

13-2-7

LUMINAIRE NO. 100/F/B.C. FEEDER PHASES

L E G E N D			
SYMBOL	REPRESENTS	REFERENCE	
		DETAIL	NOTE
	SINGLE ARM METAL LTG. STD. FOUNDATION, & 150 WATT H.P.S. LAMP	2/E13	G/E1
	REMOVE EXISTING LUMINAIRE ON UTILITY CO. POLE AND STOCKPILE (DELIVER TO C&C BASE YARD AT 160 KAUOLA ST.)		
	TWIN ARM METAL LTG. STD. FOUNDATION, & 150 WATT H.P.S. LAMPS	2/E13	G/E1
	TWIN ARM METAL LTG. STD. FOUNDATION, & (1) 150 WATT AND (1) 250 WATT LAMP	2/E13	G/E1
	TWIN ARM METAL LTG. STD. FOUNDATION, & (2) 250 WATT LAMPS	2/E13	G/E1
	WOOD POLE LTG. STD., BKT ARM, LUMINAIRE, & 150 WATT H.P.S. LAMP	2/E15	G/E1
	PROVIDE LUMINAIRE, BKT ARM, & 150 W H.P.S. LAMP ON UTILITY CO. POLE	1/E15	G/E1
	PULLBOX, TYPE CC1 FOR LIGHTING SYSTEM	1/E14	
	PULLBOX, TYPE CC1 FOR TRAFFIC SIGNAL SYSTEM		
	PULLBOX, TYPE CC2 FOR LIGHTING SYSTEM	1/E14	
	PULLBOX, TYPE CC2 FOR TRAFFIC SIGNAL SYSTEM		
	UNDERGROUND RACEWAY FOR TRAFFIC SIGNAL SYSTEM		3/E1 4/E1
	UNDERGROUND RACEWAY FOR LIGHTING SYSTEM	2/E14	2,4,5/E1
	AERIAL CONDUCTORS AND TRAFFIC SIGNAL SPAN WIRE		
	TRAFFIC SIGNAL SYSTEM VEHICLE DETECTOR LOOP, W/PHASE IDENTIFICATION		SEE DWG DT 405
	TEMPORARY METAL TRAFFIC SIGNAL STANDARD; W/I.D. NO.	1/E11 2/E11	
	METAL TRAFFIC SIGNAL STANDARD-TYPE I; W/I.D. LETTER		SEE DWG DT 400
	METAL TRAFFIC SIGNAL STANDARD-TYPE II, WITH MAST ARM LENGTH AS INDICATED; W/I.D. LETTER		SEE DWG DT 400 DT 404
	TRAFFIC SIGNAL HEAD; W/I.D. NO.	SEE STR DWG	SEE DWG DT 400
	PEDESTRIAN SIGNAL, SIGN, & BUTTON; W/I.D. NO.		SEE DWG DT 400
	TRAFFIC SIGNAL SYSTEM CONTROLLER AND FOUNDATION		SEE DWG DT 404
	METAL POLE FOR SPAN WIRE SUPPORTED SIGNALS; W/I.D.		SEE STR DWG. 124A
	AERIAL SECONDARY LIGHTING CONDUCTORS		1/E15

NOTE: ESTIMATED QUANTITY FOR LUMP SUM PAY ITEMS WILL BE USED TO DETERMINE THE APPARENT UNIT PRICE AS DEFINED IN SUB-SECTION 104.02(B) OF THE STANDARD SPEC.

ELECTRICAL				
ITEM NO.	ITEM	UNIT	QUANTITIES	
			HIGHWAY	BRIDGE
622.7002	METAL LIGHTING STANDARD ON GRADE	EA.	8	
622.7003	METAL LIGHTING STANDARD ON GRADE, TWIN ARM	EA.	36	
622.7019	2" RACEWAY IN STRUCTURE	L.S.		750
622.7021	UNDERGROUND RACEWAY, LTG. SYSTEM	L.S.	9,500	
622.7008	WIRE, 600 VOLT, 1/C, #6	L.S.	6,250	
622.7009	WIRE, 600 VOLT, 1/C, #4	L.S.	68,400	
622.7016	PULLBOX, TYPE CC, LTG. SYSTEM	EA.	40	
622.7020	MISCELLANEOUS ELECTRICAL FACILITIES	L.S.	1	
623.9007	TRAFFIC SIGNAL SYSTEM No. 2-2 N.I.C.	L.S.	0	
623.9008	TRAFFIC SIGNAL SYSTEM No. 2-3 N.I.C.	L.S.	0	
623.9009	TRAFFIC SIGNAL SYSTEM No. 2-4	L.S.	1	
623.9010	PULLBOX, TYPE CC, TRAFFIC SIGNAL SYSTEMS N.I.C.	E.A.	0	
623.9015	SIGNAL LOOP CABLE: 26/C, #14, 600V	L.S.	200	
623.9016	SIGNAL HEAD CABLE: 4/C, #14, 600V	L.S.	100	
623.9017	DETECTOR LEAD-IN CABLE: 2/C #12, 600V	L.S.	400	
623.9019	SIGNAL DUCT: ONE 2-INCH	L.S.	20	
623.9020	SIGNAL DUCT: TWO 2-INCH	L.S.	0	
623.9021	SIGNAL POWER CABLE: 1/C, #6, 600V	L.S.	160	
623.9022	SIGNAL POWER CABLE: 1/C, #4, 600V	L.S.	0	

DATE	REVISION
6/6/80	Deleted note from the description of the second symbol of the Legend, per Addendum No. 1.
2/17/81	Revised 100 Watt HPS Lamps to 150 Watt in the Legend.
10/8/81	Added Detail for Street Light I.D. Tag.

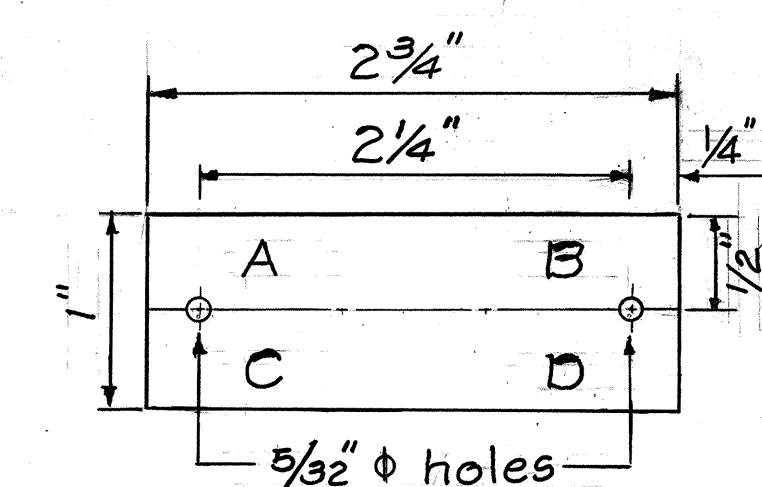
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	MT600(2)	1980	113	244

LIST OF ABBREVIATIONS

C	RACEWAY (TYPE & SIZE AS INDICATED)
NMR	NON-METALLIC RACEWAY (TYPE PVC OR CAD)
RGS	RIGID GALVANIZED STEEL CONDUIT
RAL	RIGID ALUMINUM CONDUIT
PVC	POLYVINYLCHLORIDE CONDUIT
CAD	CEMENT ASBESTOS DUCT
LTG	LIGHTING
LTG STD	LIGHTING STANDARD
BKT	BRACKET ARM
FND	FOUNDATION
CKT	CIRCUIT
FDR	FEEDER (OR BRANCH THEREOF)
GND	GROUND
N.T.S.	NOT TO SCALE
N.I.C.	NOT IN CONTACT
FUT.	FUTURE
(E)	EXISTING
CONC.	CONCRETE
H.P.S.	HIGH PRESSURE SODIUM LAMP
HG	MERCURY VAPOR LAMP
E.T.W.	EDGE OF TRAVELED WAY
JP	JOINT POLE

LEGEND

- A - CONTRACT NUMBER
- B - LIGHT NUMBER, SEE PLANS
- C - LAMP DATA N FOR H.P.S.
- D - REFRACTOR DATA



NOTES:

- Contractor to furnish Street Light I.D. Tag where indicated on plans.
- I.D. Tag shall be made from 3-ply black/white/black laminated plastic with 1/8" high commercial gothic engraved letters.
- Attach to wood pole with 4d aluminum nails. For metal poles drill No. 29 holes and attach with No. 7 cadmium plated drive screws.

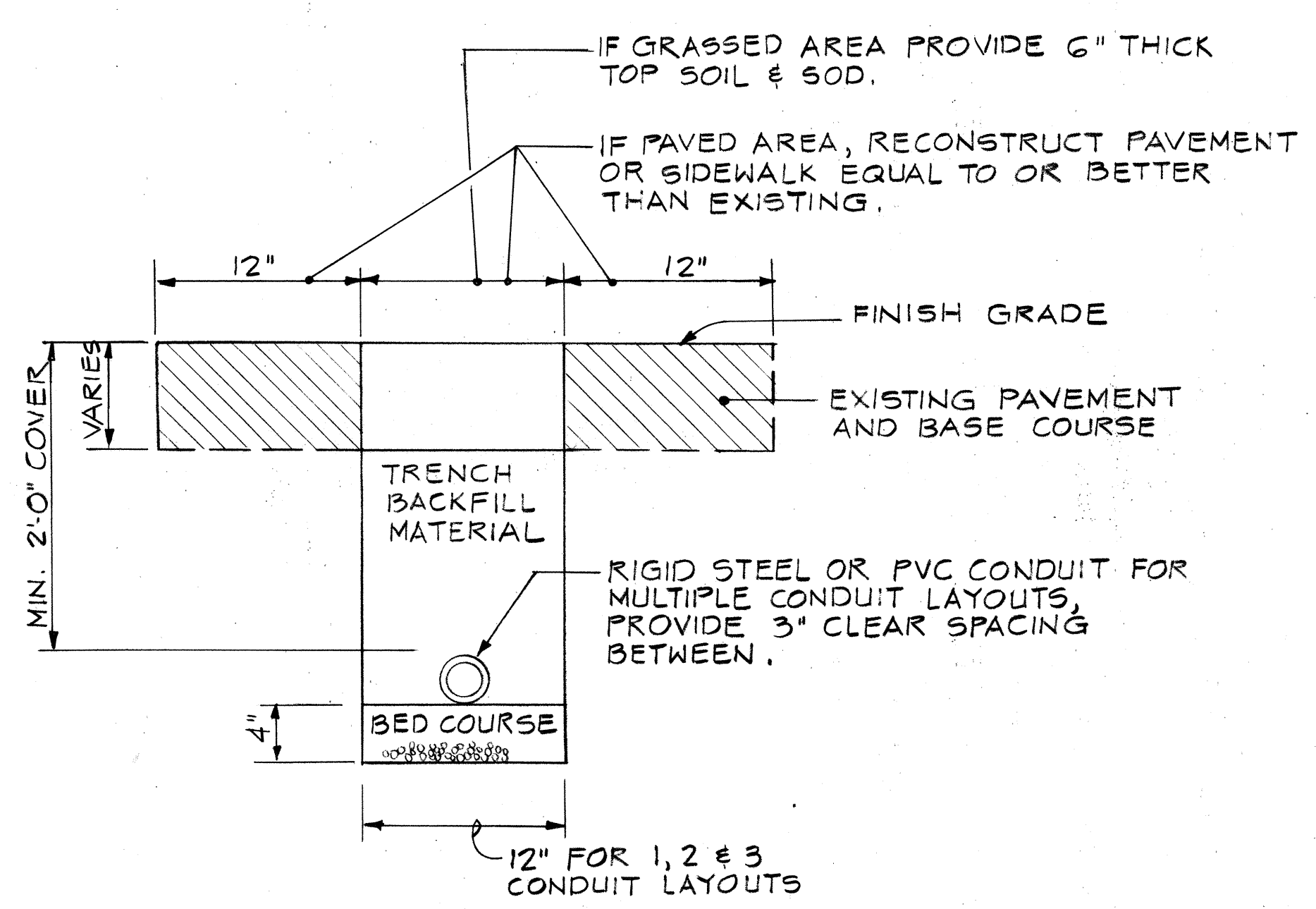
DETAIL FOR STREET LIGHT I.D. TAG

N.T.S.

6/E1. FOR LUMINAIRE PHOTO-METRICS & UTILIZATION CURVE, SEE SPECIAL PROVISIONS, SUBSECTION 712.29.

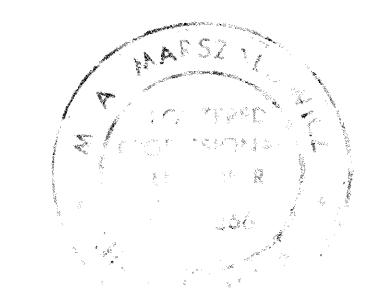
NOTES

- DETAILS AND NOTES ARE NUMBERED AS FOLLOWS:
3/E1. DETAIL OR NOTE NUMBER ELECTRICAL SHEET ON WHICH DETAIL OR NOTE IS SHOWN.
- 2/E1. PROVIDE UNDERGROUND RACEWAYS AND RACEWAYS IN STRUCTURE FOR LIGHTING IN 2-INCH SIZE, EXCEPT AS OTHERWISE INDICATED.
- 3/E1. PROVIDE UNDERGROUND RACEWAYS FOR TRAFFIC SIGNAL SYSTEM IN 2-INCH SIZE, EXCEPT AS OTHERWISE INDICATED.
- 4/E1. FOR UNDERGROUND RACEWAYS PROVIDE TYPE RGS OR TYPE NMR, 2 FEET BELOW GRADE, FOR RACEWAY EXPOSED OR IN STRUCTURE PROVIDE TYPE RGS, EXCEPT AS OTHERWISE INDICATED.
- 5/E1. PROVIDE AN EXPANSION-DEFLECTION FITTING IN ALL RACEWAY AT EACH BRIDGE EXPANSION JOINT.



TRENCH DETAIL FOR LIGHTING CONDUIT

SCALE: 1 1/2" = 1'-0"



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HIGHWAYS DIVISION

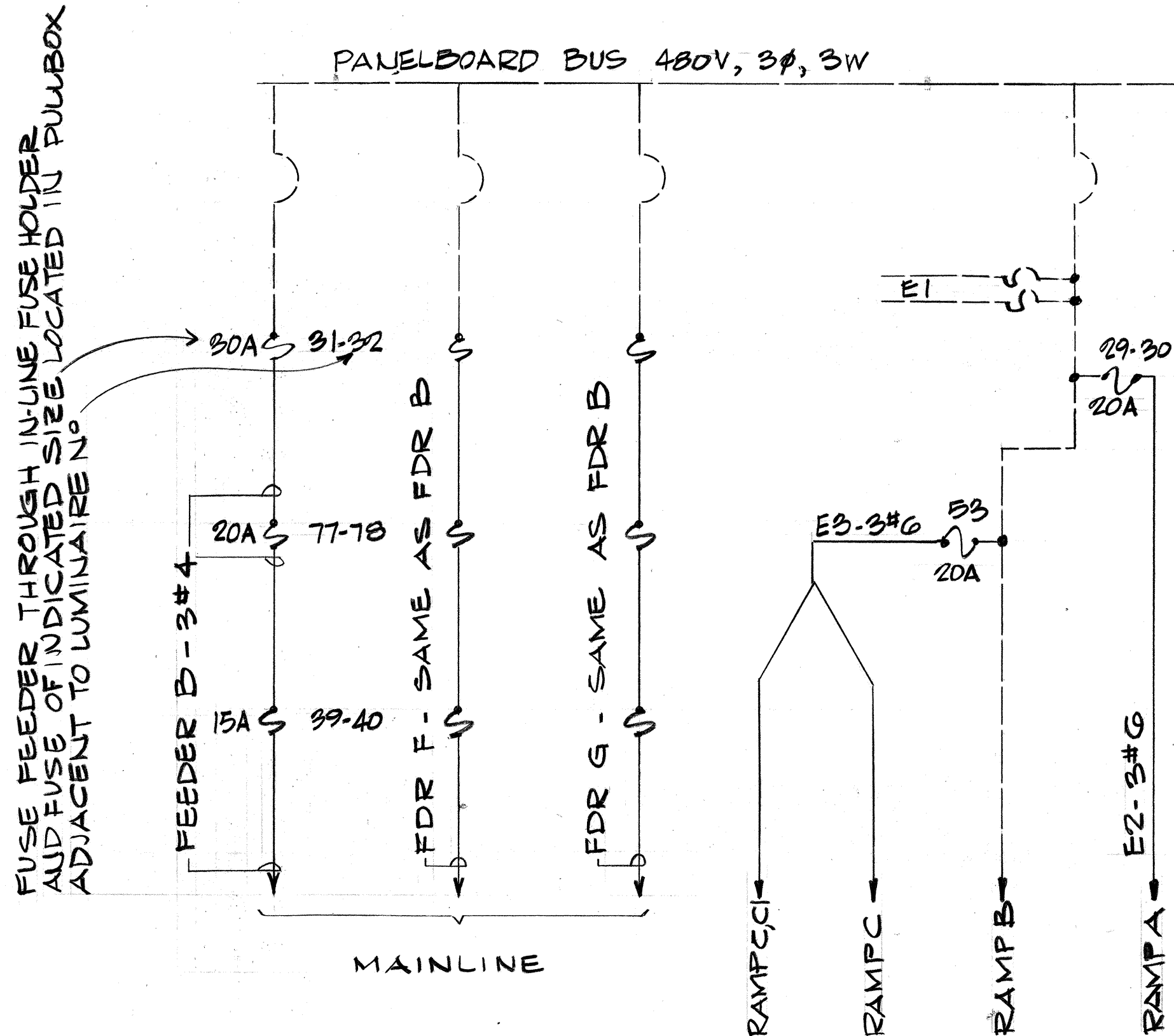
ELECTRICAL LEGEND & NOTES

FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

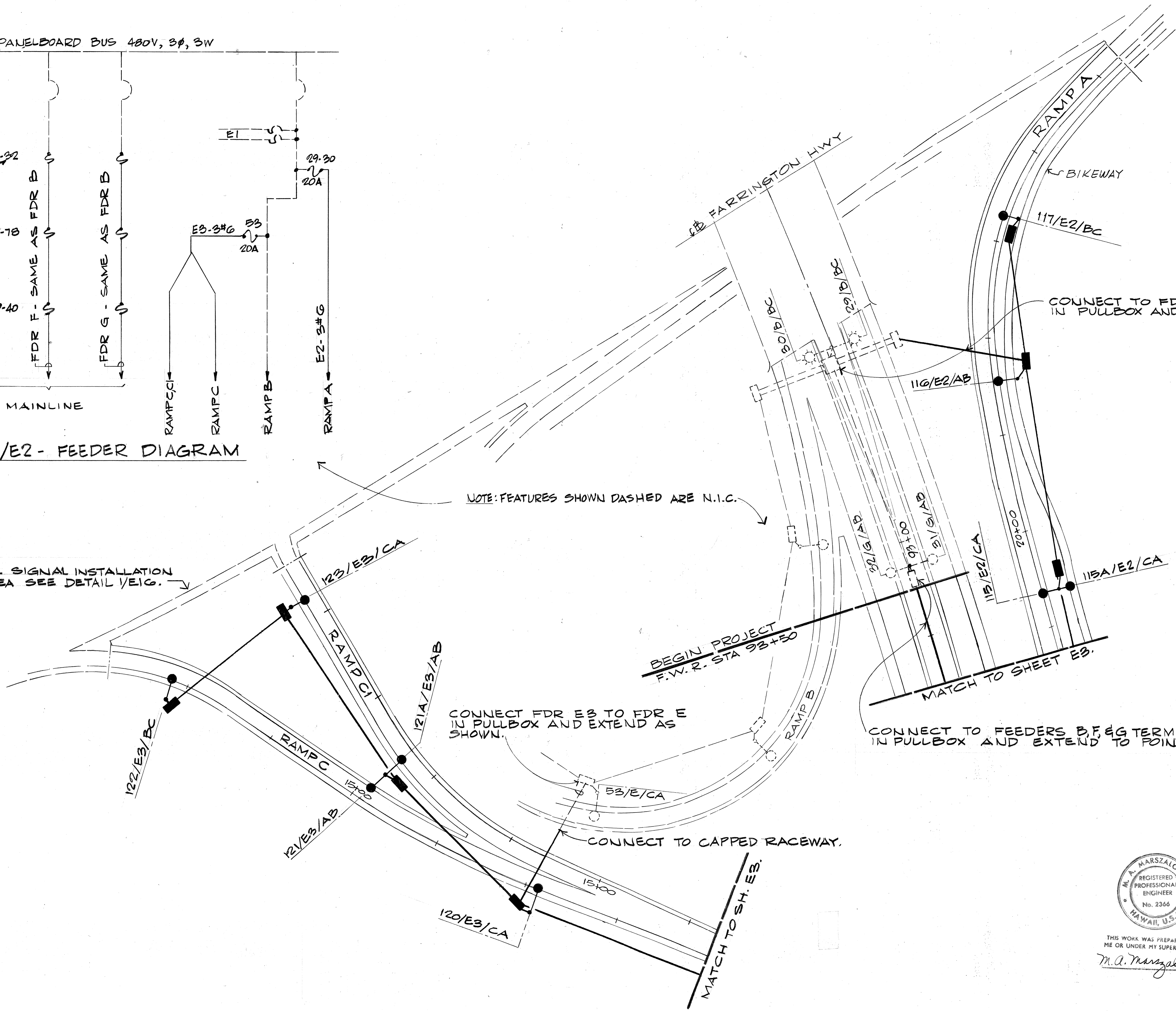
SCALE: AS SHOWN DATE: SEPT 1979
SHEET No. E1 OF E17 SHEETS

C.O.113R

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600(2)	1980	114	244



DETAIL 1/E2 - FEEDER DIAGRAM



FOR TRAFFIC SIGNAL INSTALLATION IN THIS AREA SEE DETAIL 1/E1G.

NOTE: FEATURES SHOWN DASHED ARE N.I.C.

CONNECT FDR E3 TO FDR E IN PULLBOX AND EXTEND AS SHOWN.

CONNECT TO FEEDERS B, F, & G TERMINATED IN PULLBOX AND EXTEND TO POINT SHOWN ON SHEET E7. SEE DETAIL 1/E2.

CONNECT TO CAPPED RACEWAY.

MATCH TO SH. E5.

MATCH TO SHEET E3.

BEGIN PROJECT F.W.R. STA 93+50

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

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M.A. Marszalowicz
REGISTERED PROFESSIONAL ENGINEER
No. 2366
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART I
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE:
DATE: SEPT 1979
SHEET No. E2 OF E17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600 (2)	1980	115	244

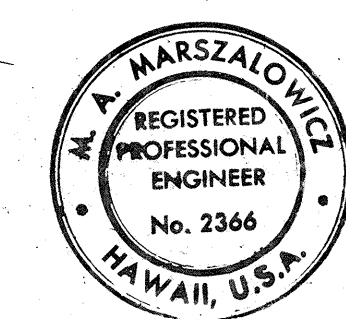
SCALE: 1" = 50'

MATCH TO SHEET E2
STA. 94+50.00

MATCH LINE - SEE SHEET NO. E2
STA. 19+00.00

MATCH LINE - SEE SHEET NO. E4
STA. 110+50.00

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

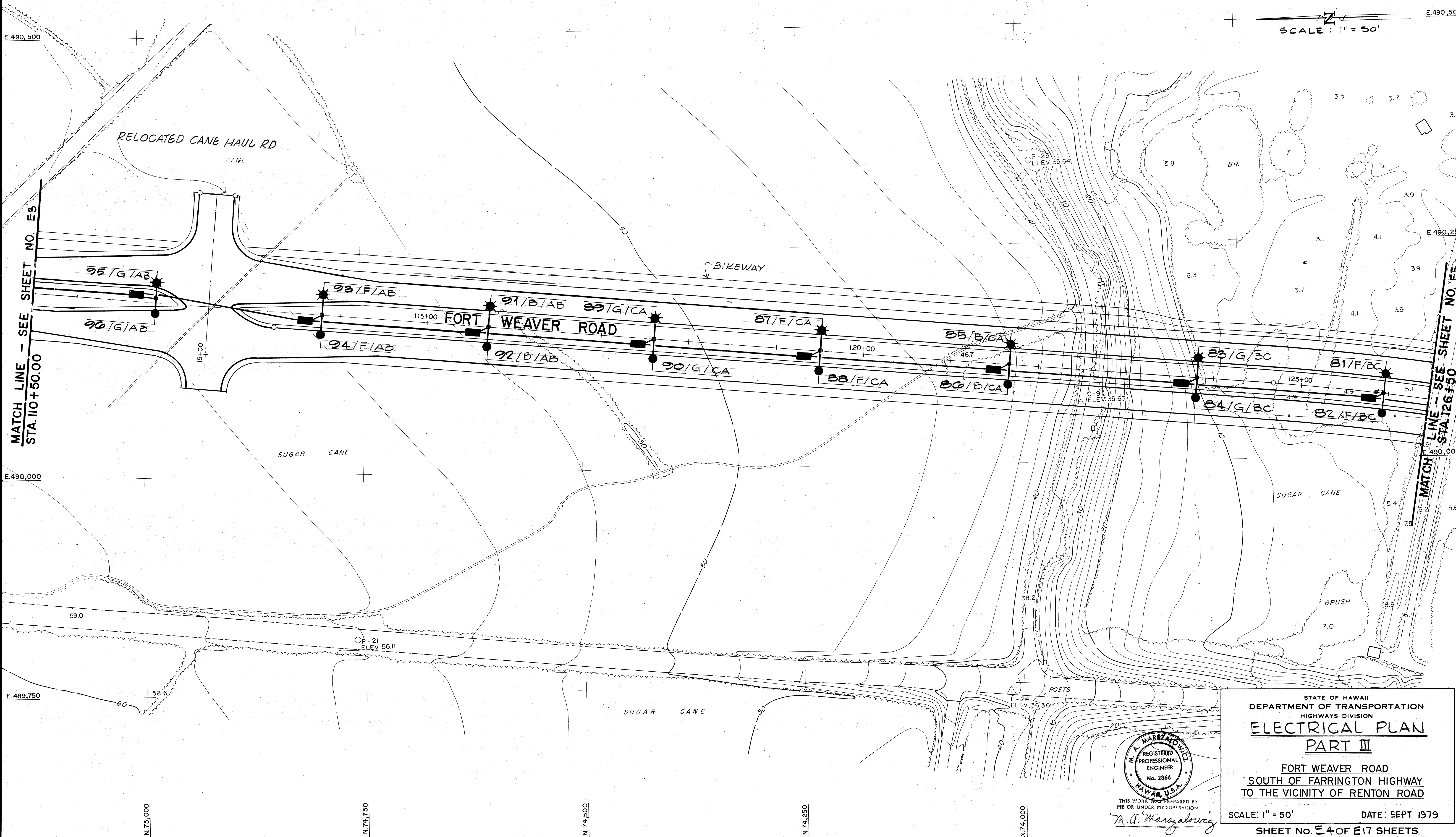


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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART II
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. E3 OF E17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M1600(2)	1980	116	244

SCALE: 1" = 50'



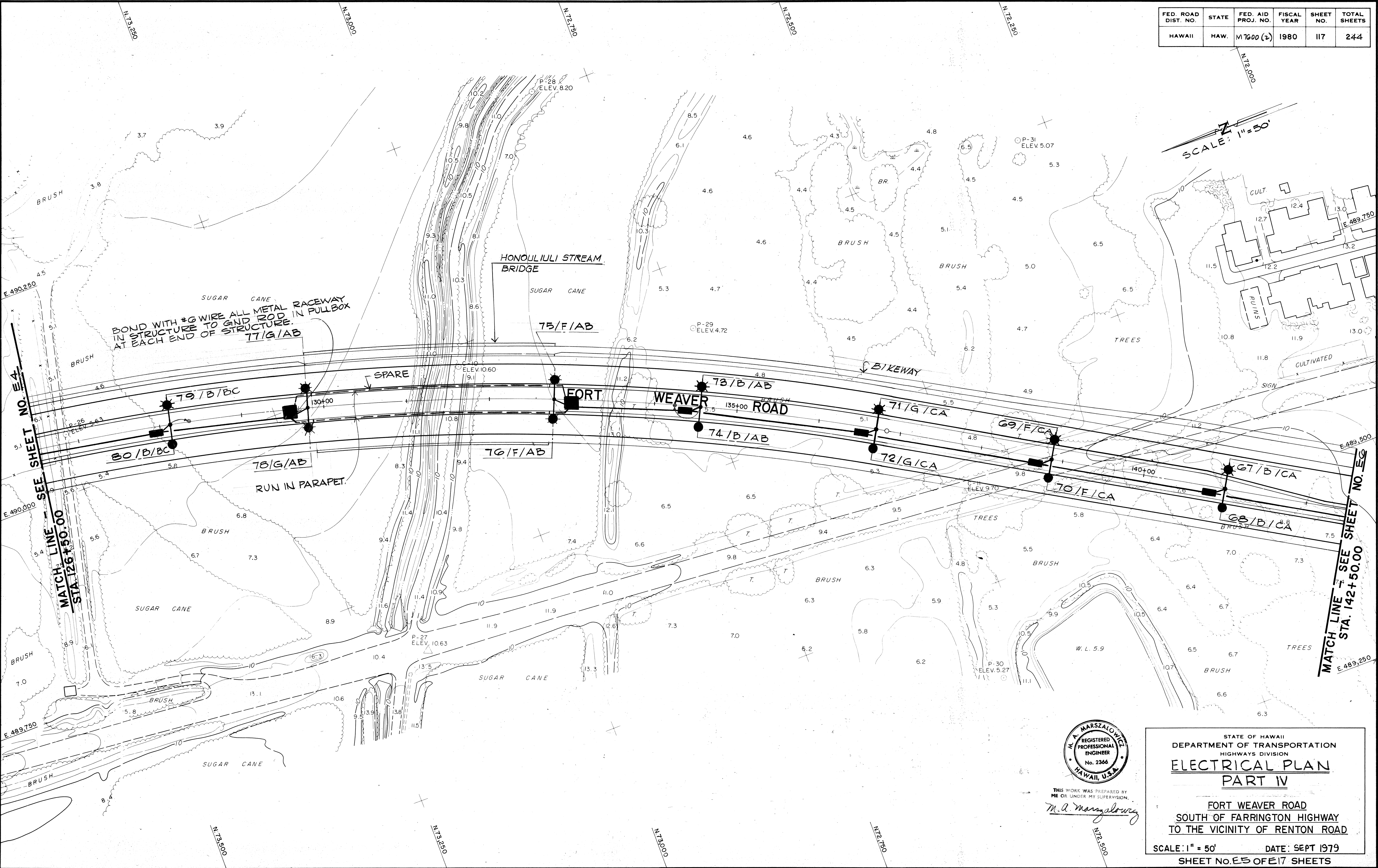
ORIGINAL PLAN	DATE
NO.	
DESIGNED BY	
CHECKED BY	



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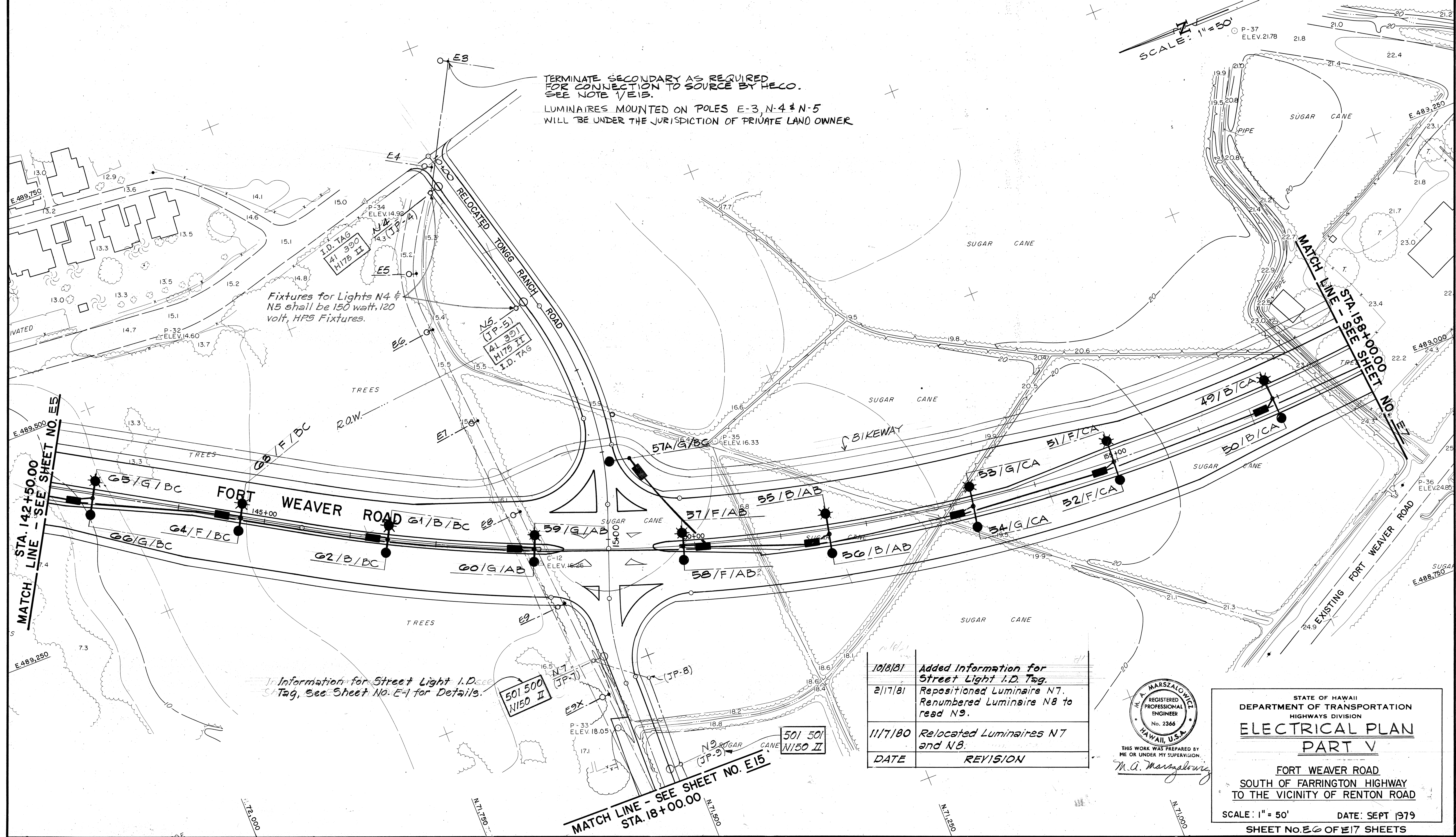
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART III
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. E 4 OF E 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600 (2)	1980	117	244



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M1600 (2)	1980	118	244

SUGA



TERMINATE SECONDARY AS REQUIRED FOR CONNECTION TO SOURCE BY HECO. SEE NOTE 1/E15.
LUMINAIRES MOUNTED ON POLES E-3, N-4 & N-5 WILL BE UNDER THE JURISDICTION OF PRIVATE LAND OWNER

Fixtures for Lights N4 & N5 shall be 150 watt, 120 volt, HPS Fixtures.

