

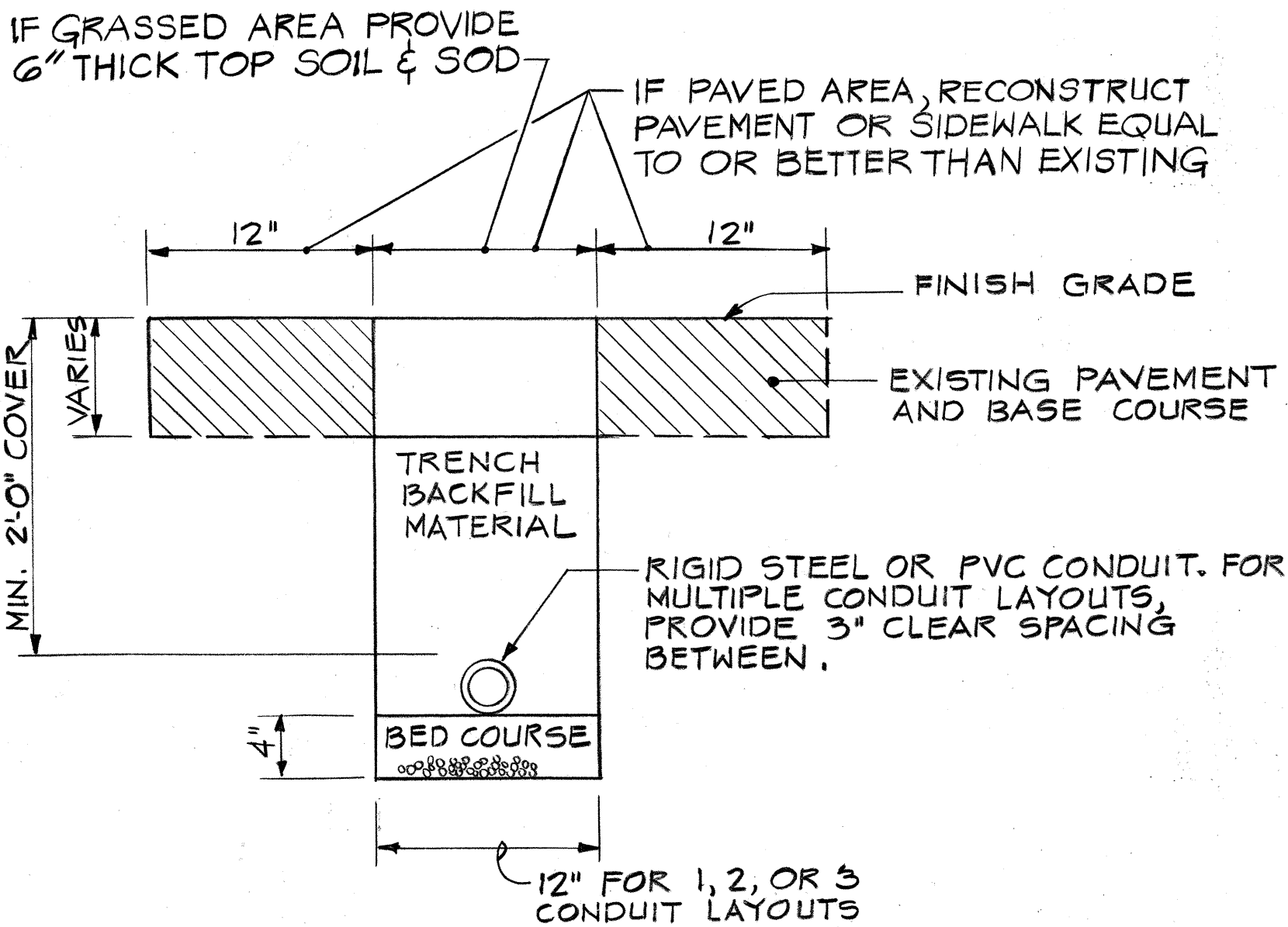
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	67	163

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	POLYVINYLCARBONATE 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

NOTES

- 6/E1. FOR LUMINAIRE PHOTO-METRICS & UTILIZATION CURVE, SEE SPECIAL PROVISIONS, SUBSECTION 712.23.
- 7/E1. FOR MAST ARM TRAFFIC STANDARDS USE TYPE IIA FOUNDATION.
- 1/E1. 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.



DETAIL 1/E1
TRENCH FOR RACEWAY
SCALE: 1 1/2" = 1'-0"



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL LEGEND & NOTES

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: NONE DATE: APRIL 1982

SHEET No. E1 OF E12 SHEETS

LUMINAIRE No. 44/B, 1 BC
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/E7	6/E1	
	TWIN ARM METAL LTG. STD., FOUNDATION, & (1) 150 WATT AND (1) 250 WATT LAMP	2/E7	6/E1	
	PULLBOX, TYPE CC1 FOR LIGHTING SYSTEM PULLBOX, TYPE CC1 FOR TRAFFIC SIGNAL SYSTEM	1/E8		
	PULLBOX, TYPE CC2 FOR TRAFFIC SIGNAL SYSTEM	1/E8		
—TS—	UNDERGROUND RACEWAY FOR TRAFFIC SIGNAL SYSTEM		1,3,4/E1	
=====	UNDERGROUND RACEWAY FOR LIGHTING SYSTEM RACEWAY IN STRUCTURE FOR LIGHTING SYSTEM	2/E8	1,2,4,5/E1	
TS / SW	AERIAL CONDUCTORS AND TRAFFIC SIGNAL SPAN WIRE			
4'x6' 4'x6'	TRAFFIC SIGNAL SYSTEM VEHICLE DETECTOR LOOP; W/PHASE IDENTIFICATION		SEE DWG DT 405	
o 3B	TEMPORARY METAL TRAFFIC SIGNAL STANDARD; W/I.D. No.	1/E5 2/E5		
• 3A	METAL TRAFFIC SIGNAL STANDARD-TYPE I; W/I.D. LETTER		SEE DWG DT 400	
—• 3D	METAL TRAFFIC SIGNAL STANDARD-TYPE II, WITH MAST ARM LENGTH AS INDICATED; W/I.D. LETTER	7/E1	SEE DWG DT 400 DT 404	
1-2 ←	TRAFFIC SIGNAL HEAD; W/I.D. No.	2/E9	SEE DWG DT 400	
□ P4-1	PEDESTRIAN SIGNAL, SIGN, & BUTTON; W/I.D. No.		SEE DWG DT 400	
■ 3H	METAL POLE FOR SPAN WIRE SUPPORTED SIGNALS; W/I.D.	2/E9		

