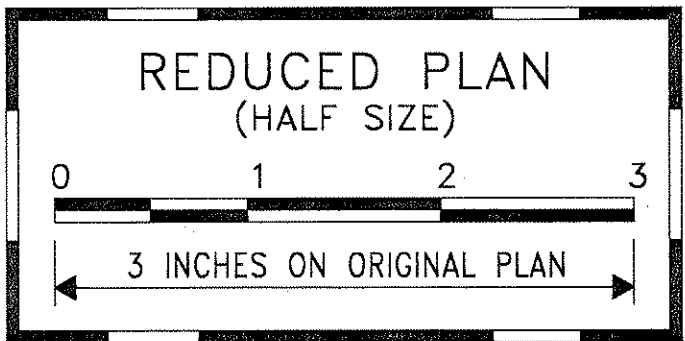
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E-97** **TYPICAL WIRING DIAGRAM OF
HIGHWAY LIGHT STANDARD
@ Crossover 1 & 3**



**2
E-97** **TYPICAL WIRING DIAGRAM OF
DESTINATION SIGN LUMINAIRES**

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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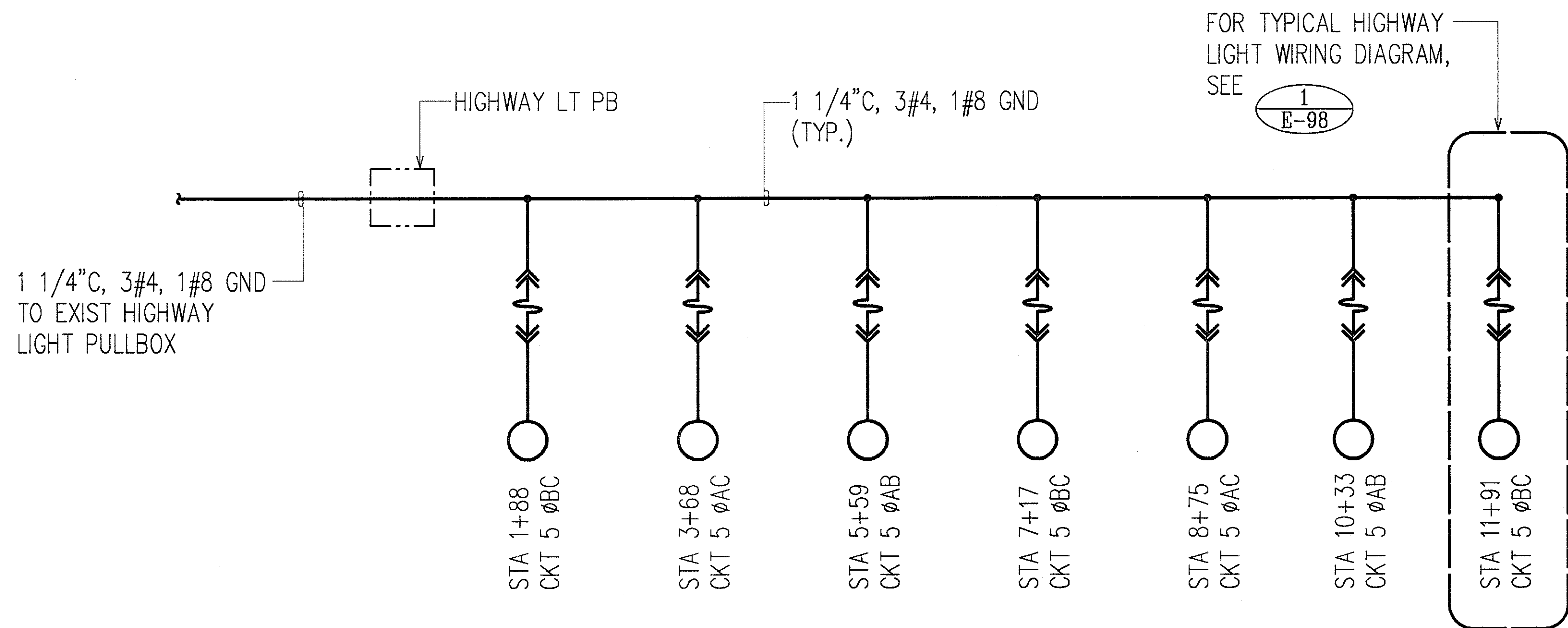


ANDREW I. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 4340-E
HAWAII, U.S.A.
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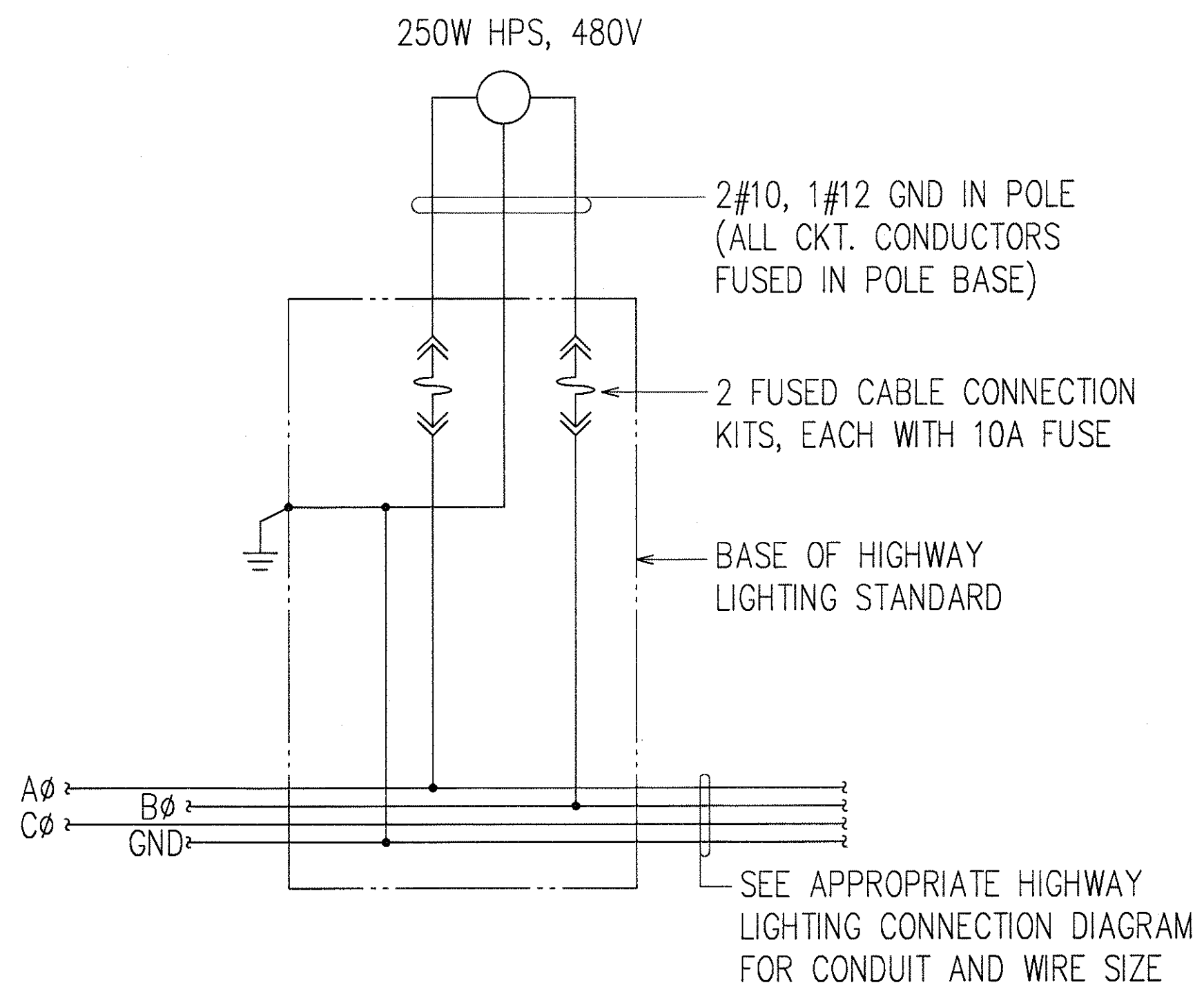
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HIGHWAY LIGHTING CONNECTION
DIAGRAM 1**
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No. E-97 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	285	344



**HIGHWAY LIGHTING CONNECTION DIAGRAM
@ CROSSOVER 2**



**1 E-98 TYPICAL WIRING DIAGRAM OF
HIGHWAY LIGHT STANDARD
@ CROSSOVER 2 AND 4**

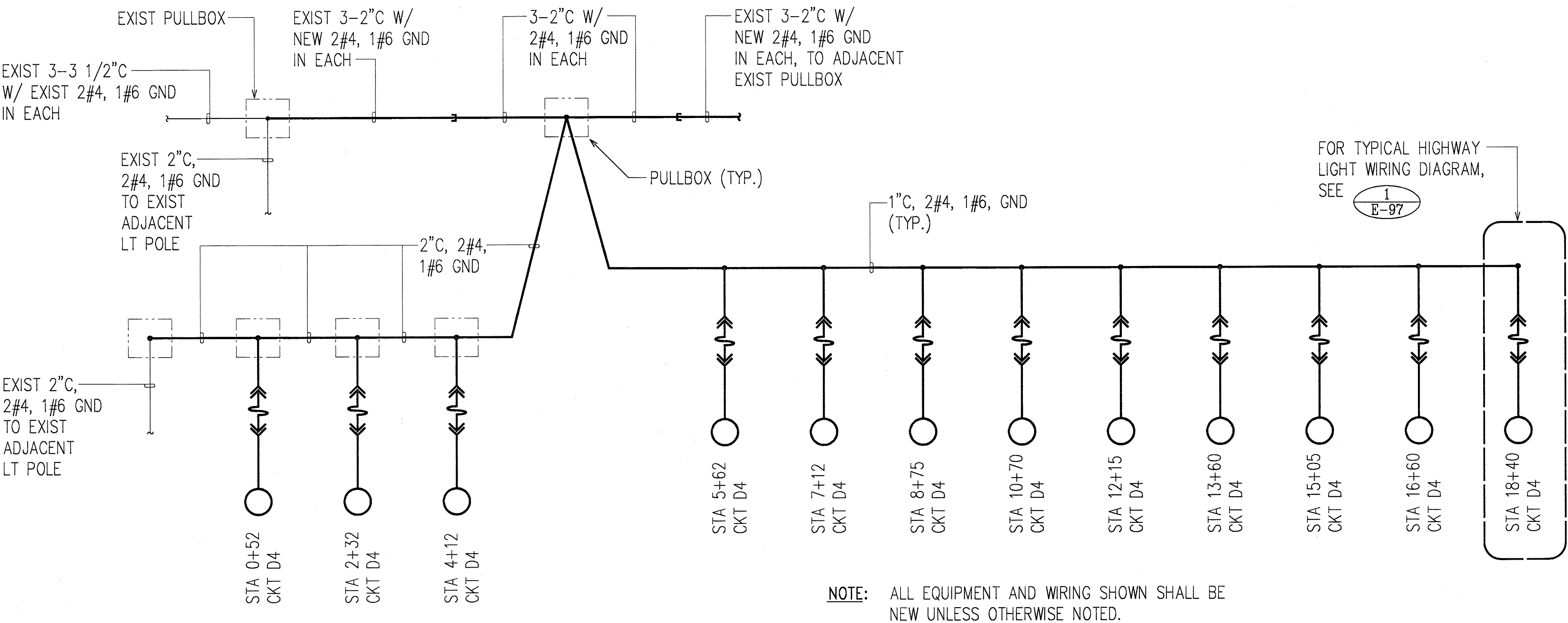


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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HIGHWAY LIGHTING CONNECTION
DIAGRAMS II**
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
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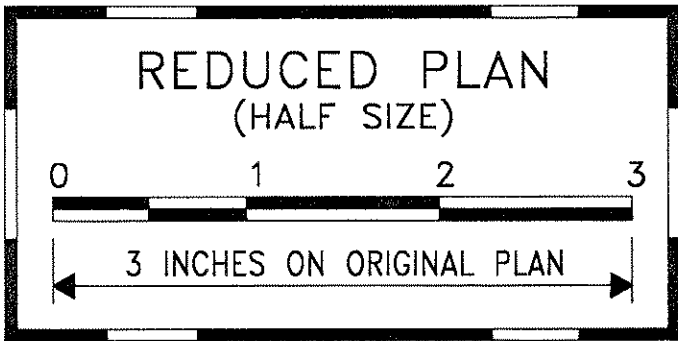
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HAWAII	HAW.	H1EFG-01-96	1998	286	344



HIGHWAY LIGHTING CONNECTION DIAGRAM
@ CROSSOVER 3

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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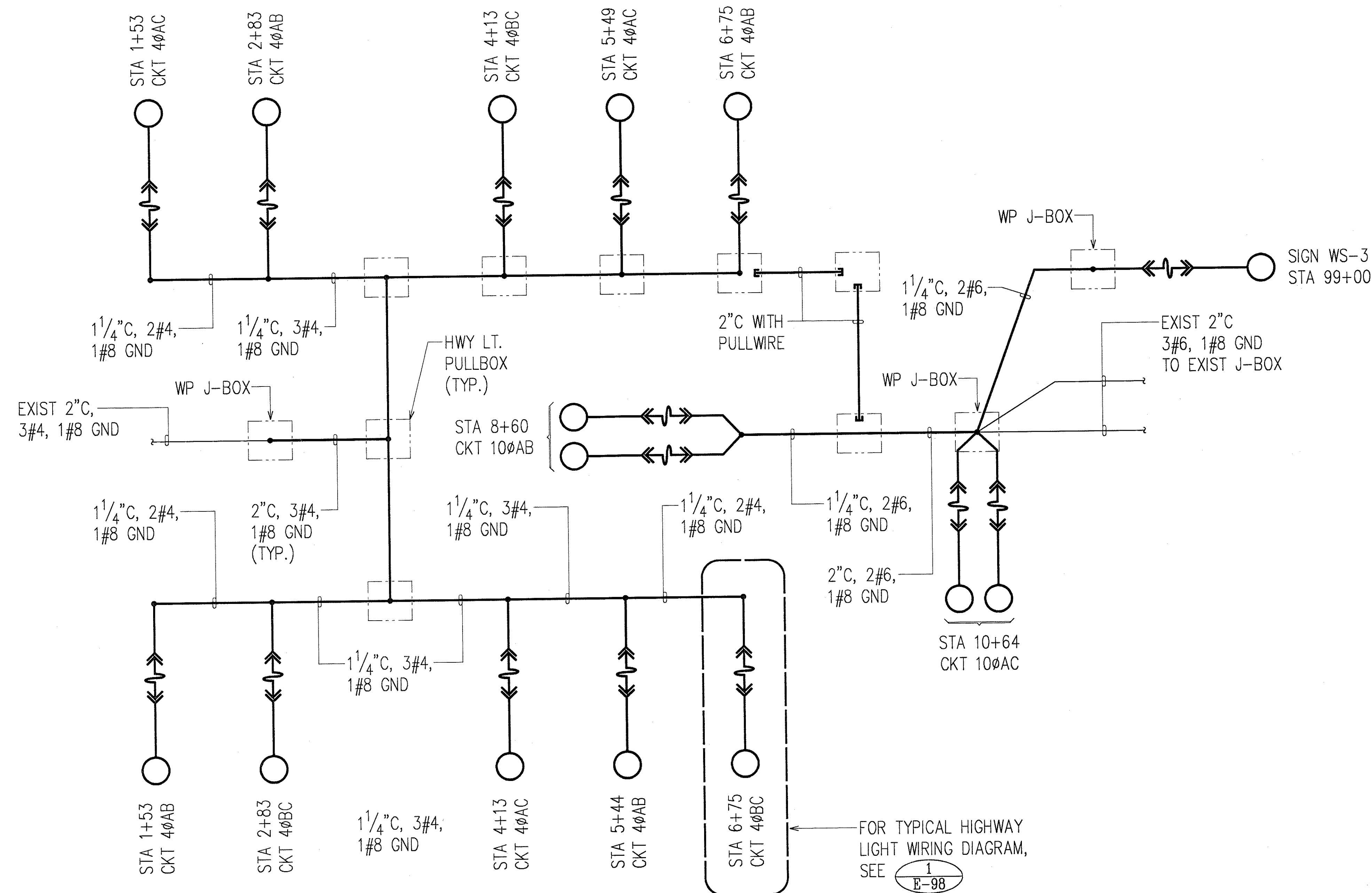
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING CONNECTION
DIAGRAMS III
INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-99 OF 106 SHEETS