Information for Street Light I.D. Tag, See Sheet No. E-1 for Details.

DATE	REVISION
10/8/81	Added Information for Street Light I.D. Tag.
2/17/81	Repositioned Luminaire N7. Renumbered Luminaire N8 to read N9.
11/7/80	Relocated Luminaires N7 and N8.

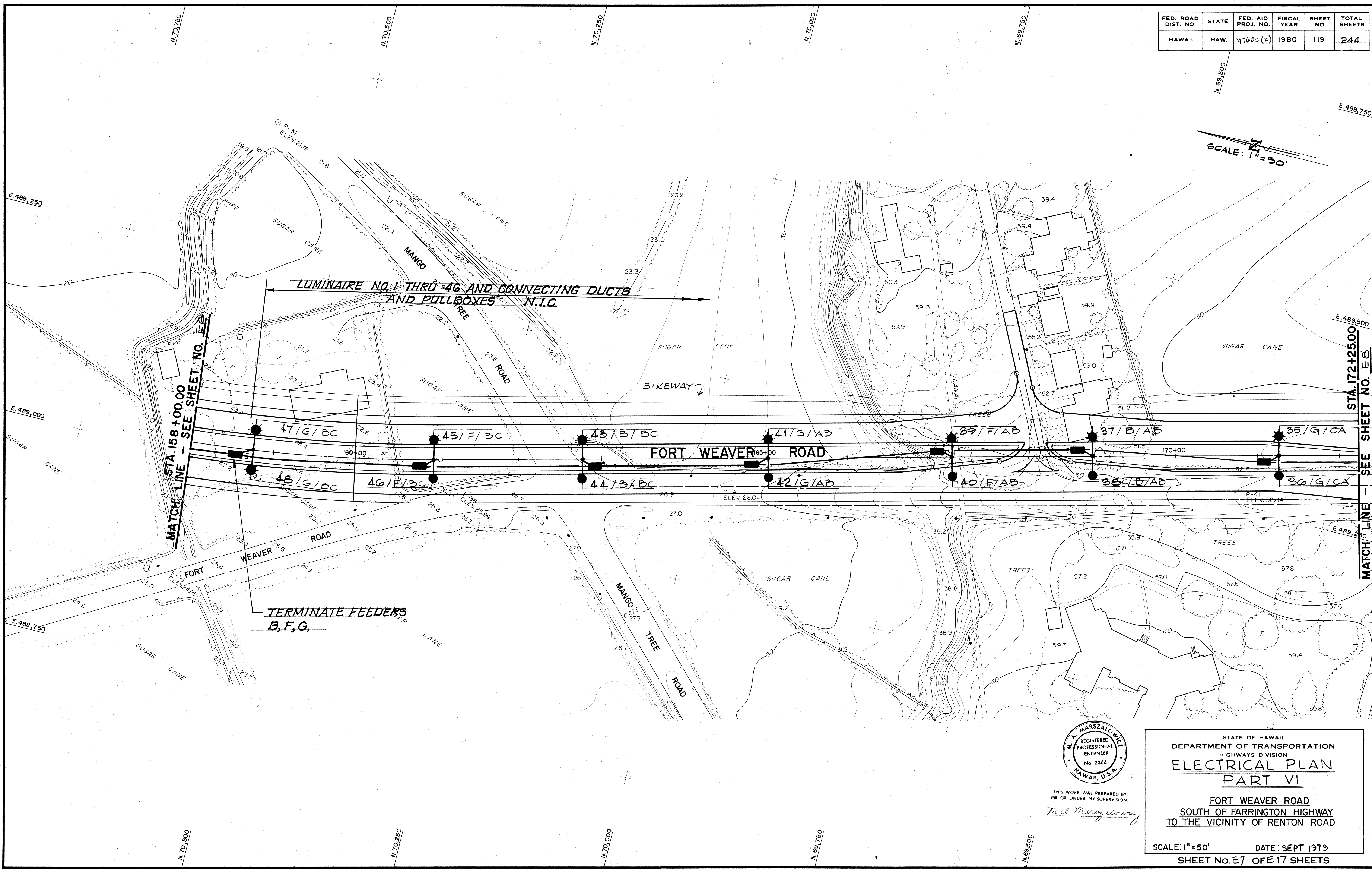


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STATE OF HAWAII
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ELECTRICAL PLAN
PART V
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. 118 OF 244 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600 (2)	1980	119	244

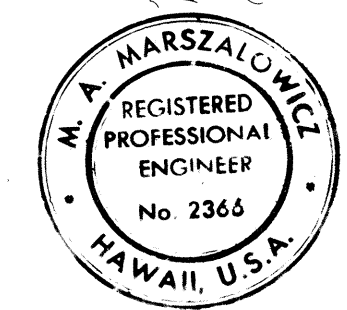
SCALE: 1"=50'



STA. 158+00.00
MATCH LINE - SEE SHEET NO. E6

STA. 172+25.00
MATCH LINE - SEE SHEET NO. E8

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
NO.	_____

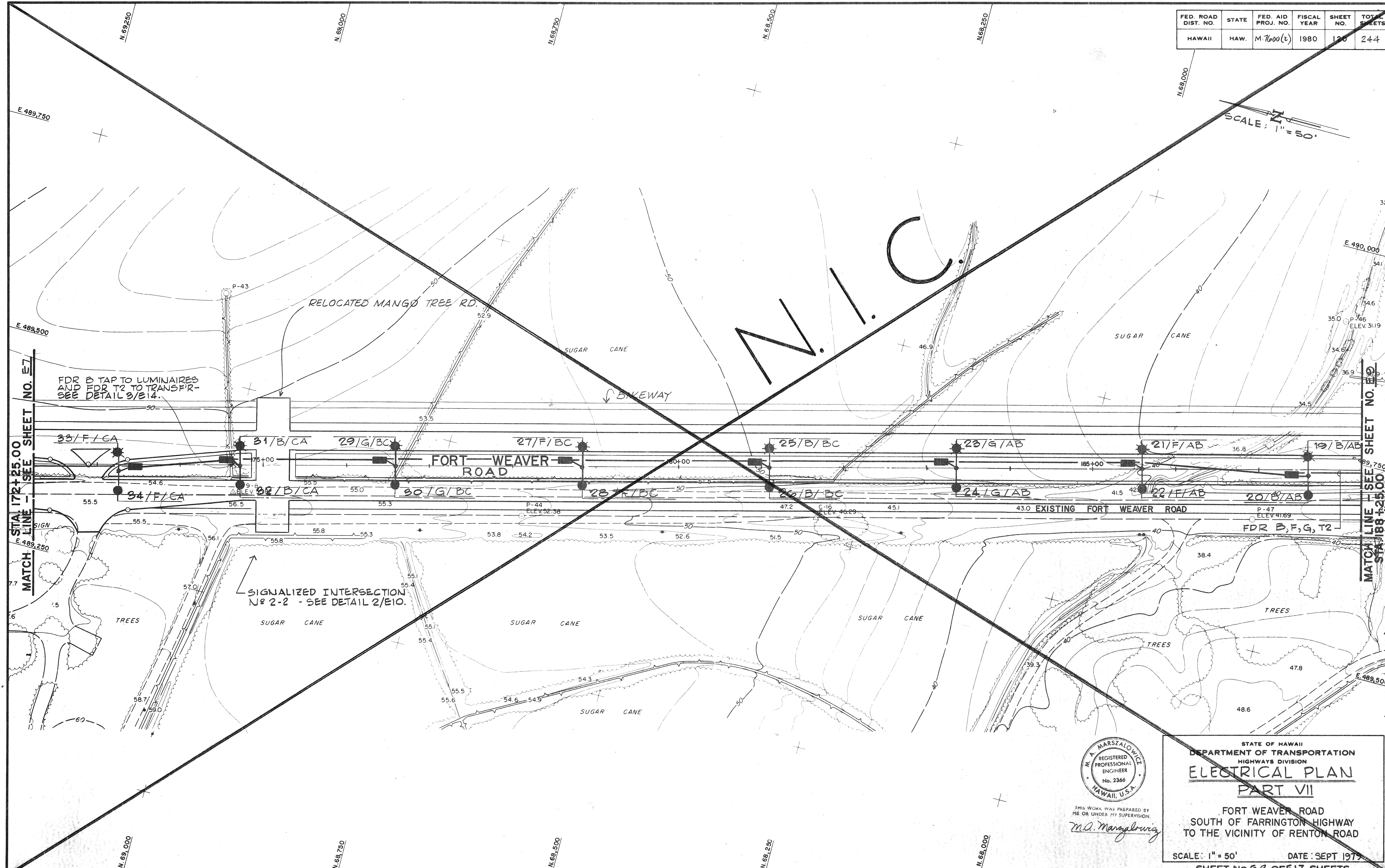


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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART VI
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: 1"=50' DATE: SEPT 1979
SHEET NO. E7 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M. 7600 (2)	1980	120	244

SCALE: 1" = 50'



SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



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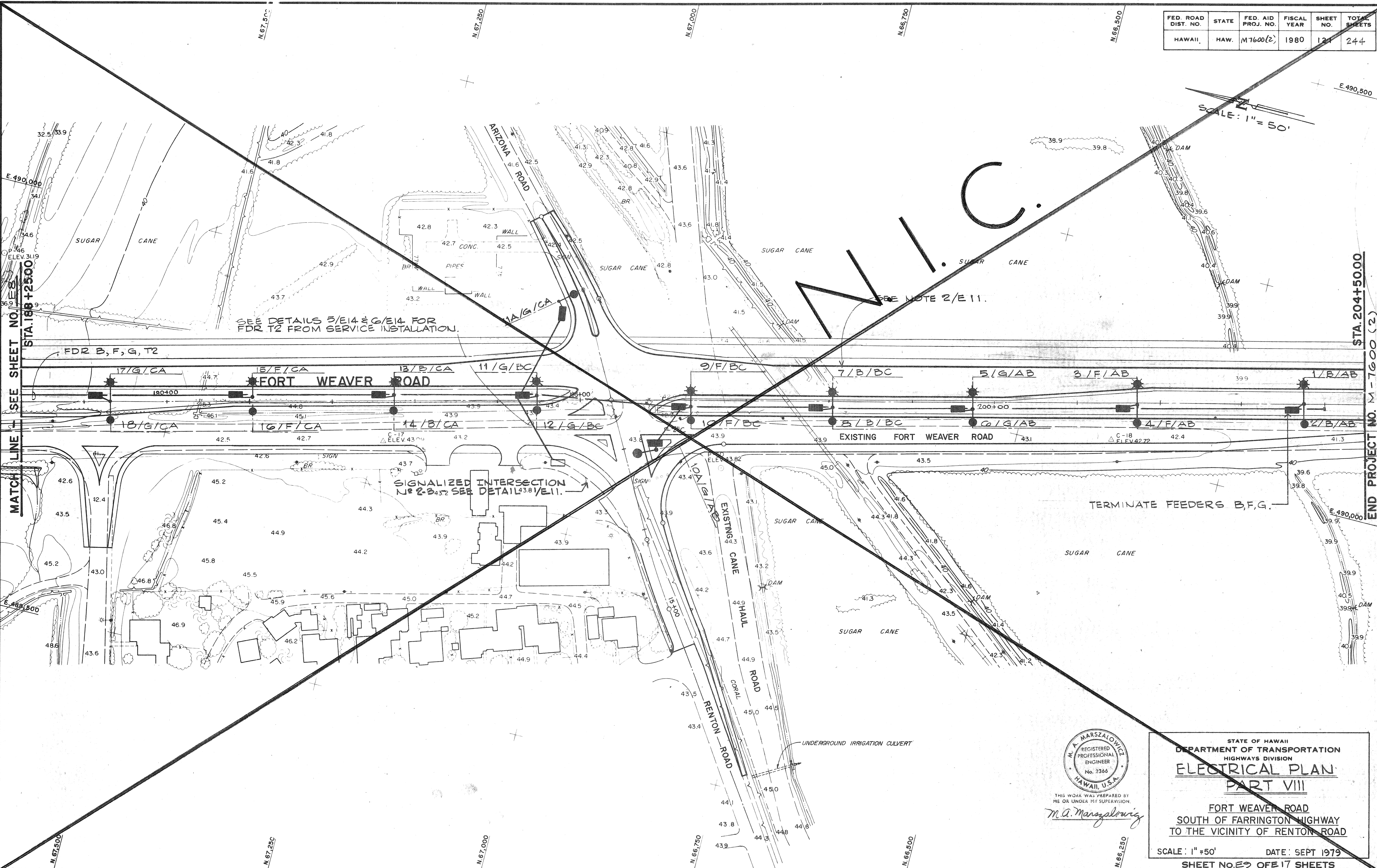
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART VII

FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

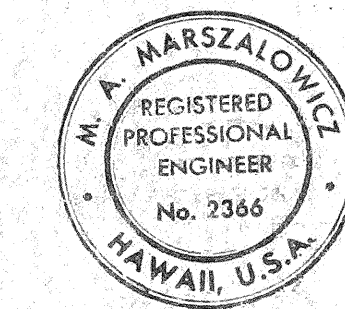
SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. E8 OF E17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600(2)	1980	121	244

SCALE: 1" = 50'



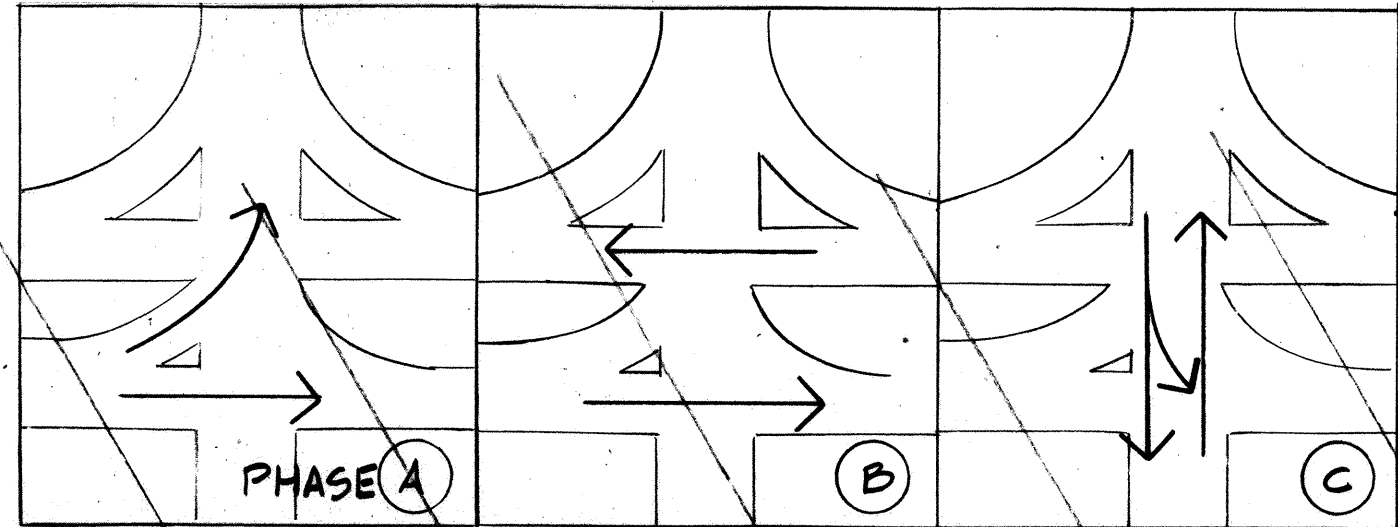
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	



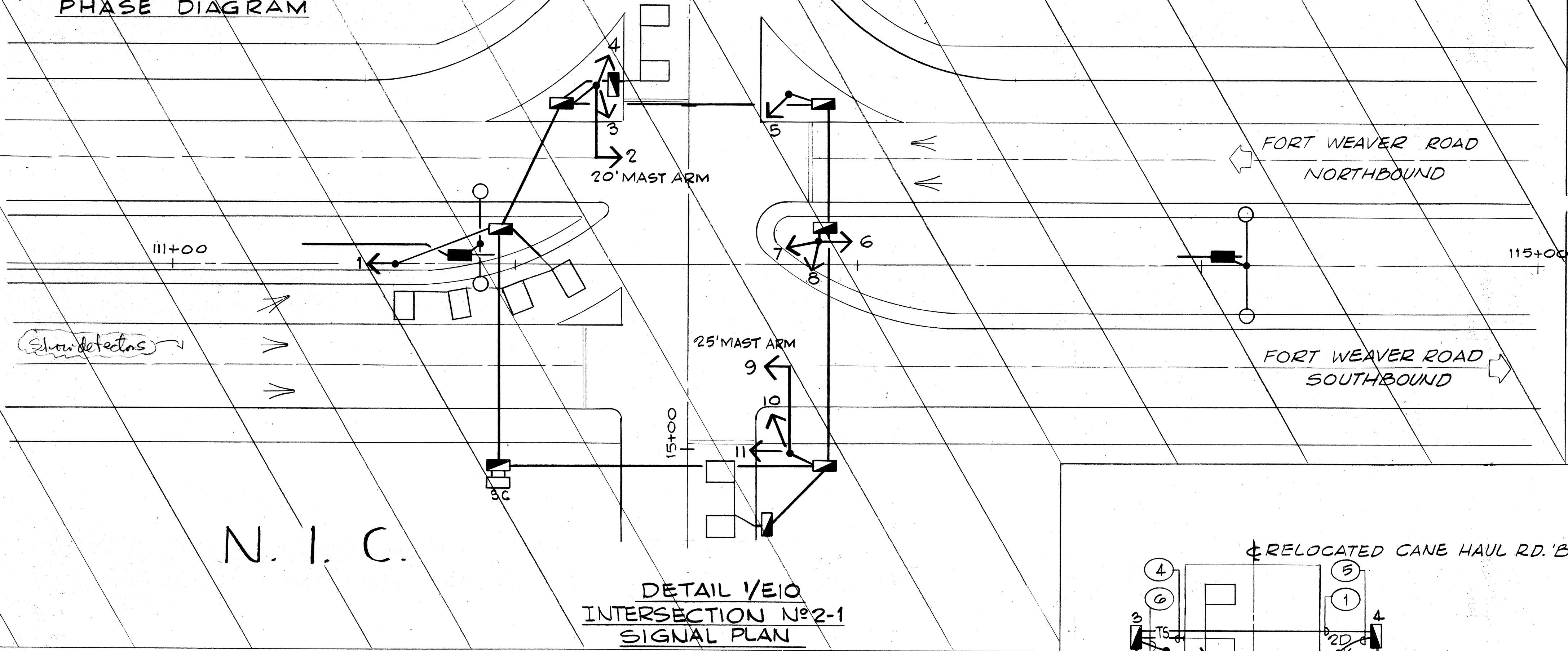
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ELECTRICAL PLAN
PART VIII
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. 121 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	MT600(2)	1980	122	244

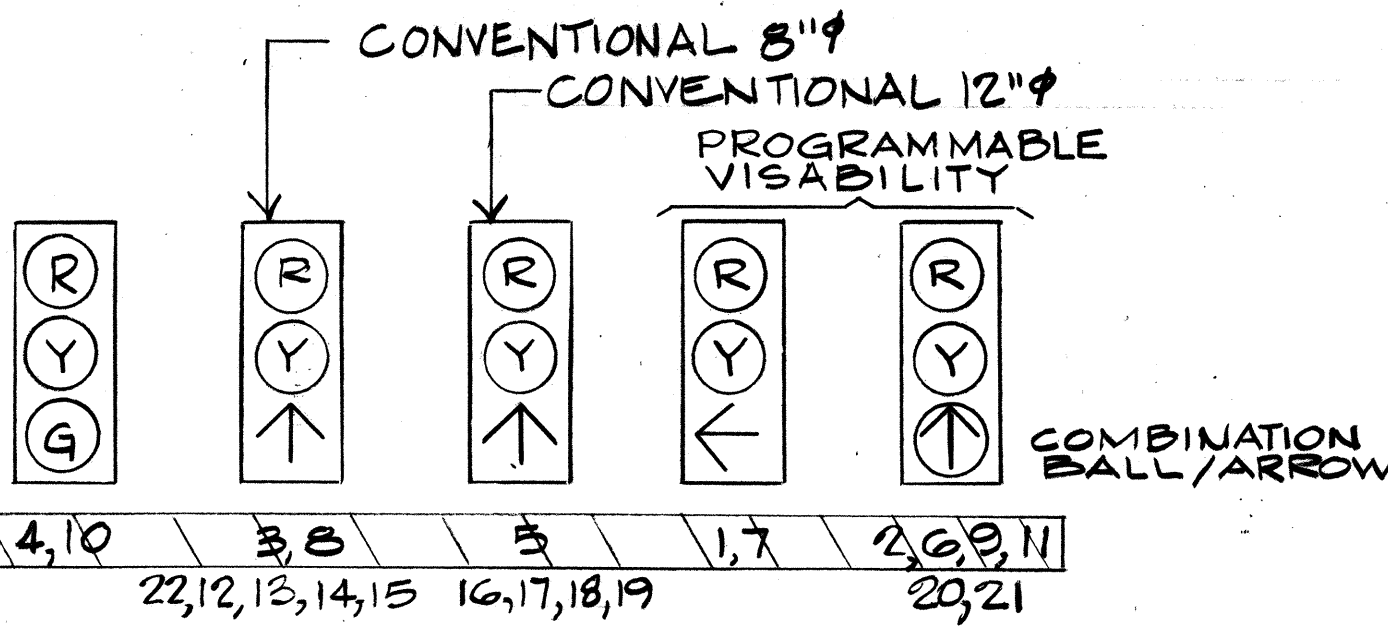


PHASE DIAGRAM



N. I. C.

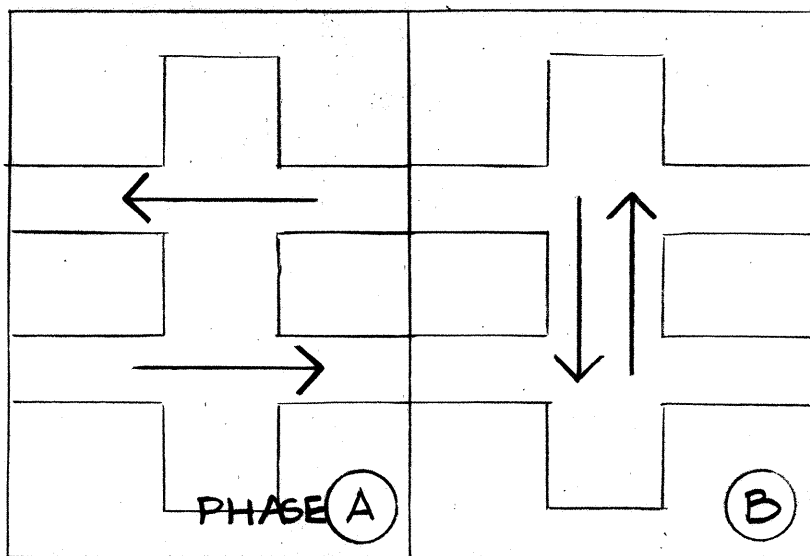
DETAIL 1/E10
INTERSECTION No. 2-1
SIGNAL PLAN



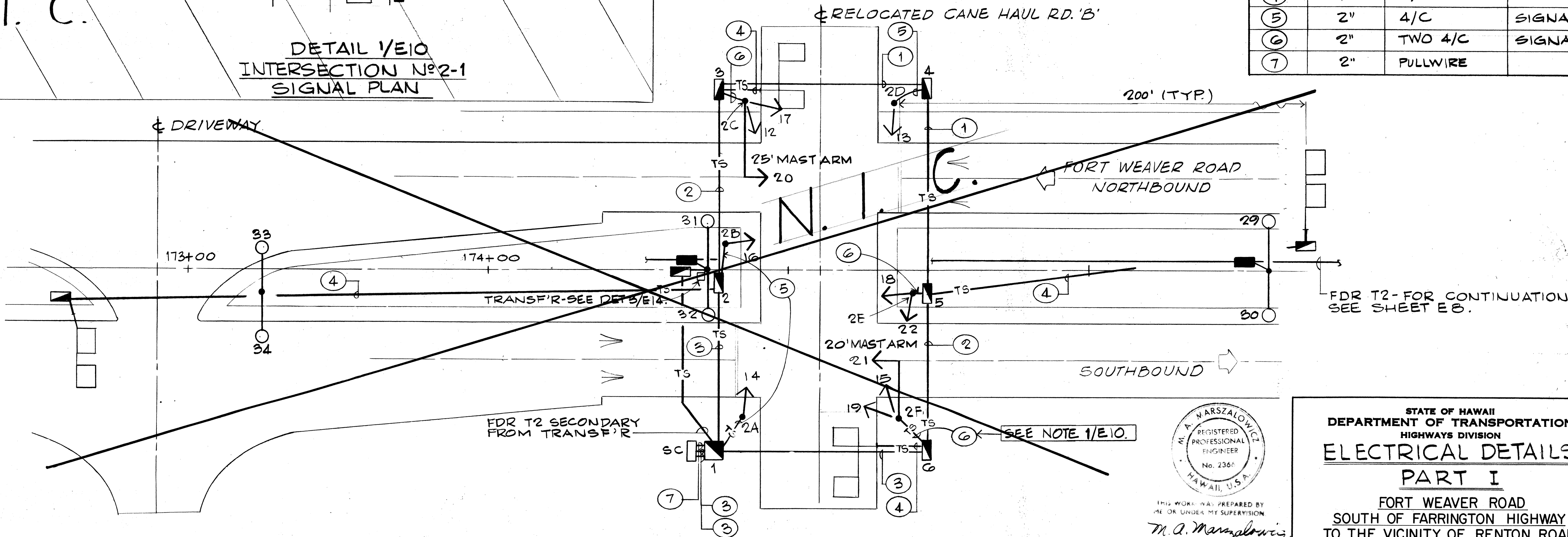
DETAIL 3/E10 - SIGNAL TYPES

NOTES
1/E10. PROVIDE RACEWAYS AND CABLES AS FOLLOWS

RACEWAY		CABLE	
No.	SIZE	TYPE	FOR
1	2"	2G/C	SIGNAL LOOP
2	2"	2G/C & 2/C	SIGNAL LOOP, DET. LOOP
3	2"	2G/C & TWO 2/C	SIGNAL LOOP, DET. LOOPS
4	2"	2/C	DET. LOOP
5	2"	4/C	SIGNALS
6	2"	TWO 4/C	SIGNAL
7	2"	PULLWIRE	



DETAIL 4/E10
TRAFFIC PHASES



DETAIL 2/E10 - INTERSECTION, No. 2-2 - SIGNAL PLAN
NOTE: SEE DETAILS 3/E10, 4/E10.