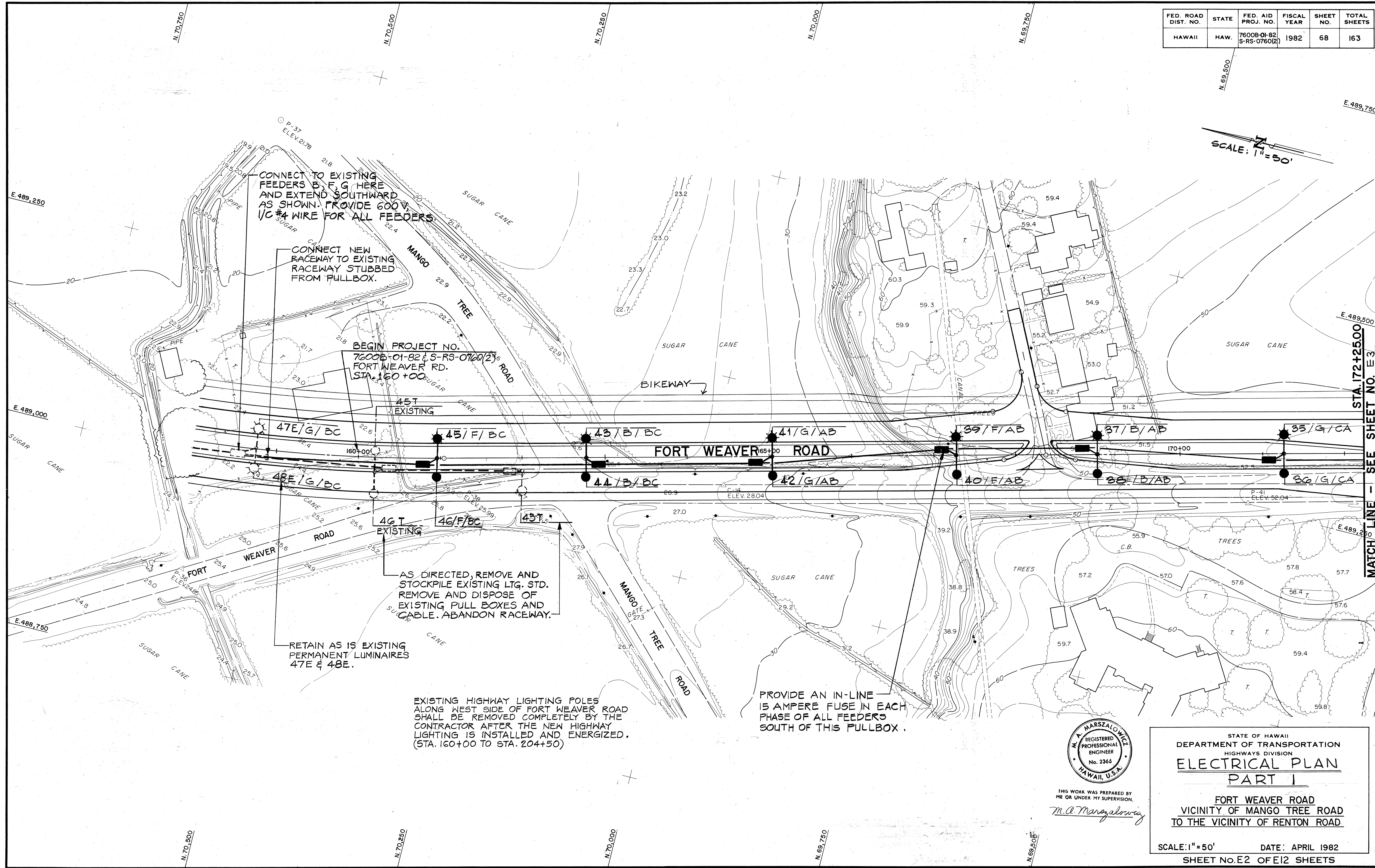
NOTE: ESTIMATED QUANTITY FOR LUMP SUM PAY ITEMS WILL BE USED TO DETERMINE THE APPARENT UNIT PRICE AS DEFINED IN SUB-SECTION 104.02(B) OF THE STANDARD SPEC.

ELECTRICAL				
ITEM No.	ITEM	UNIT	QUANTITIES	
			HIGHWAY	BRIDGE
622.7002	METAL LIGHTING STANDARD ON GRADE	EA.	2	
622.7003	METAL LIGHTING STANDARD ON GRADE, TWIN ARM	EA.	22	
622.7019	2" RACEWAY IN STRUCTURE	L.S.		130'
622.7021	UNDERGROUND RACEWAY, LTG. SYSTEM	L.S.	4600'	
622.7008	WIRE, 600 VOLT, 1/C, #6	L.S.	250'	
622.7009	WIRE, 600 VOLT, 1/C, #4	L.S.	42,000'	
622.7016	PULLBOX, TYPE CC, LTG. SYSTEM	EA.	24	
622.7020	MISCELLANEOUS ELECTRICAL FACILITIES	L.S.	1	1
623.9008	TRAFFIC SIGNAL SYSTEM No. 2-1	L.S.	1	
623.9010	PULLBOX, TYPE CC, TRAFFIC SIGNAL SYSTEM	EA.	20	
623.9015	SIGNAL LOOP CABLE: 26/C, #12, 600V	L.S.	1500'	
623.9016	SIGNAL HEAD CABLE: 4/C, #14, 600V	L.S.	3200'	
623.9017	DETECTOR LEAD-IN CABLE: 2/C #12, 600V	L.S.	1800'	
623.9019	SIGNAL DUCT: ONE 2-INCH	L.S.	900'	
623.9020	SIGNAL DUCT: TWO 2-INCH	L.S.	800'	