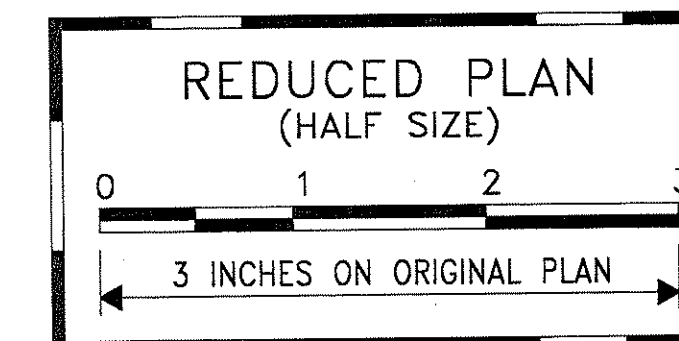
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	287	344



HIGHWAY LIGHTING CONNECTION ONE LINE DIAGRAM @ CROSSOVER NO. 4

ORIGINAL PLAN	DATE
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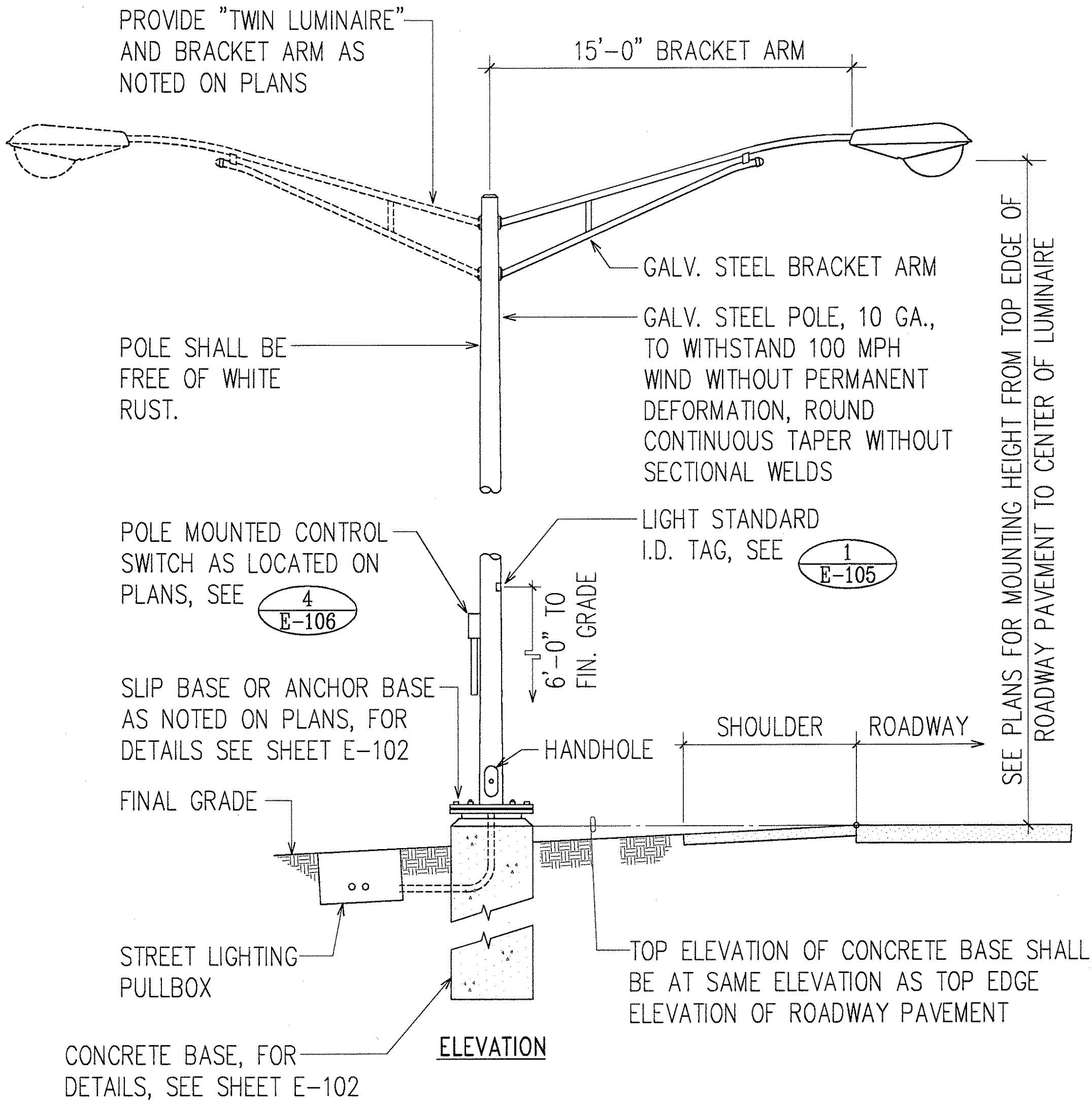
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING CONNECTION DIAGRAM IV

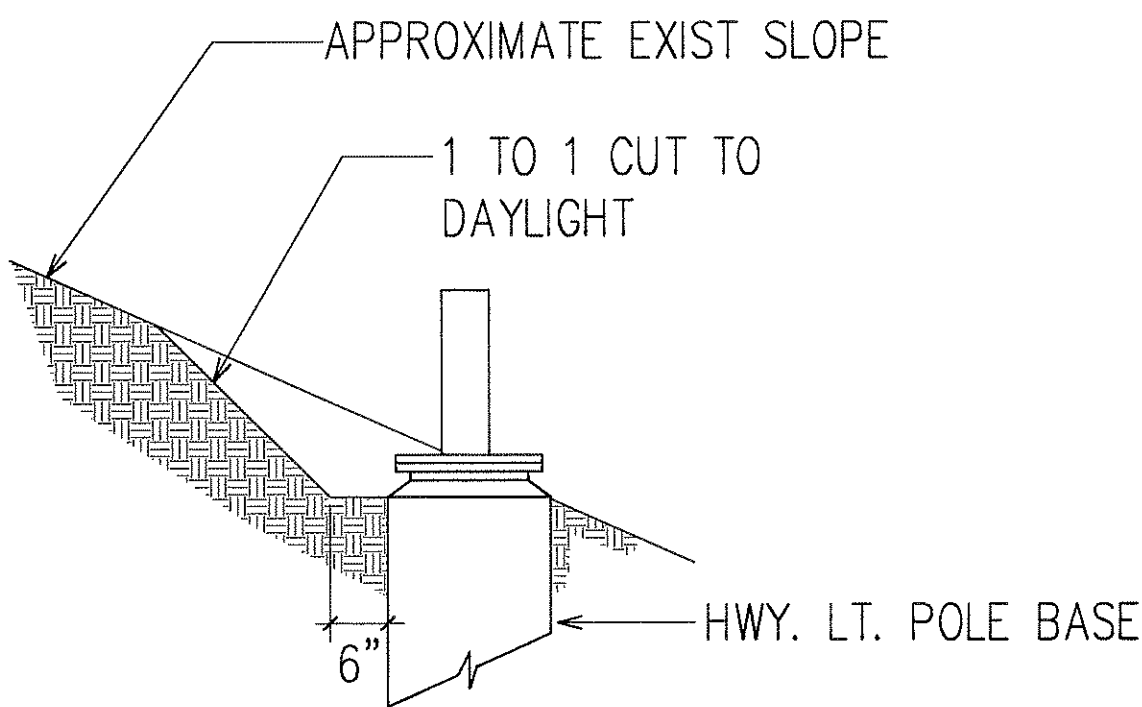
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CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: NONE DATE: OCTOBER 1997
SHEET No. E-100 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	288	344

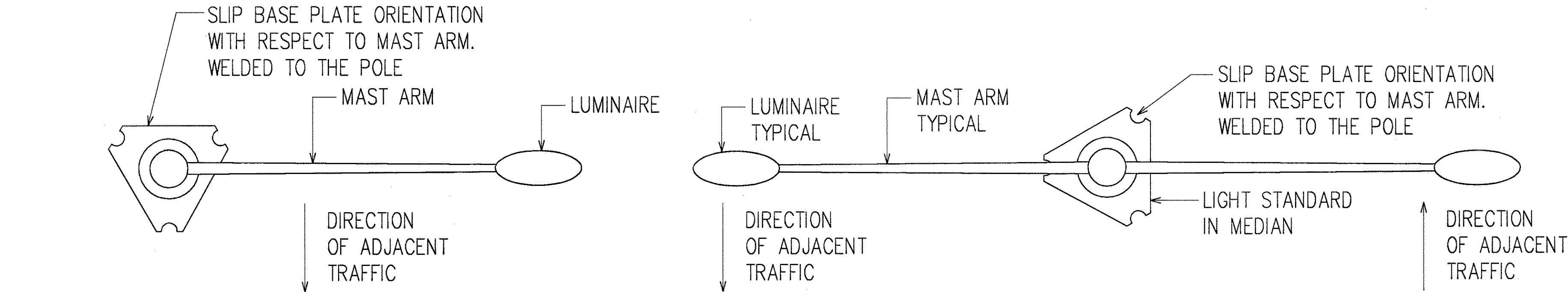


IN-GRADE HIGHWAY LIGHT STANDARD DETAIL
NOT TO SCALE

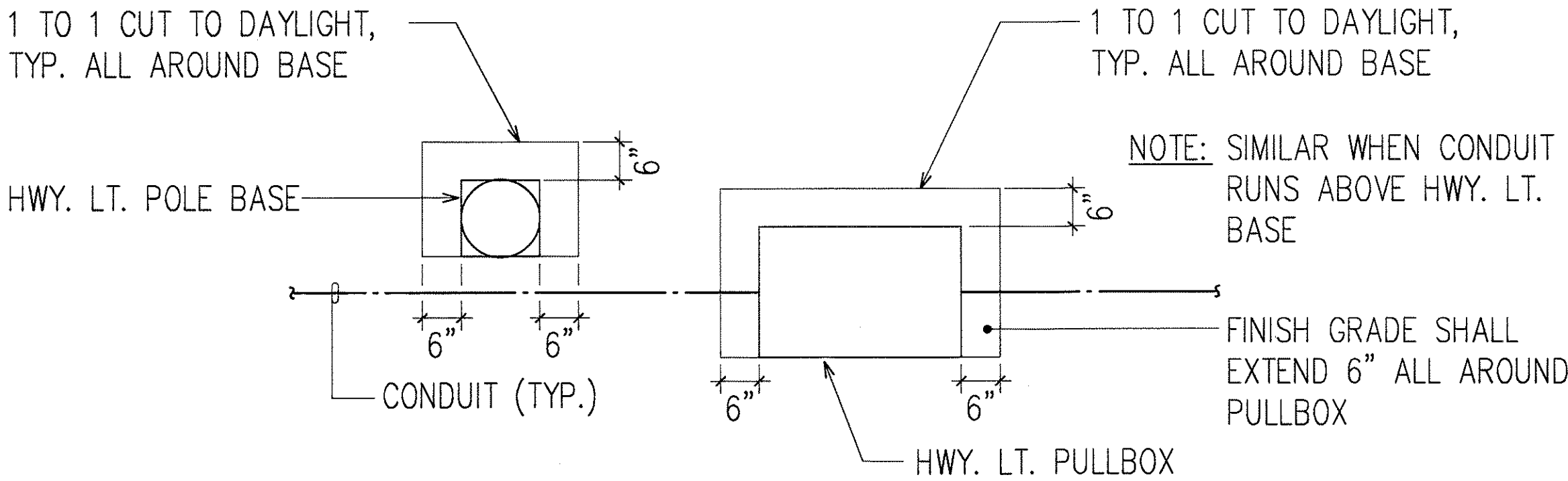
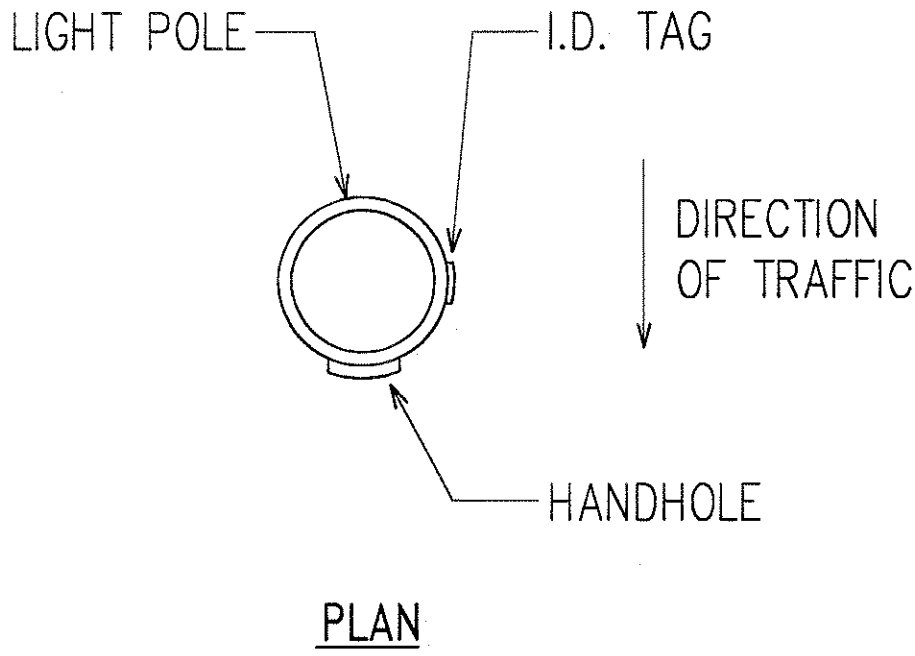


NOTE: IF LOOSE MATERIAL IS ENCOUNTERED WITHIN THE STREET LIGHT CUT SLOPE, THE CONTRACTOR SHALL STABILIZE THE AREA OF LOOSE MATERIAL WITH SHOTCRETE OR OTHER APPROVED METHOD.