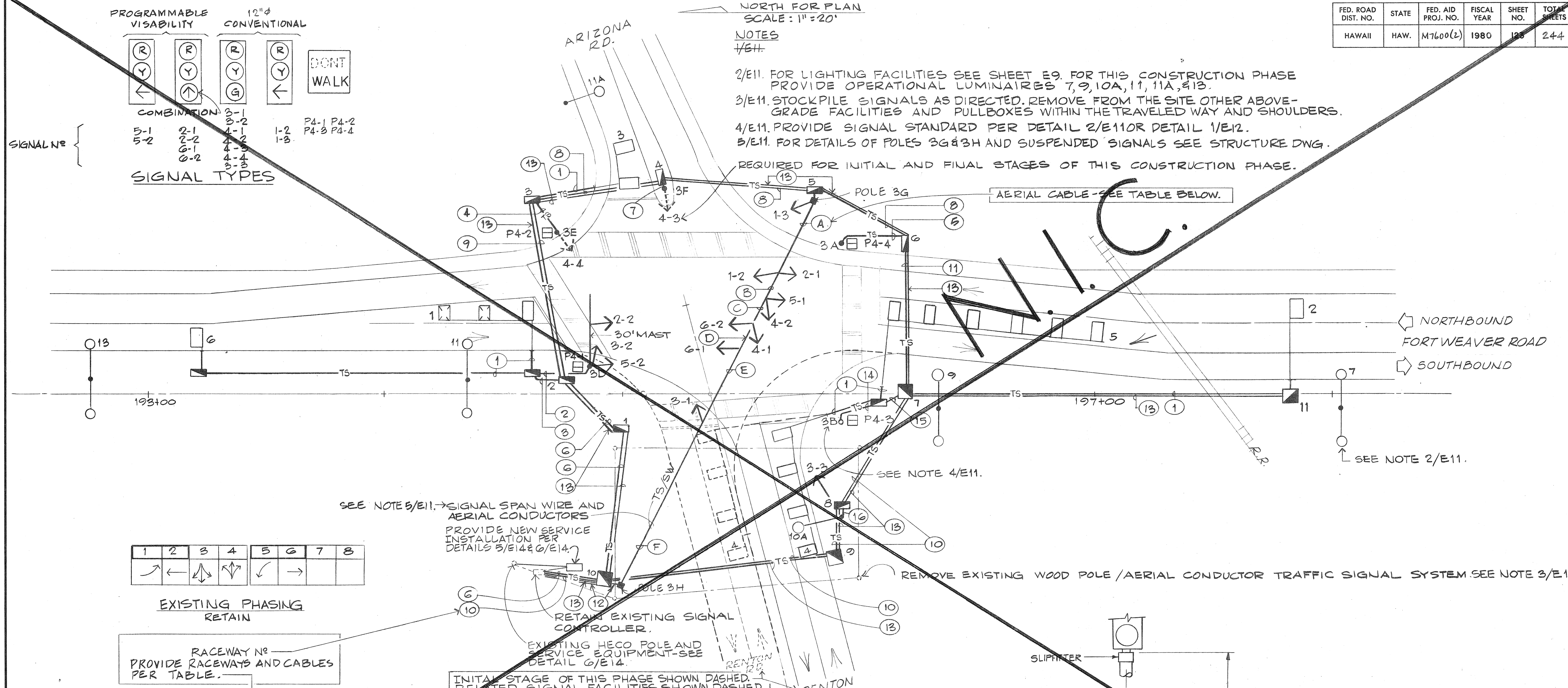


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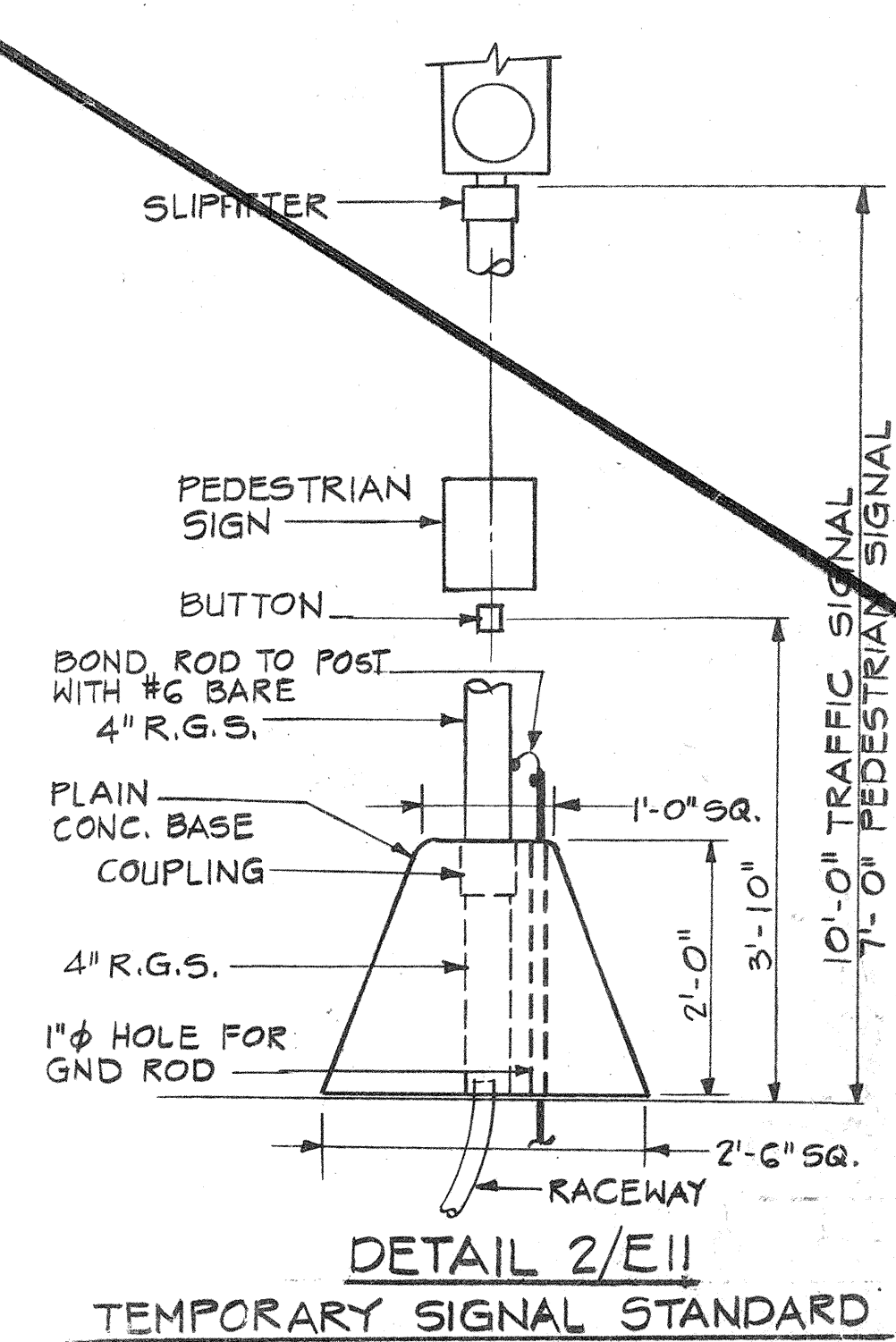
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART I
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: 1" = 20' DATE: SEPT 1979
SHEET No. 122 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600(2)	1980	123	244



RACEWAY					CABLE					RACEWAY					CABLE				
NO.	SIZE	2G/C SIG. LOOP	4/C SIGNAL	2/C DET. LOOP	2/C PUSH BUTTON	NO.	SIZE	2G/C SIG. LOOP	4/C SIGNAL	2/C DET. LOOP	2/C PUSH BUTTON	NO.	SIZE	2G/C SIG. LOOP	4/C SIGNAL	2/C DET. LOOP	2/C PUSH BUTTON	NO.	SIZE
1	2"			1		14	2"		1 & 2*		1				1 & 2*	2	1		
2	2"		4		1	15	2"		1 & 2*		1				1 & 2*		1		
3			4	2	1	16	2"		1 & 1*										
4			2		1														
5			1 & 2*		1														
6				2 & 1*															
7			1																
8		1																	
9		1		1	1														
10		1		2	2														
11		1			1														
12			9																
13																			



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART II
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: 1"=20' DATE: SEPT 1979
SHEET No. E11 OF E17 SHEETS



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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600 (2)	1980	124	244

NORTH FOR PLAN
SCALE: 1"=20'

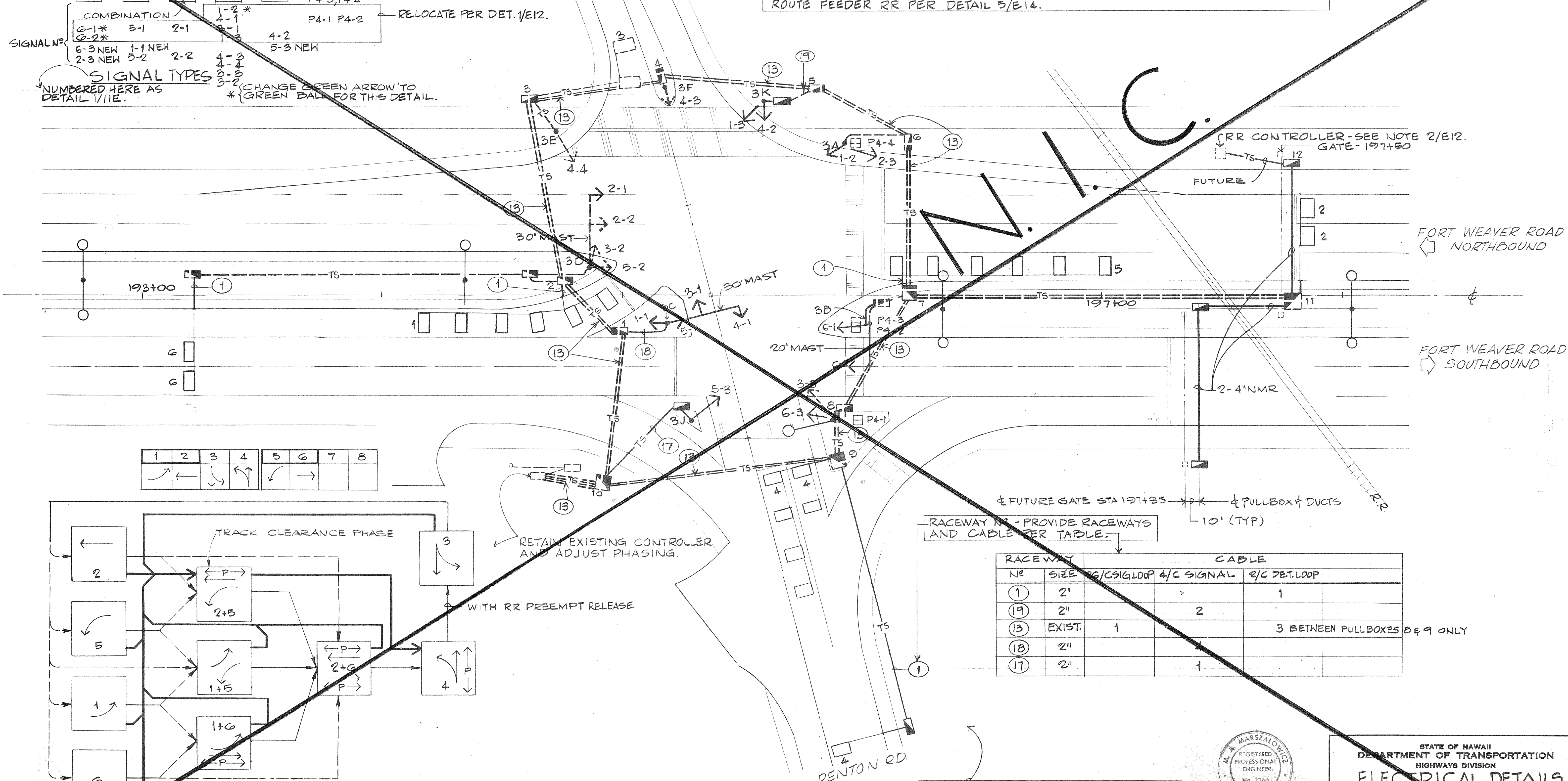
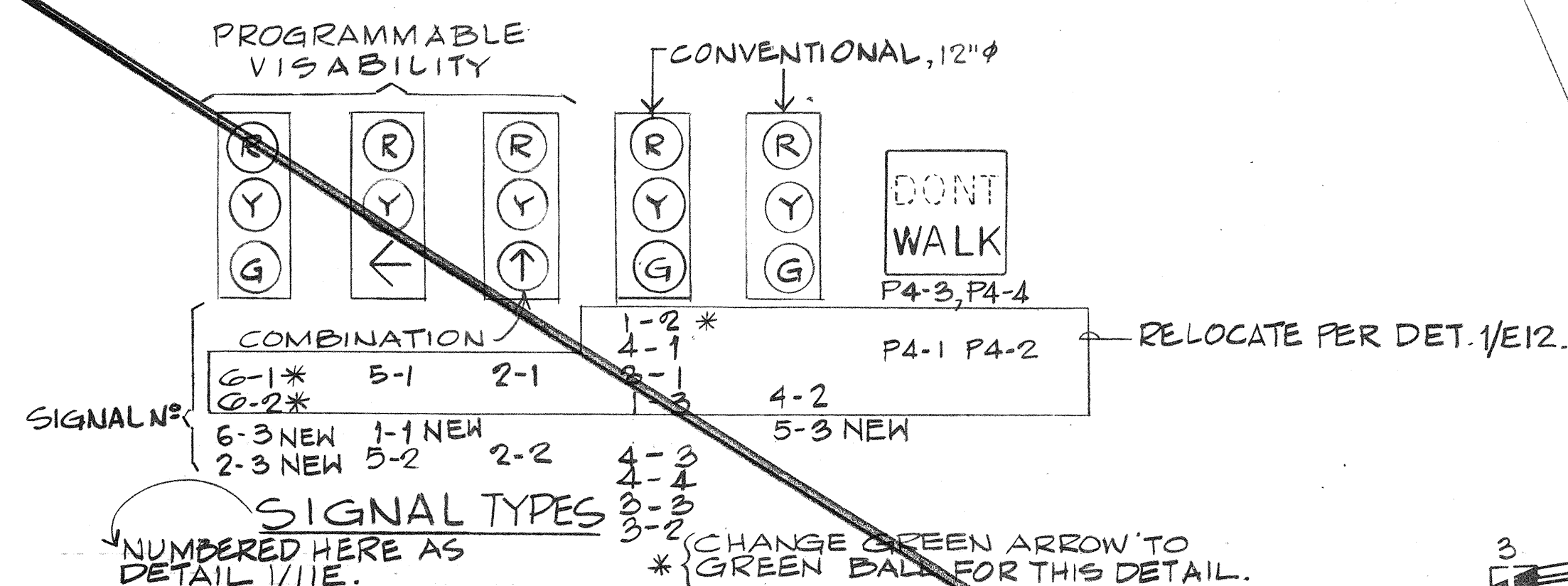
NOTES

1/E12. MODIFY SIGNAL SYSTEM OF DETAIL 1/E11 TO PROVIDE SYSTEM OF DETAIL 1/E12. ABANDON RACEWAYS AND CONDUCTORS NOT REQUIRED FOR DETAIL 1/E12. REMOVE AND STOCKPILE POLES 3H & 3G.

2/E12.

FOR RR PREEMPTION PROVIDE 2-#8 FROM CONTROLLER TO PULLBOXES 10-9-8-7-11-12 TO RR CONTROLLER AND SIMILARLY ROUTE FEEDER RR PER DETAIL 3/E14.

← FUTURE - N.I.C.



RACEWAY		CABLE		
№	SIZE	RG/CSIG LOOP	4/C SIGNAL	3/C DET. LOOP
1	2"			1
19	2"		2	
13	EXIST.	1		3 BETWEEN PULLBOXES 8 & 9 ONLY
18	2"			
17	2"		1	

NOTE: SIGNAL FACILITIES SHOWN DASHED ARE PROVIDED UNDER DETAIL 1/E11.

DETAIL 1/E12 - INTERSECTION NO. 2-3 SIGNAL PLAN
COMPLETED PERMANENT FACILITIES
SEE NOTE 1/E12.

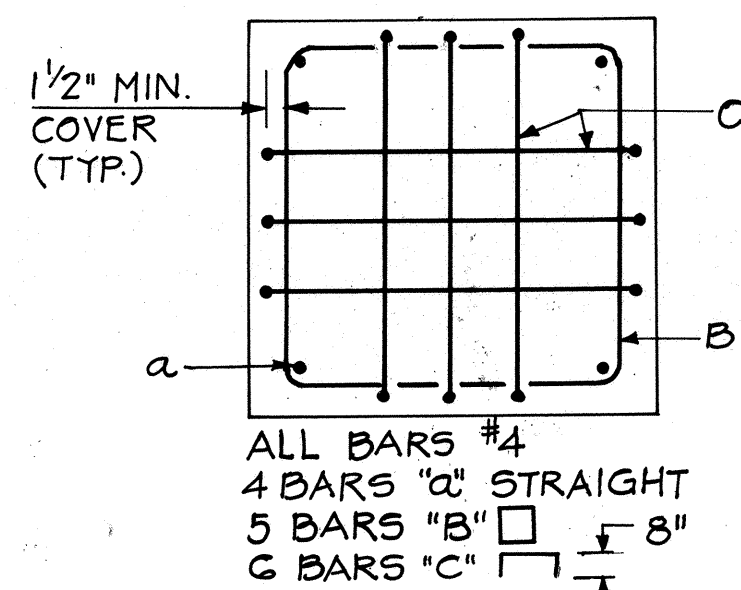


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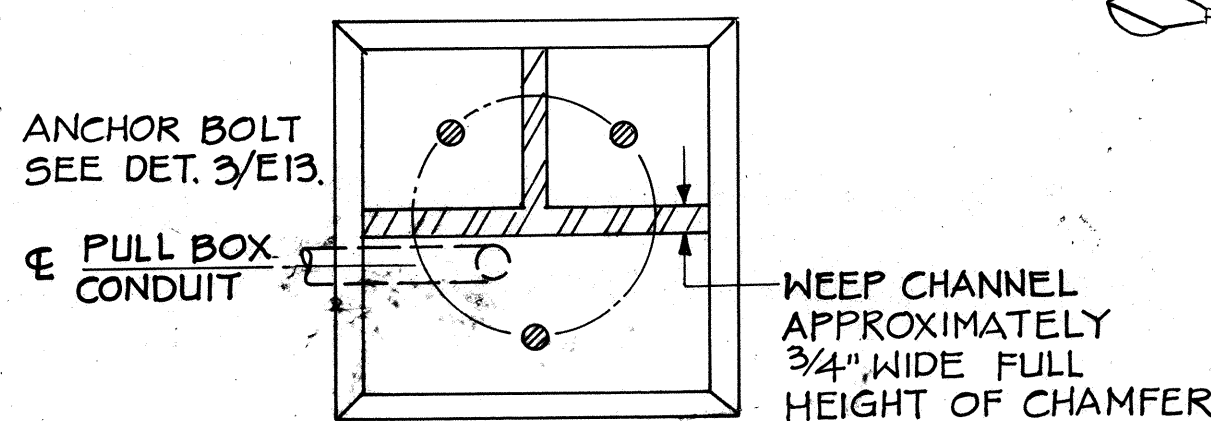
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART III
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: 1"=20' DATE: SEPT 1979
SHEET No. E12 OF 17 SHEETS

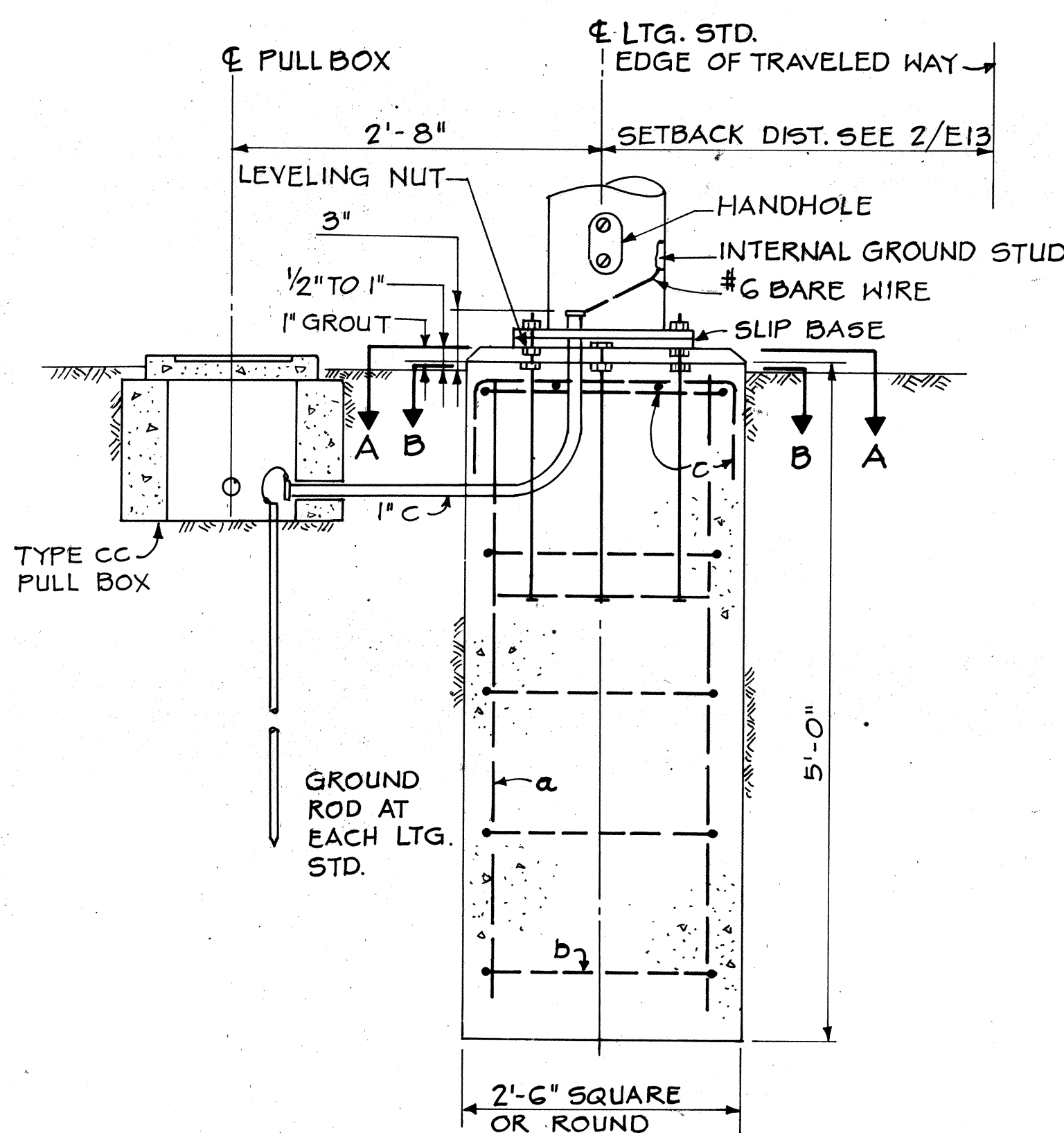
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600(2)	1980	125	244



SECTION B-B
REINFORCING PLAN

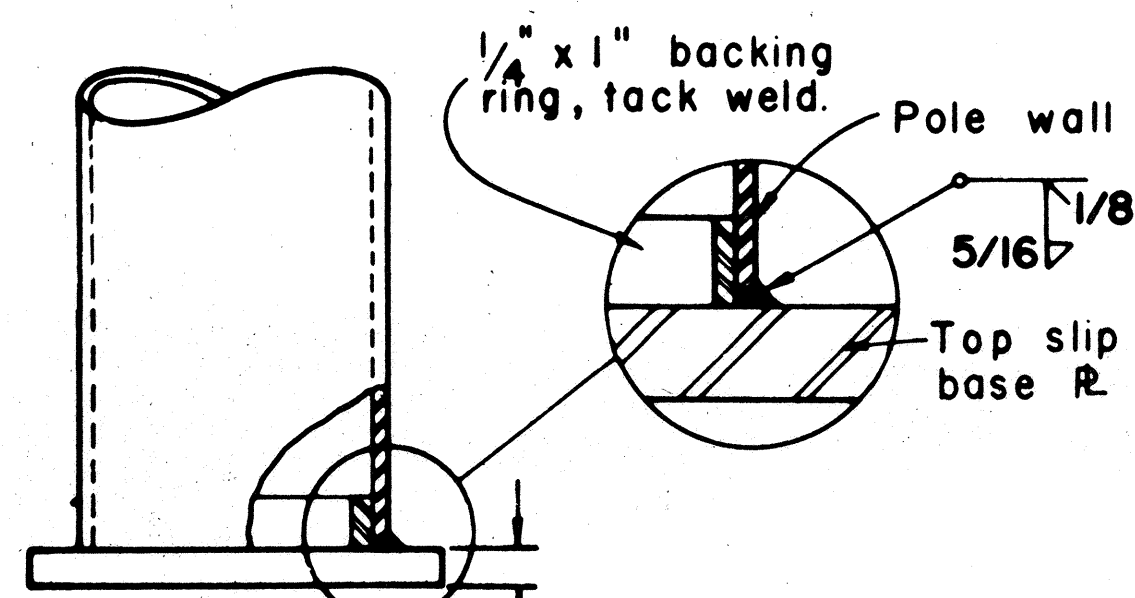


SECTION A-A
FOUNDATION PLAN



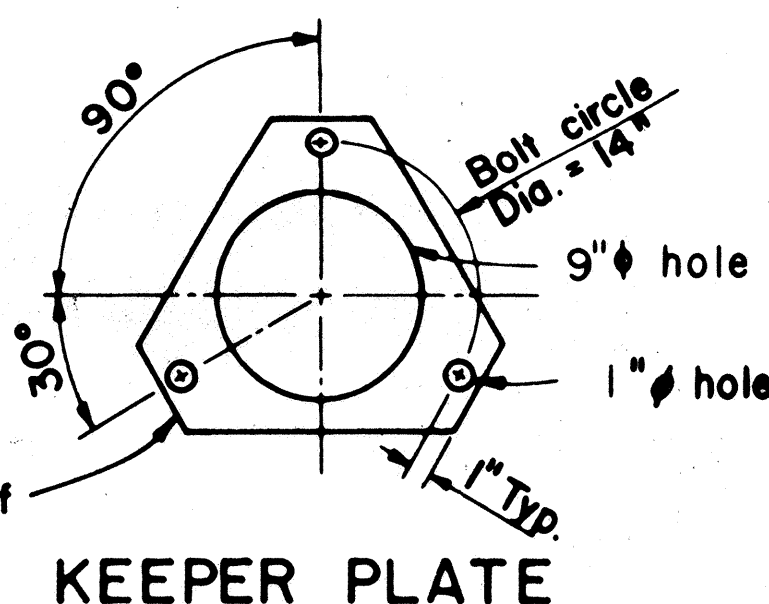
DETAIL 1/E13

LIGHTING STANDARD FOUNDATION
(ALL LUMINAIRES EXCEPT #49, #50, #75, #76, #77, #78)
SCALE: 1" = 1'-0"



DETAIL B

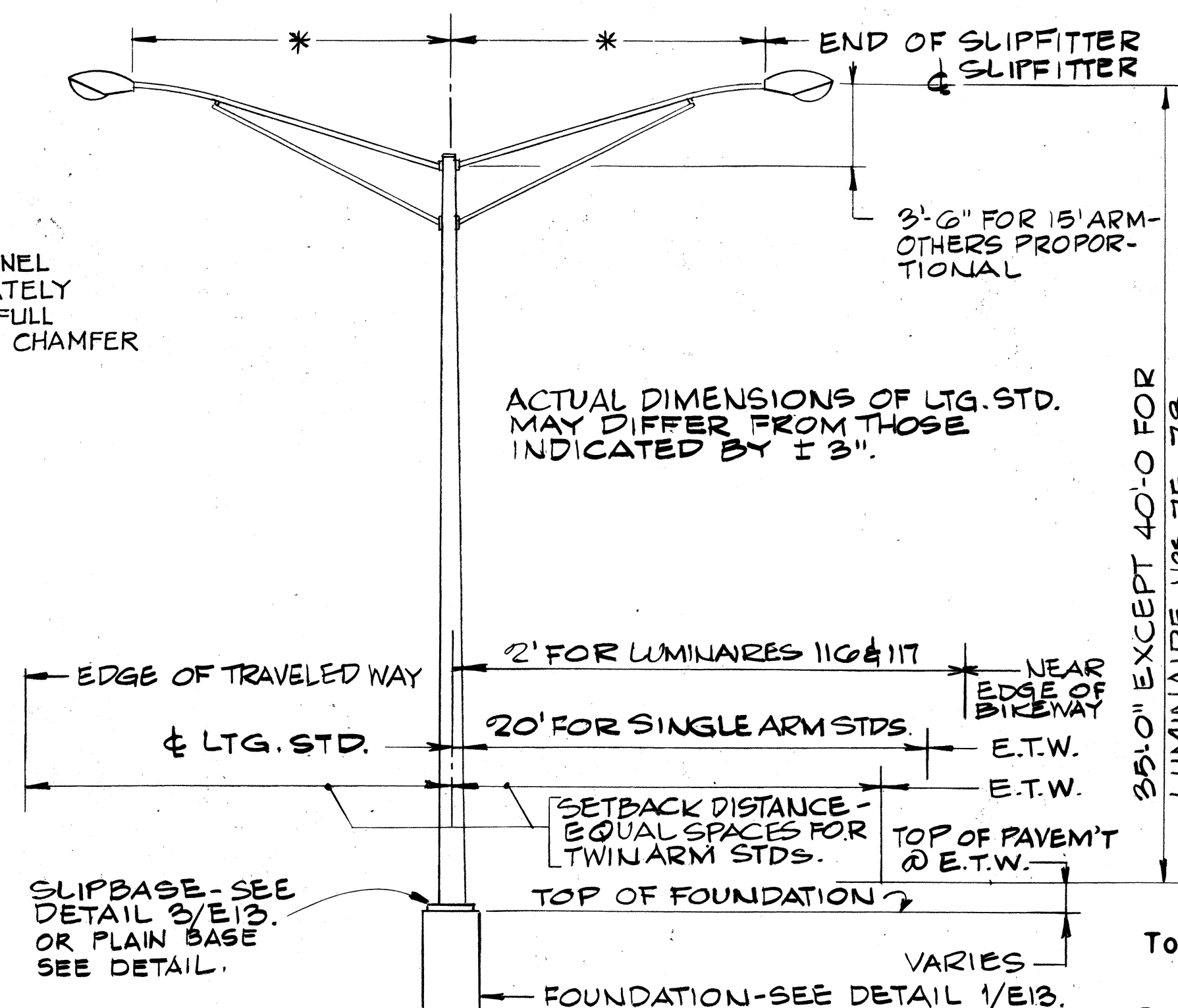
28 ga. keeper R., place on top of flat washer. A.S.T.M. A526, 125 Commercial.



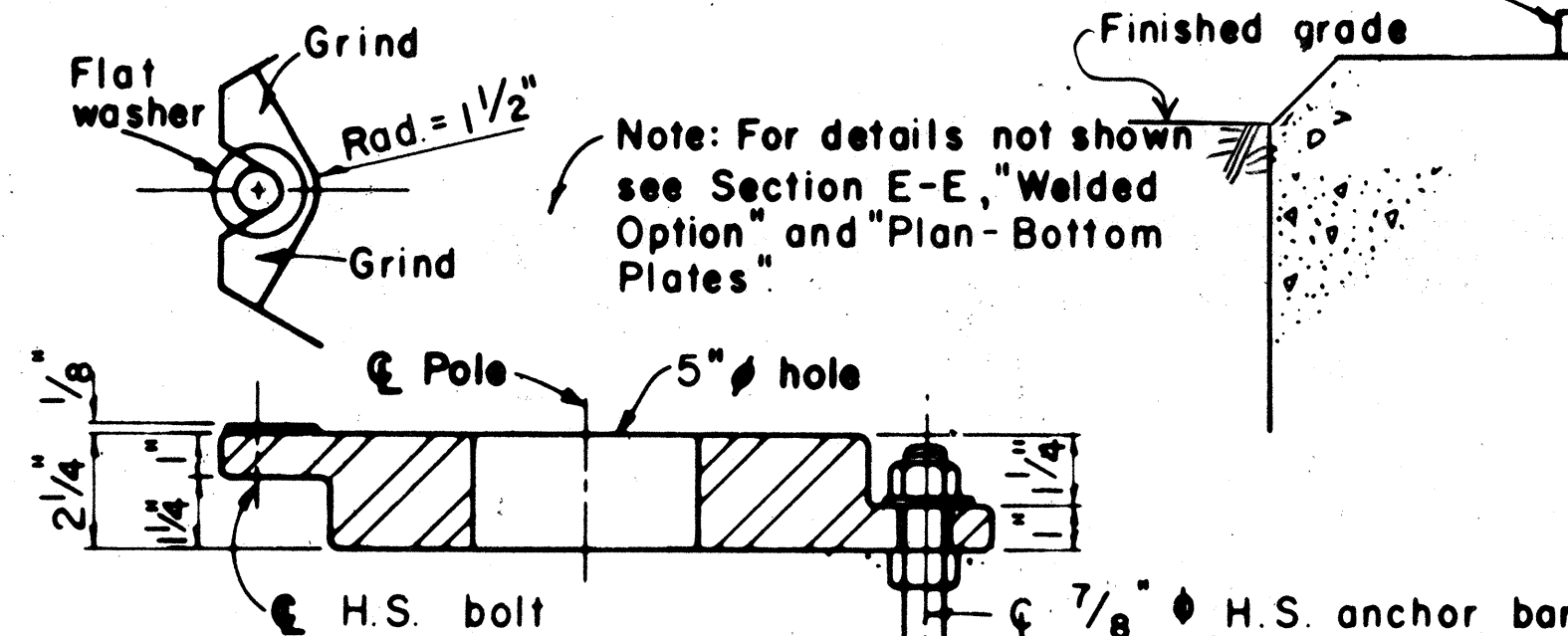
KEEPER PLATE

DETAIL 3/E13

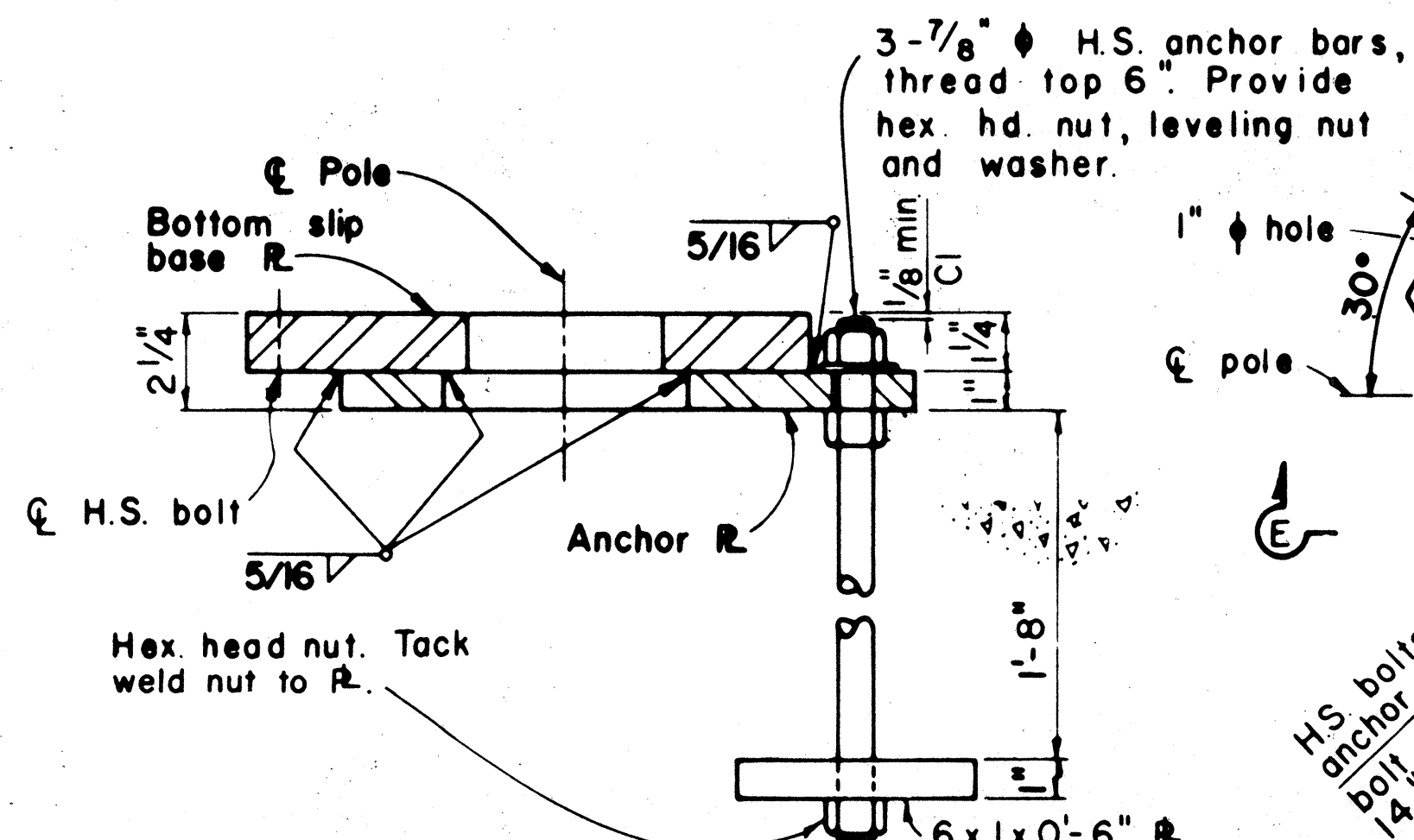
* BRACKET ARM LENGTH FOR ALL LUMINAIRES 15'-0", EXCEPT 6'-0" FOR LUMINAIRES Nos. 99A, 101A, 103A, 105A, 107A, 113A, 114A, #115A.