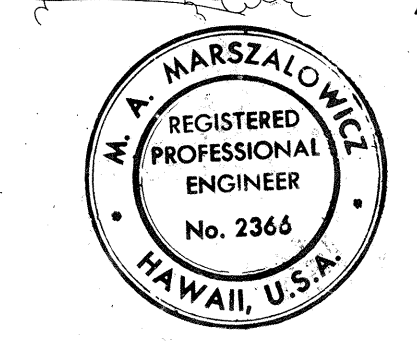
SURVEY PLOTTED BY	DATE
PLAN	
DESIGNED BY	
NOTES	
QUANTITIES BY	
CHECKED BY	
ORIGINAL	
PLAN	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	68	163

SCALE: 1"=30'



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



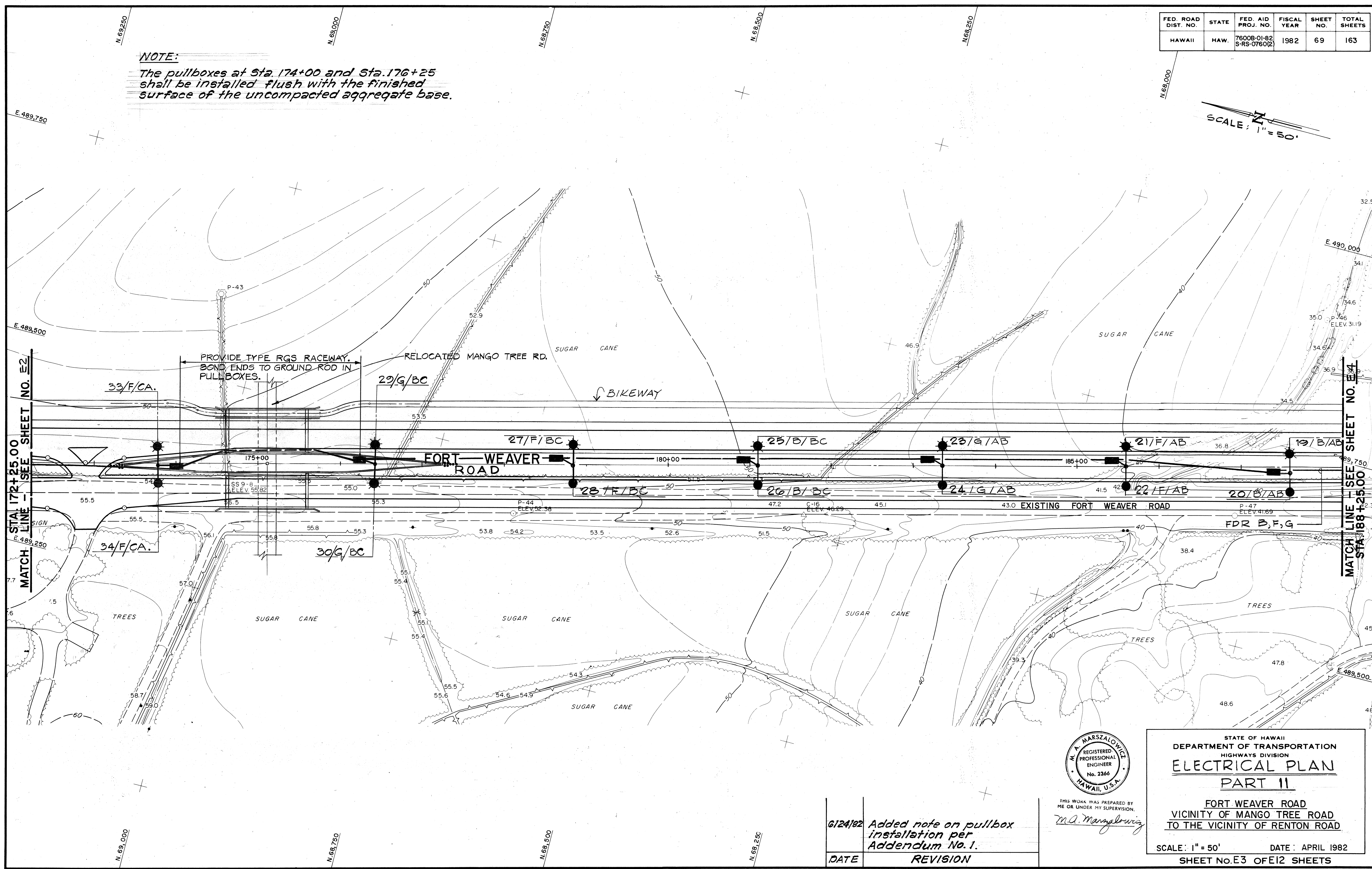
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
M.A. Marszalowicz

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART I
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: 1"=50' DATE: APRIL 1982
SHEET No. E2 OF E12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	69	163

NOTE:
The pullboxes at Sta. 174+00 and Sta. 176+25 shall be installed flush with the finished surface of the uncompacted aggregate base.