TYPICAL GRADING SECTION THRU HIGHWAY LIGHT POLE BASE AT SLOPE
NOT TO SCALE

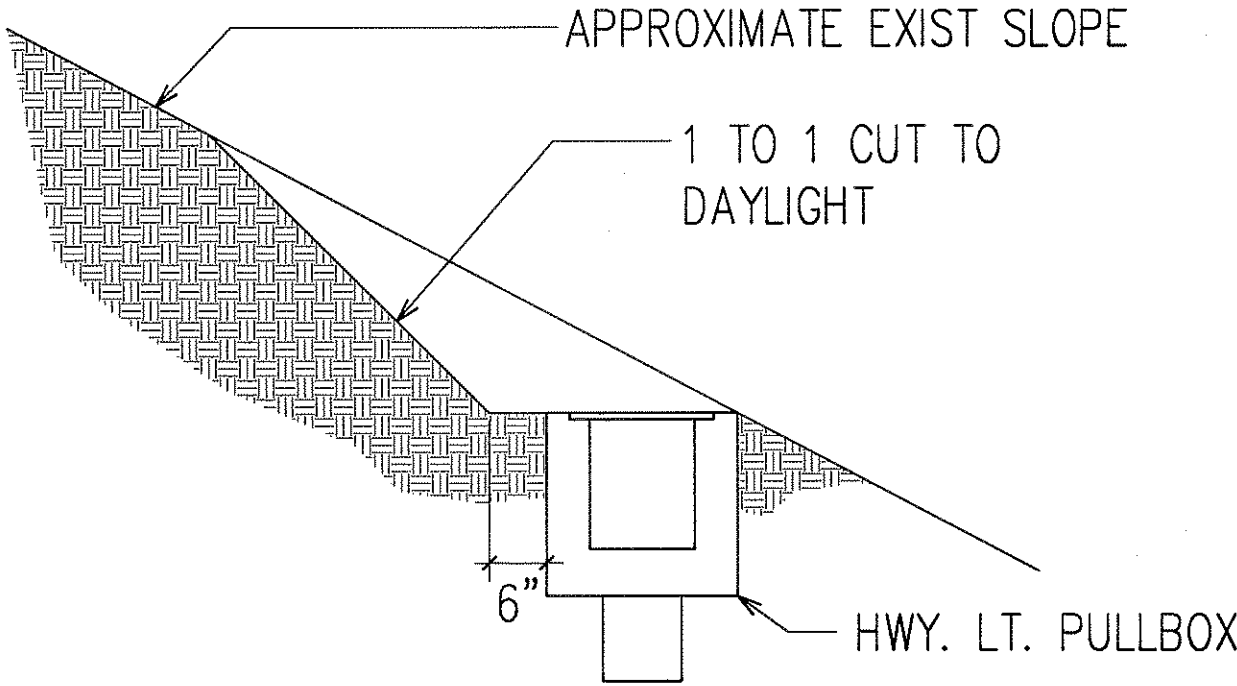


SLIP BASE ORIENTATION DETAILS
NOT TO SCALE



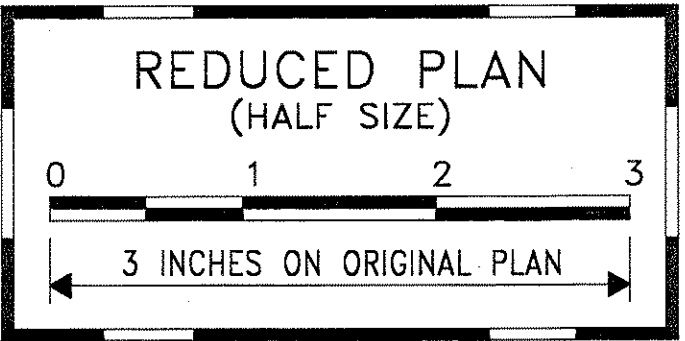
NOTE: IF LOOSE MATERIAL IS ENCOUNTERED WITHIN THE STREET LIGHT CUT SLOPE, THE CONTRACTOR SHALL STABILIZE THE AREA OF LOOSE MATERIAL WITH SHOTCRETE OR OTHER APPROVED METHOD.

TYPICAL GRADING PLAN AROUND HIGHWAY LIGHT BASE AND PULLBOX AT SLOPE
NOT TO SCALE



NOTE: IF LOOSE MATERIAL IS ENCOUNTERED WITHIN THE STREET LIGHT CUT SLOPE, THE CONTRACTOR SHALL STABILIZE THE AREA OF LOOSE MATERIAL WITH SHOTCRETE OR OTHER APPROVED METHOD.

TYPICAL GRADING SECTION THRU HIGHWAY LIGHT PULLBOX AT SLOPE
NOT TO SCALE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS I

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

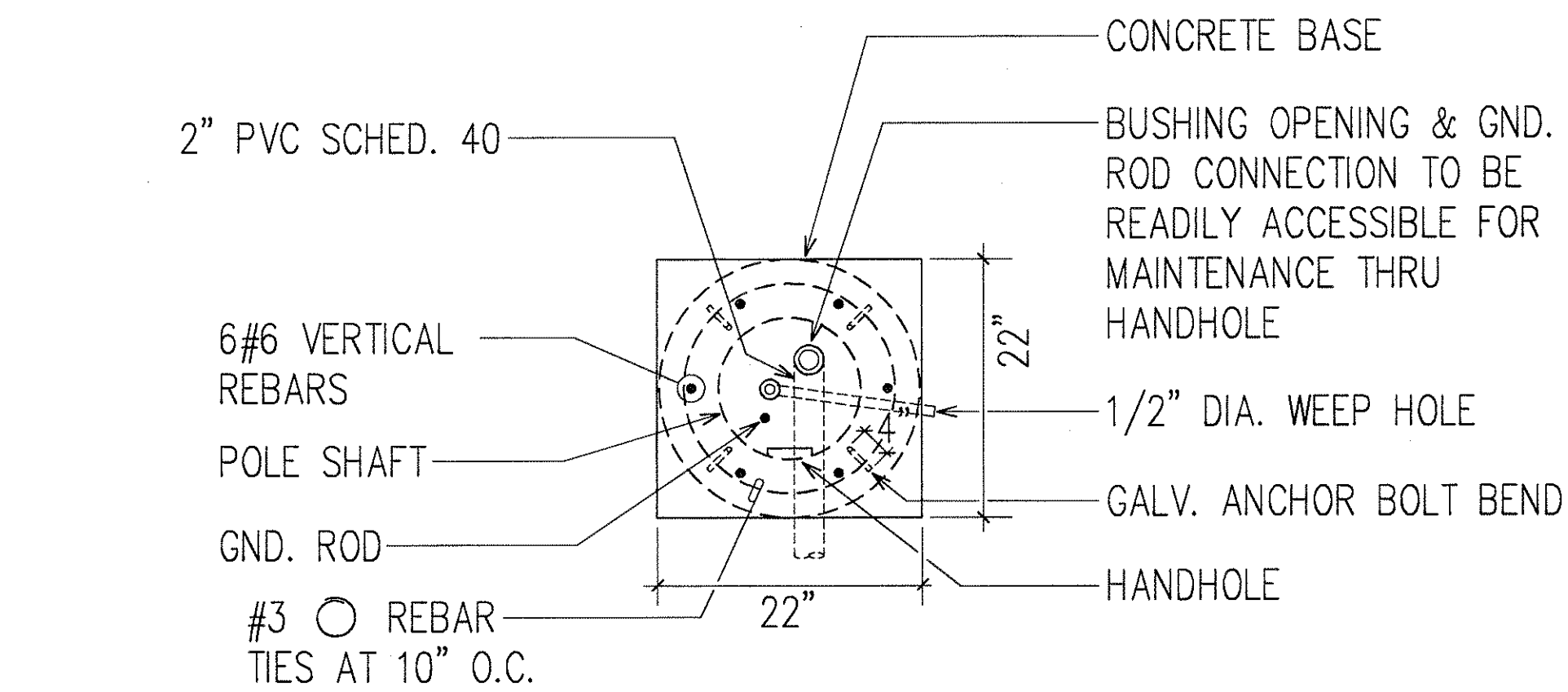
SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-101 OF 106 SHEETS

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ELECTRICAL ENGINEERS

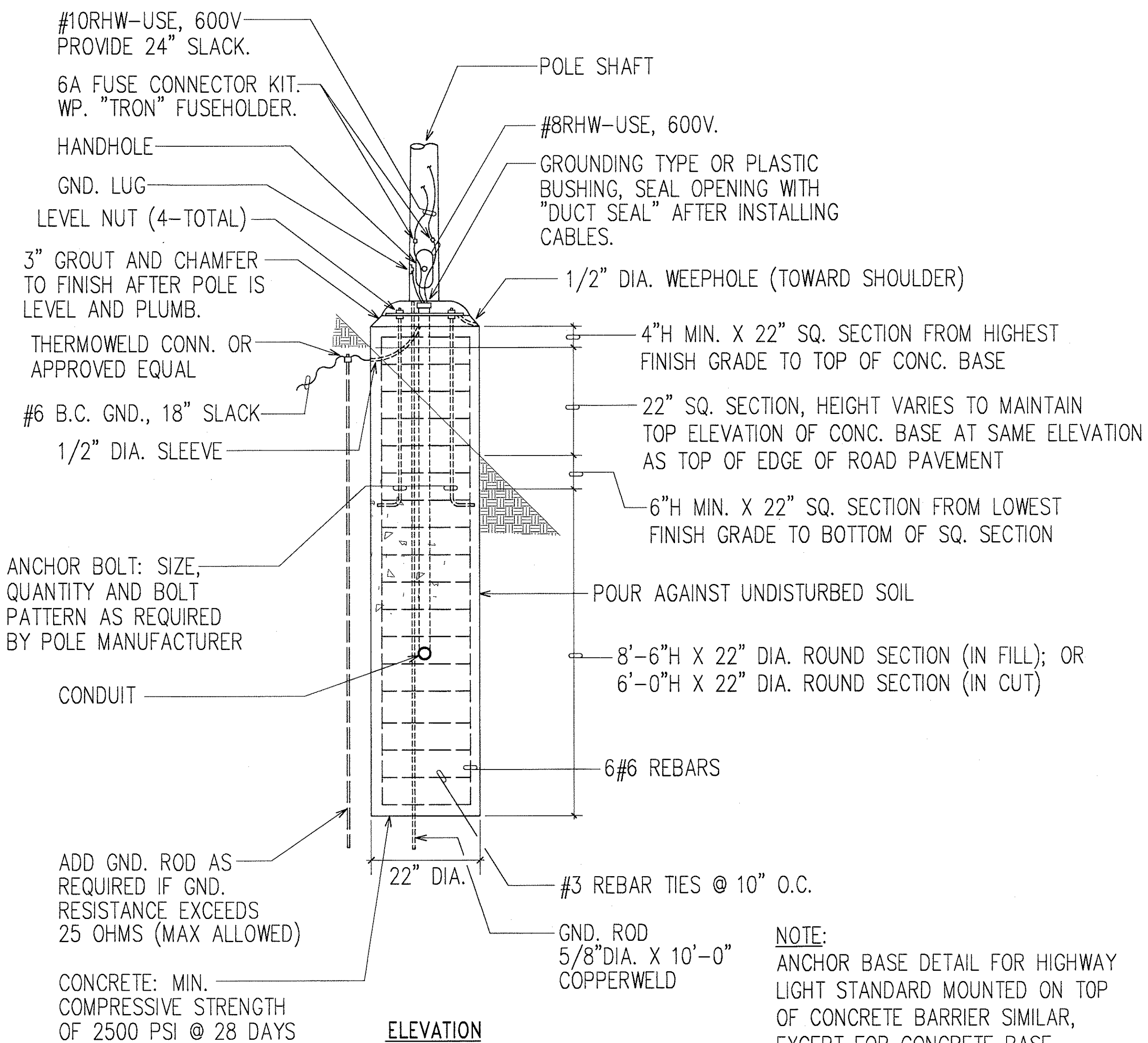
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	289	344