DETAIL 2/E13 - LIGHTING STANDARD



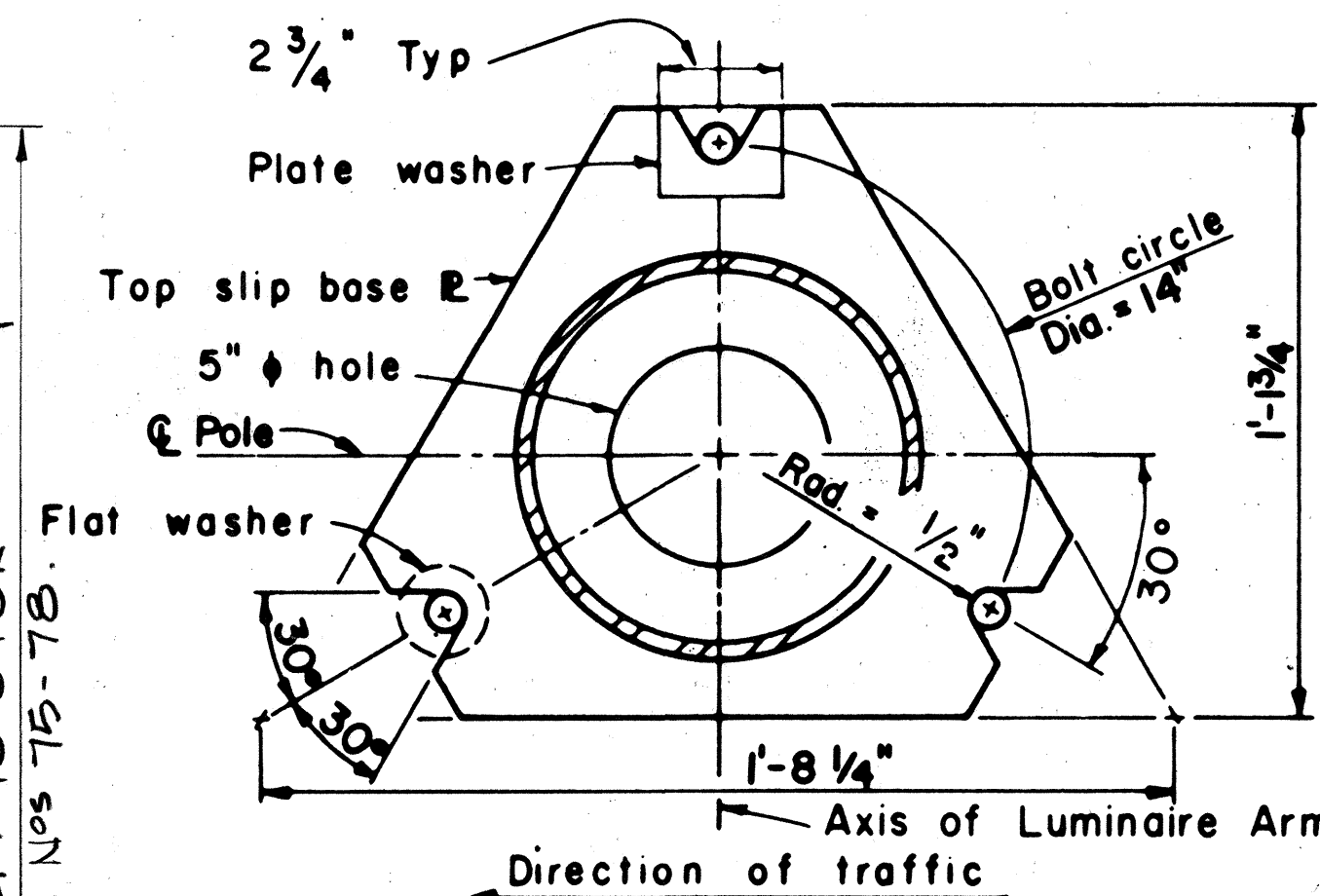
CAST OPTION



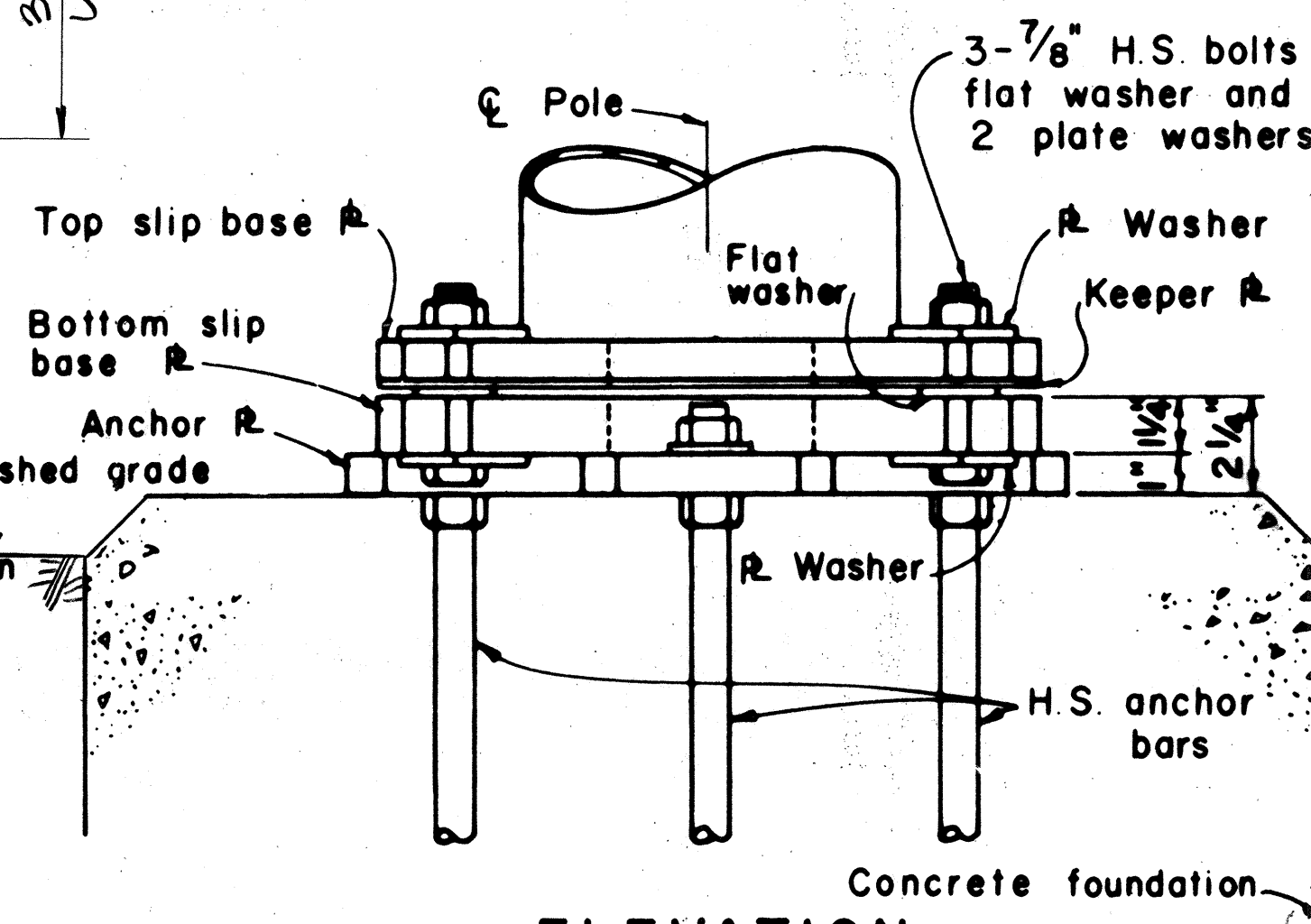
WELDED OPTION

SECTION E-E

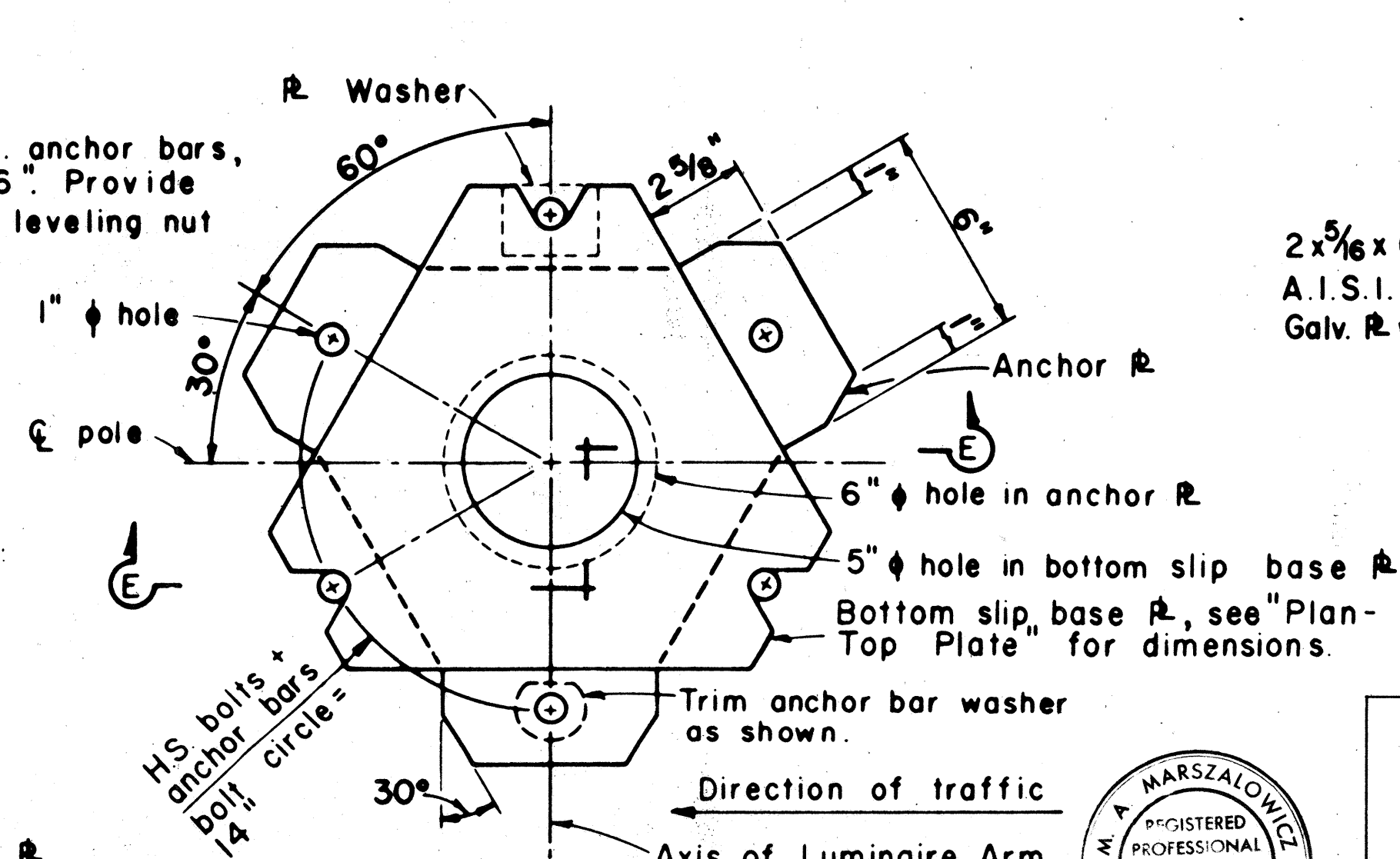
LIGHTING STANDARD SLIP BASE



PLAN - TOP PLATE



ELEVATION



PLAN - BOTTOM PLATES

SLIP BASE PLATE DETAILS

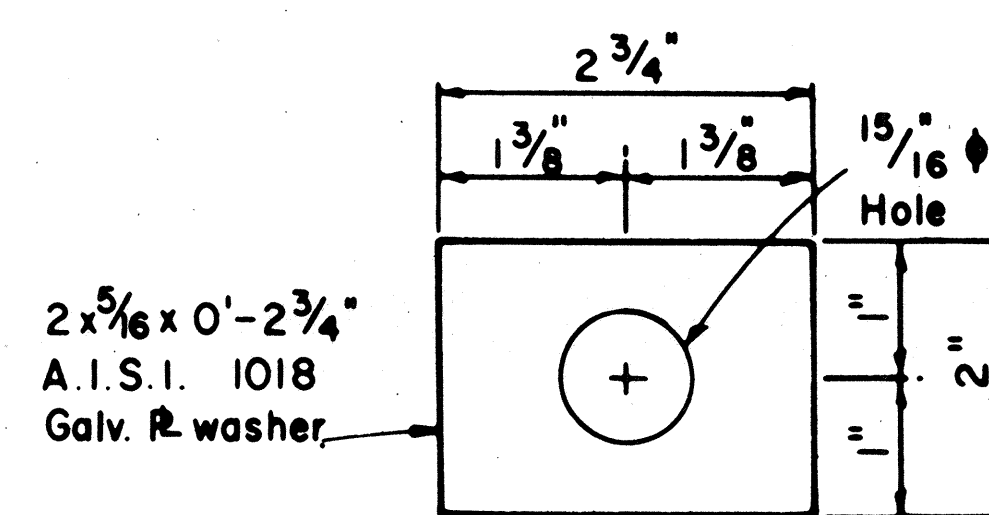


PLATE WASHER



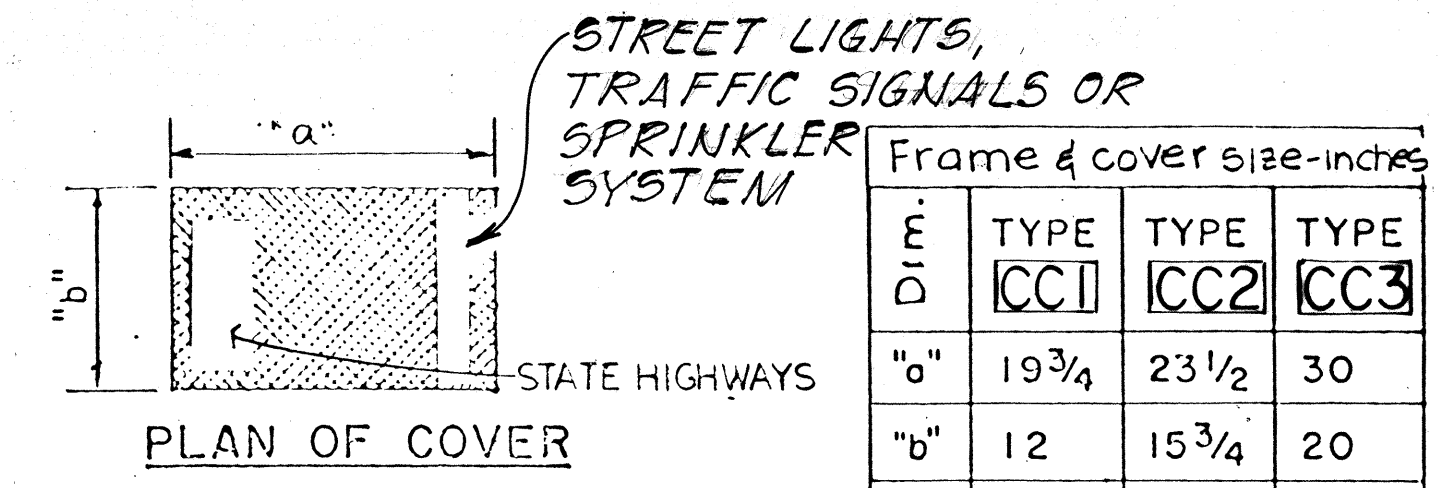
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
M. J. Marszalowicz

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART IV
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

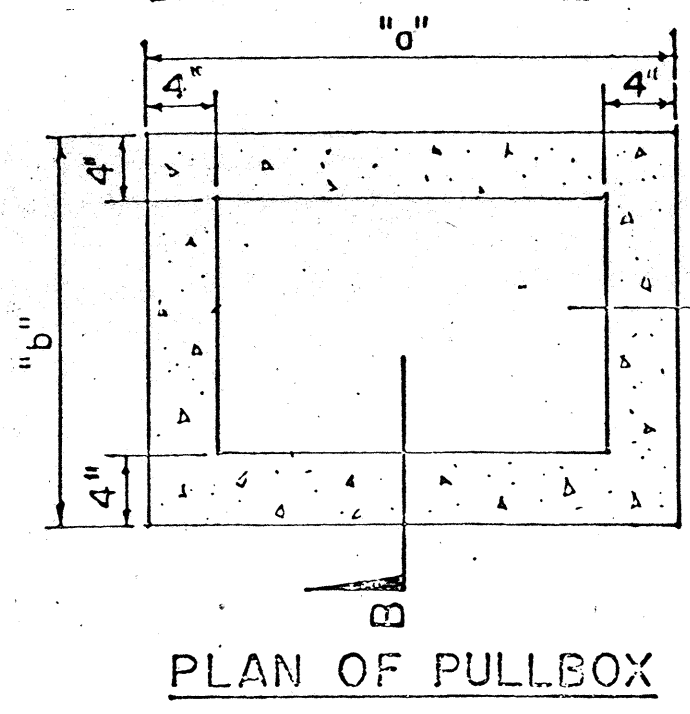
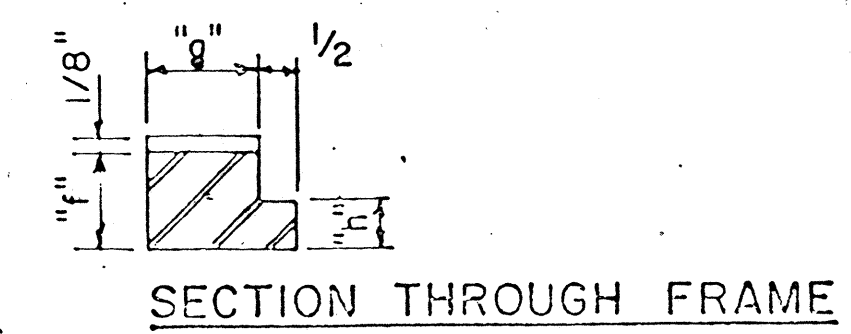
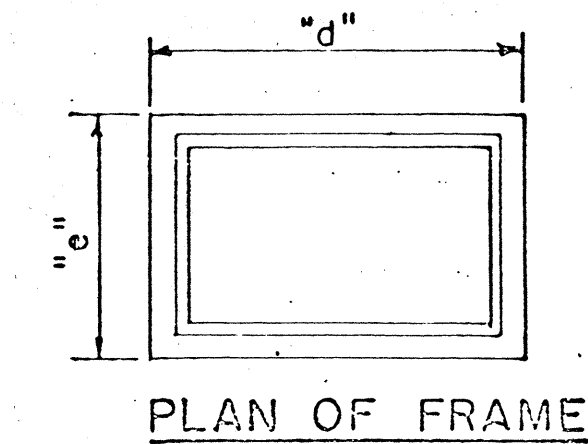
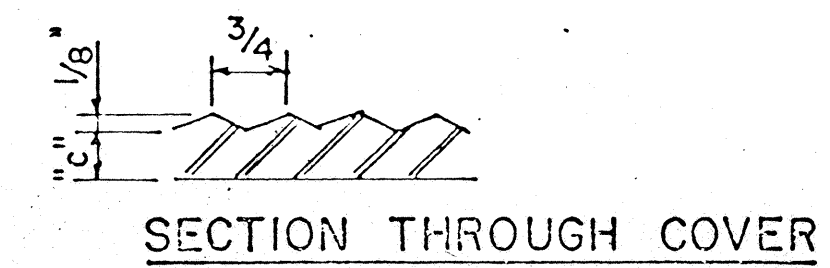
SCALE: AS SHOWN DATE: SEPT 1979
SHEET NO. E12 OF E17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M7600(2)	1980	126R	244

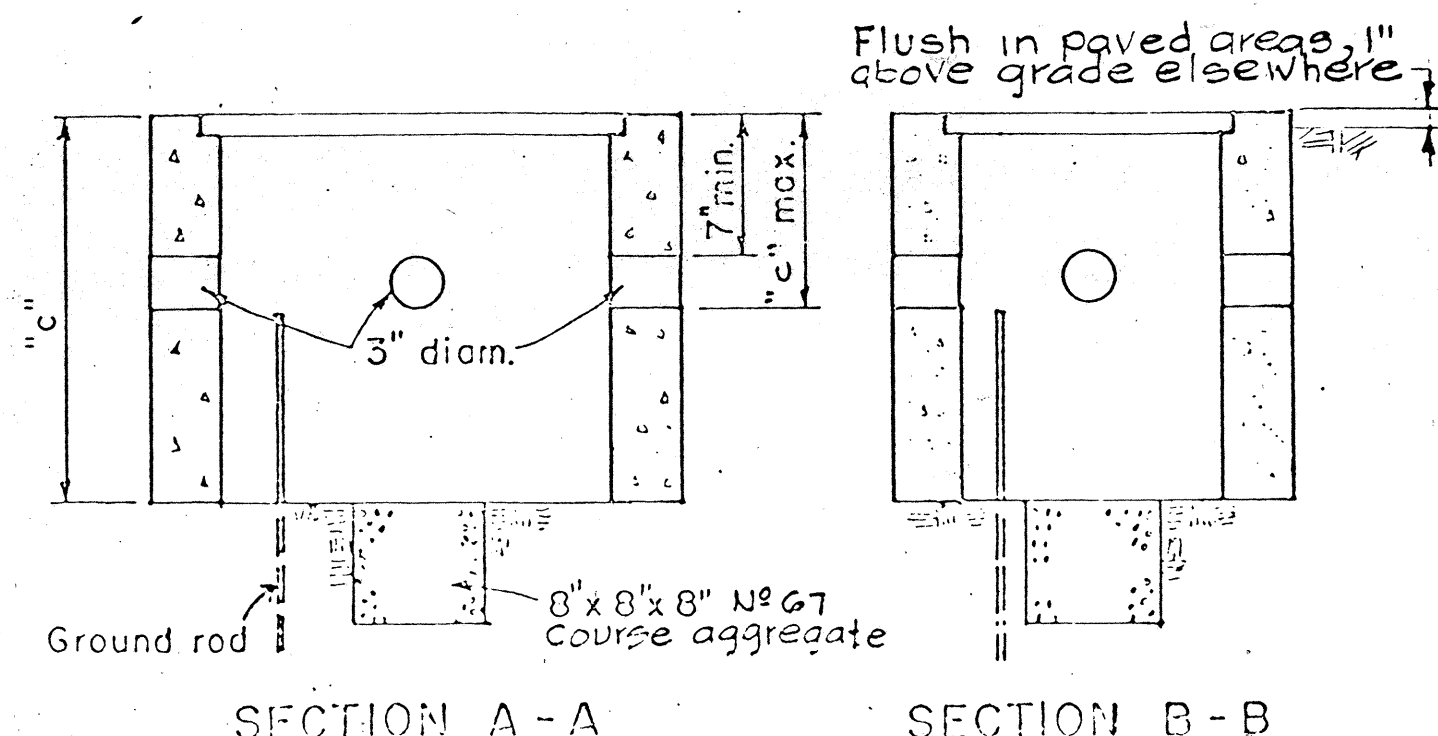
DATE	REVISION
6/6/80	Added to Inscriptions "Sprinkler System" for Plan of Cover, Detail 1/E14, per Addendum No. 1.



Frame & cover size-inches			
Dim.	TYPE CC1	TYPE CC2	TYPE CC3
"a"	19 3/4	23 1/2	30
"b"	12	15 3/4	20
"c"	1/2	1/2	5/8
"d"	22 1/2	26 1/4	33 3/16
"e"	14 3/4	18 1/2	23 3/16
"f"	1	1	2
"g"	1 1/4	1 1/4	1 1/2
"h"	1/2	1/2	1 3/8

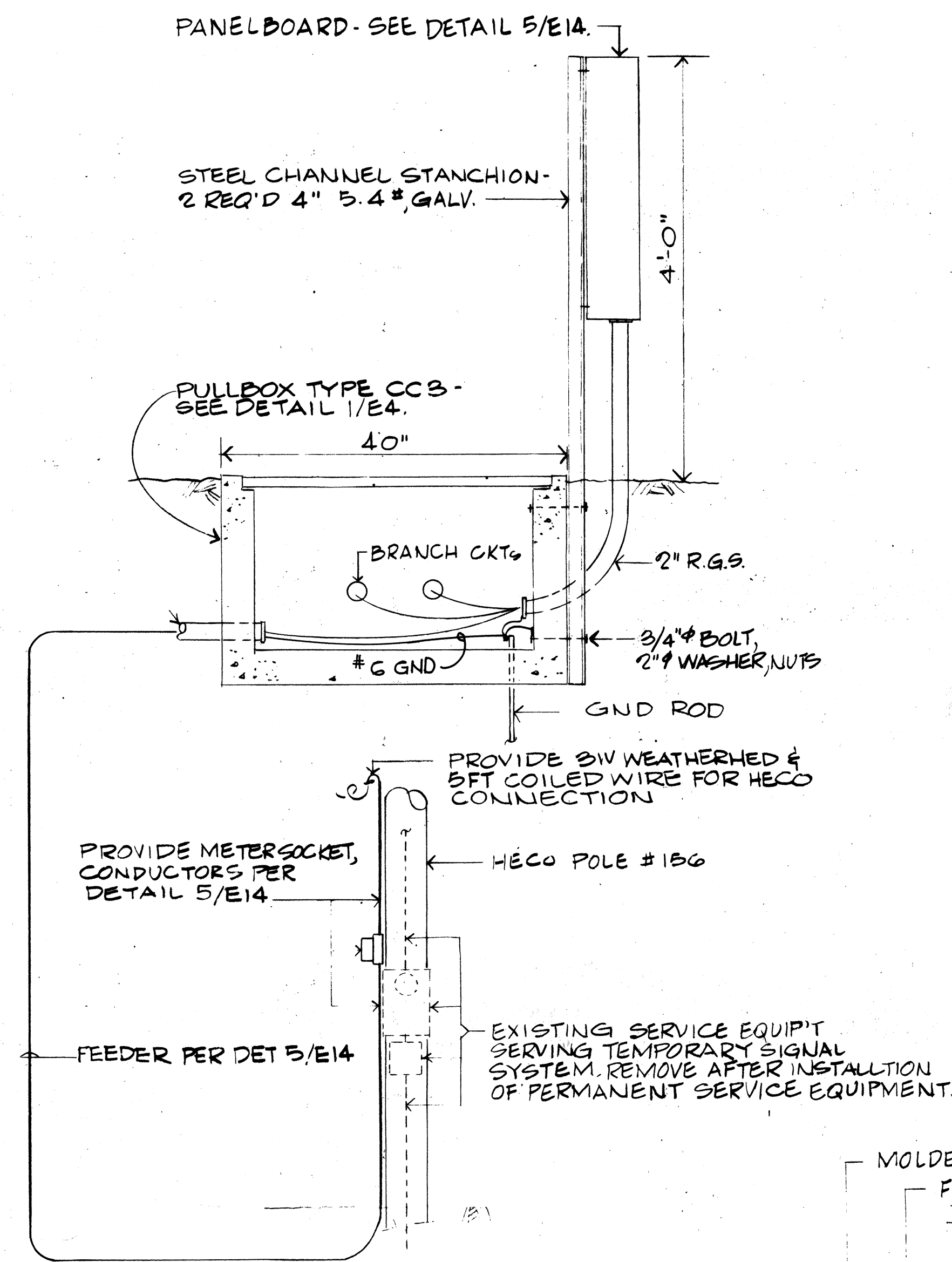
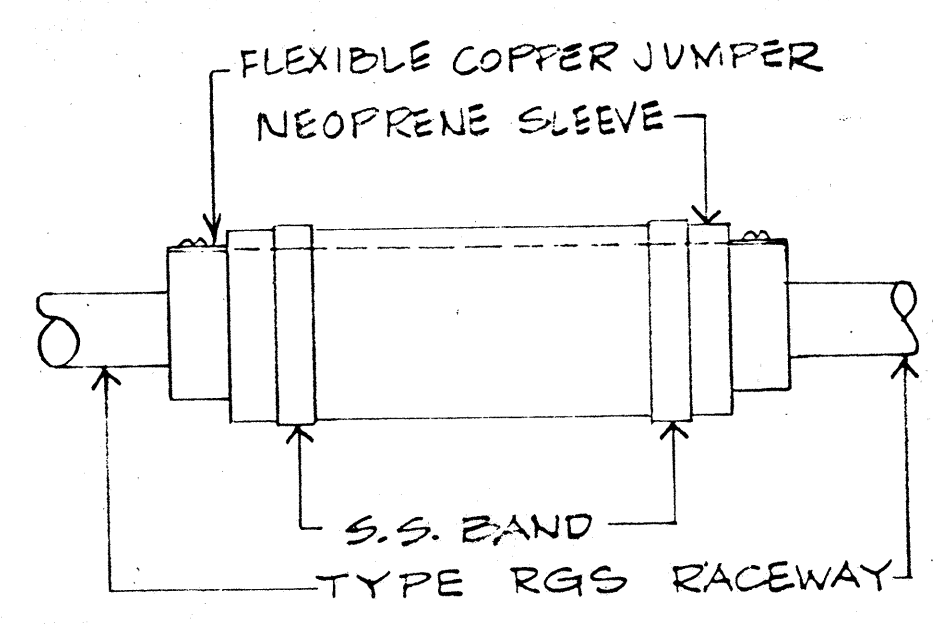


Pullbox size-inches			
Dim.	TYPE CC1	TYPE CC2	TYPE CC3
"a"	28	32	40
"b"	19	24	28
"c"	18	24	24

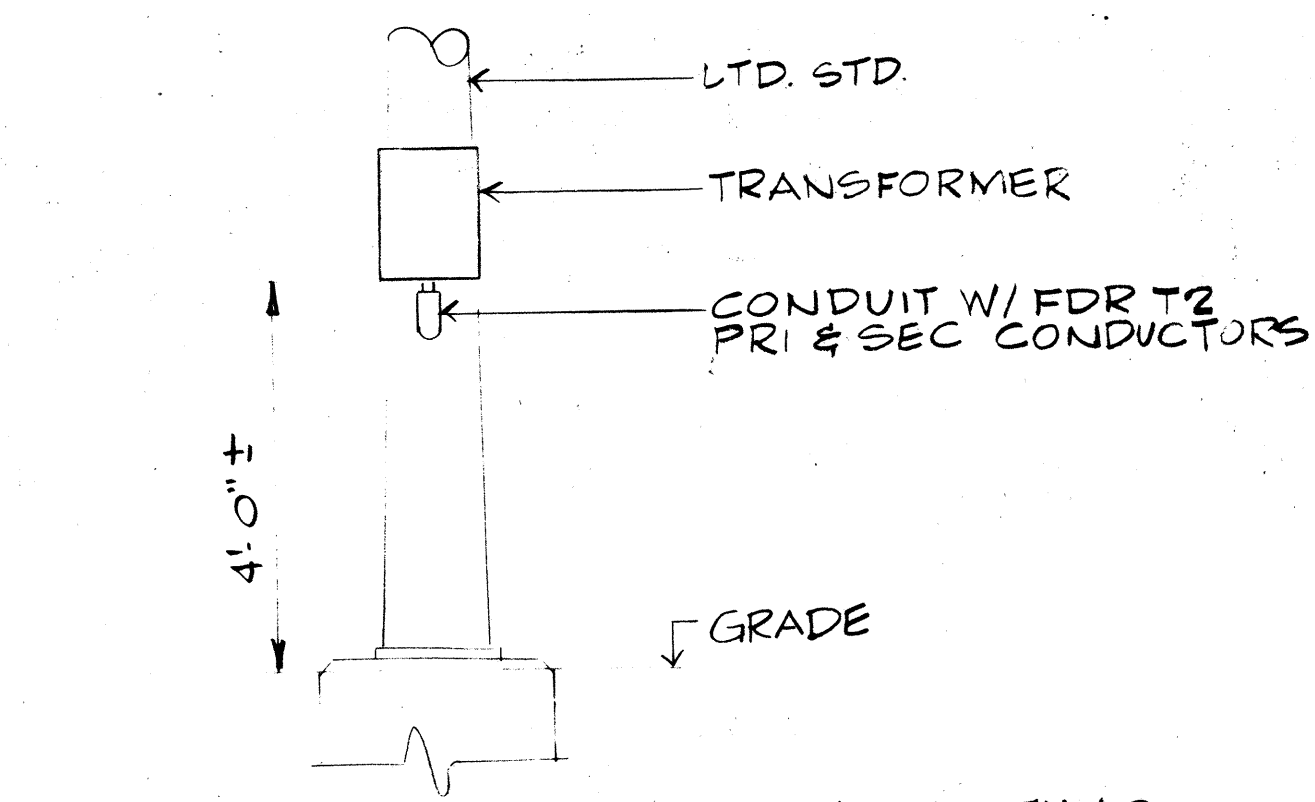


NOTE: Contractor shall provide necessary bends for raceway to enter through Pullbox holes.