SCALE: 1" = 50'



DATE	
SURVEY PLOTTED BY	JJS
DESIGNED BY	JJS
QUANTITIES BY	
CHECKED BY	

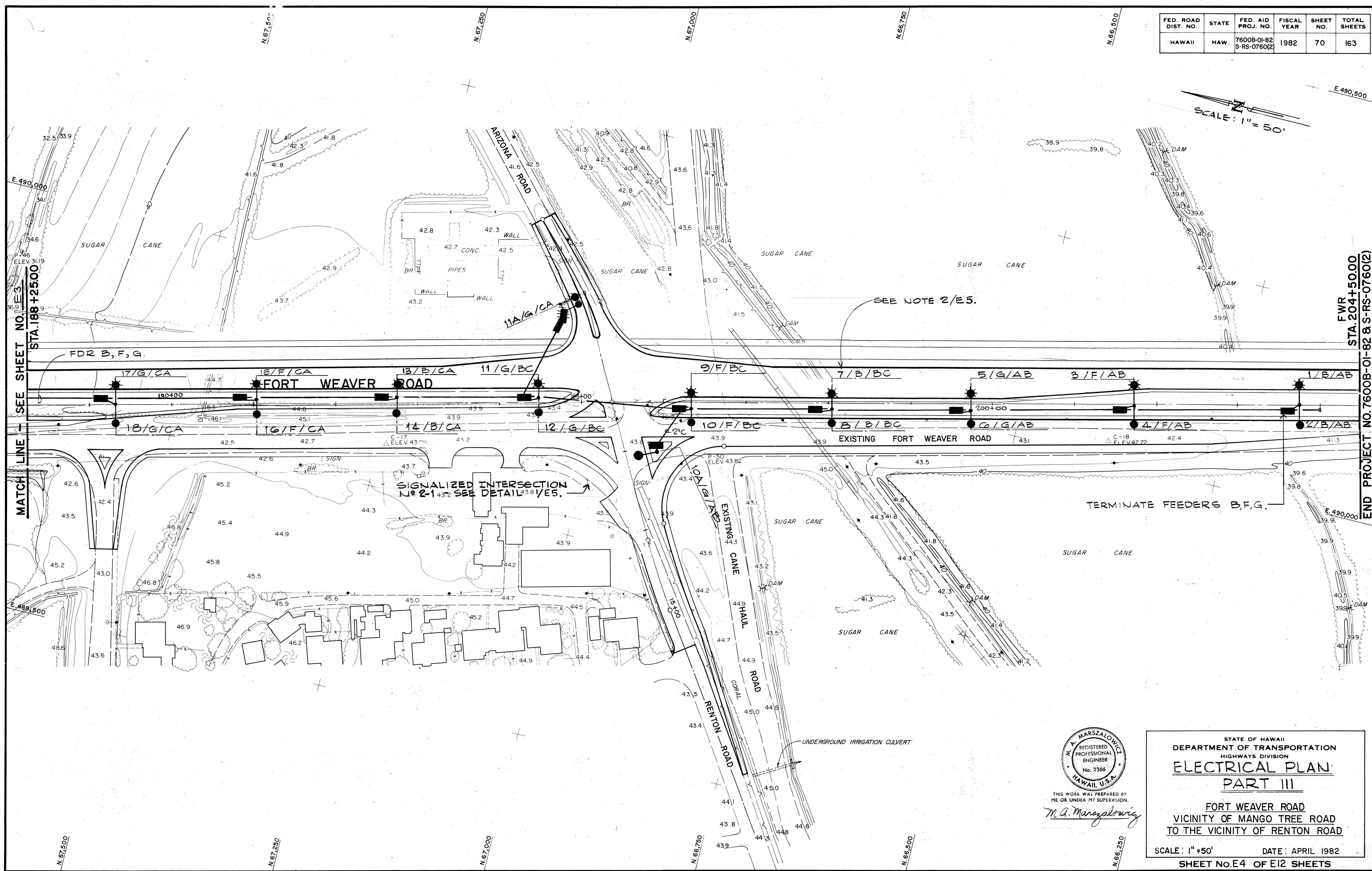
6/24/82	Added note on pullbox installation per Addendum No. 1.
DATE	REVISION



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
PART 11
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: 1" = 50' DATE: APRIL 1982
SHEET No.E3 OF E12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	70	163

SCALE: 1" = 50'



DATE: 4/82
 SURVEY PLOTTED BY: JJS
 DESIGNED BY: JJS
 NOTE BOOK: JJS
 QUANTITIES BY: JJS
 CHECKED BY: JJS

M. A. MARSZALOWICZ
 REGISTERED PROFESSIONAL ENGINEER
 No. 2366
 HAWAII, U.S.A.
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
M.A. Marszalowicz

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ELECTRICAL PLAN
PART III
 FORT WEAVER ROAD
 VICINITY OF MANGO TREE ROAD
 TO THE VICINITY OF RENTON ROAD
 SCALE: 1" = 50' DATE: APRIL 1982
 SHEET No. E4 OF E12 SHEETS

PROGRAMMABLE VISABILITY

CONVENTIONAL

COMBINATION

SIGNAL TYPES

NOTES
1/E5:

2/E5. FOR LIGHTING FACILITIES SEE SHEET E4. FOR THIS CONSTRUCTION PHASE PROVIDE OPERATIONAL LUMINAIRES 7, 9, 10A, 11, 11A, & 13.