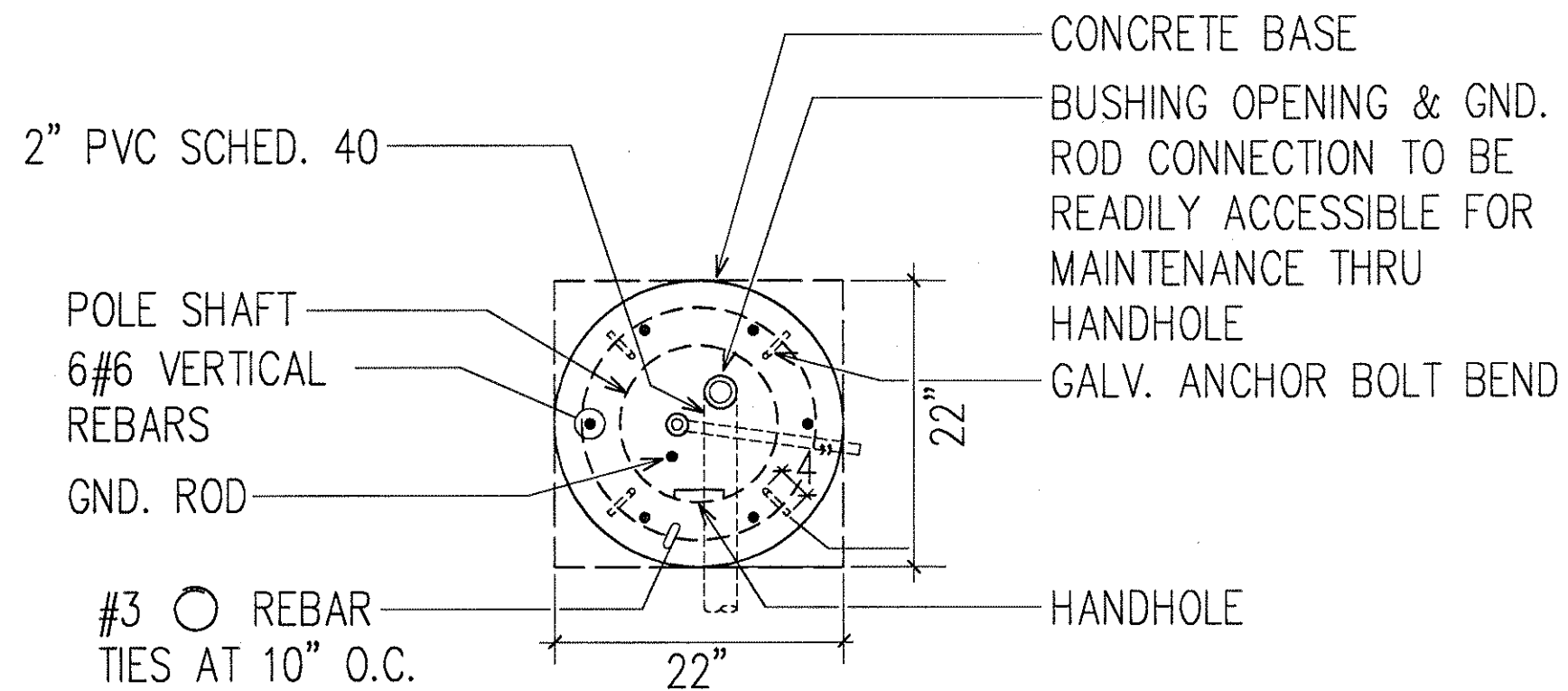
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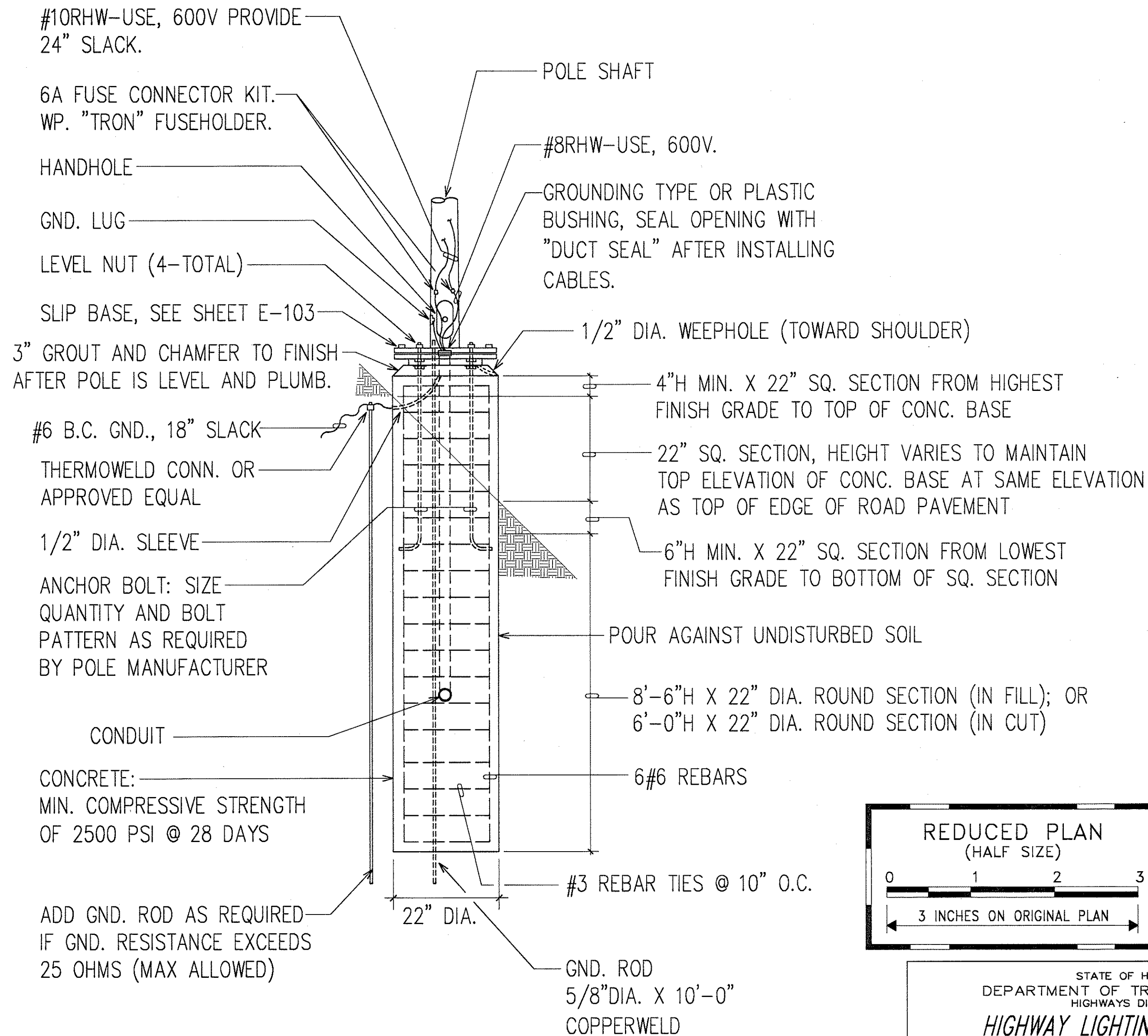
ELEVATION

ANCHOR BASE DETAIL
NOT TO SCALE

NOTE:
ANCHOR BASE DETAIL FOR HIGHWAY LIGHT STANDARD MOUNTED ON TOP OF CONCRETE BARRIER SIMILAR, EXCEPT FOR CONCRETE BASE REINFORCING

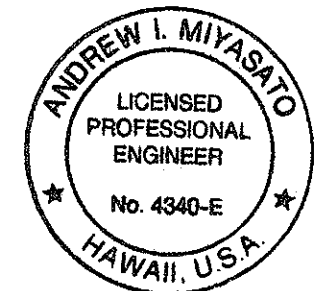
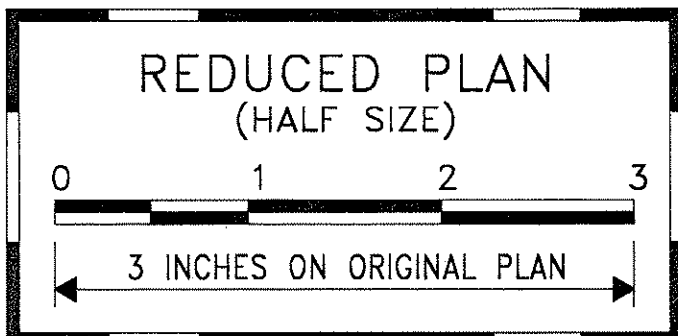