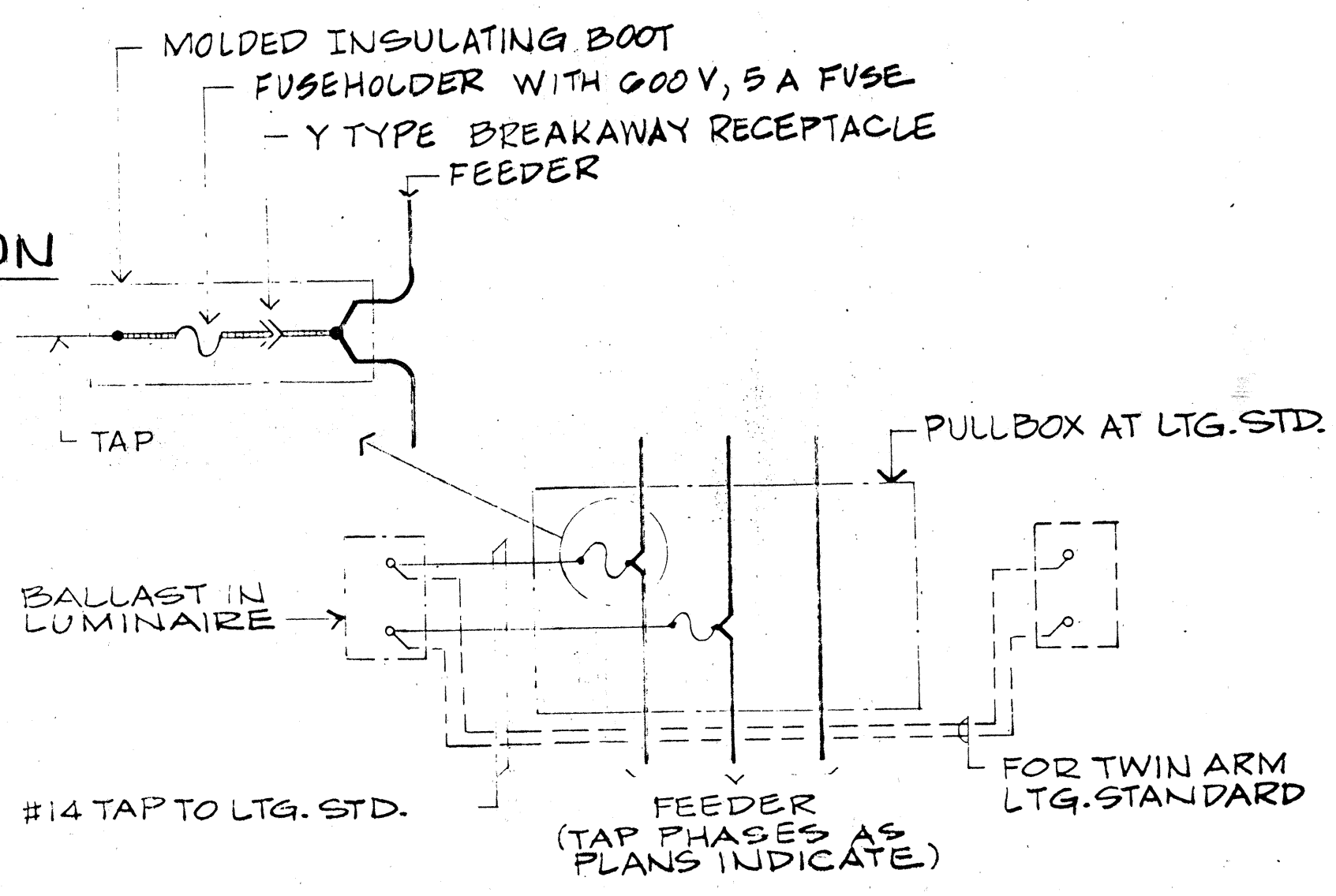
DETAIL 1/E14
PULLBOX TYPES CC



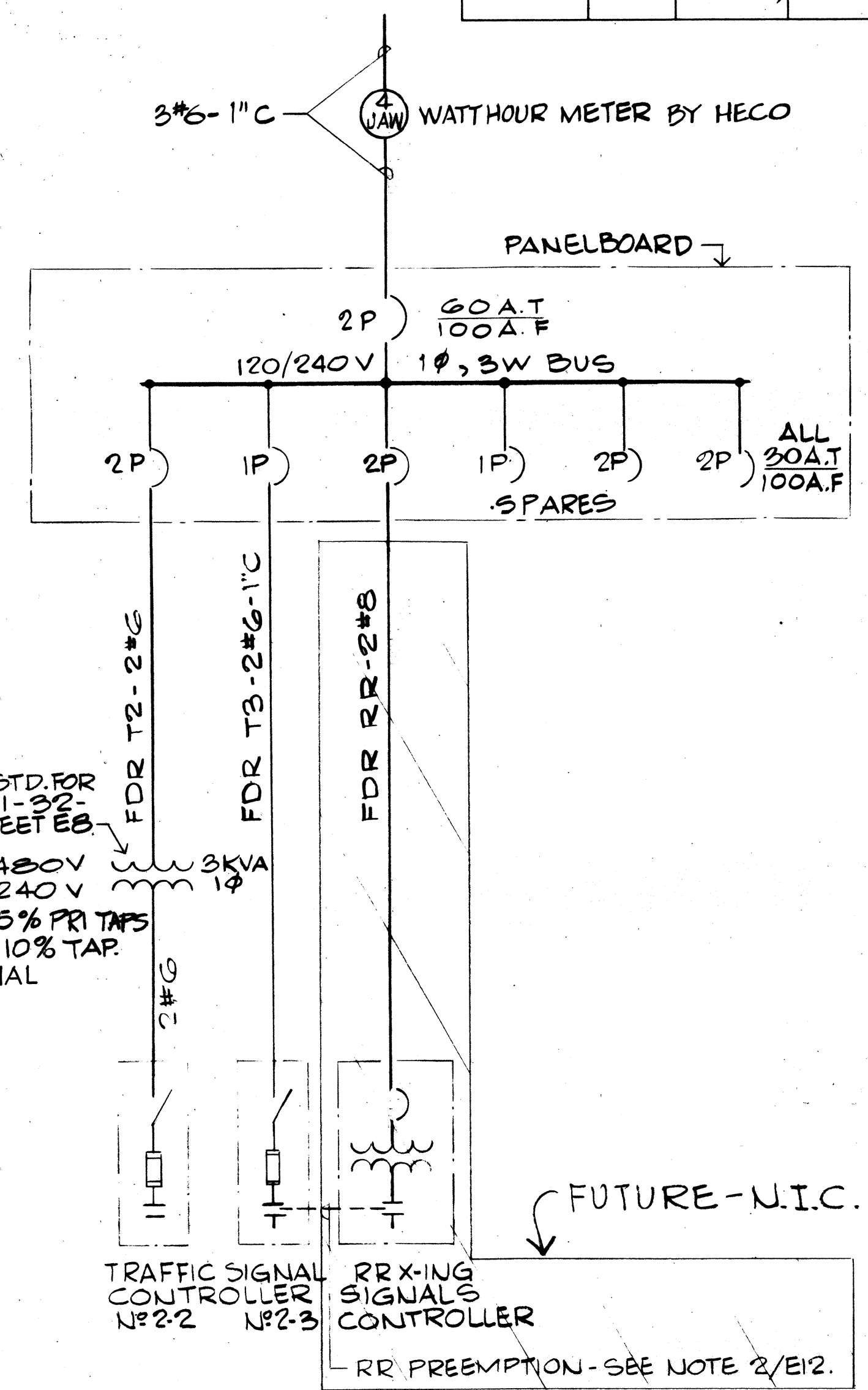
DETAIL 6/E14-SERVICE INSTALLATION



DETAIL 3/E14 - XFMR MOUNTING



DETAIL 4/E14
TAP TO LTG. STD. LUMINAIRE



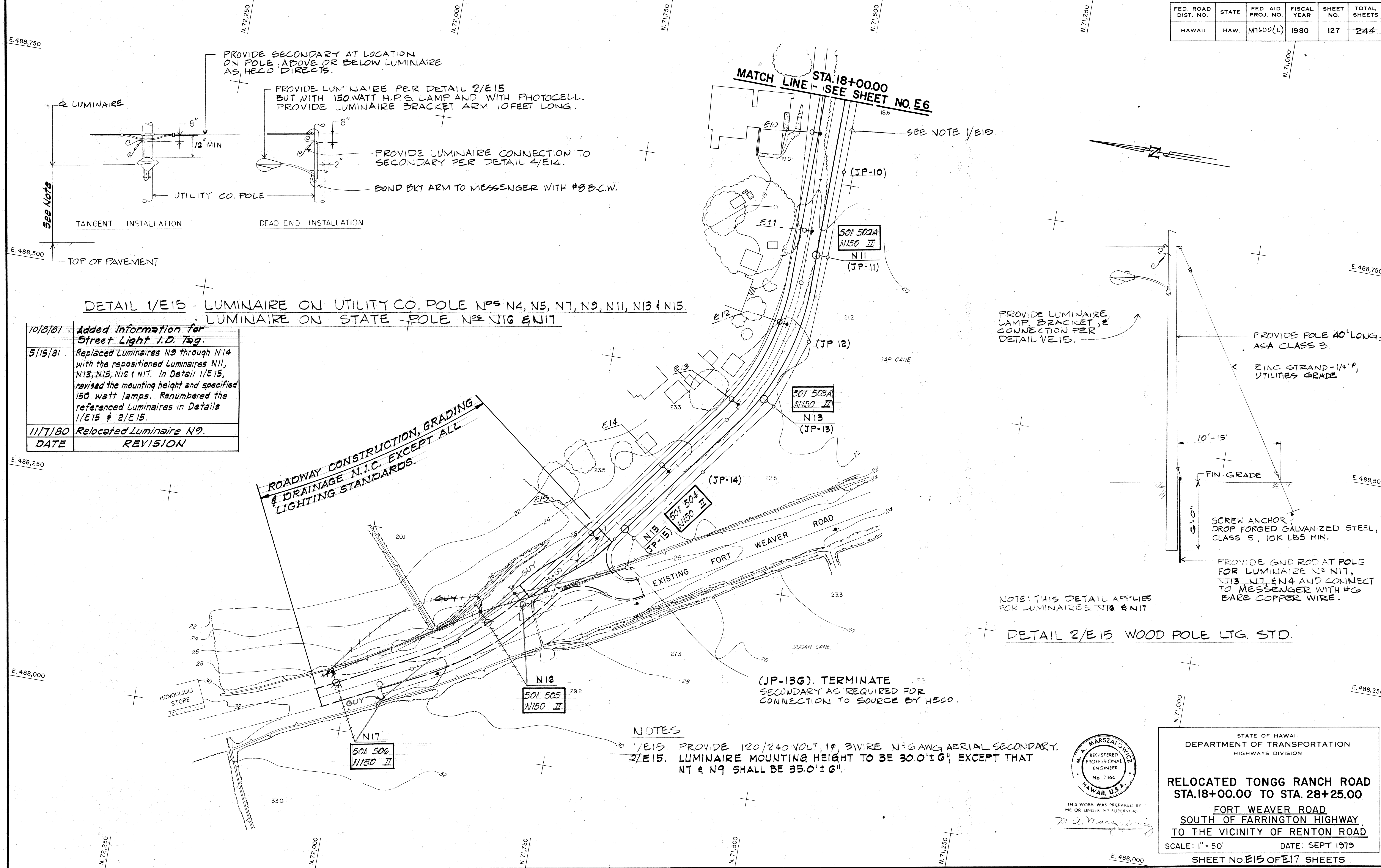
DETAIL 5/E14 - ONE LINE DIAGRAM of SERVICE



WAS PREPARED BY
UNDER THE SUPERVISION
M. A. Manalunga

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART V
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD
SCALE: NONE DATE: SEPT 1979
SHEET No. E14 OF E17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M1600(L)	1980	127	244



See Note

TANGENT INSTALLATION

DEAD-END INSTALLATION

DETAIL 1/E15 LUMINAIRE ON UTILITY CO. POLE NOS N4, N5, N7, N9, N11, N13 & N15.
LUMINAIRE ON STATE POLE NOS N16 & N17

DATE	REVISION
10/8/81	Added Information for Street Light I.D. Tag.
5/15/81	Replaced Luminaires N9 through N14 with the repositioned Luminaires N11, N13, N15, N16 & N17. In Detail 1/E15, revised the mounting height and specified 150 watt lamps. Renumbered the referenced Luminaires in Details 1/E15 & 2/E15.
11/7/80	Relocated Luminaire N9.

ROADWAY CONSTRUCTION, GRADING & DRAINAGE N.I.C. EXCEPT ALL LIGHTING STANDARDS.

MATCH LINE - STA. 18+00.00 - SEE SHEET NO. E6

SEE NOTE 1/E15.

PROVIDE LUMINAIRE LAMP, BRACKET, & CONNECTION PER DETAIL 1/E15.

PROVIDE POLE 40' LONG, ASA CLASS 3.

ZINC STRAND - 1/4" P, UTILITIES GRADE

10'-15'

FIN. GRADE

SCREW ANCHOR, DROP FORGED GALVANIZED STEEL, CLASS 5, 10K LBS MIN.

PROVIDE GND ROD AT POLE FOR LUMINAIRE NOS N17, N13, N15, & N4 AND CONNECT TO MESSENGER WITH #6 BARE COPPER WIRE.

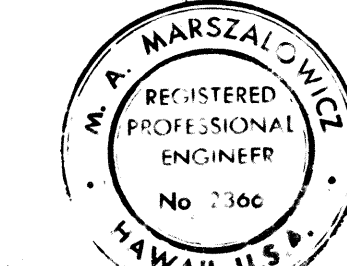
NOTE: THIS DETAIL APPLIES FOR LUMINAIRES N16 & N17

DETAIL 2/E15 WOOD POLE LTG. STD.

(JP-13G). TERMINATE SECONDARY AS REQUIRED FOR CONNECTION TO SOURCE BY HECO.

NOTES

1/E15. PROVIDE 120/240 VOLT, 19 3WIRE N°6 AWG AERIAL SECONDARY.
2/E15. LUMINAIRE MOUNTING HEIGHT TO BE 30.0' ± 6", EXCEPT THAT N7 & N9 SHALL BE 35.0' ± 6".



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

W. A. Marszalowicz

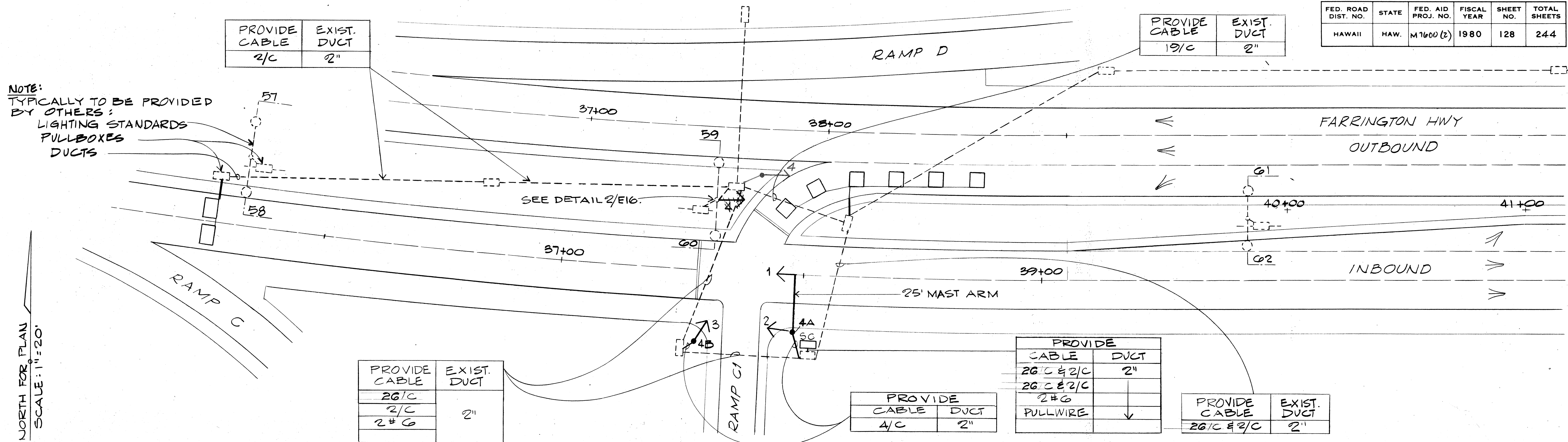
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RELOCATED TONGG RANCH ROAD
STA. 18+00.00 TO STA. 28+25.00
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: 1" = 50' DATE: SEPT 1979
SHEET NO. E15 OF E17 SHEETS

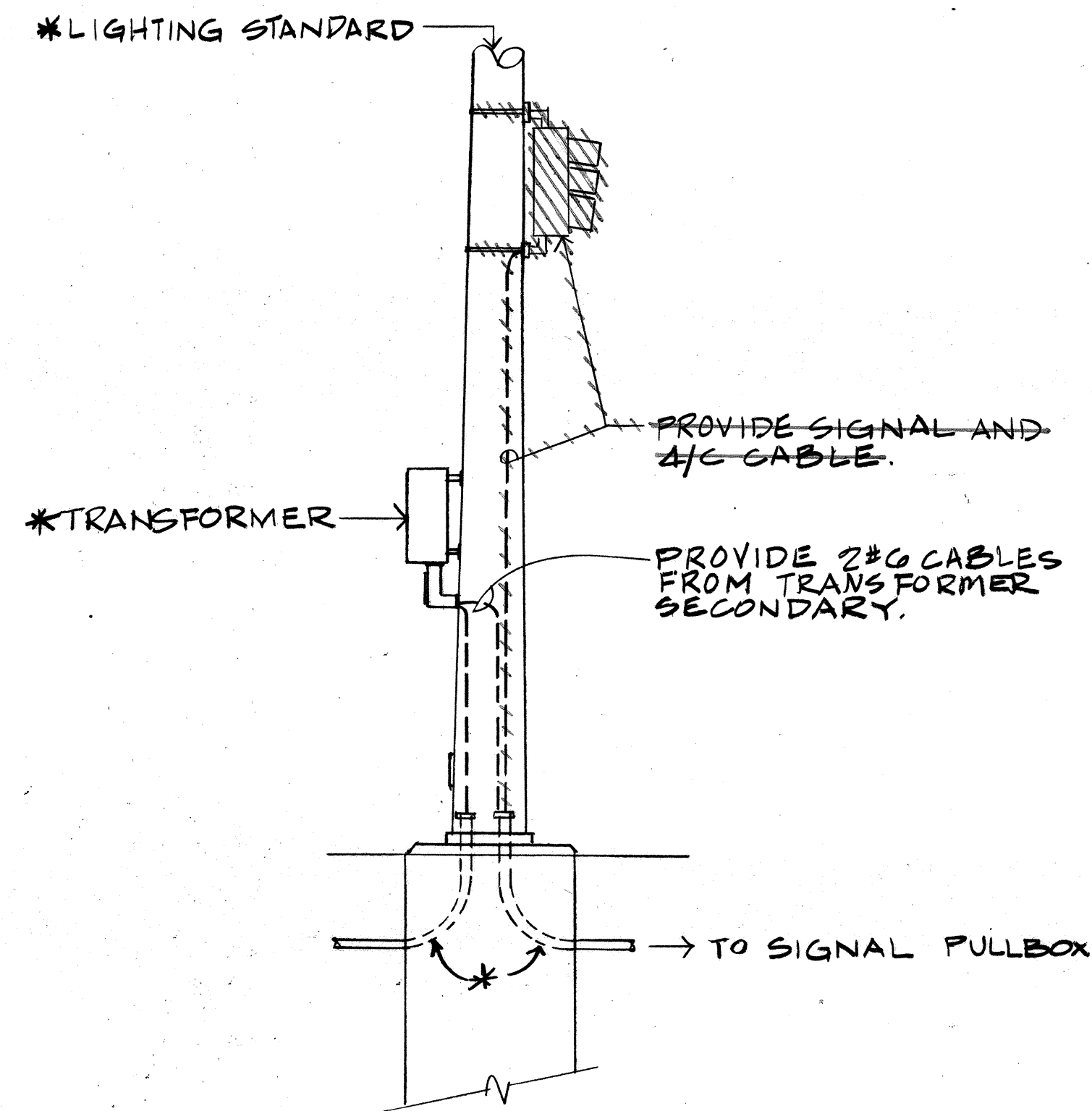
SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M1600(2)	1980	128	244



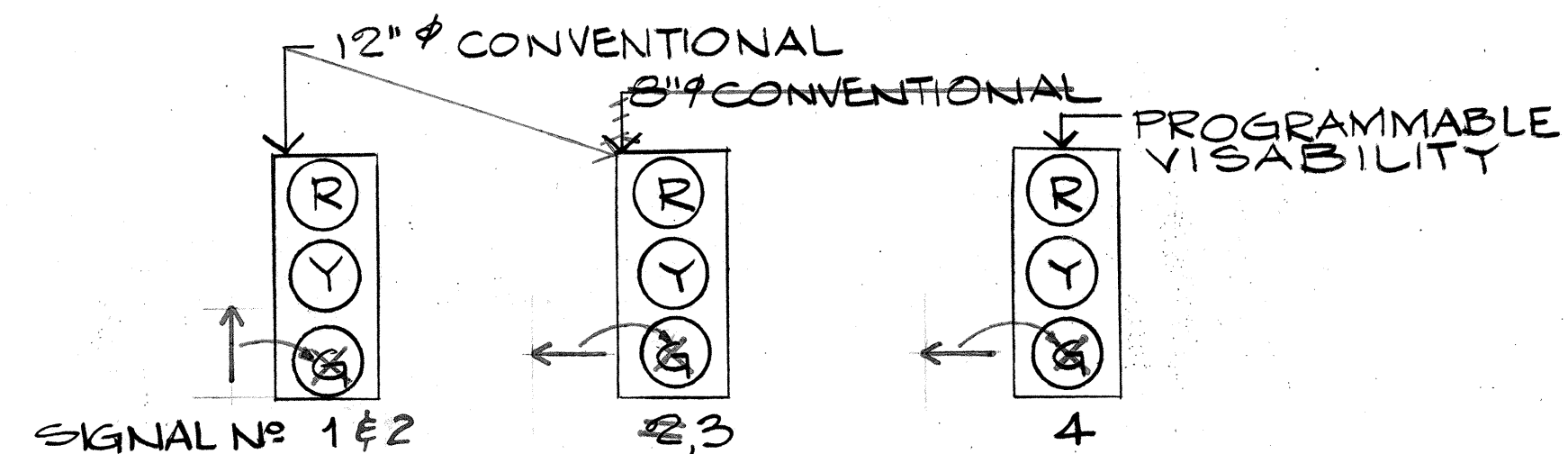
DETAIL 1/EIG - INTERSECTION NO 2-4 SIGNAL PLAN

NOTE: LIGHTING AND TRAFFIC SYSTEM FACILITIES SHOWN DASHED ARE N.I.C. SEE DETAILS 3/EIG, 4/EIG.

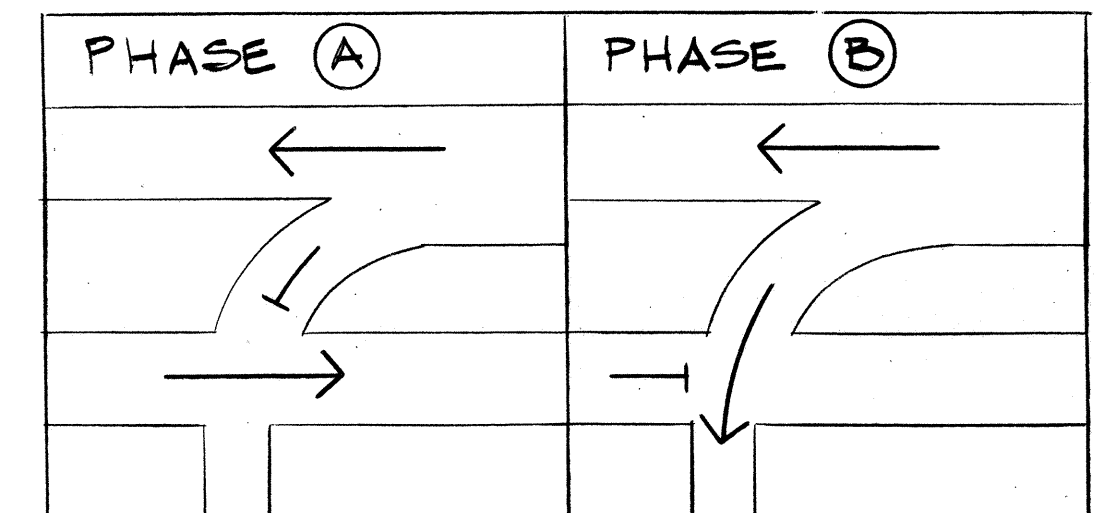


DETAIL 2/EIG

*PROVIDED BY OTHERS UNDER PROJ. NO. M-1600(7).