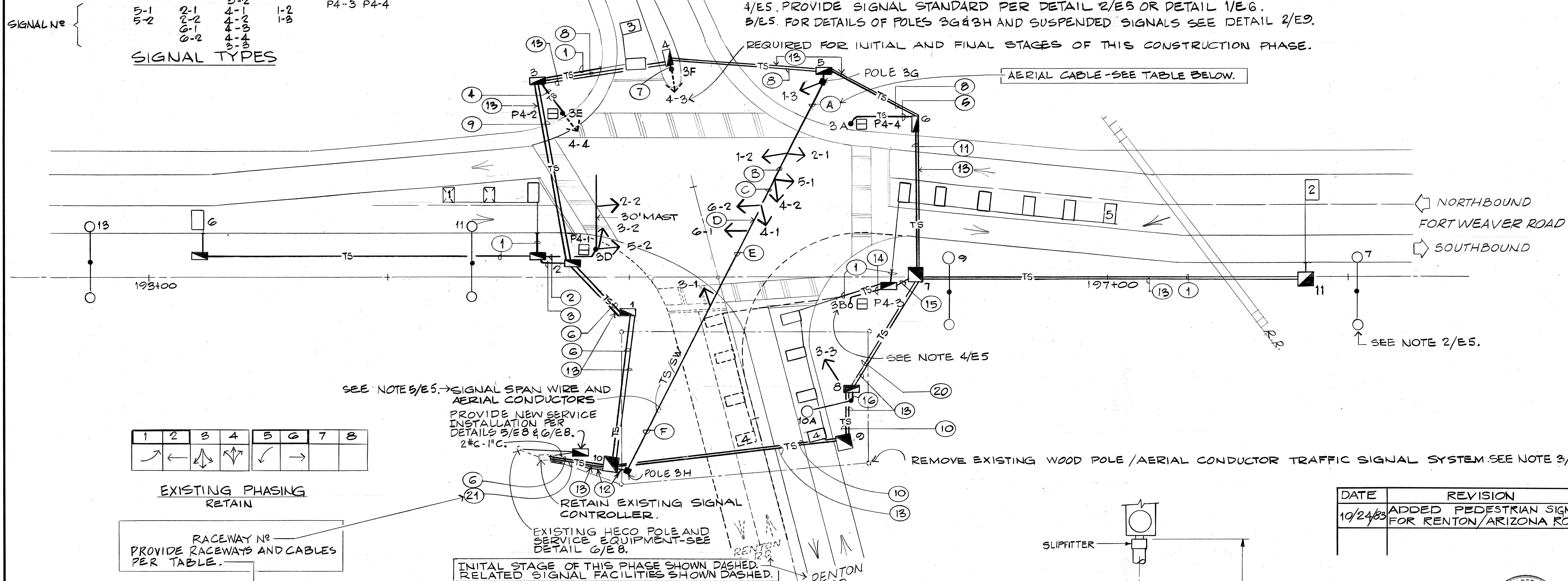
3/E5. STOCKPILE SIGNALS AS DIRECTED. REMOVE FROM THE SITE OTHER ABOVE-GRADE FACILITIES AND PULLBOXES WITHIN THE TRAVELED WAY AND SHOULDERS.

4/E5. PROVIDE SIGNAL STANDARD PER DETAIL 2/E5 OR DETAIL 1/E6.

5/E5. FOR DETAILS OF POLES 3G & 3H AND SUSPENDED SIGNALS SEE DETAIL 2/E9.

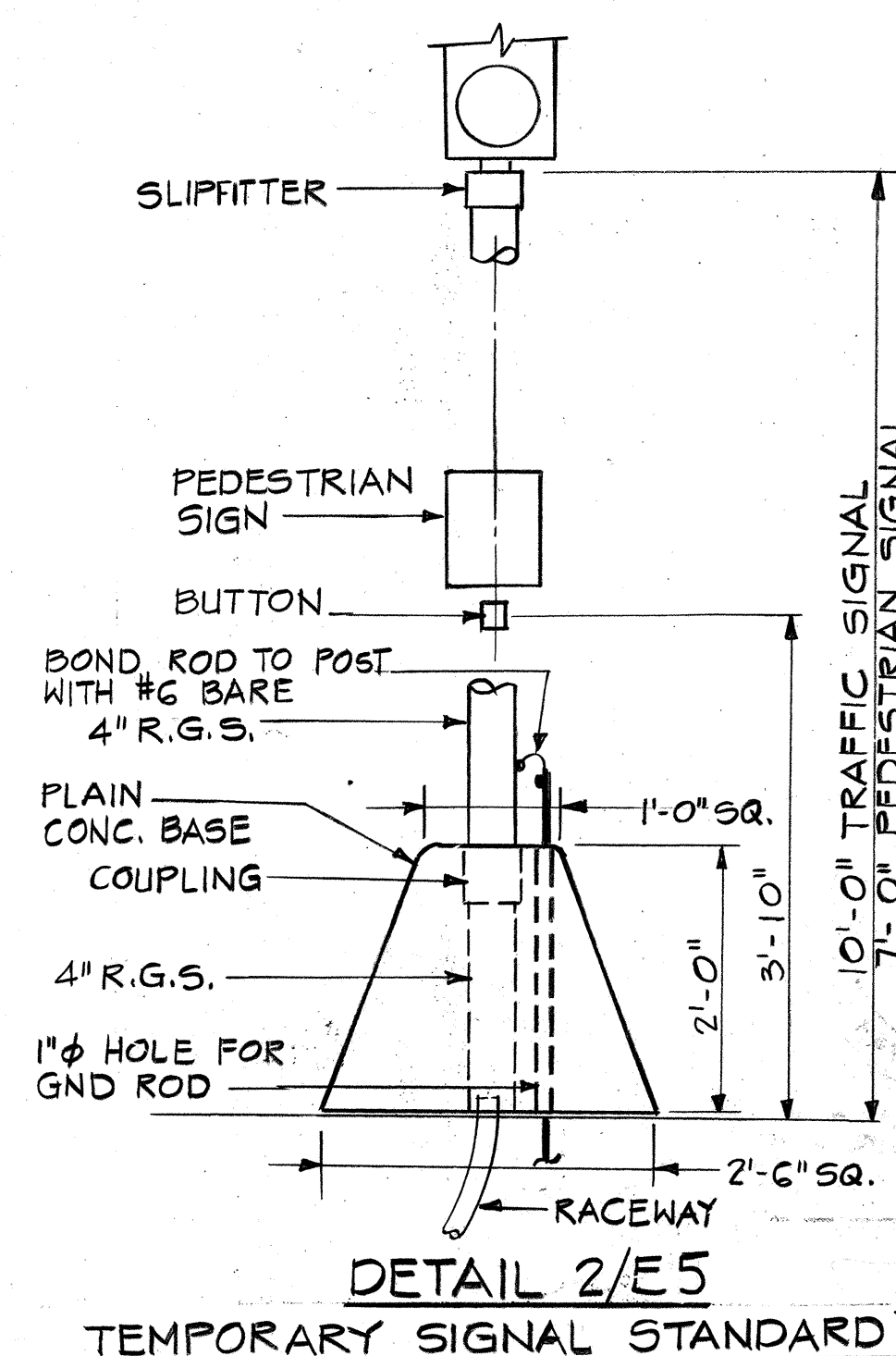
REQUIRED FOR INITIAL AND FINAL STAGES OF THIS CONSTRUCTION PHASE.