PLAN



ELEVATION

SLIP BASE DETAIL
NOT TO SCALE



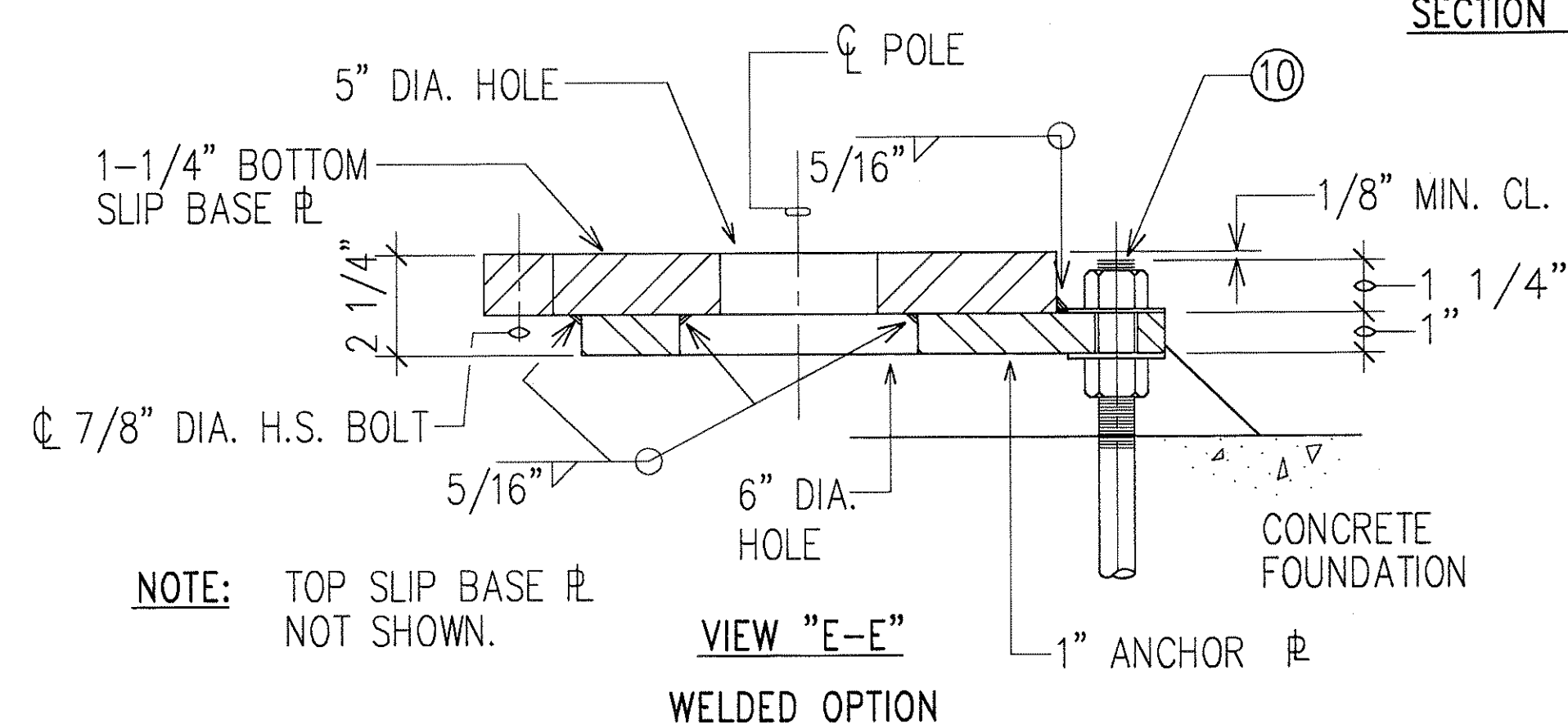
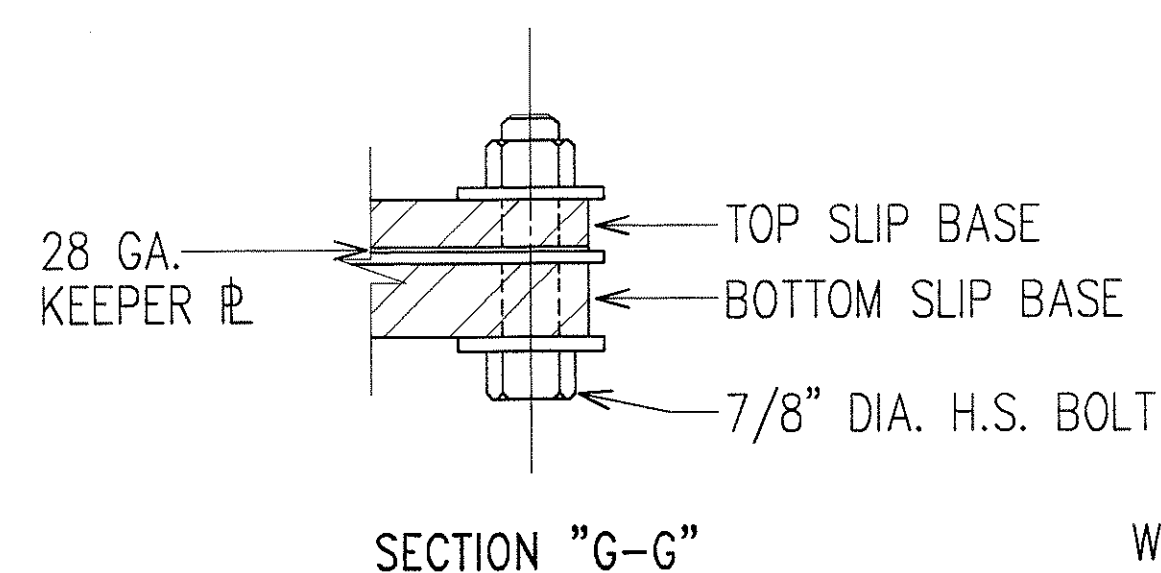
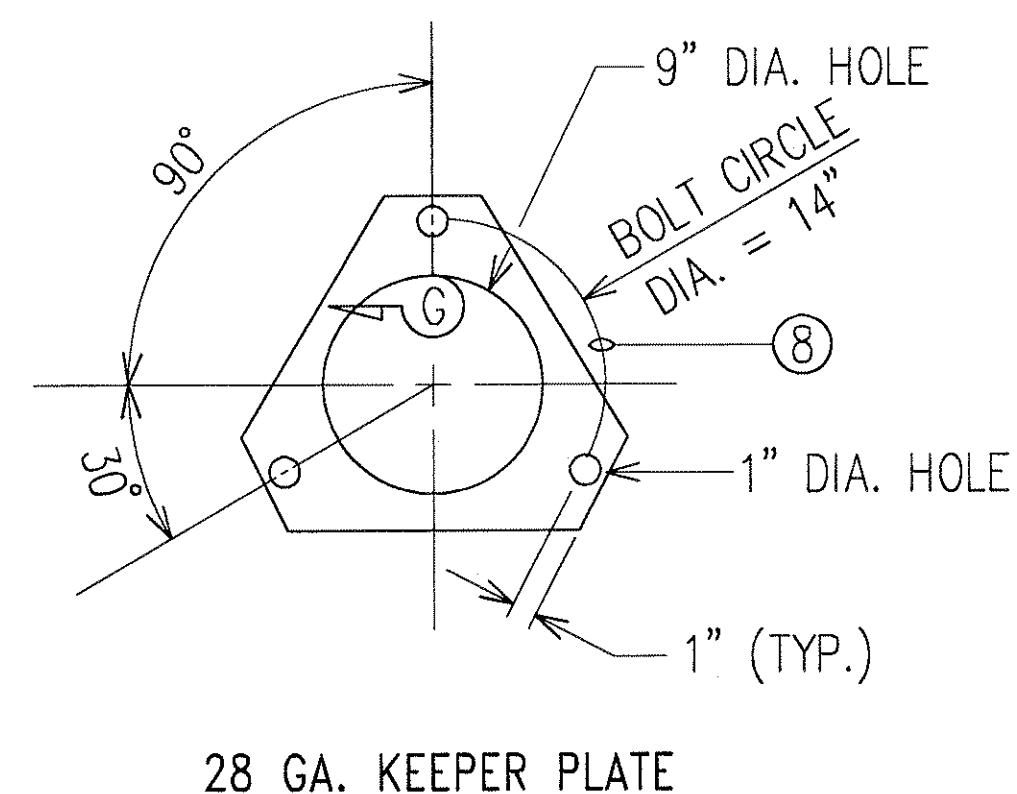
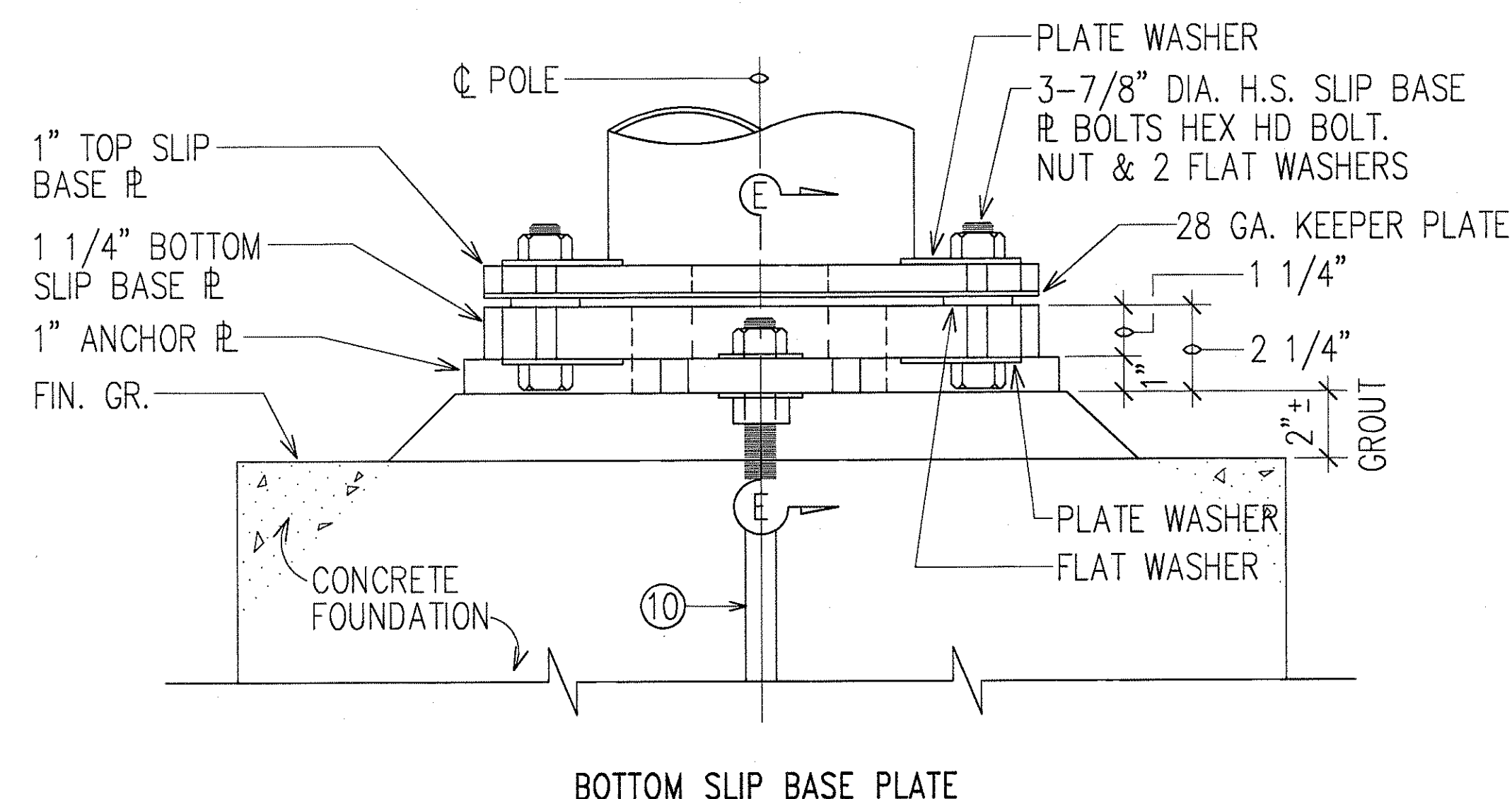
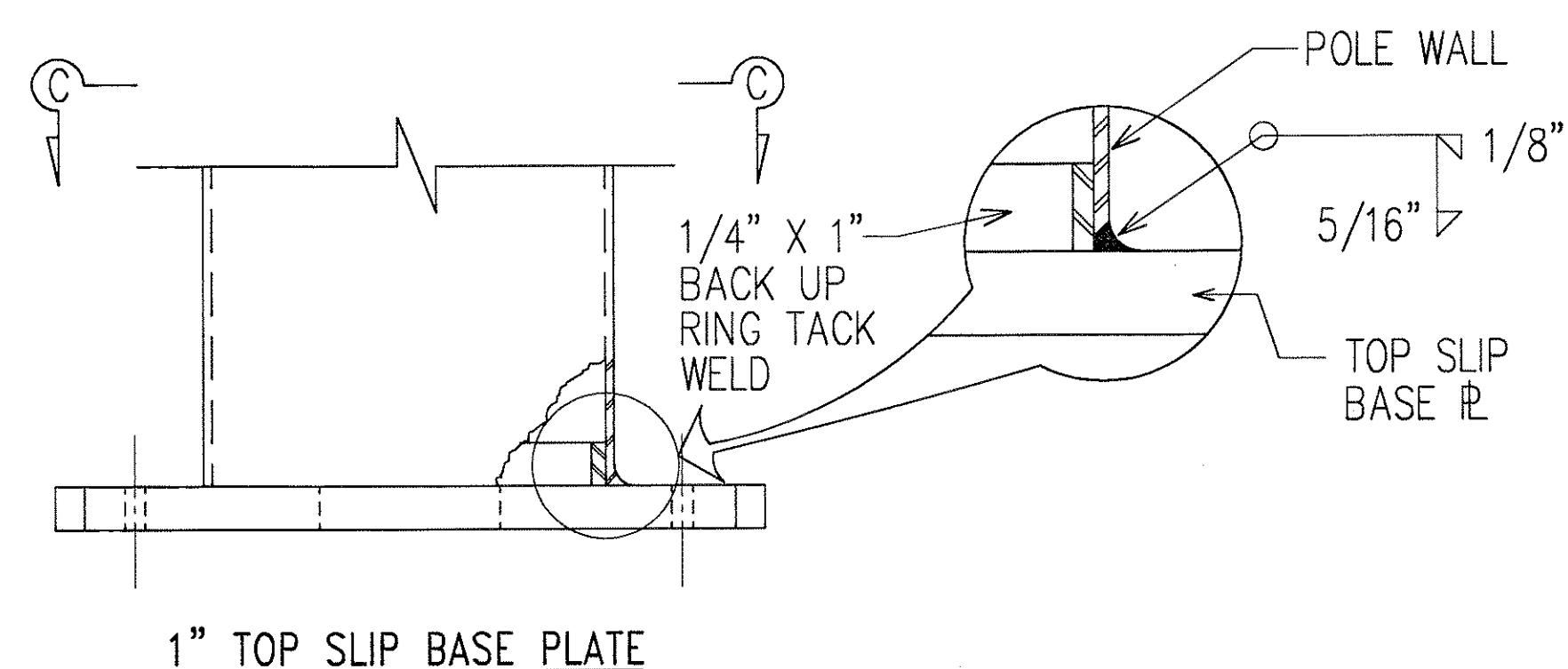
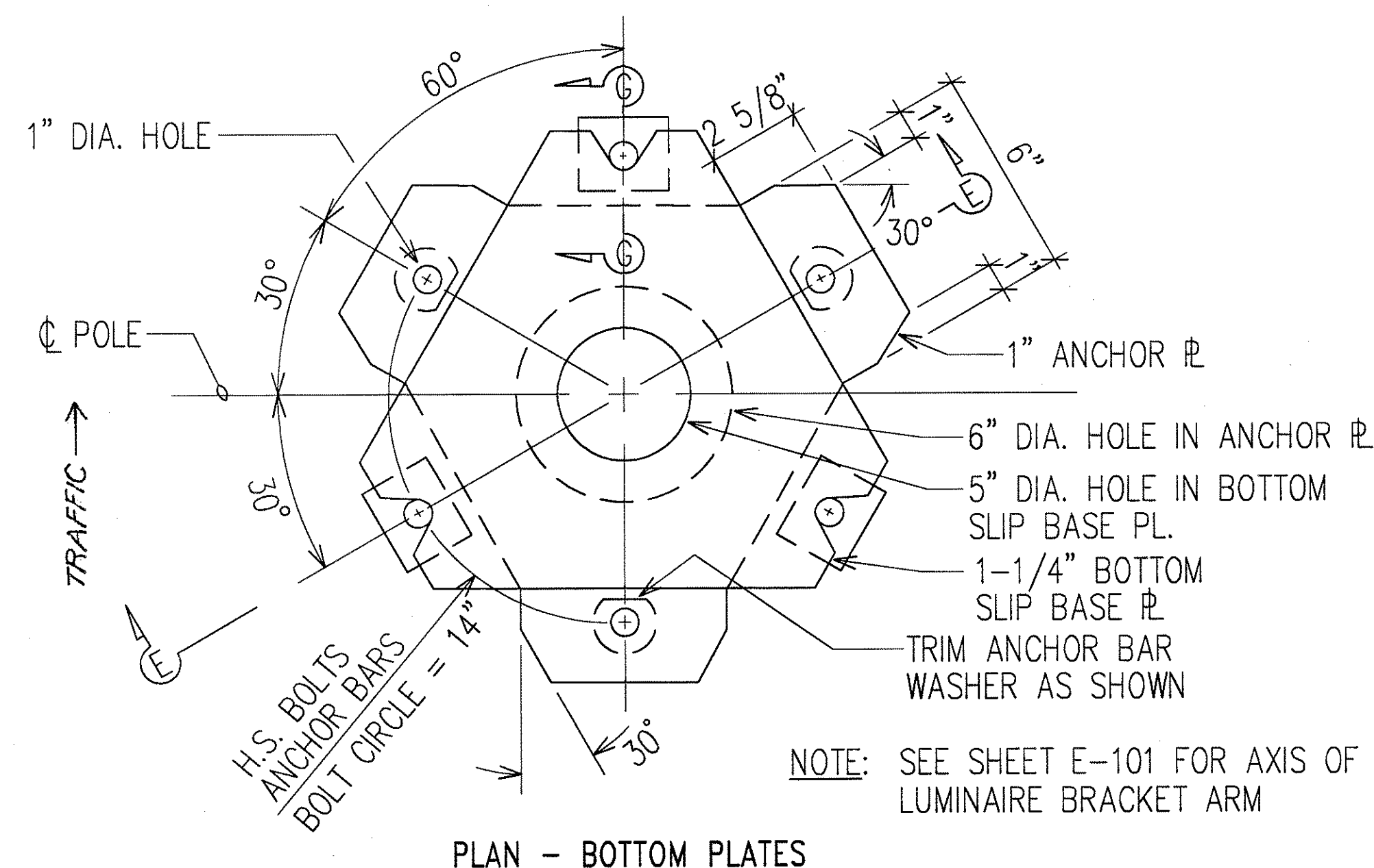
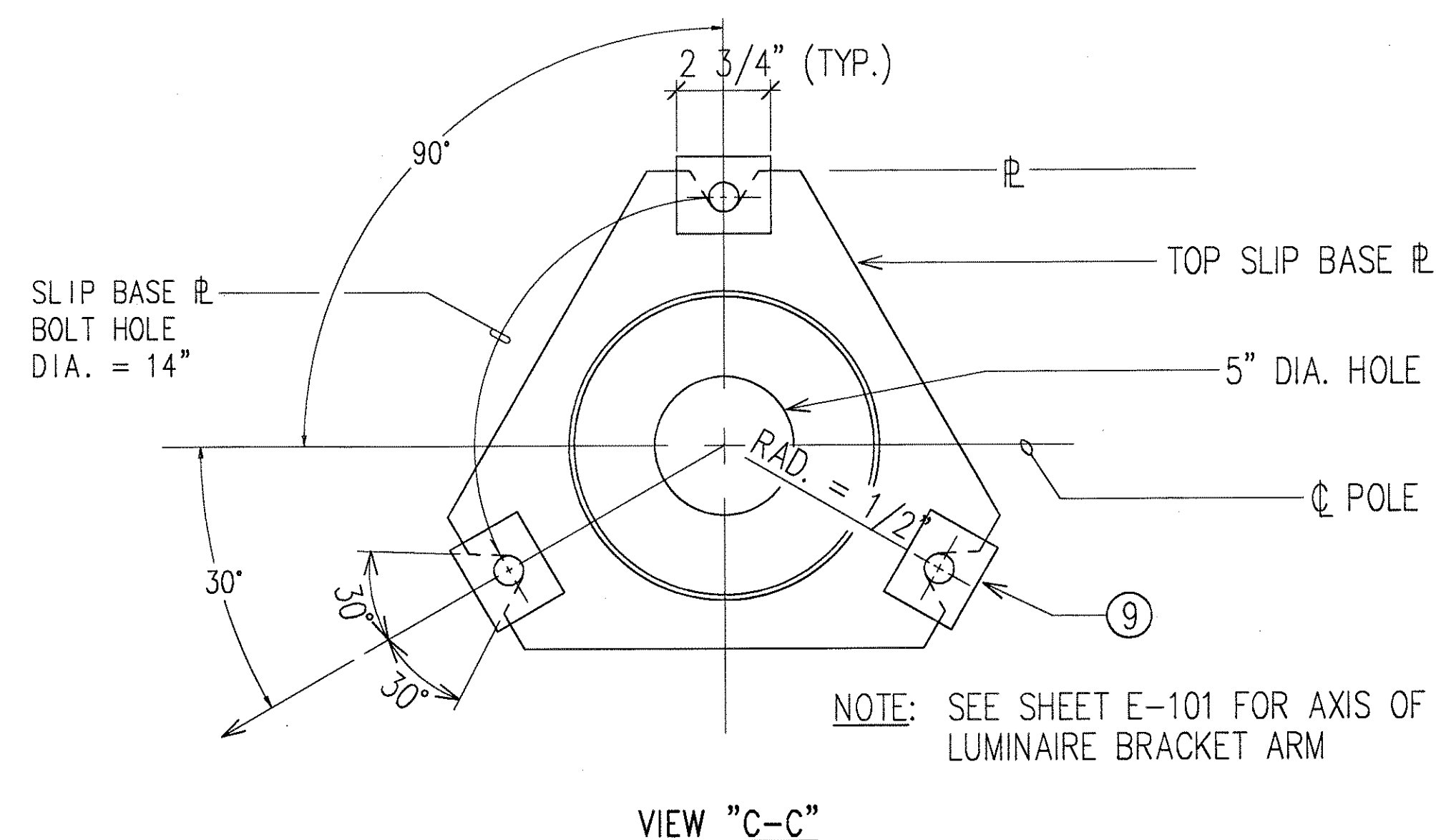
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RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS II

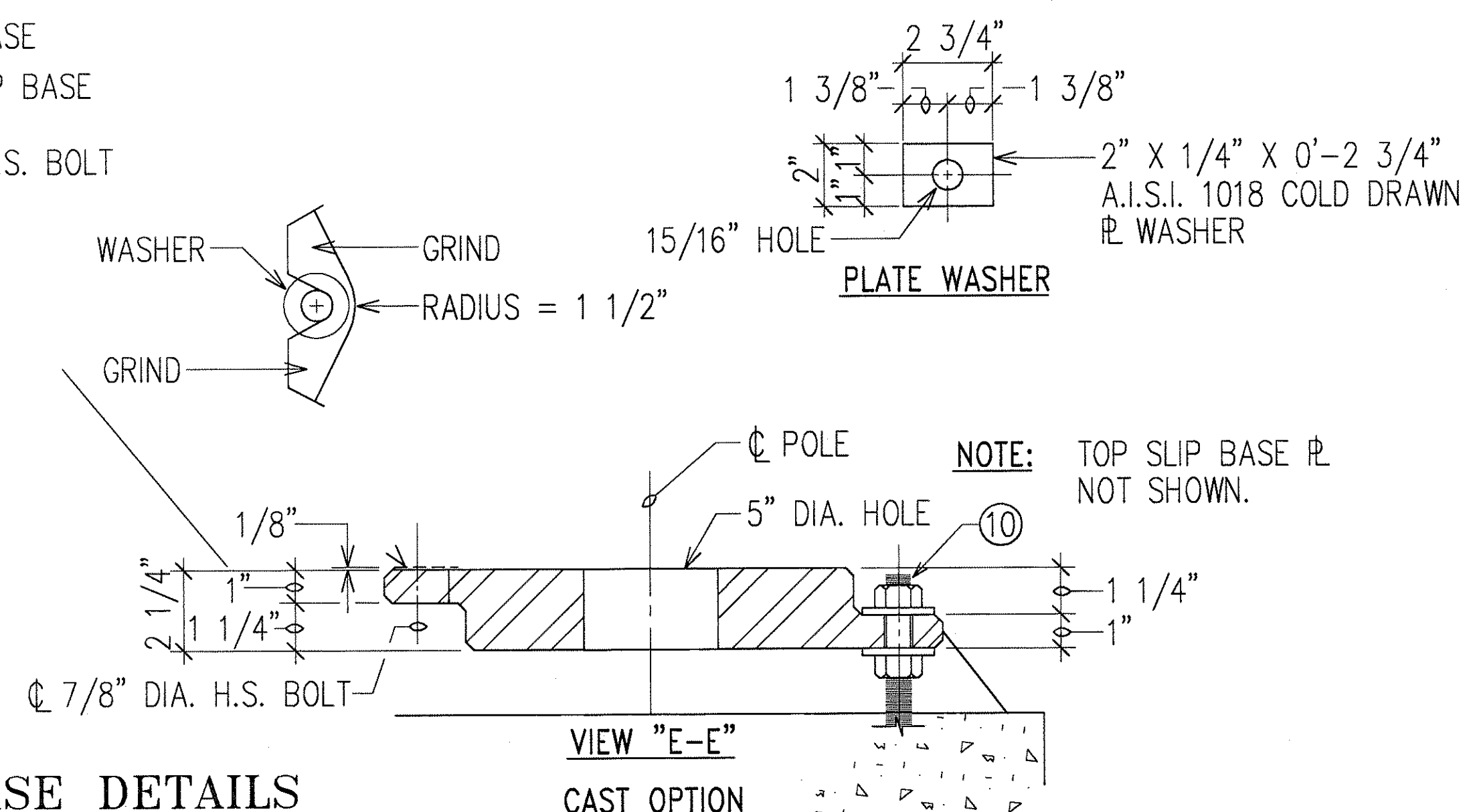
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-102 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	290	344