REVISED DETAIL 3/EIG SIGNAL TYPES



DETAIL 4/EIG TRAFFIC PHASES



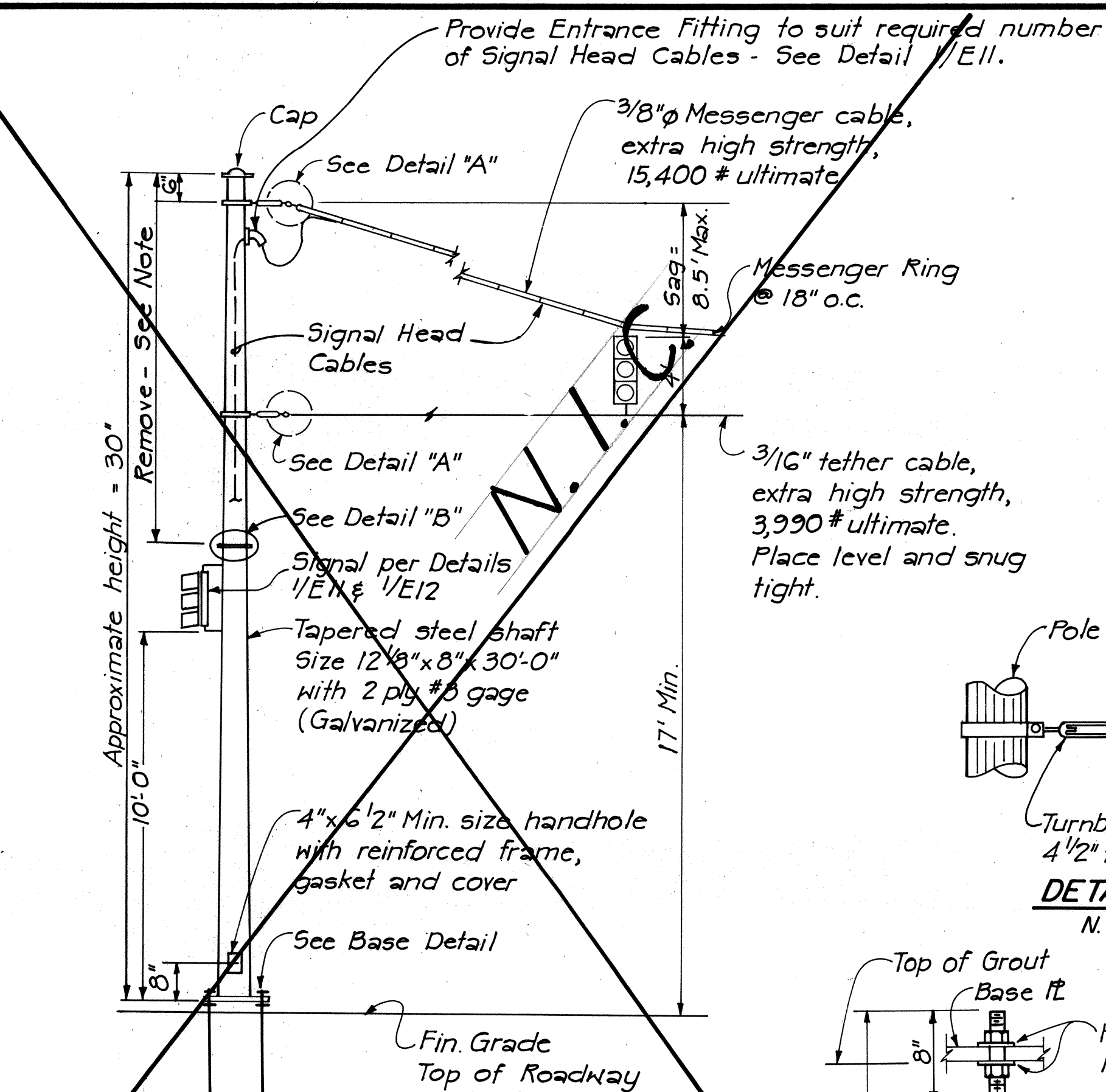
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
M.A. Marszalowicz

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART VI

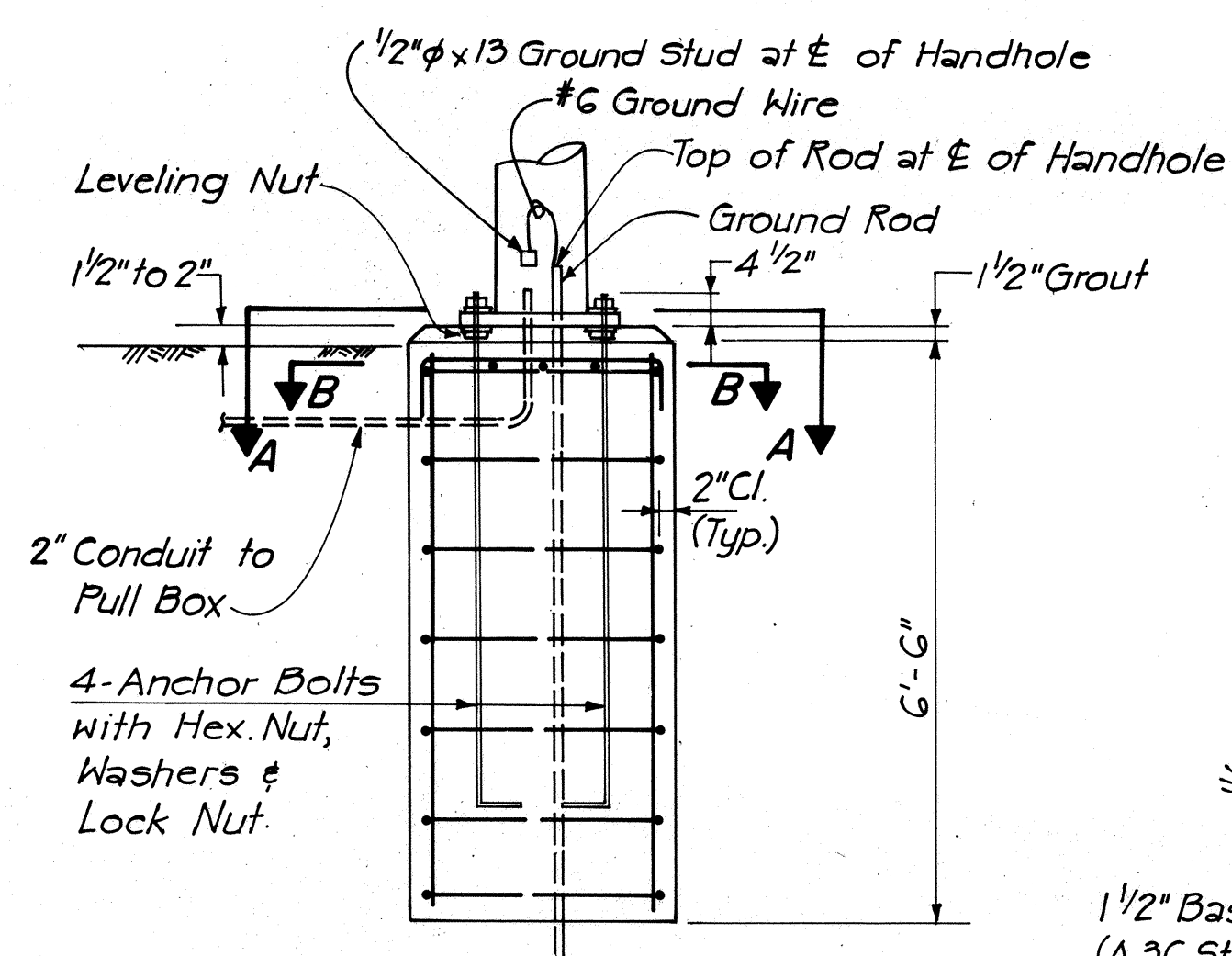
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN DATE: SEPT 1979
SHEET NO. EIG OF E17 SHEETS

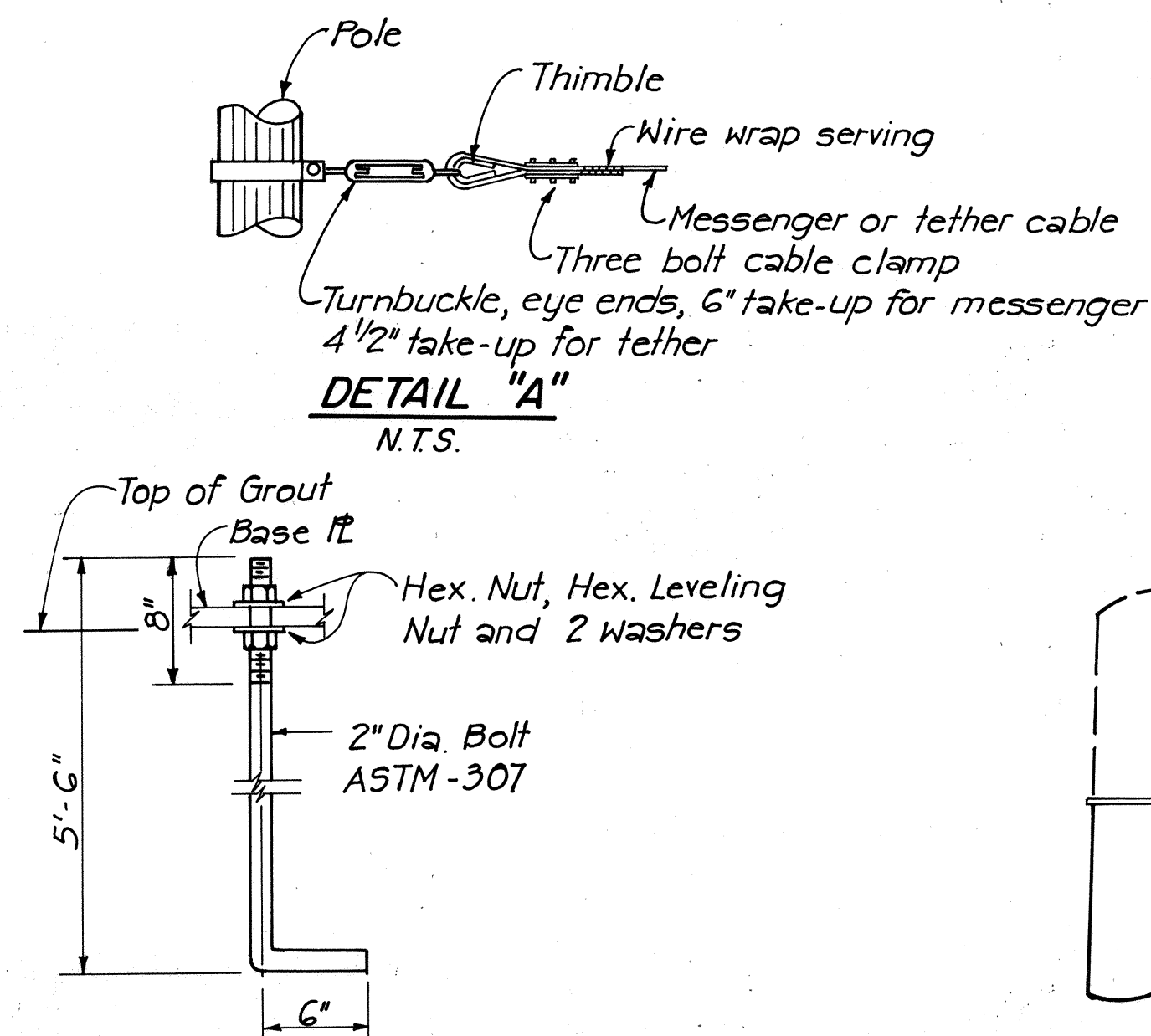
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600 (2)	1980	129	244



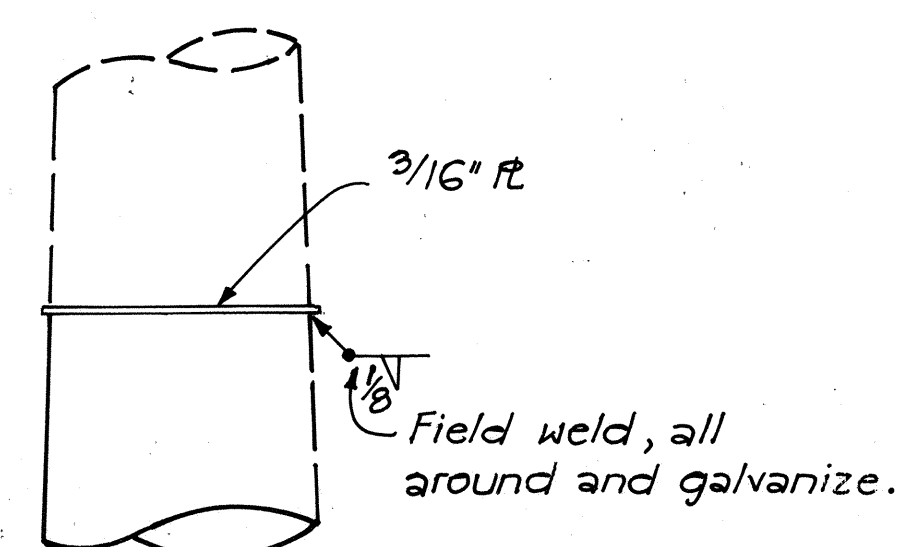
POLE 3H OR 3G
(FOR SPAN AND LOCATION SEE DETAIL 1/E11)
N.T.S.



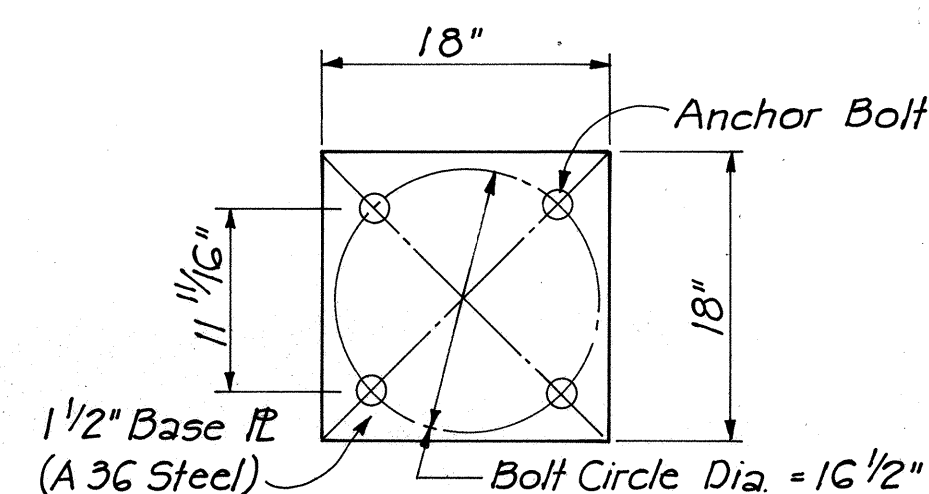
BASE DETAIL
Scale: 1/2" = 1'-0"



ANCHOR BOLT DETAIL
N.T.S.



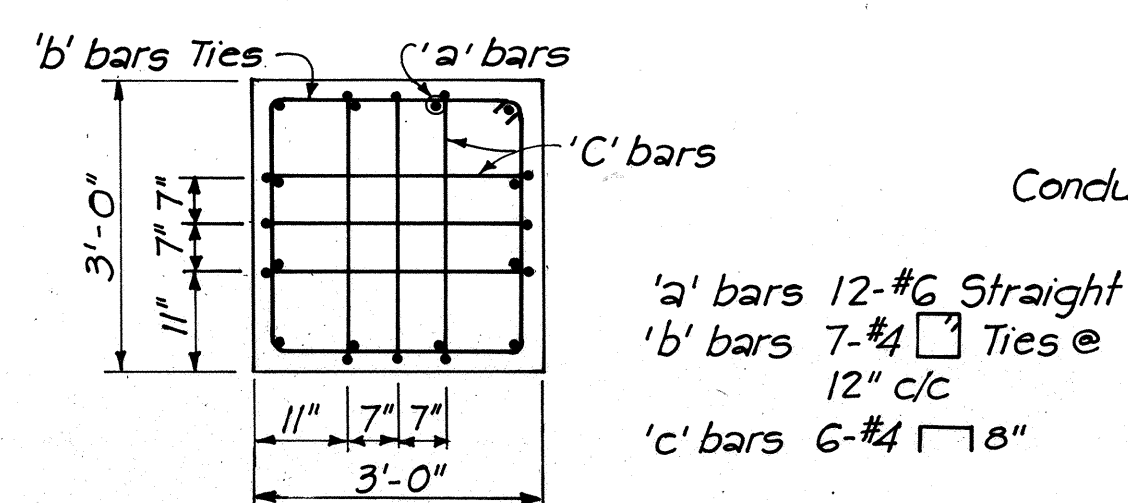
DETAIL "B"



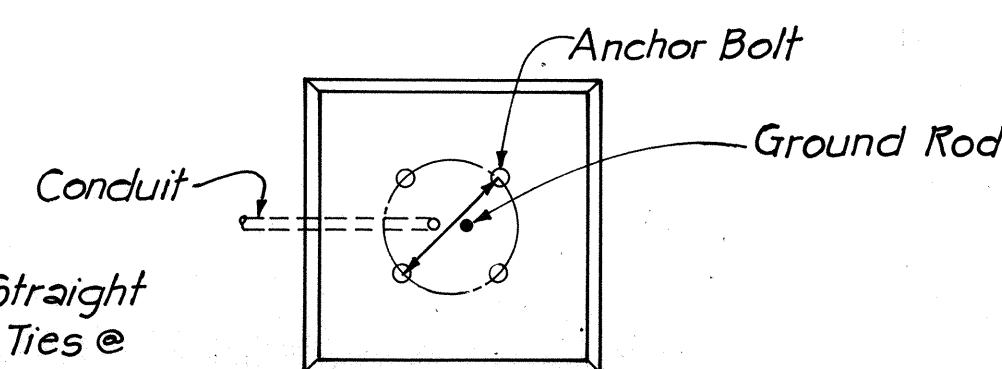
ANCHOR BASE PLATE
N.T.S.

NOTE:

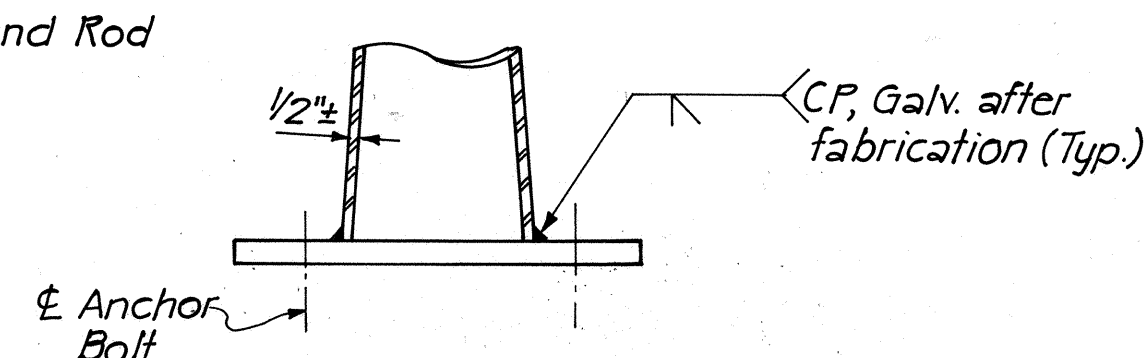
1. Tapered Steel Pole shall have a yield stress $f_y = 40$ ksi. after fabrication.
2. Base Pl. Plates, Anchor Bolts, Nuts and Washers shall be hot dipped galvanized after fabrication.



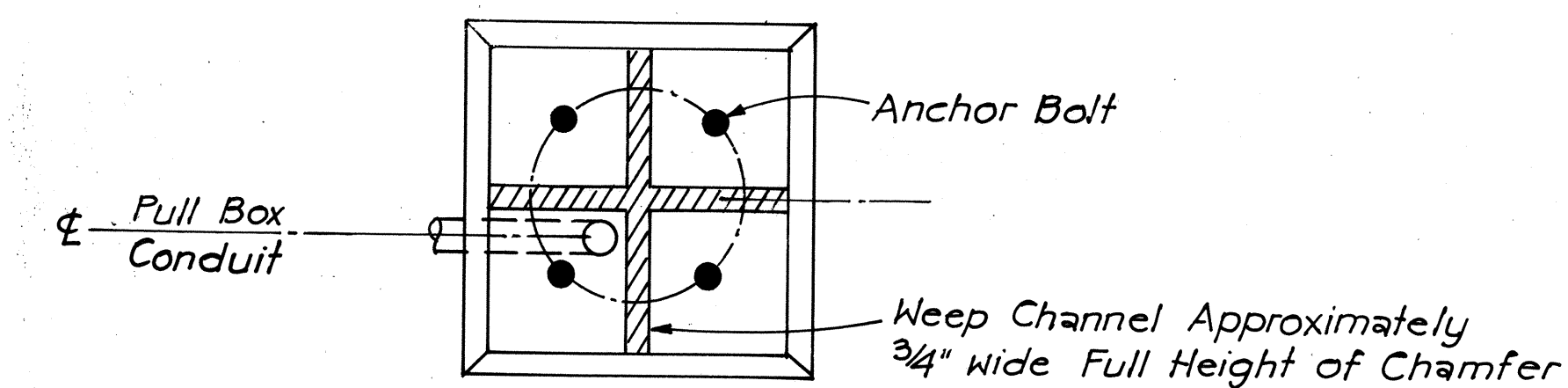
SECTION B-B
Scale: 1/2" = 1'-0"



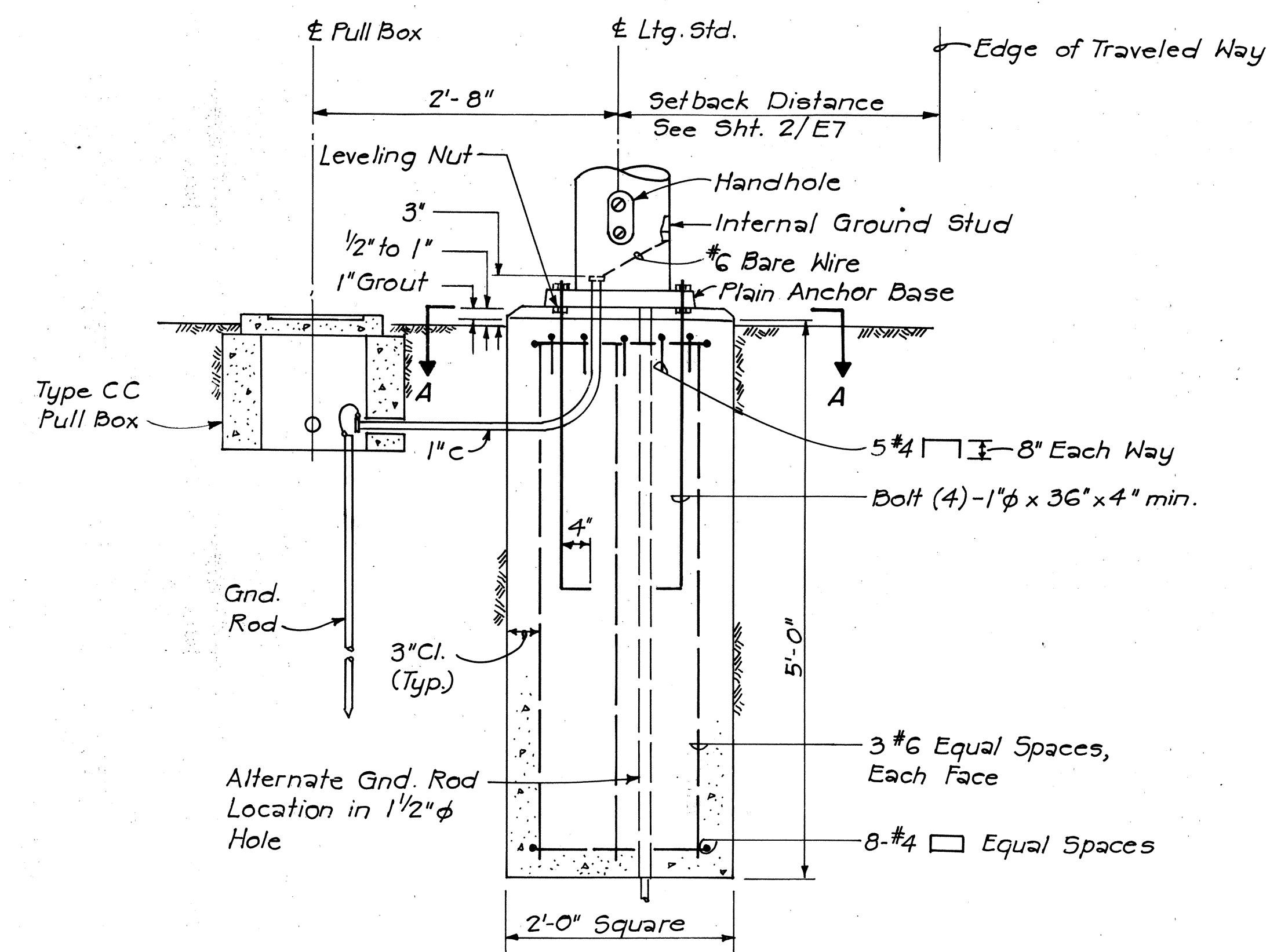
SECTION A-A
Scale: 1/2" = 1'-0"



SECTION THRU BASE OF POLE
Scale: 1" = 1'-0"



SECTION A-A



DETAIL 1/E17

LIGHTING STANDARD FOUNDATION, PLAIN BASE
(Luminaires #49, #50, #75, #76, #77, #78 only)
Not to Scale

THIS WORK WAS PREPARED BY
WE IN ACCORDANCE WITH THE SUPERVISION OF
Shirley Chen

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ELECTRICAL DETAILS

PART VII

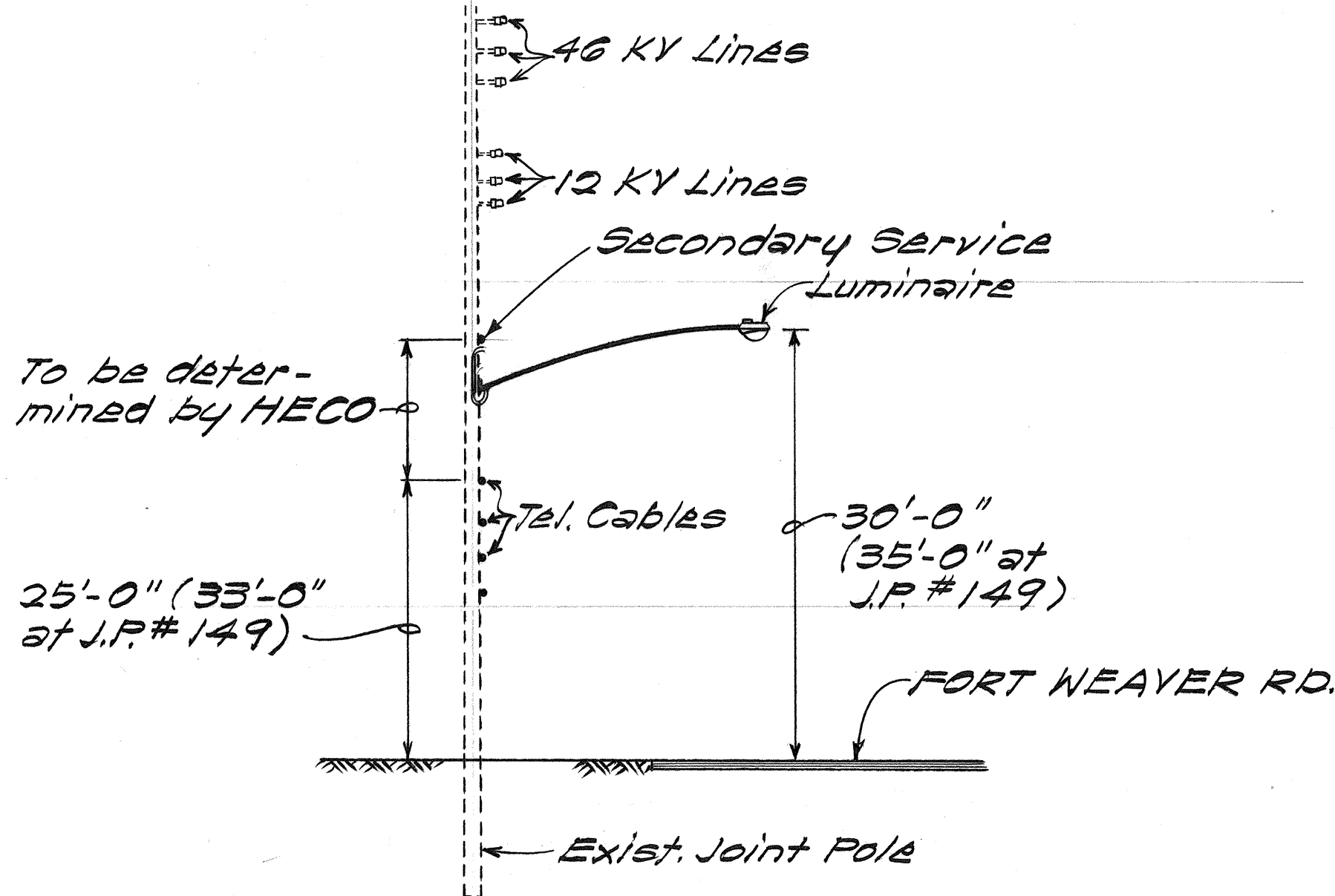
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN

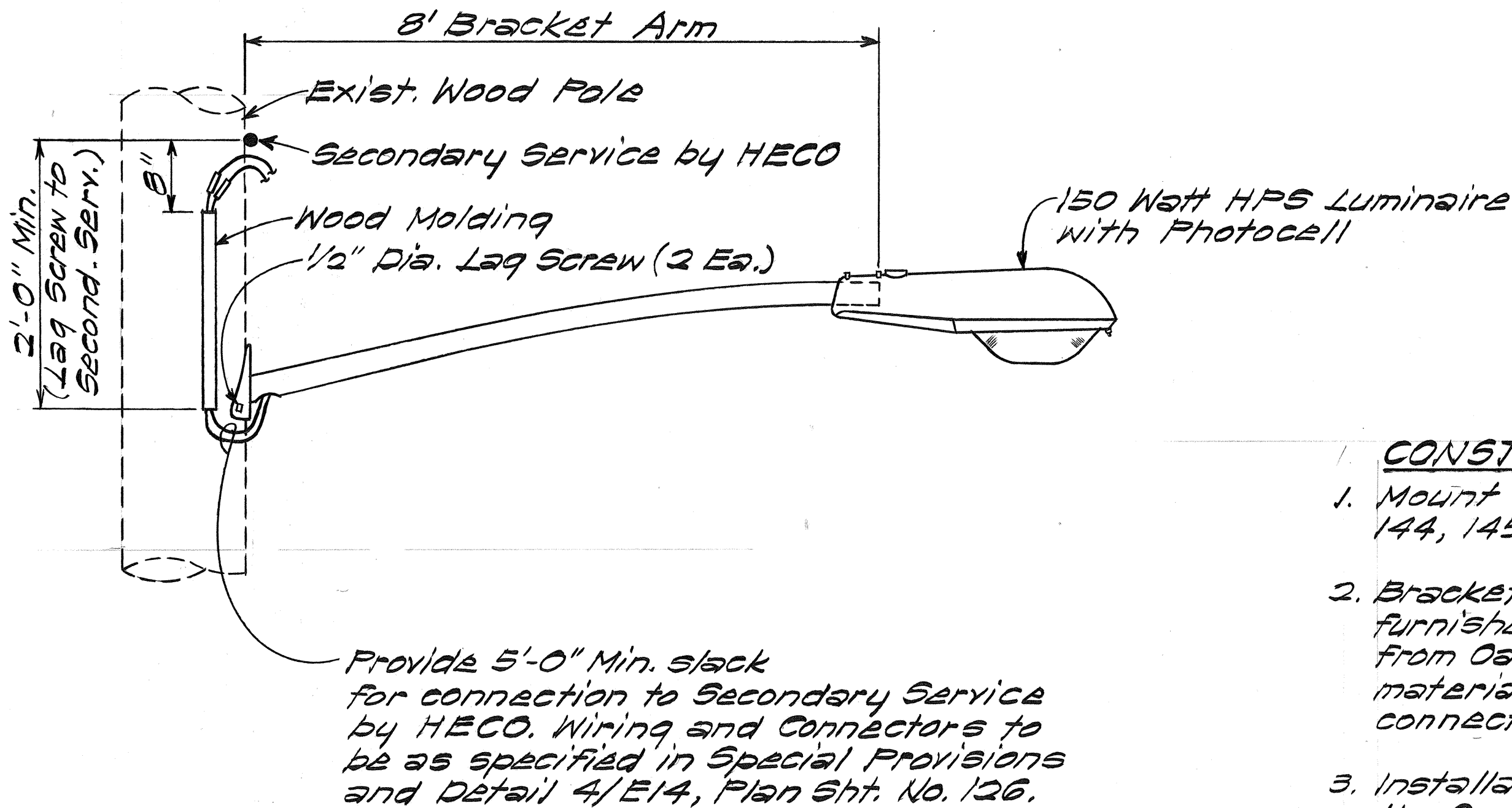
DATE: SEPT 1979

SHEET No. E-17 OF E-17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600(2)	1983	CO 129 S-1	244



TYPICAL INSTALLATION
Not to Scale



MOUNTING DETAIL
Not to Scale

STREET LIGHT I.D. TAG INFORMATION					
J.P. No.	INFORMATION	J.P. No.	INFORMATION	J.P. No.	INFORMATION
143	501 507 N150 II	149	501 512 N150 II	154	501 517 N150 II
144	501 508 N150 II	150	501 513 N150 II	155	501 518 N150 II
145	501 509 N150 II	151	501 514 N150 II	156	501 519 N150 II
147	501 510 N150 II	152	501 515 N150 II	157	501 520 N150 II
148	501 511 N150 II	153	501 516 N150 II		

CONSTRUCTION NOTES

1. Mount bracket arms with luminaires on new J.P. #143, 144, 145, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156 & 157.
2. Bracket arms, luminaires, photocells and lamps to be furnished by State. Contractor shall arrange for pickup from Oahu District Baseyard, 727 Kaka'i St. All miscellaneous materials, including lag screws, wiring, I.D. tags and connectors to be furnished by the Contractor.
3. Installation shall be in accordance with these details and the Special Provisions. Secondary service to be provided by HECO at the State's expense; connections will be made by HECO.
4. Contractor shall remove and dispose of the old street lights and cables. Removal of the old J.P.s will be by others.
5. Contractor to furnish Street Light I.D. Tag for each pole per detail on Plan Sht. No. CO 113R. For tag information, see listing this sheet.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