AERIAL CABLE-SEE TABLE BELOW.



RACEWAY		CABLE				RACEWAY		CABLE			
Nº	SIZE	2G/C SIG. LOOP	4/C SIGNAL	2/C DET. LOOP	2/C PUSHBUTTON	Nº	SIZE	2G/C SIG. LOOP	4/C SIGNAL	2/C DET. LOOP	2/C PUSHBUTTON
①	2"			1		⑭	2"		1 & 2*		1
②	2"		4		1	⑮			1 & 2*	2	1
③			4	2	1	⑯			1 & 1*		
④			3		1	⑰		1		2	2
⑤			1 & 2*		1	⑱		1		2	2 & 2*
⑥				2 & 1*	2 & 2*	↓					
⑦			1			AERIAL					
⑧		1			2*	①			1		
⑨		1		1	1 & 2*	②			3		
⑩		1		2	2 & 1*	③			5		
⑪		1			1	④			7		
⑫			9			⑤			8		
⑬	↓	PULLWIRE ONLY				⑥			9		
						⑦					

← * = REQUIRED FOR NEXT
← / CONST. PHASE - SEE DET 1/E 6.



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M. A. Marszalowicz

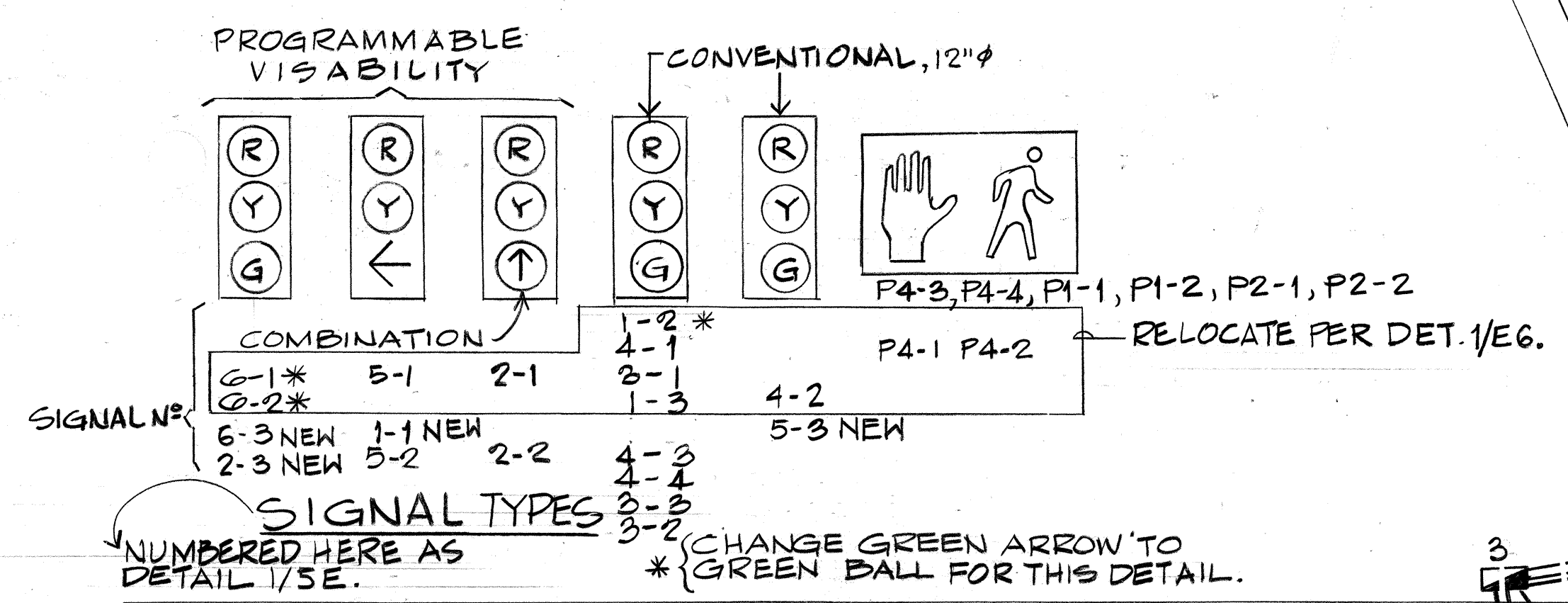
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART I
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: 1" = 20' DATE: APRIL 1982