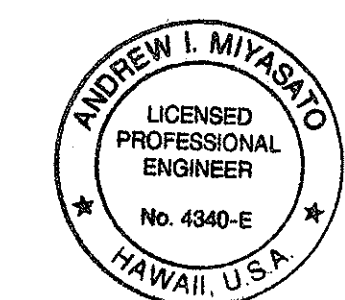
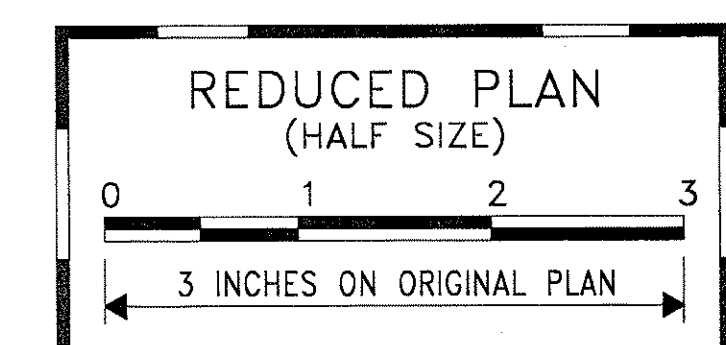


SLIP BASE DETAILS
NOT TO SCALE



NOTES:

- ALL STEEL SHAFTS, PLATES, MAST ARMS, BOLTS, SCREWS, NUTS & WASHERS TO BE GALVANIZED AFTER FABRICATION OR MODIFICATION.
- PLATES TO CONFORM TO ASTM A-36.
- CAST OPTION TO CONFORM TO ASTM A-486 CL. 90.
- TORQUE 7/8" DIAMETER H.S. SLIP BASE PLATE BOLTS TO 84 FEET PER POUND.
- 7/8" DIAMETER H.S. ANCHOR BARS, WRENCH TIGHTEN - TORQUE REQUIREMENT WAIVED.
- FABRICATORS ELECTING LARGER THAN MINIMUM ARM DIAMETERS MUST ADJUST DETAILS AS REQUIRED TO PERMIT SOLID SEATING OF CAP SCREWS. IN LIEU OF TORQUE REQUIREMENTS FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN OF NUT METHOD 1/6 TURN FROM SNUG CONDITION. NO WASHER WILL BE REQUIRED.
- 4" X 6 1/2" HANDHOLE REINFORCED WITH #3 GAUGE RING 1/2" WIDE WELDED TO OUTSIDE OF POLE COVER OF 10 GAUGE PLATE LOCATE 90 DEGREES OF MAST ARM UNLESS SHOWN OTHERWISE.
- 28 GAUGE KEEPER PLATE, PLACE ON TOP OF MIDDLE FLAT WASHER, ASTM A-526 125 COMMERCIAL.
- PLATE WASHER.
- 3 - 7/8" DIAMETER H.S. BARS, THREAD 6" & GALVANIZED 10", WITH HEX., HEAD, NUT, LEVELING NUT & WASHER.
- HEX. HEAD NUT SHOWN OR AS AN ALTERNATE DETAIL ANCHOR PLATES MAY BE RETAINED WITH 5/16" FILLET WELDS ALL AROUND OR FORMED HEADS.
- ROUND TAPERED STEEL TUBE WITH MAXIMUM TAPER OF 0.15"/FOOT.
- NO. 11 GAUGE SHEET STEEL OF WELDABLE GRADE ACCEPTABLE IF STEEL AFTER FABRICATION HAS A MINIMUM YIELD STRENGTH OF 40,000 P.S.I.



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Ronald N. S. Ho & Assoc., Inc.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS III

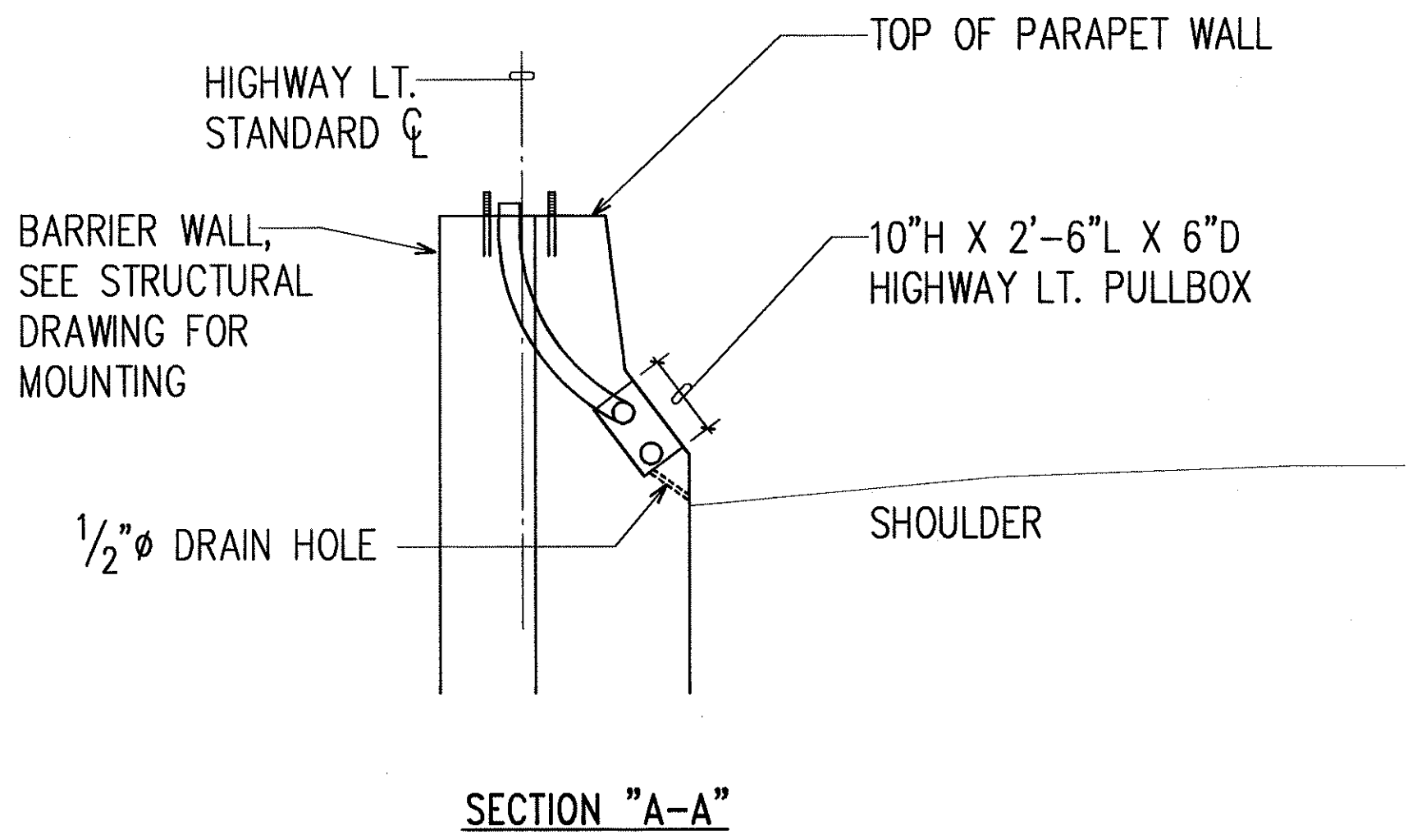
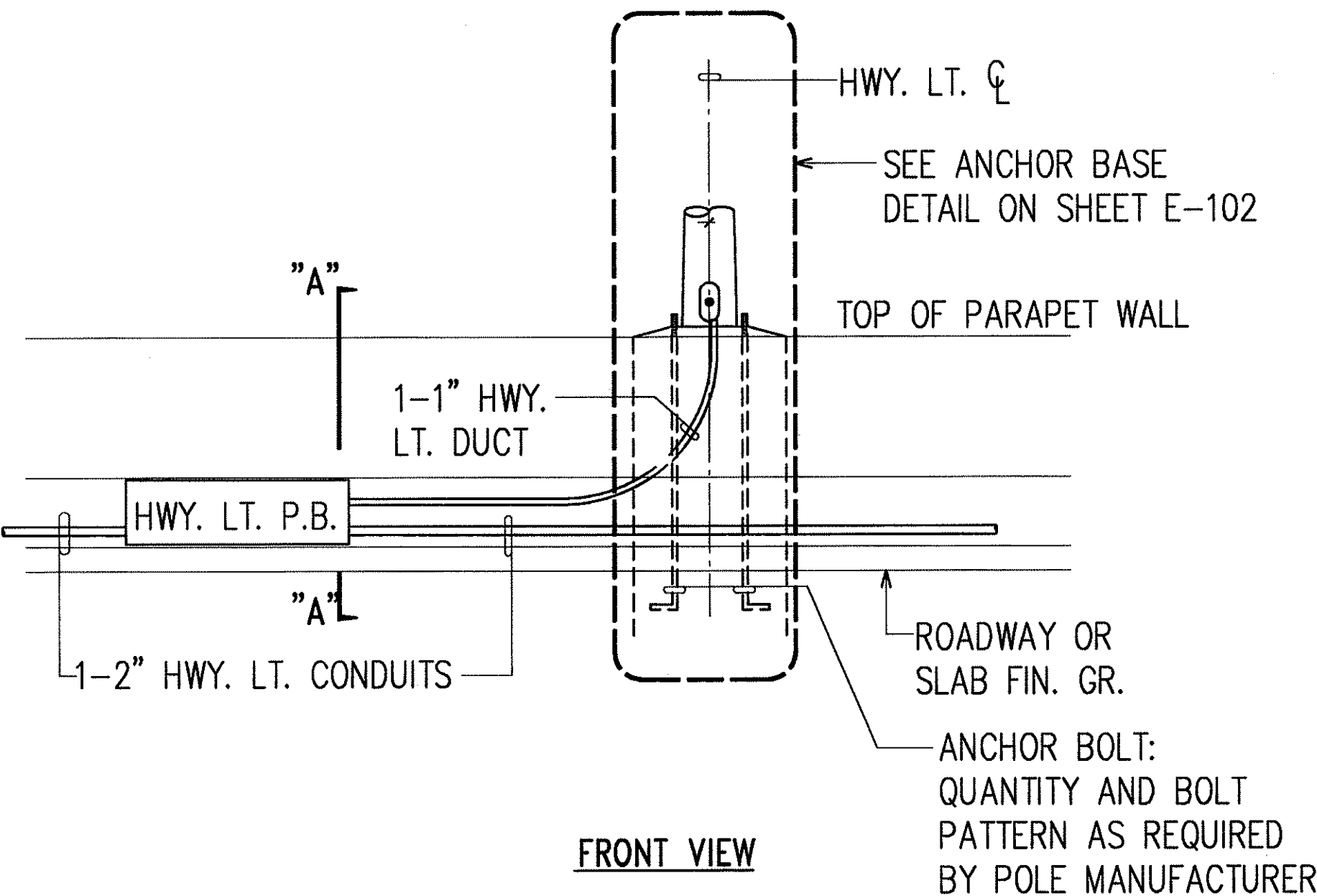
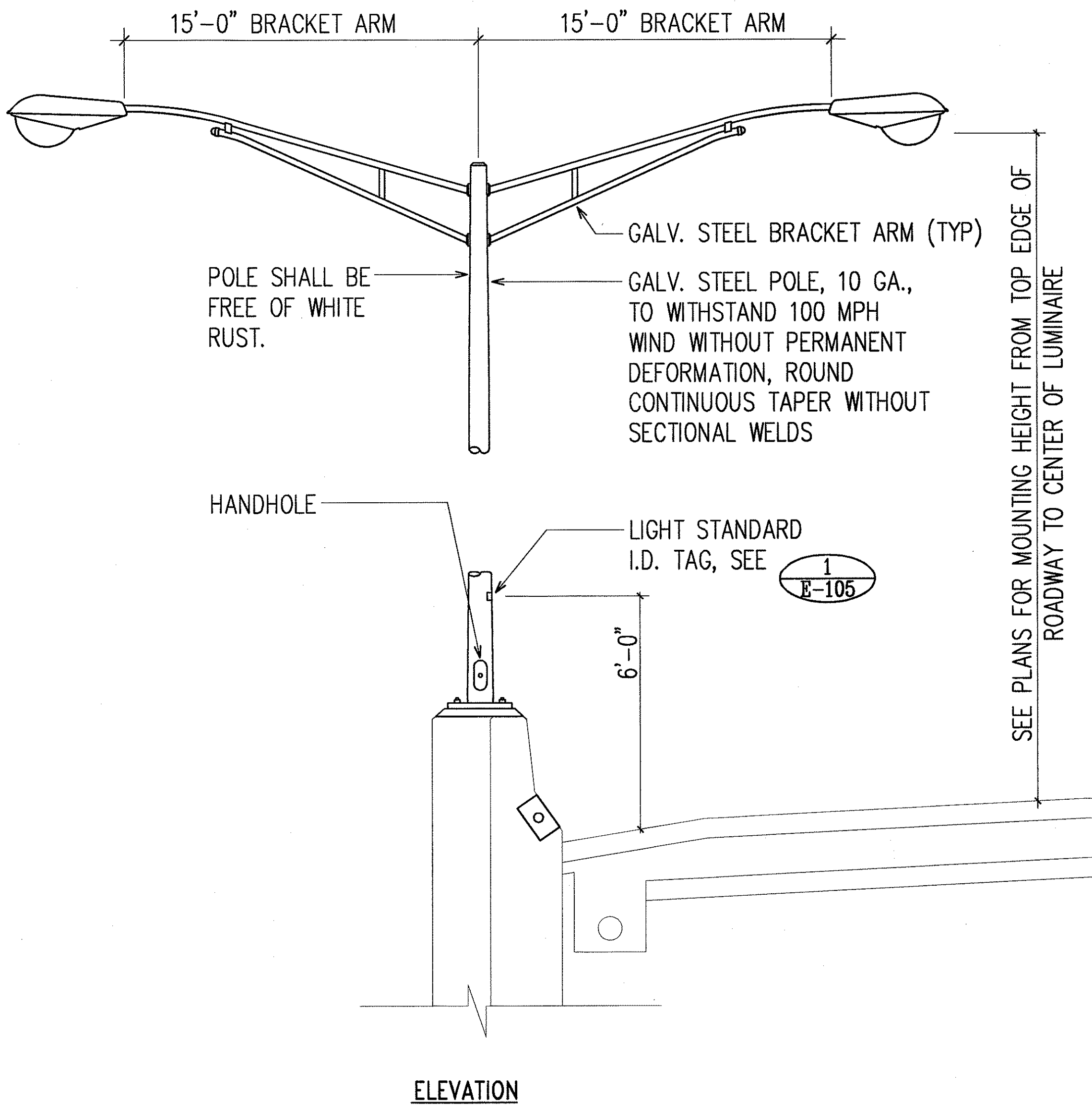
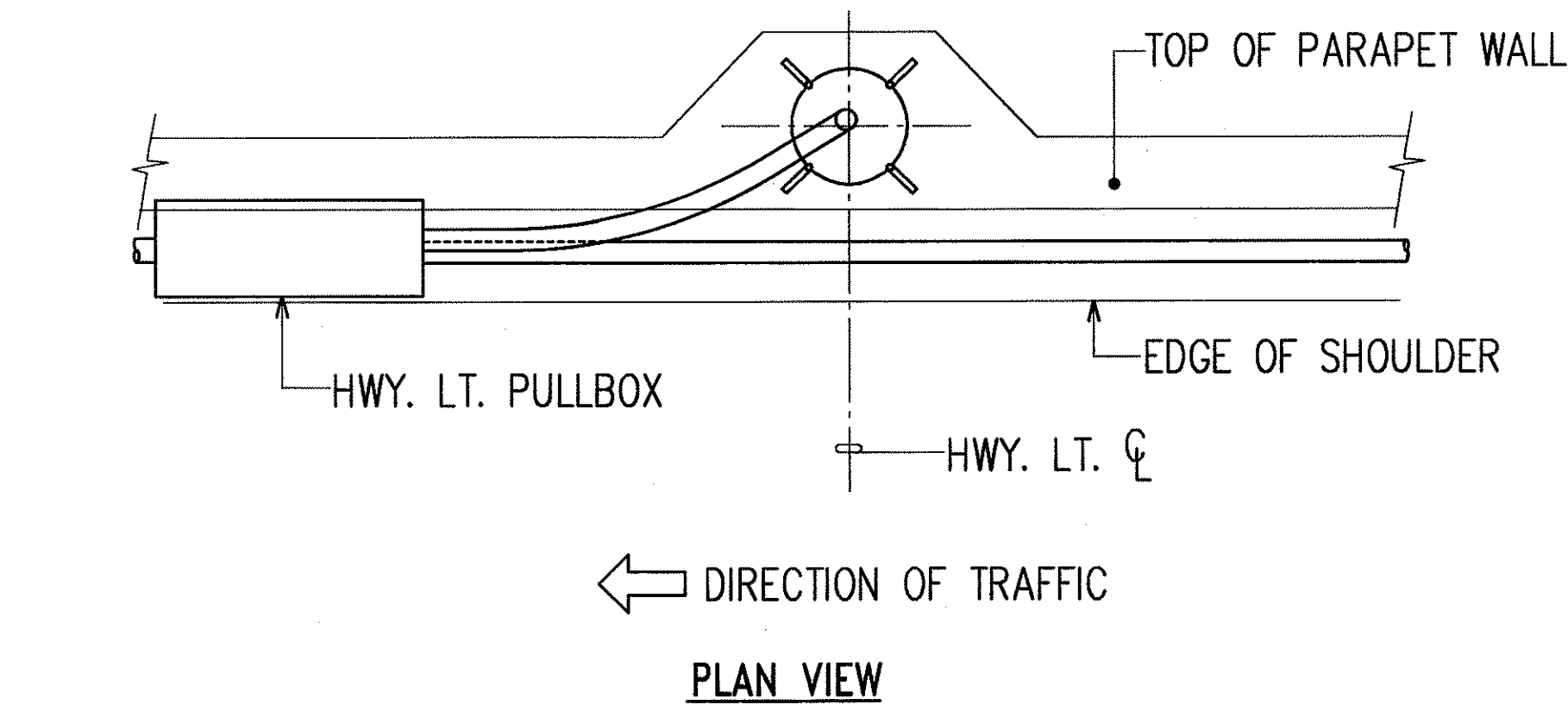
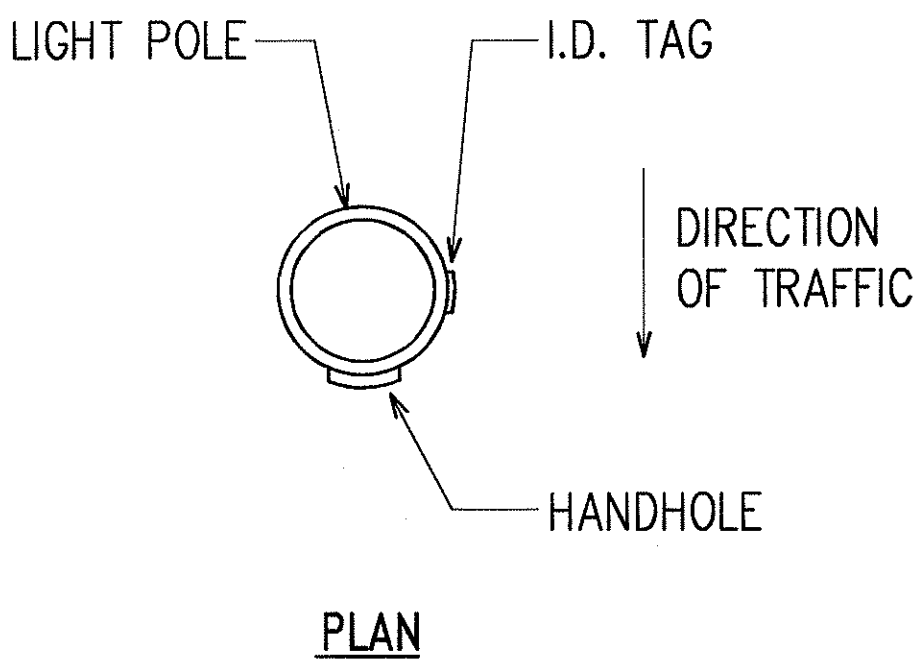
**INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96**