ELECTRICAL DETAILS
TEMPORARY HIGHWAY LIGHTING

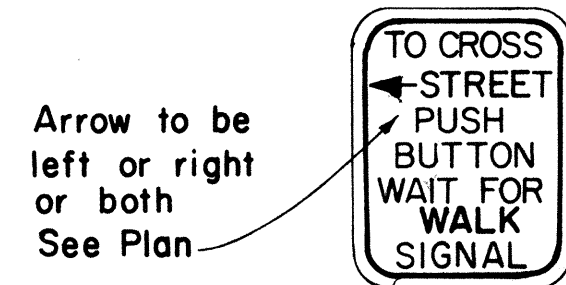
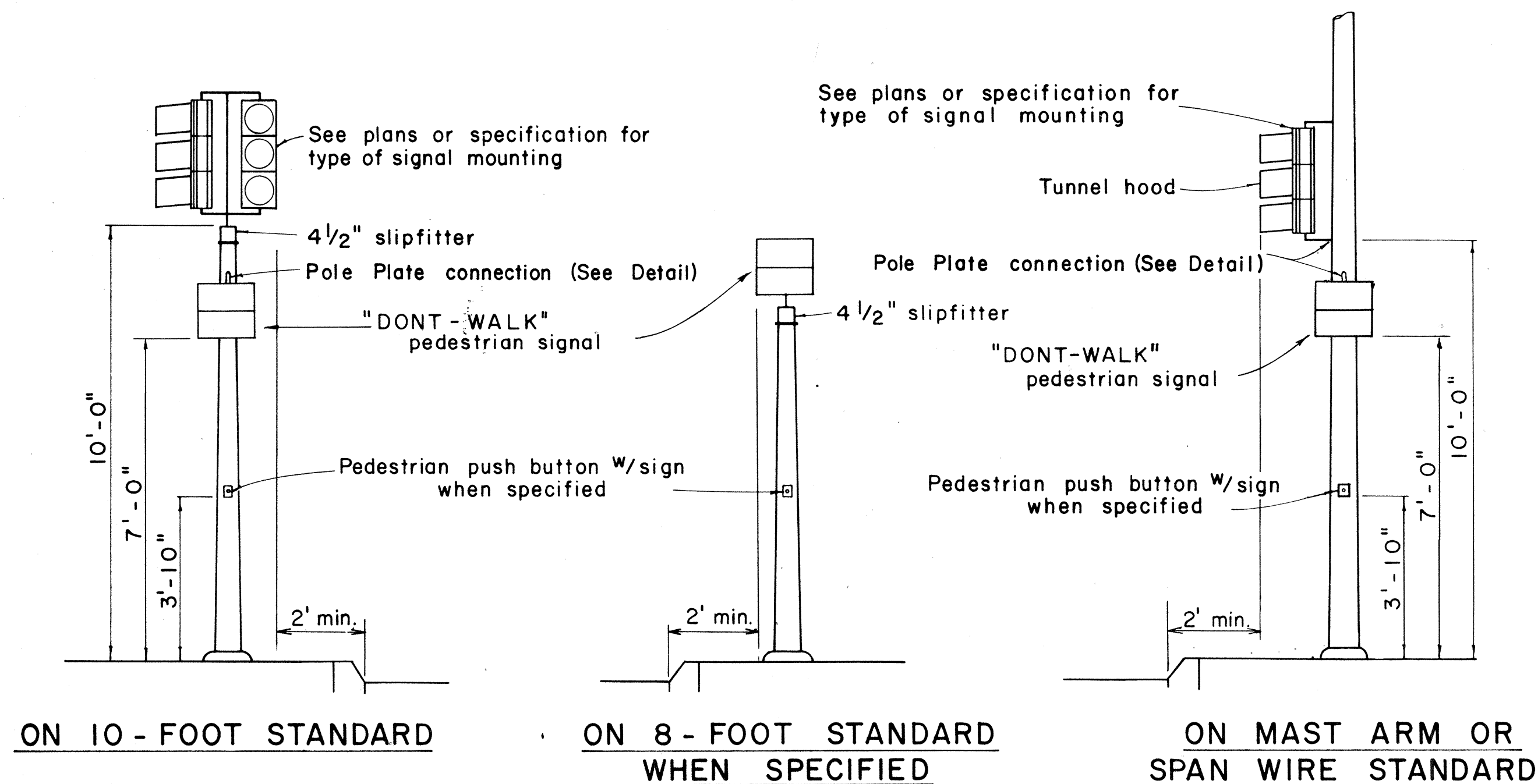
FORT WEAVER ROAD
SOUTH OF FARRINGTON HIGHWAY
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN DATE: JULY 1982

SHEET No. E17A OF E-17 SHEETS

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

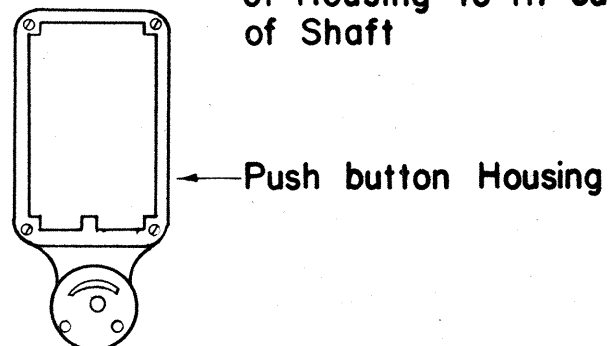
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600(2)	1980	130	244



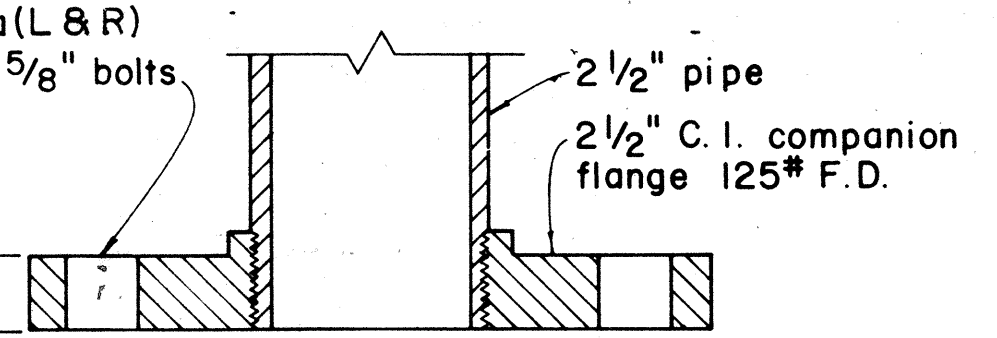
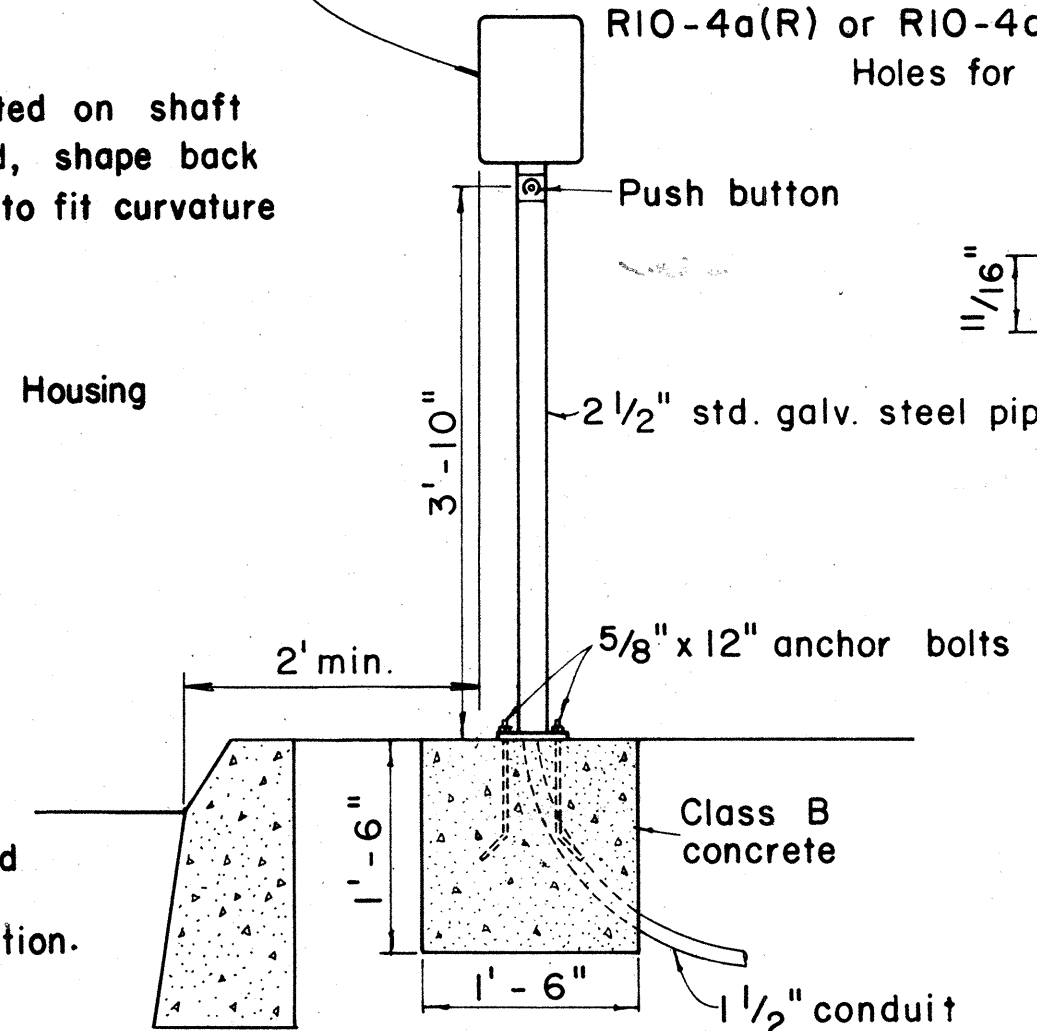
R10-4a(L) PEDESTRIAN PUSH BUTTON
5" x 7"

- NOTE:
1. Conduits shall protrude 2" max. above finished surface of foundation.
 2. Conduits shall slope away from pole foundation.

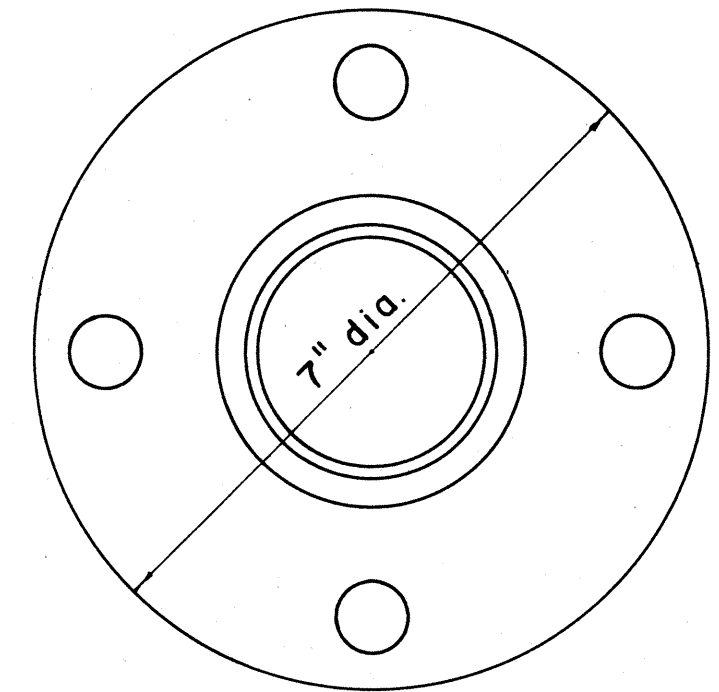
When mounted on shaft of Standard, shape back of Housing to fit curvature of Shaft



TRAFFIC SIGN AS SPECIFIED IN PLAN
"TO CROSS STREET (ARROW) PUSH BUTTON
WAIT FOR WALK SIGNAL", R10-4a(L)
R10-4a(R) or R10-4a(L&R)

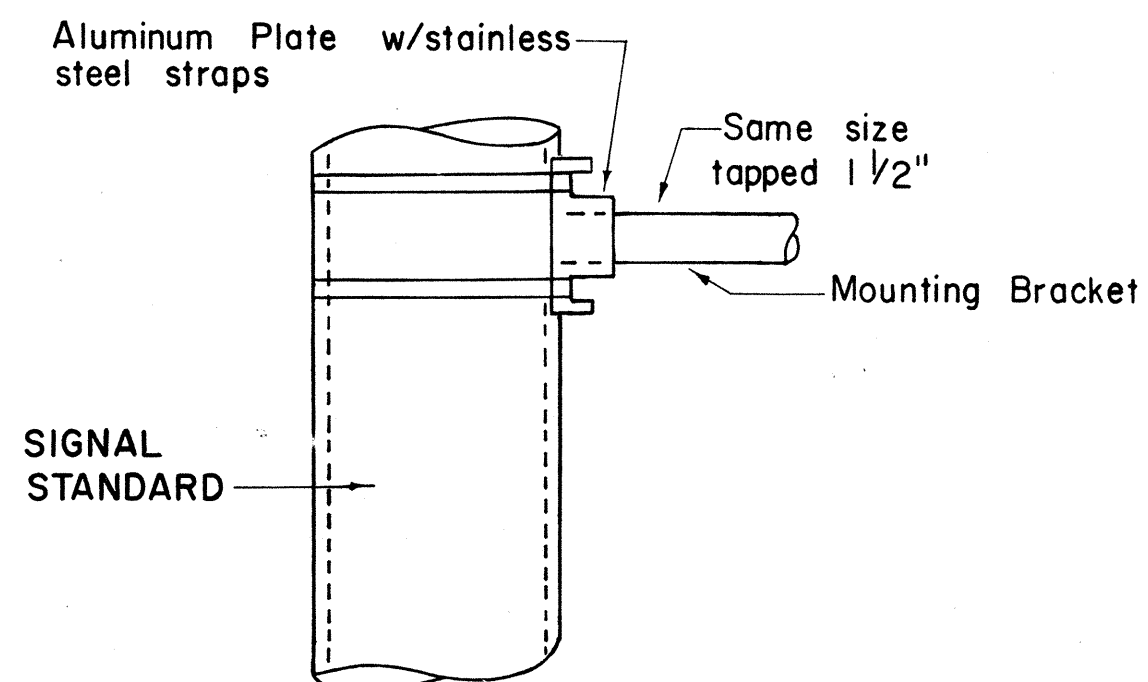


SECTION

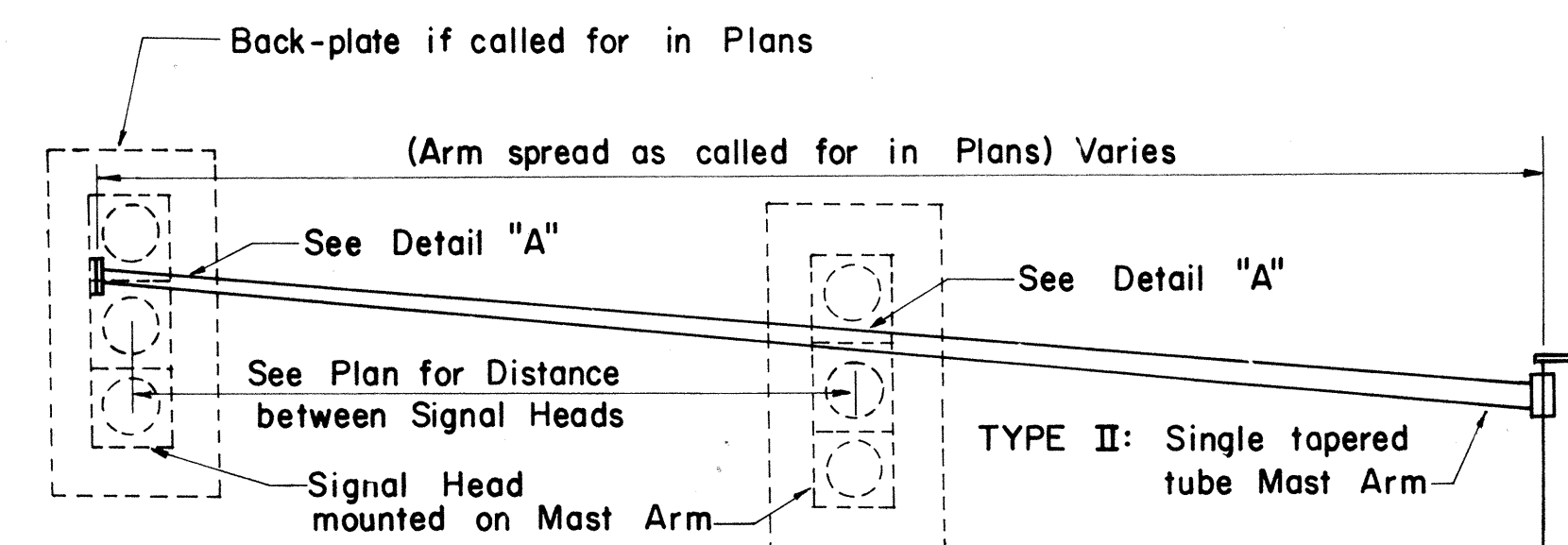


BASE DETAIL

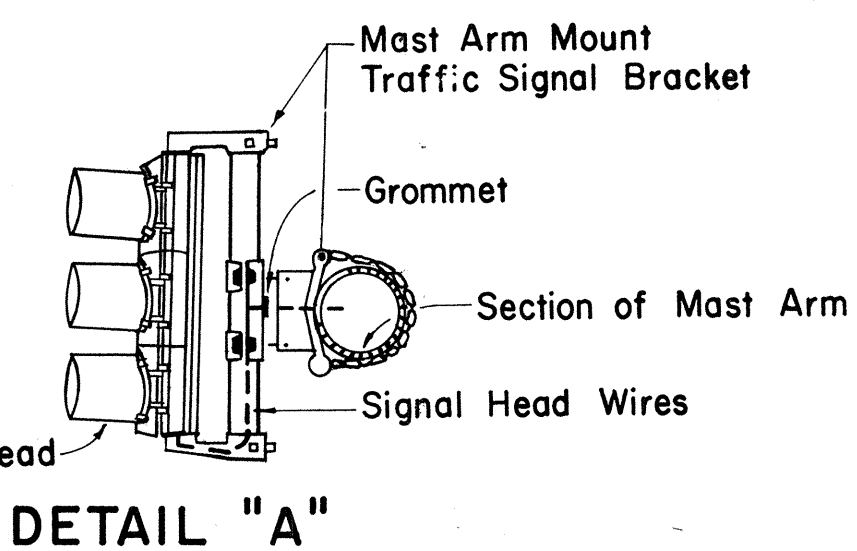
TYPICAL EQUIPMENT MOUNTINGS



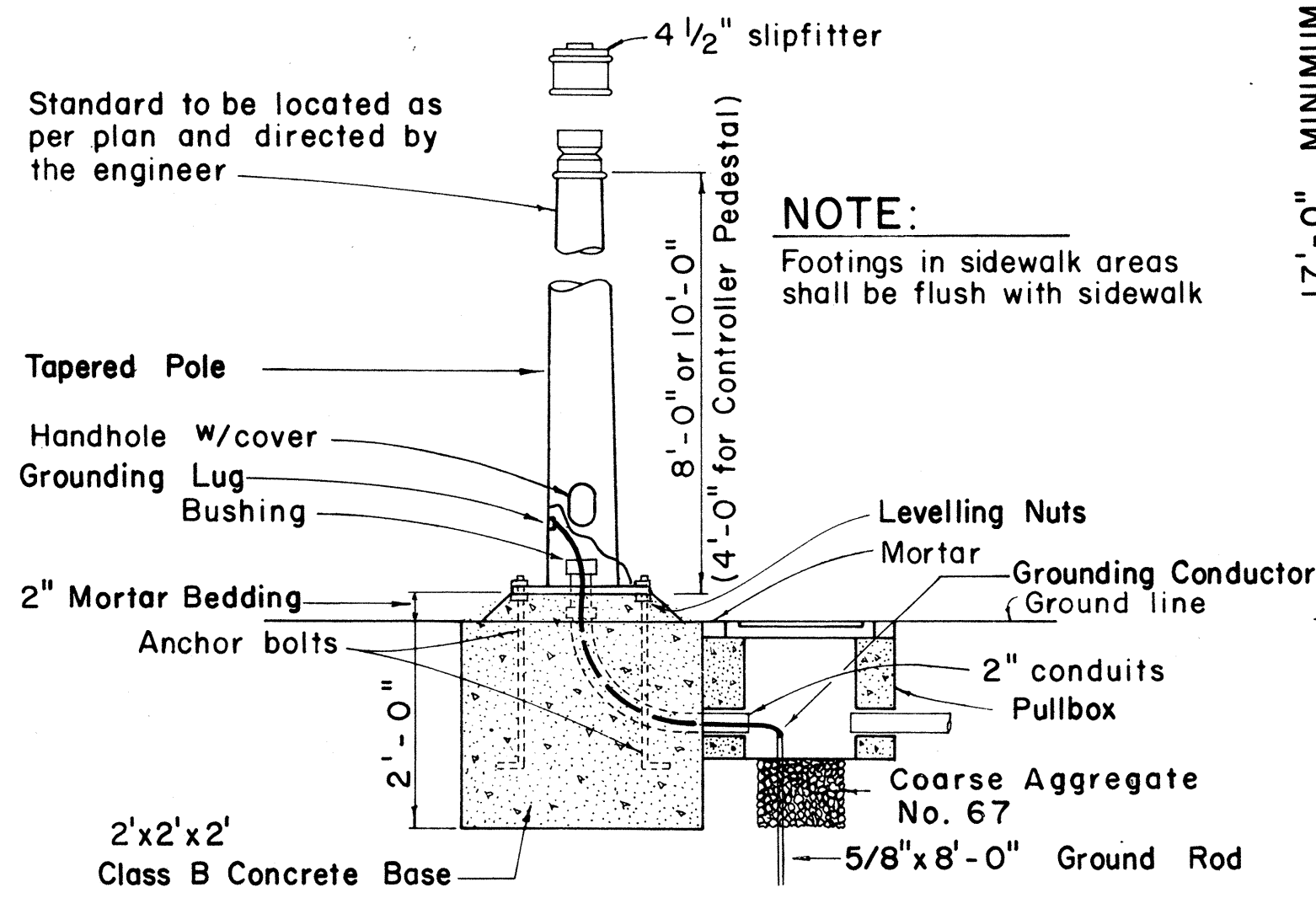
DETAIL OF POLE PLATE CONNECTIONS



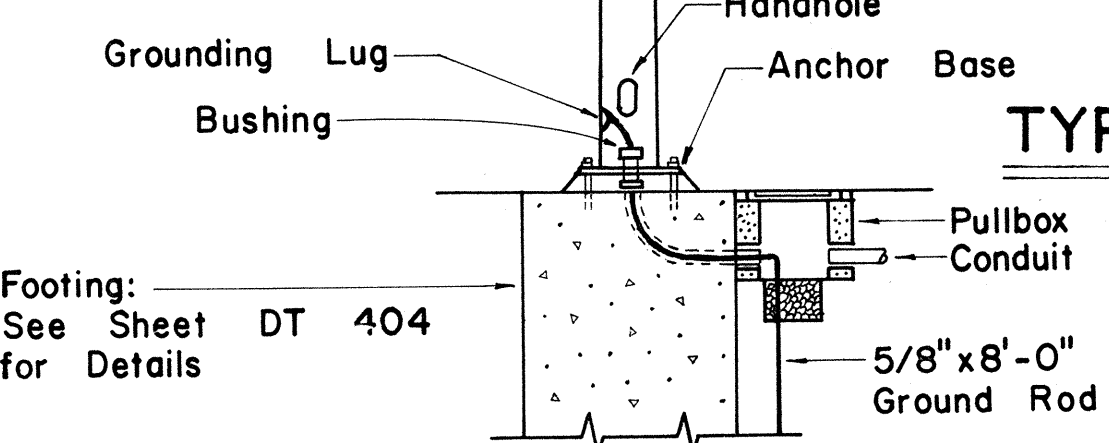
17'-0" MINIMUM CLEARANCE ABOVE ROADWAY



DETAIL "A"

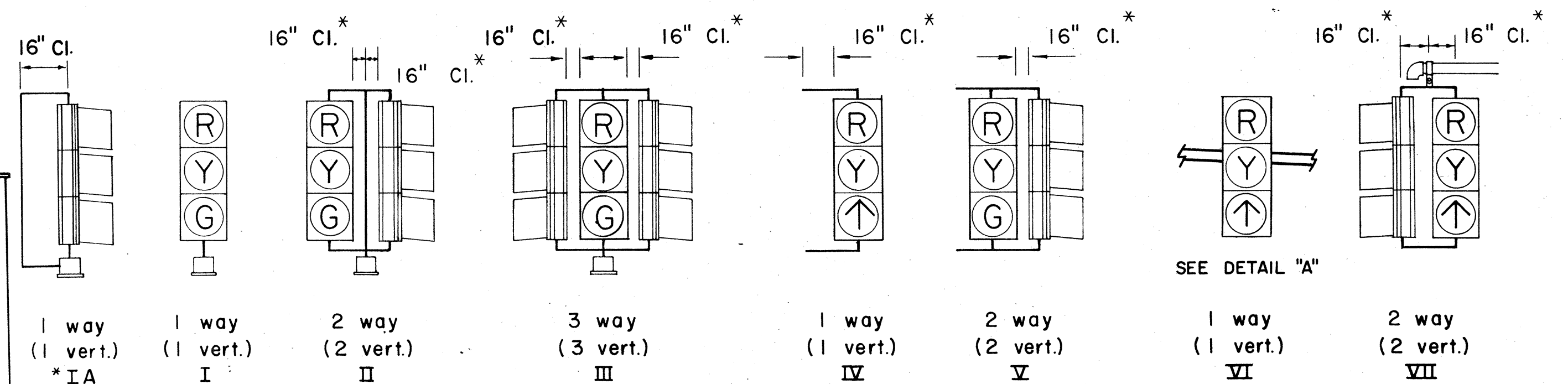


TYPE I SIGNAL STANDARD OR CONTROLLER PEDESTAL AND FOOTING



TYPE II MAST ARM AND STANDARD

PEDESTRIAN PUSH BUTTON POST AND FOOTING



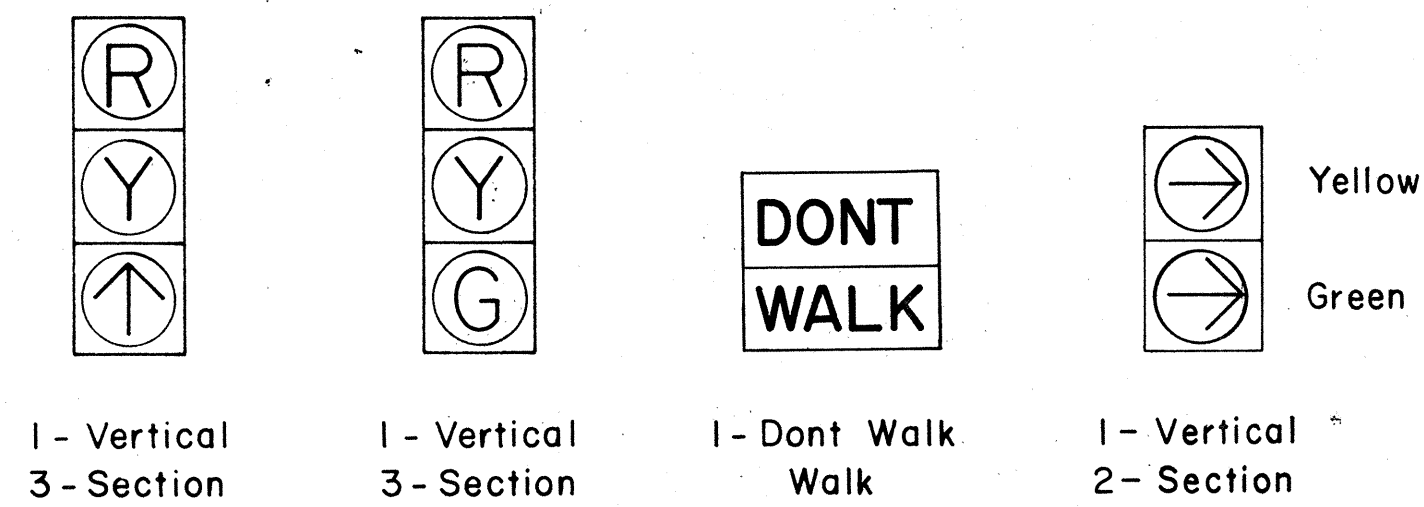
SLIPFITTER MOUNTINGS

BRACKET MOUNTINGS

MASTARM MOUNTINGS

* Use with Programmed Visibility Signal

TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



TYPICAL SIGNAL ARRANGEMENTS

NO.	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/23/12
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	H.T.	3/5/12
3	Revise signal indications.	H.T.	9/22/10
4	Remove Note No. 3 & Revise clearance and dimension.	H.T.	9/19/11

APPROVAL RECOMMENDED:
Eichi Tanaka
TRAFFIC ENGINEER

12/29/09
DATE

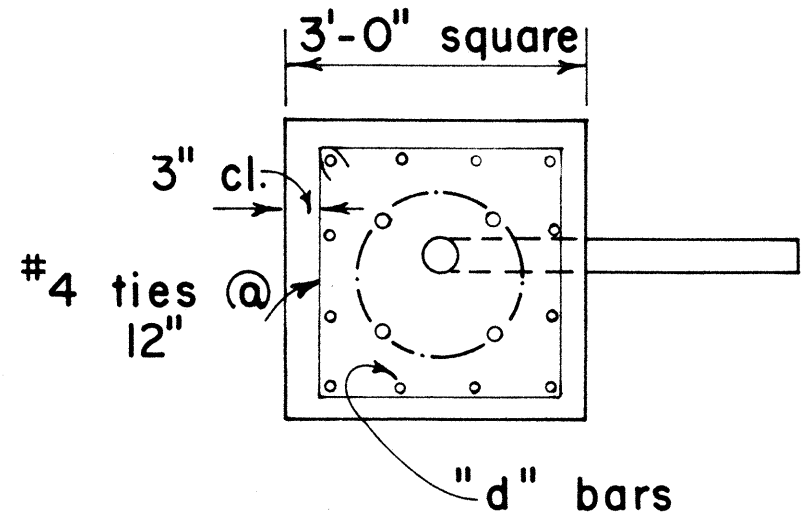
John J. ...
ASSISTANT CHIEF, ENGINEERING

12/29/09
DATE

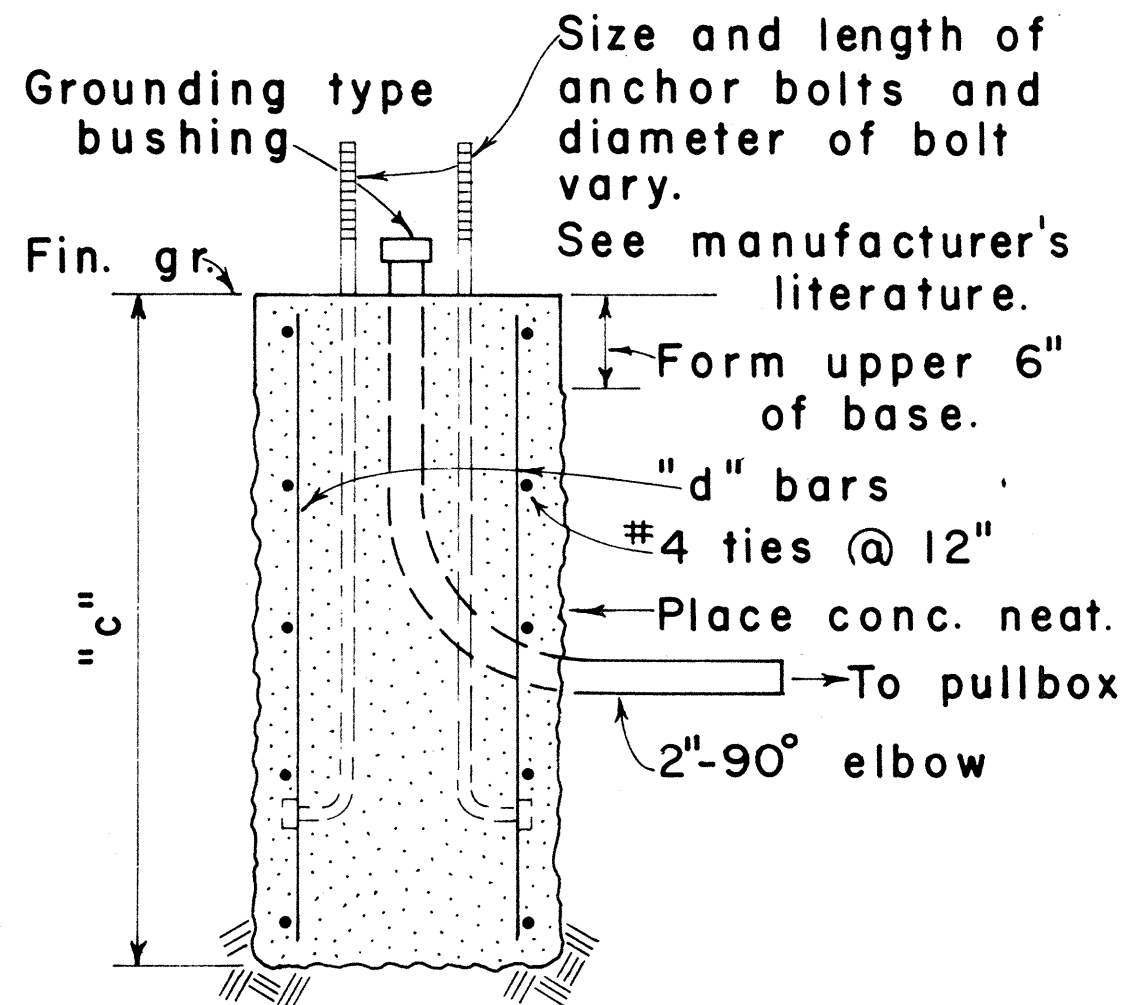
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600 (2)	1980	131	244



PLAN - SECTION

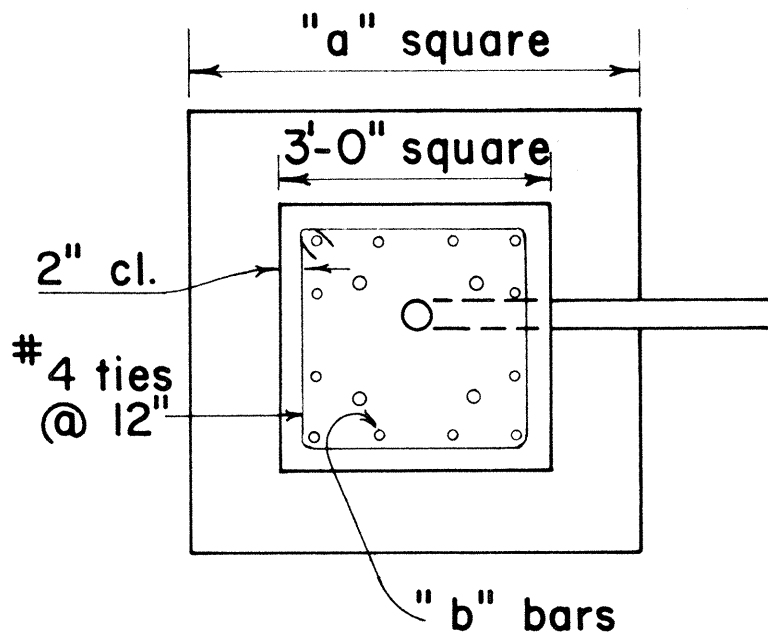


NOTE:
Concrete shall be Class B.