SHEET No.E-5 OF E-12SHEETS

C.O. 71

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	72	163

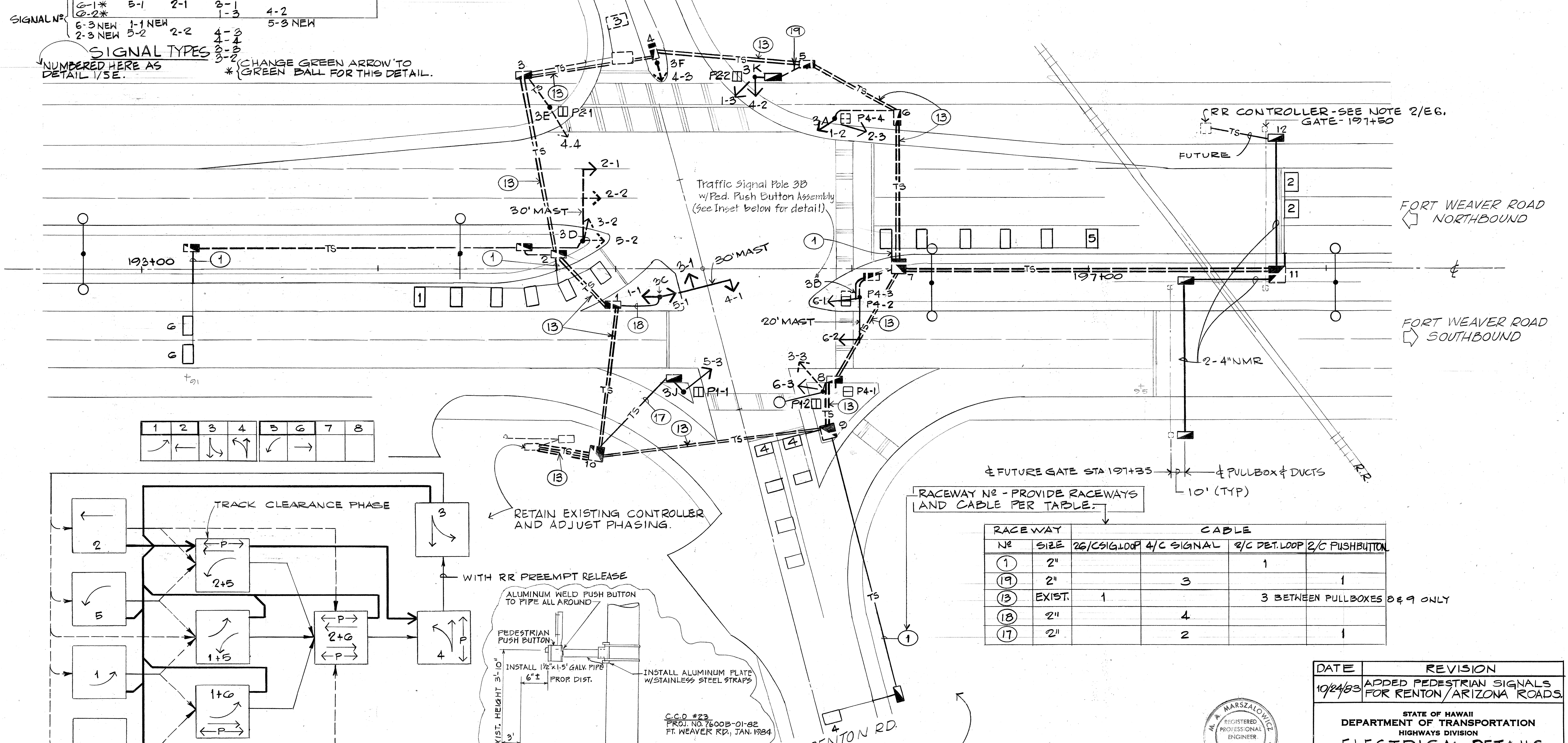


NORTH FOR PLAN
SCALE: 1"=20'

NOTES

- 1/EG. MODIFY SIGNAL SYSTEM OF DETAIL 1/E5 TO PROVIDE SYSTEM OF DETAIL 1/EG. ABANDON RACEWAYS AND CONDUCTORS NOT REQUIRED FOR DETAIL 1/EG. REMOVE AND STOCKPILE POLES 3H & 3G.
- 2/EG. 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/E8.

← FUTURE - N.I.C.

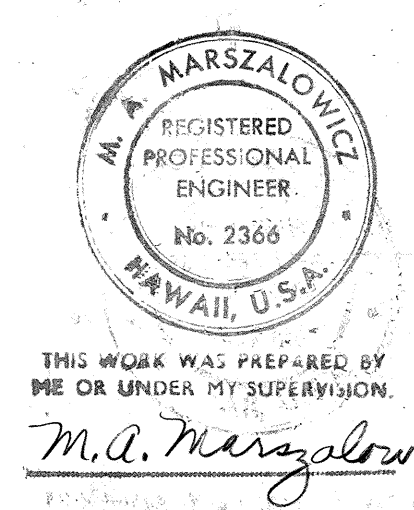


RACEWAY NO	SIZE	CABLE			
		2G/CSIG.LOOP	4/C SIGNAL	2/C DET.LOOP	2/C PUSHBUTTON
1	2"			1	
19	2"		3		1
13	EXIST.	1		3 BETWEEN PULLBOXES 8 & 9 ONLY	
18	2"		4		
17	2"		2		1