SCALE: AS NOTED
DATE: OCTOBER 1997
SHEET No. E-103 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 291	344

HARDWARE NOTES

- ALL PLATES, BOLTS, AND NUTS TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
- ALL ANCHOR BOLTS SHALL BE SET AND PLACED BY MEANS OF LIGHT STANDARD SHOP DRAWING TEMPLATE.
- REFER TO STRUCTURAL DRAWINGS FOR REINFORCING DETAILS.

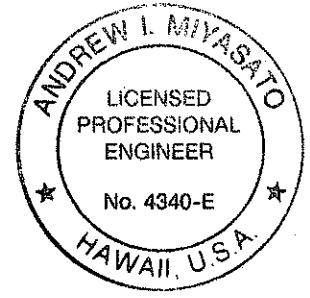
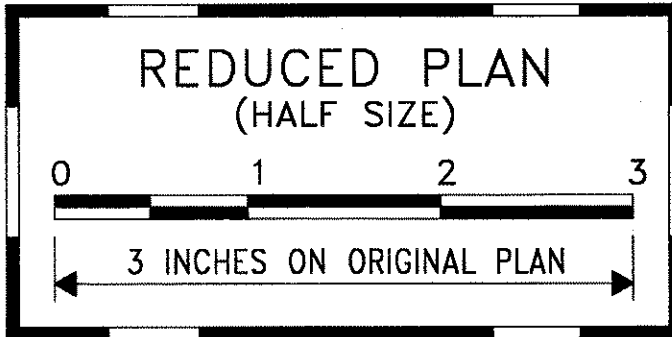


CONCRETE BARRIER MOUNTED
HIGHWAY LIGHT STANDARD DETAIL
NOT TO SCALE

CONCRETE BARRIER MOUNTED HIGHWAY LIGHT
CONDUITS AND PULLBOX DETAILS
NOT TO SCALE

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

LET DATE 12/19/97 BY: RNP/ST/10/97
C:\ADVP\PROJECTS\H1EFG\H1EFG-01-96.DWG



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OR UNDER MY SUPERVISION.
Andrew I. Miyasato
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

12/19/97	ADDED ARM & LUMINAIRE TO DETAIL
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS IV

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997
SHEET No.E-104 OF 106 SHEETS

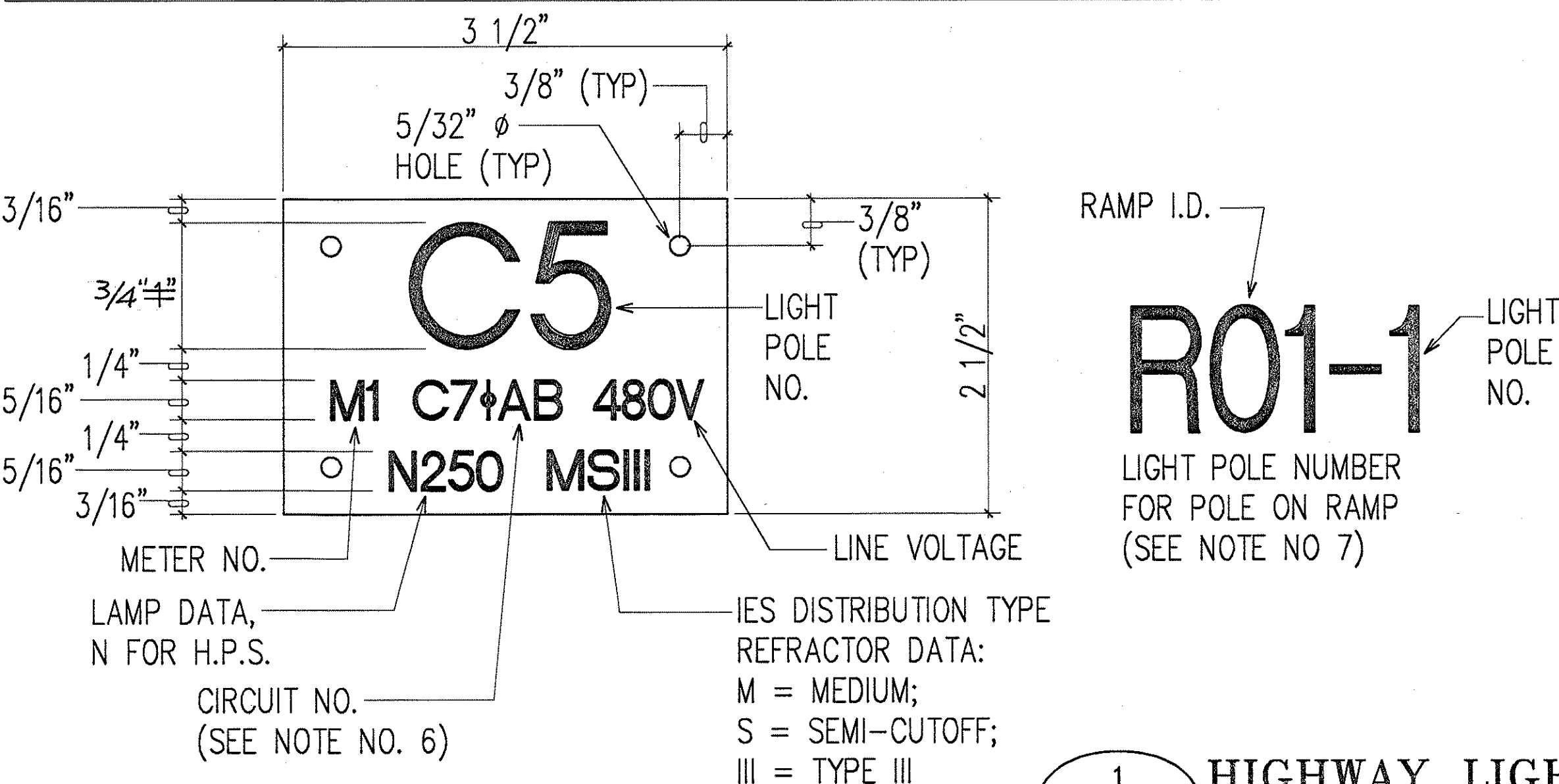
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	C.O. 292	344

NOTES:

1. VERIFY RAMP I.D. AND LIGHT POLE NUMBER WITH STATE D.O.T. PRIOR TO FABRICATION OF I.D. TAGS.
2. VERIFY METER NUMBER WITH STATE D.O.T. PRIOR TO FABRICATION OF I.D. TAGS.


NOTES:

1. USE 3 PLY LAMINATED FLEXIBLE PLASTIC, BLACK-WHITE-BLACK. THICKNESS: BLACK CAP SHEET-0.010", WHITE BASE SHEET-0.052", BLACK BASE SHEET-0.010".
2. LIGHT POLE NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NUMBER AS REQUIRED).
3. NOMENCLATURE SIZE SHALL BE 5/16" HIGH AND ENGRAVED 1/32" WIDE, WHITE IN COLOR (METER NUMBER, CIRCUIT NUMBER, LINE VOLTAGE, LAMP DATA AND REFRACTOR DATA AS REQUIRED).
4. ATTACH TO ALUMINUM AND STEEL POLE WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE.
5. NUMBERS AND LETTERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE LETTERS".
6. ASSIGN CIRCUIT NUMBER (LETTER INDICATES PANELBOARD, NUMBER INDICATES CIRCUIT). ASSIGN PHASE CONNECTIONS OF THE 3 PHASE CIRCUIT (øAB INDICATES CONNECTION TO PHASES A & B).
7. FOR LIGHT POLES INSTALLED ON RAMP, ASSIGN NUMBERS TO INCLUDE RAMP I.D. AND POLE NUMBER. LEGEND MAY BE LESS THAN ONE (1) INCH IN HEIGHT.
8. CONTRACTOR TO VERIFY ALL ITEMS OF ID TAG WITH STATE D.O.T. PRIOR TO FABRICATION.