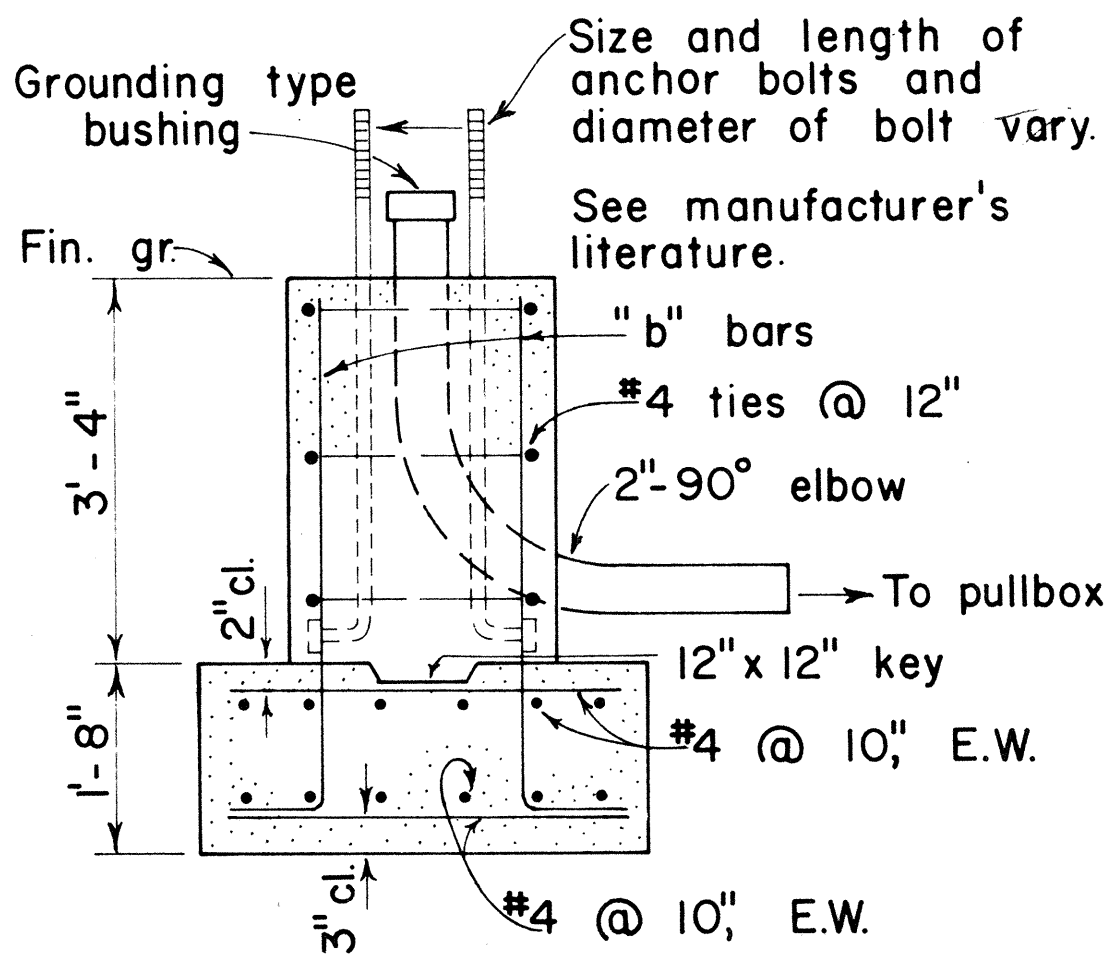
SECTION

MAST ARM LENGTH	"c"	"d" BARS
16' - 18'	5' - 0"	12 - #6
20'	5' - 6"	12 - #6
25'	6' - 0"	12 - #6
30'	6' - 6"	12 - #6
35'	7' - 0"	12 - #8
40'	8' - 0"	12 - #8

TYPE II



PLAN - SECTION



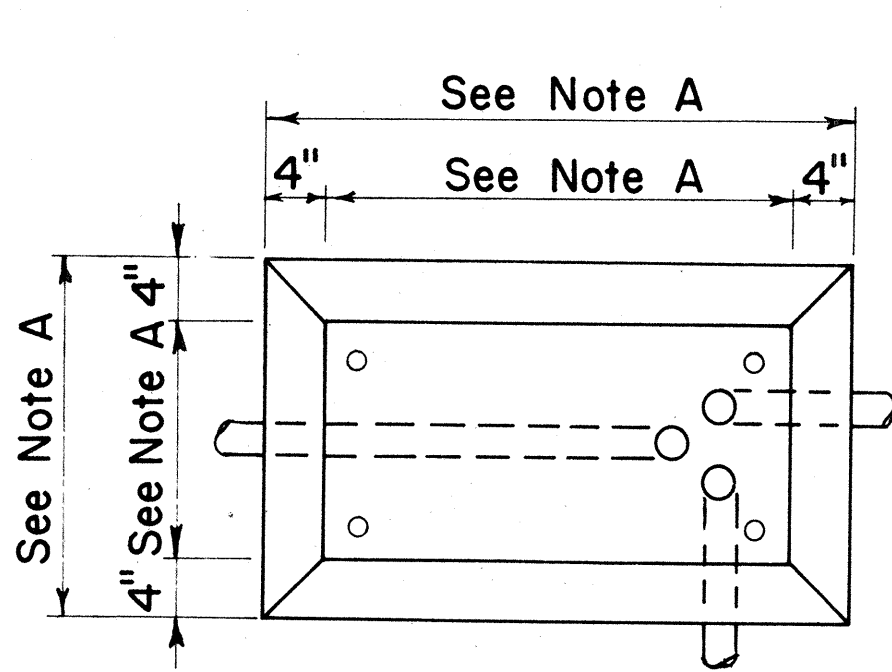
NOTE:
Concrete shall be Class B.

SECTION

MAST ARM LENGTH	"a"	"b" BARS
16' - 18'	5' - 0"	12 - #6
20'	5' - 6"	12 - #6
25'	6' - 0"	12 - #6
30'	6' - 6"	12 - #8
35'	6' - 6"	12 - #8
40'	7' - 0"	12 - #8

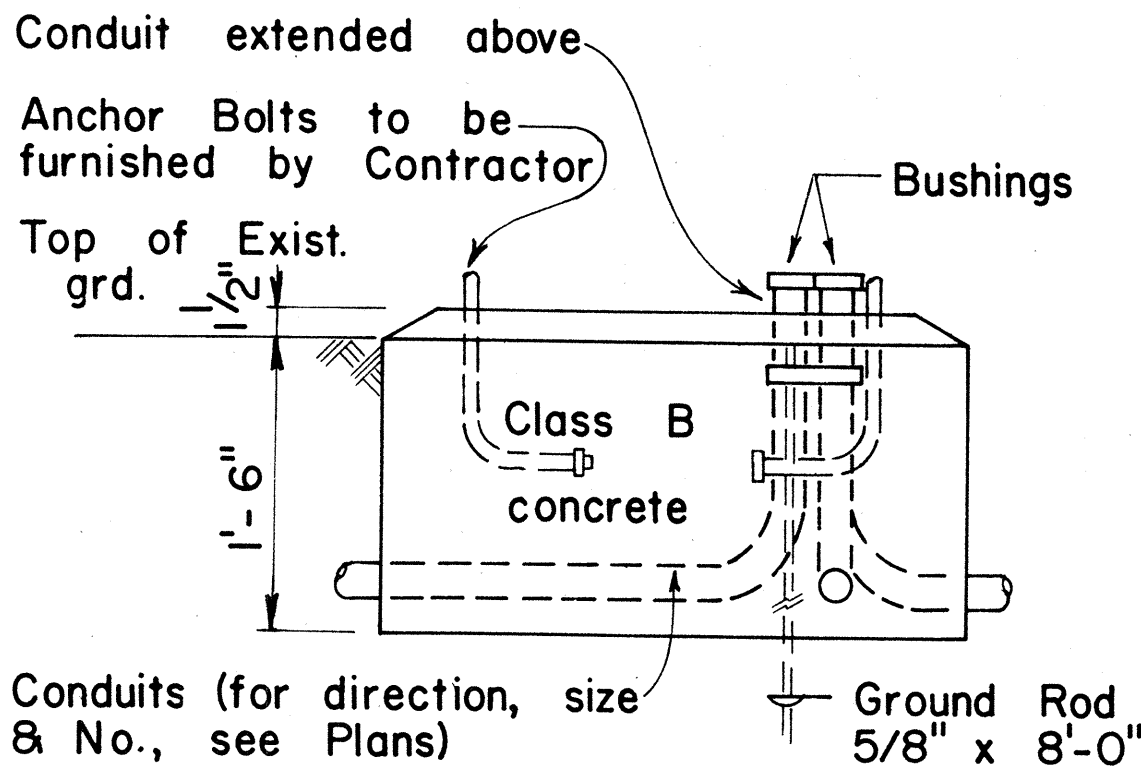
TYPE II A

FOOTING FOR MAST ARM STANDARD



PLAN

CONCRETE BASE FOR CONTROLLER CABINET



ELEVATION

- NOTES:
- Dimensions to be determined by the size of the Controller Cabinet to be furnished under this Contract.
 - Details of Conduits, Anchor Bolts, etc., are approximate only. Exact details shall be secured by the Contractor from Manufacturer.

APPROVAL RECOMMENDED:
Eichi Tanaka 3/4/76
TRAFFIC ENGINEER DATE

APPROVED:
Albert Z. Rakish 2-8-76
ASSISTANT CHIEF, ENGINEERING DATE

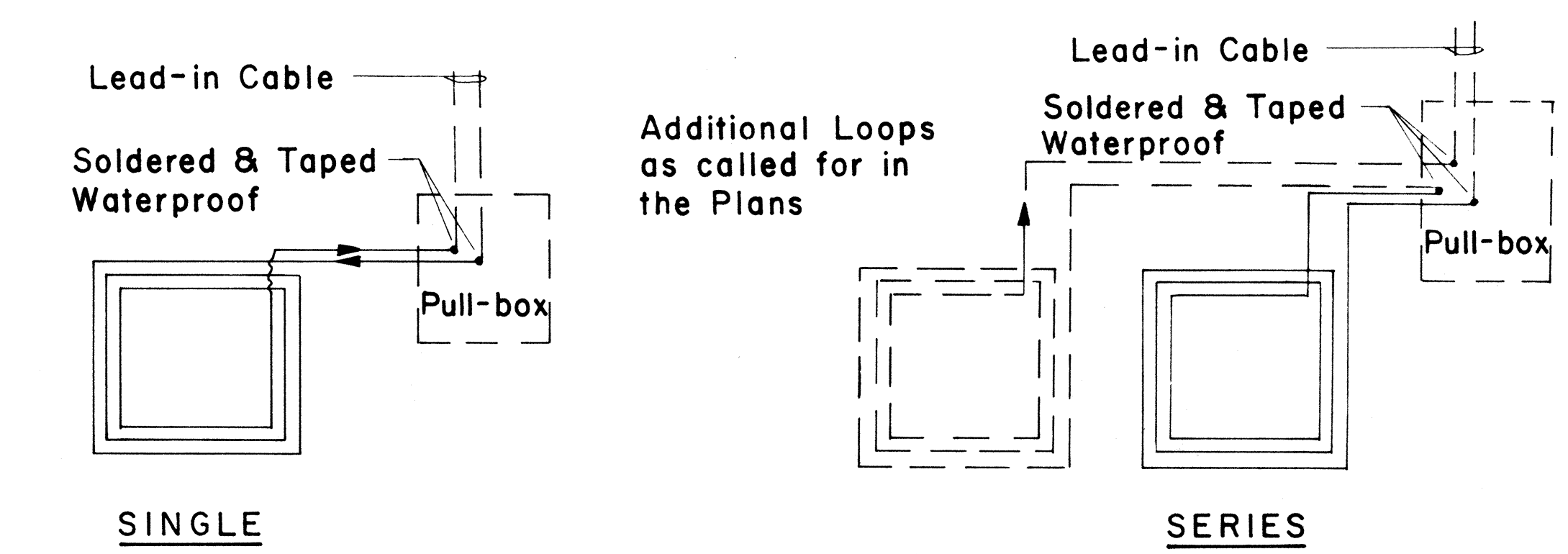
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

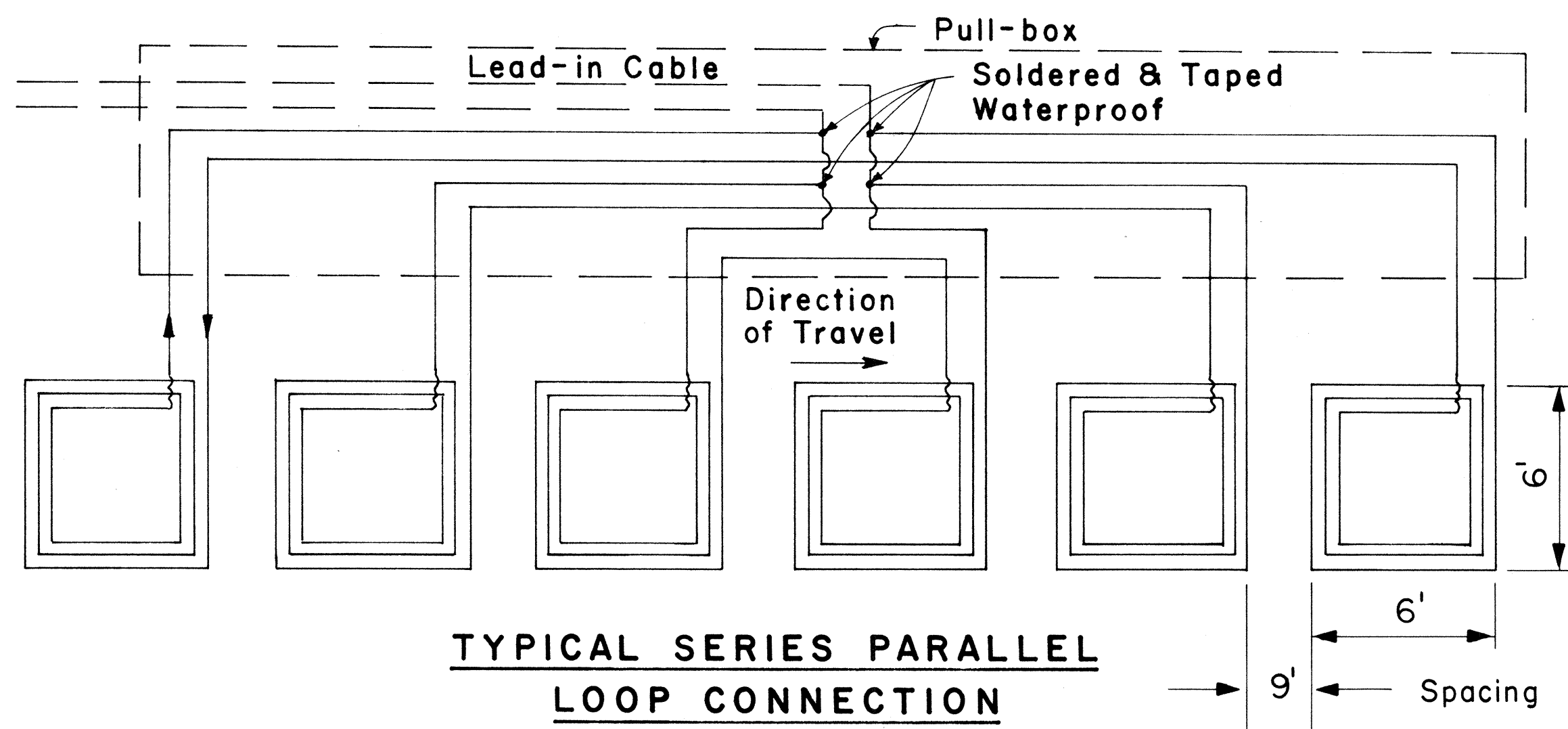
TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

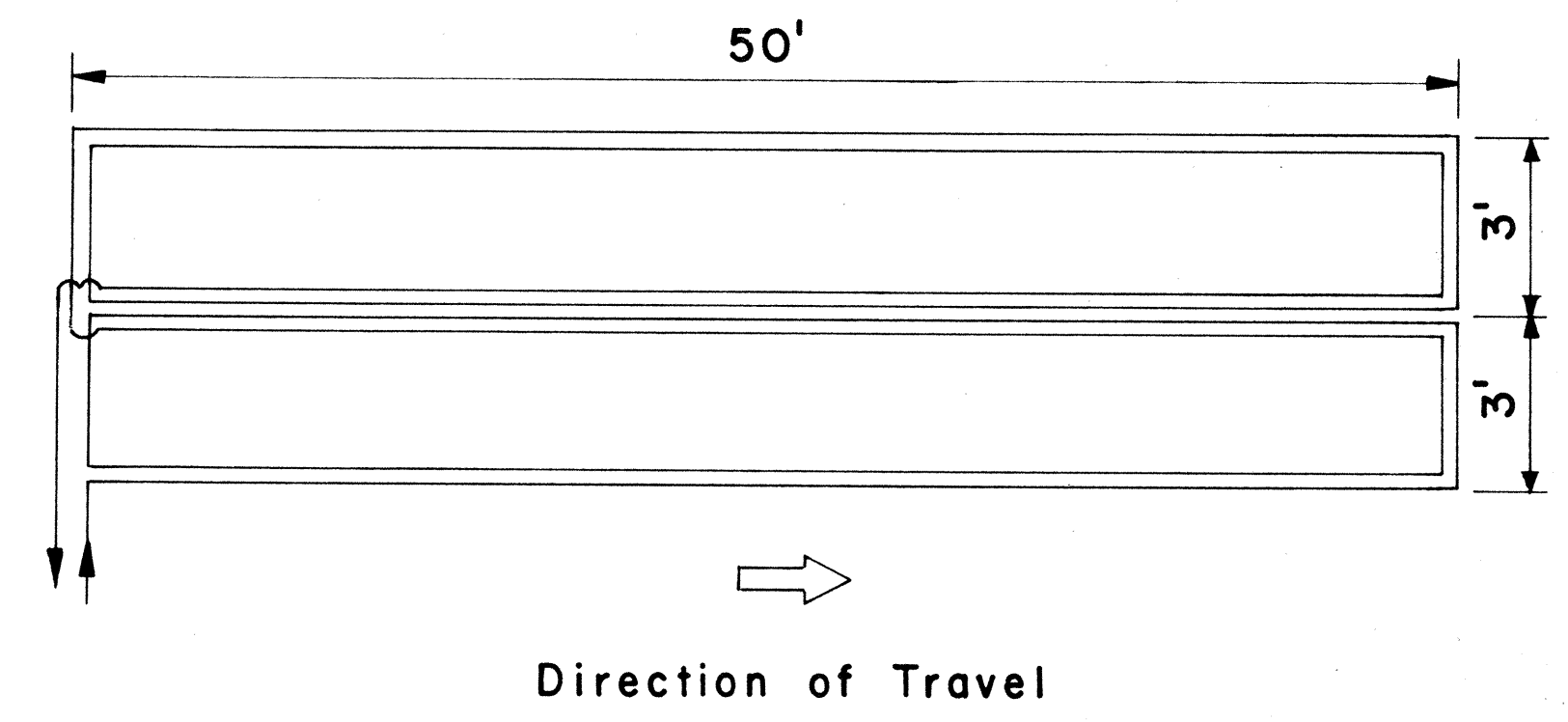
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	M-7600 (2)	1980	132	244



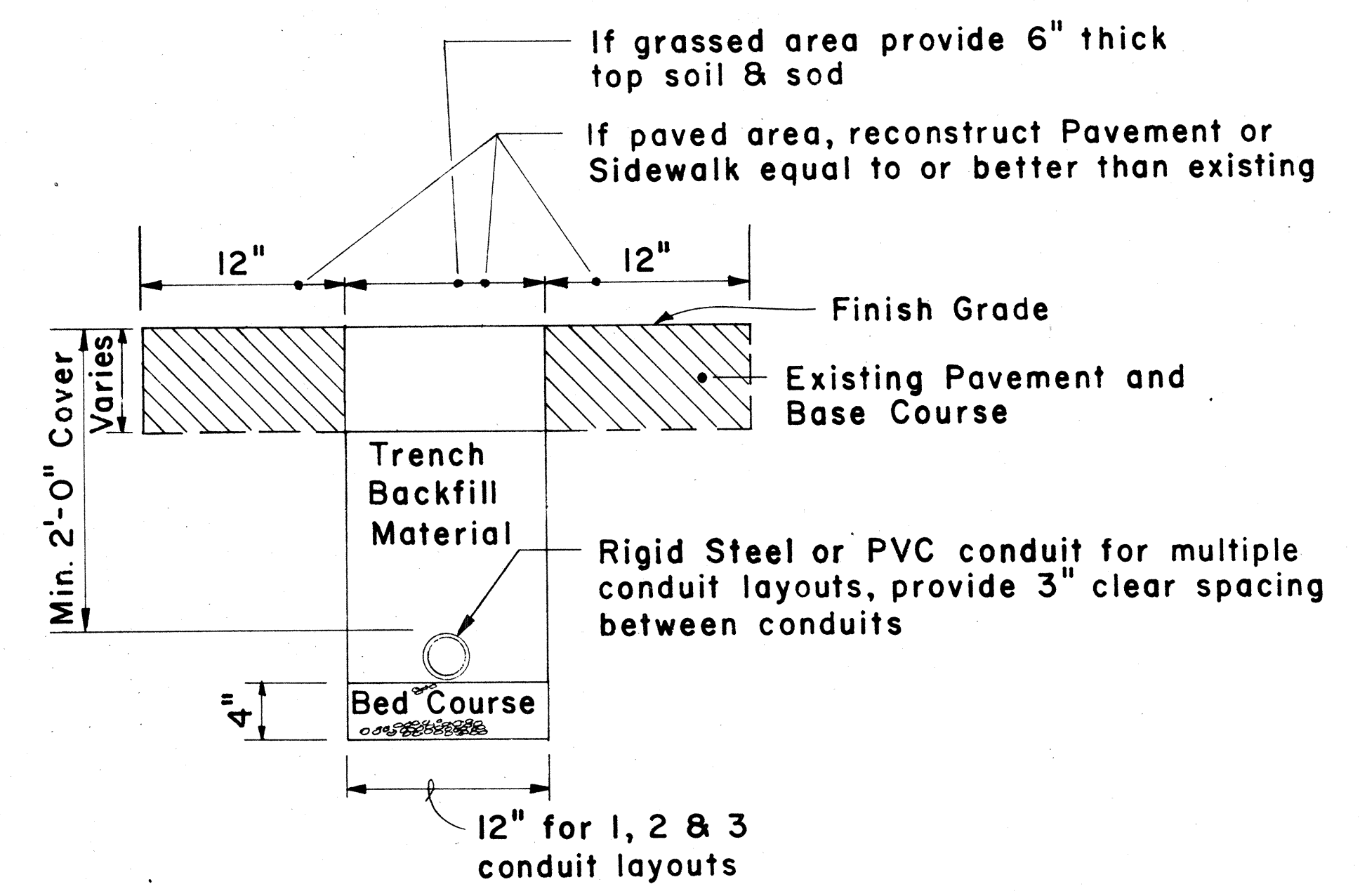
TYPICAL LOOP CONFIGURATIONS
No Scale



TYPICAL SERIES PARALLEL LOOP CONNECTION
No Scale

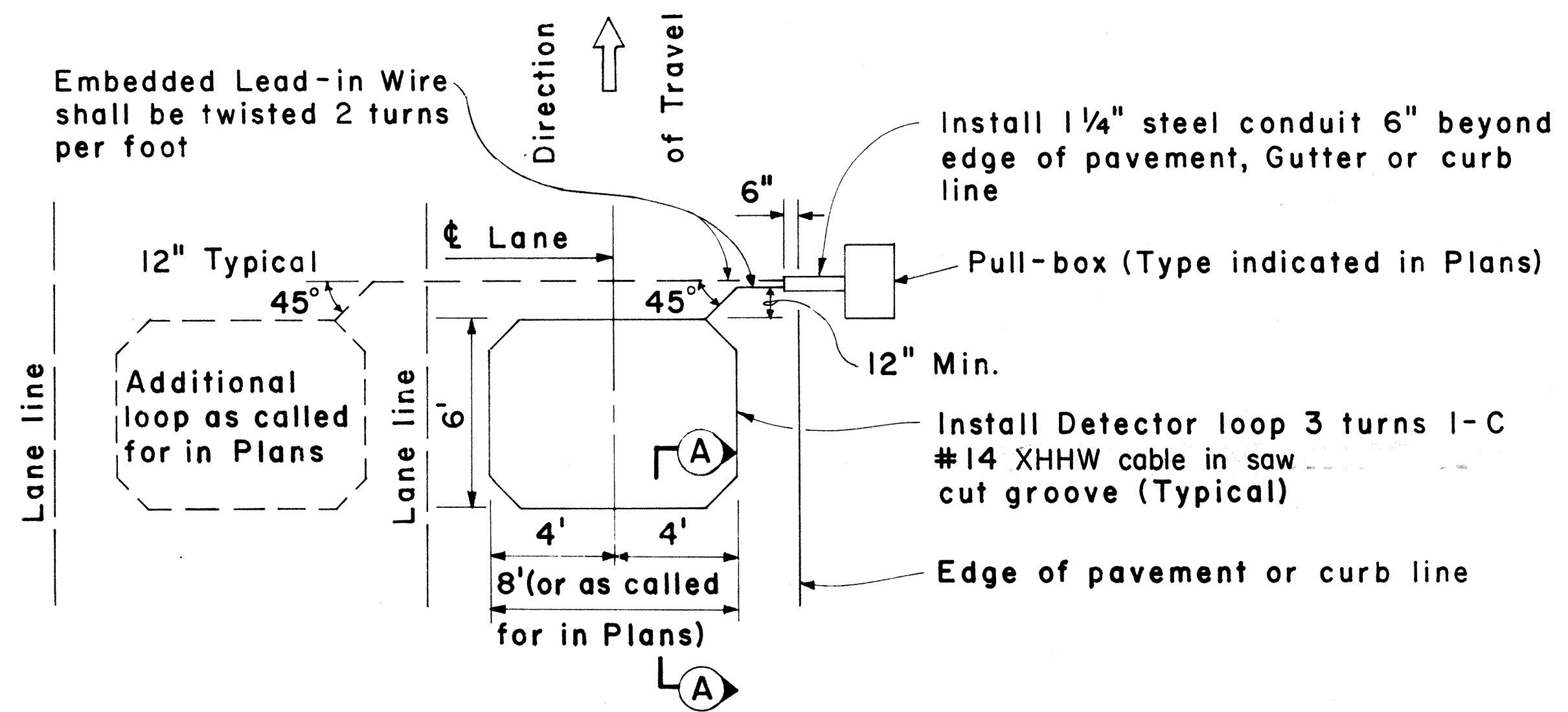


WIRING FOR 6' x 50' LOOP DETECTOR
No Scale

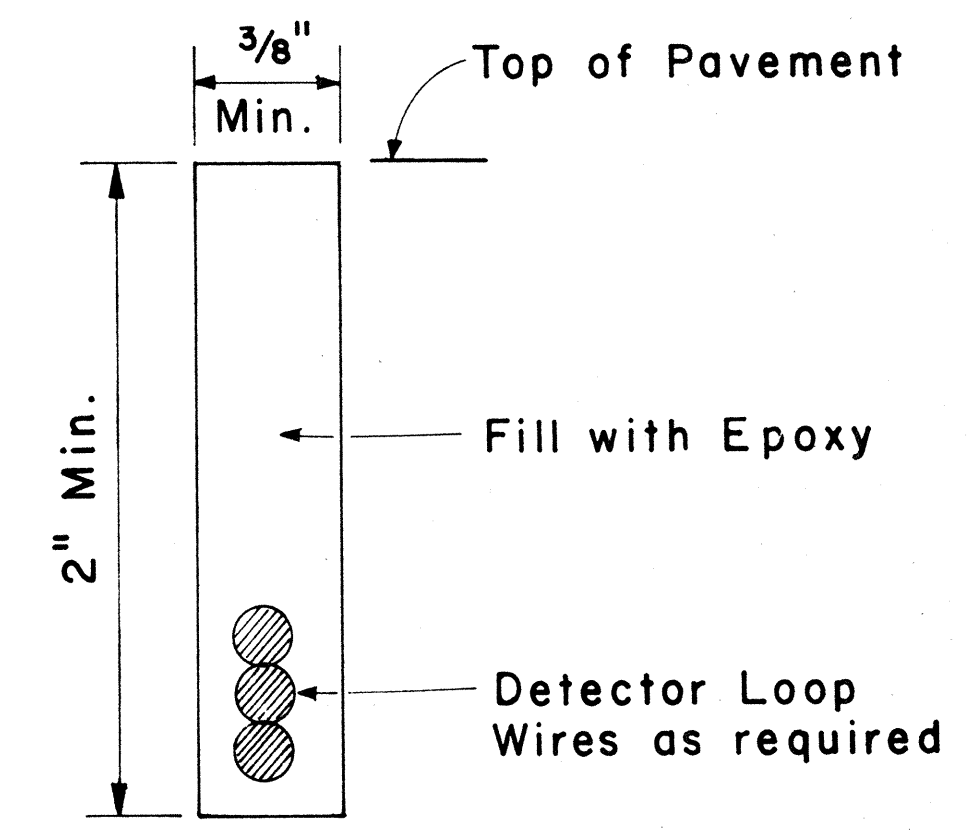


TYPICAL TRENCH SECTION FOR CONDUIT
Scale : 1 1/2" = 1' - 0"

NOTE:
1. All conduits under roadways and railroad shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.



PLAN - MULTIPLE LOOP LAYOUT
Scale : 1/4" = 1' - 0"



Detector Loop Saw-Cut SECTION A-A (TYPICAL)
No Scale

APPROVAL RECOMMENDED:
Eishi Tanaka 3/4/76
TRAFFIC ENGINEER DATE
APPROVED:
Hubert D. Balazs 3-5-76
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Add dimensions to Loop Configurations	H.T.	9-22-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

**TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS**

Scale: As Noted