1 HIGHWAY LIGHT I.D. TAG DETAIL

7/02/98	REVISED LIGHT AT CROSSOVER 4
6/24/98	ADDED LIGHTS TO CROSSOVER 4
4/24/98	ADDED POLE NUMBERS AND METER NUMBERS PER DOT REQUEST
DATE	REVISION



7/4/98
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OR UNDER MY SUPERVISION.
Andrew J. Myrland
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS V

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

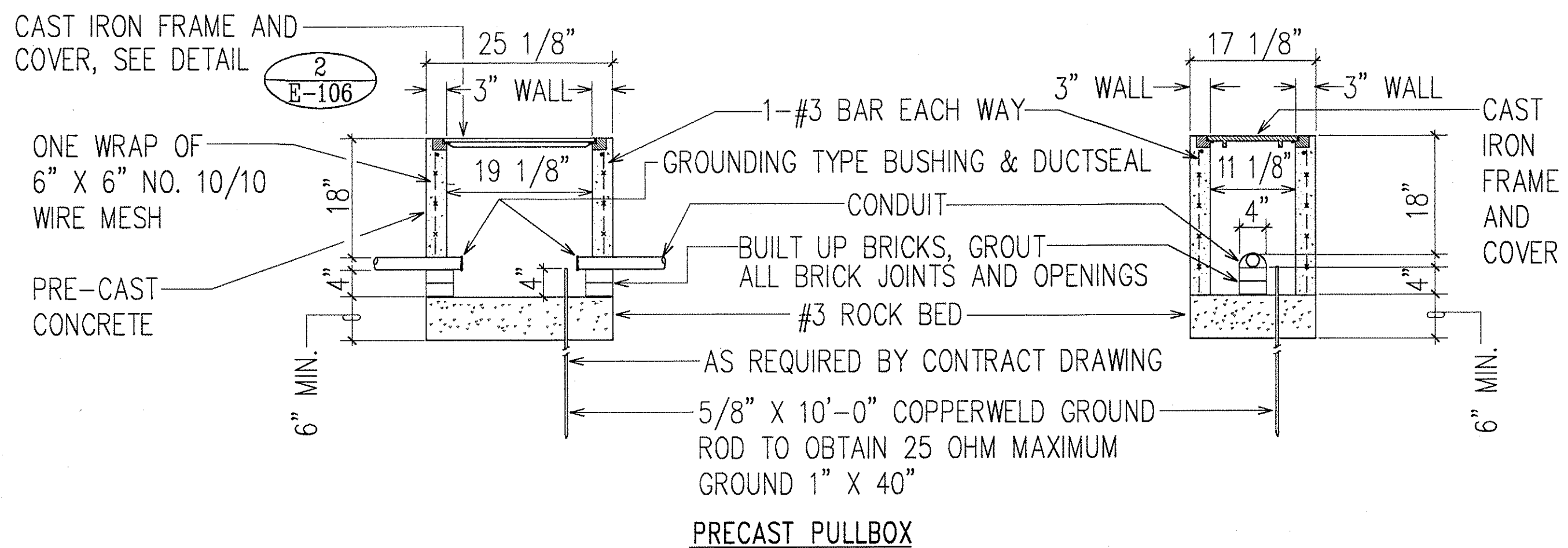
SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-105 OF 106 SHEETS

"AS-BUILT"

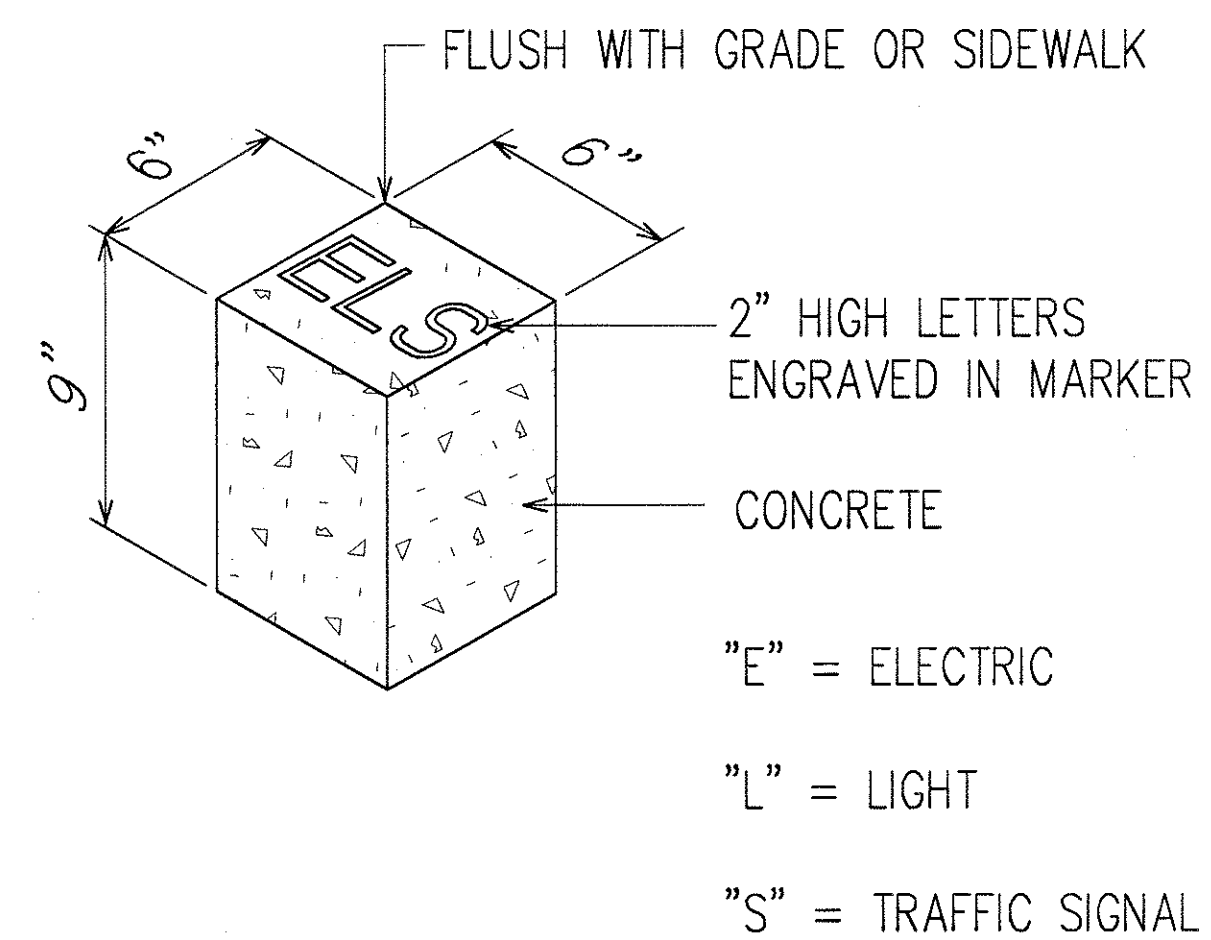
C.O. 292

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1EFG-01-96	1998	293	344

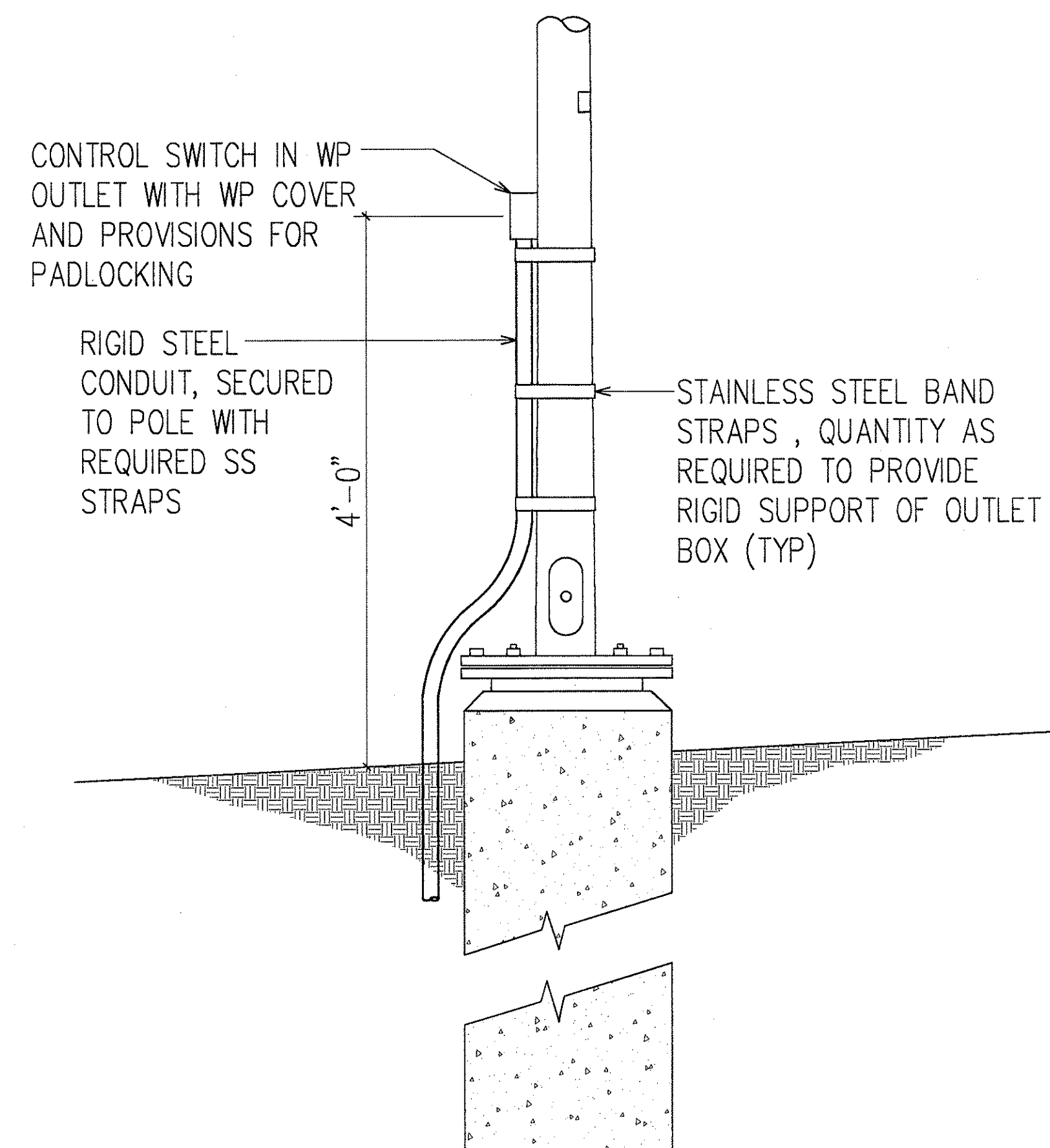
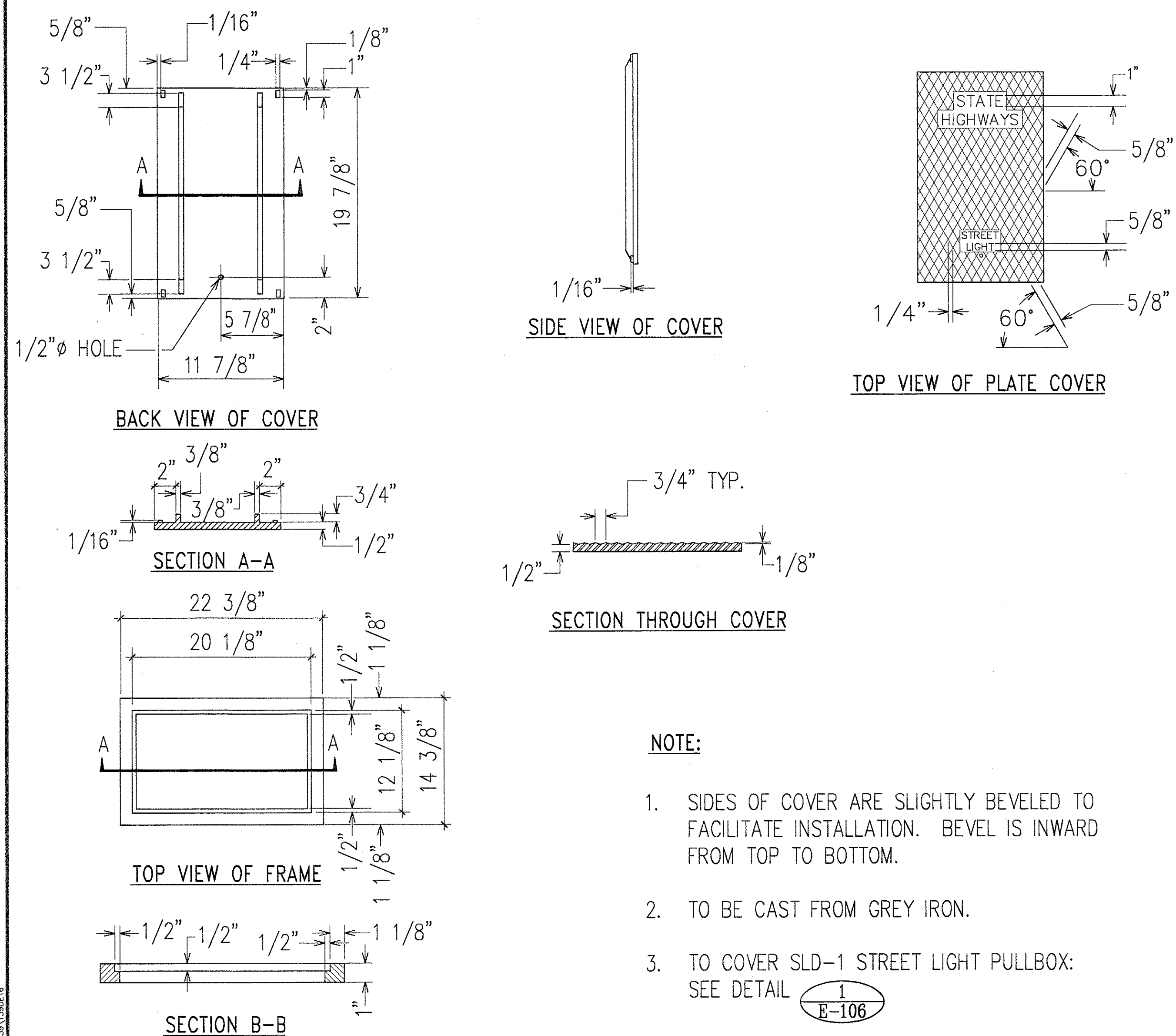


NOTE: SUBMIT SHOP DRAWINGS FOR BOX, FRAME AND COVER FOR MATERIAL APPROVAL.

1 SLD-1 STREET LIGHT PULLBOX DETAIL
E-106 NOT TO SCALE

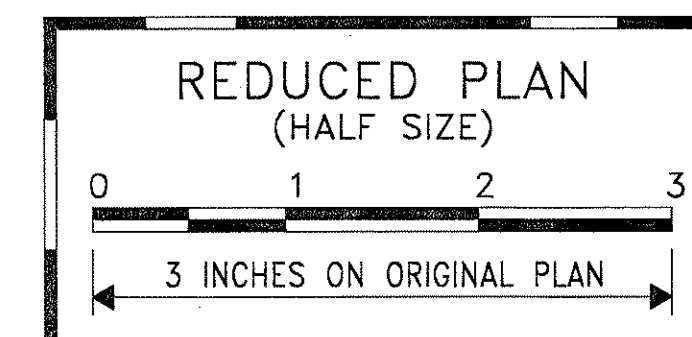


3 CONDUIT STUB-OUT MARKER
E-106 NOT TO SCALE



4 POLE MOUNTED CONTROL SWITCH
E-106 NOT TO SCALE

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	" "
	TRACED BY _____	" "
	DESIGNED BY _____	" "
	QUANTITIES BY _____	" "
	CHECKED BY _____	" "
No. _____		



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Ronald N. S. Ho
RONALD N. S. HO & ASSOC., INC.
ELECTRICAL ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING DETAILS VI

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. H1EFG-01-96

SCALE: AS NOTED DATE: OCTOBER 1997

SHEET No. E-106 OF 106 SHEETS