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

OPTIONAL, AS CALLED MANDATORY, EXCEPT AS PREEMPTED RAILROAD PREEMPTION
PHASE DIAGRAM

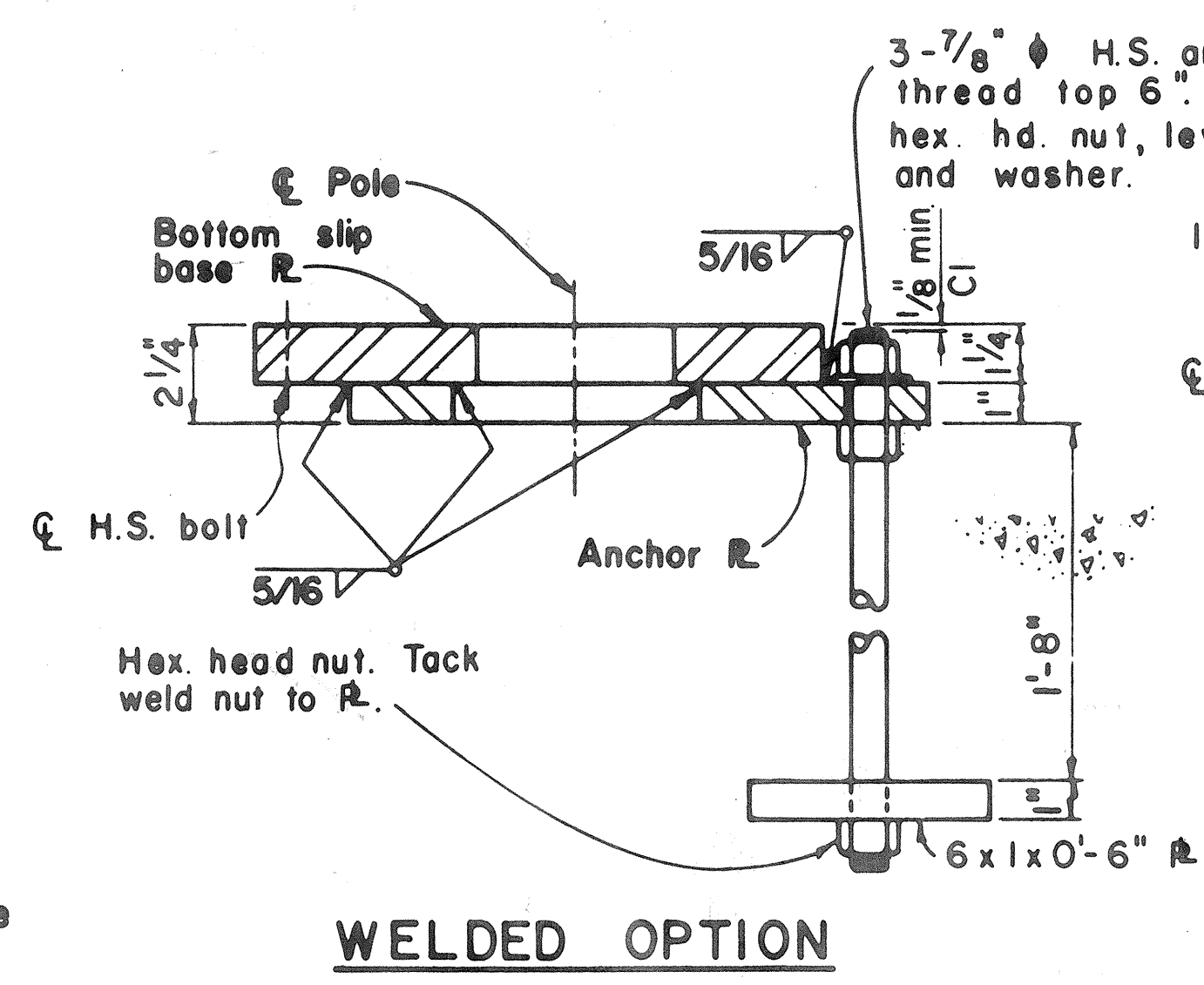
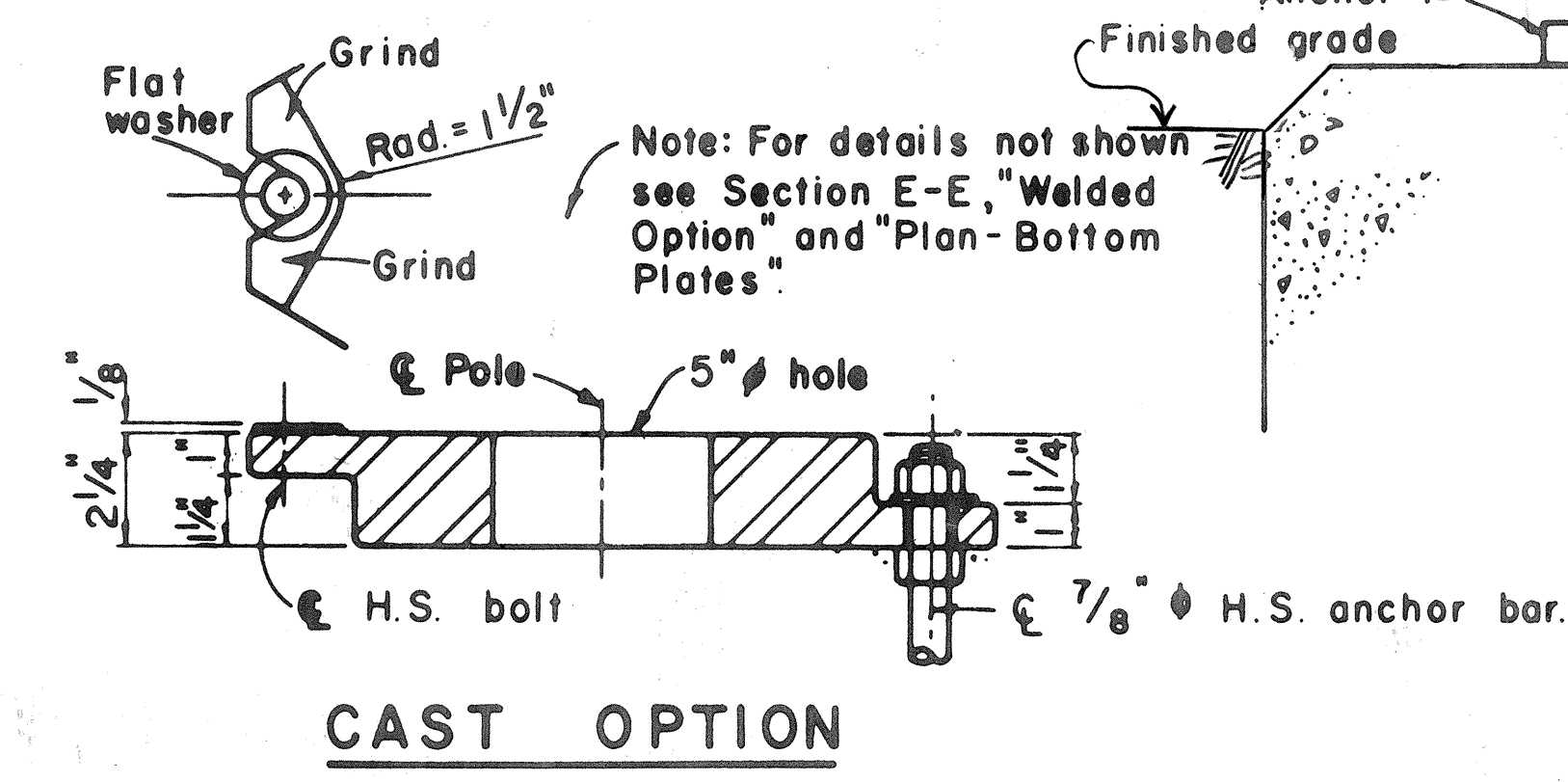
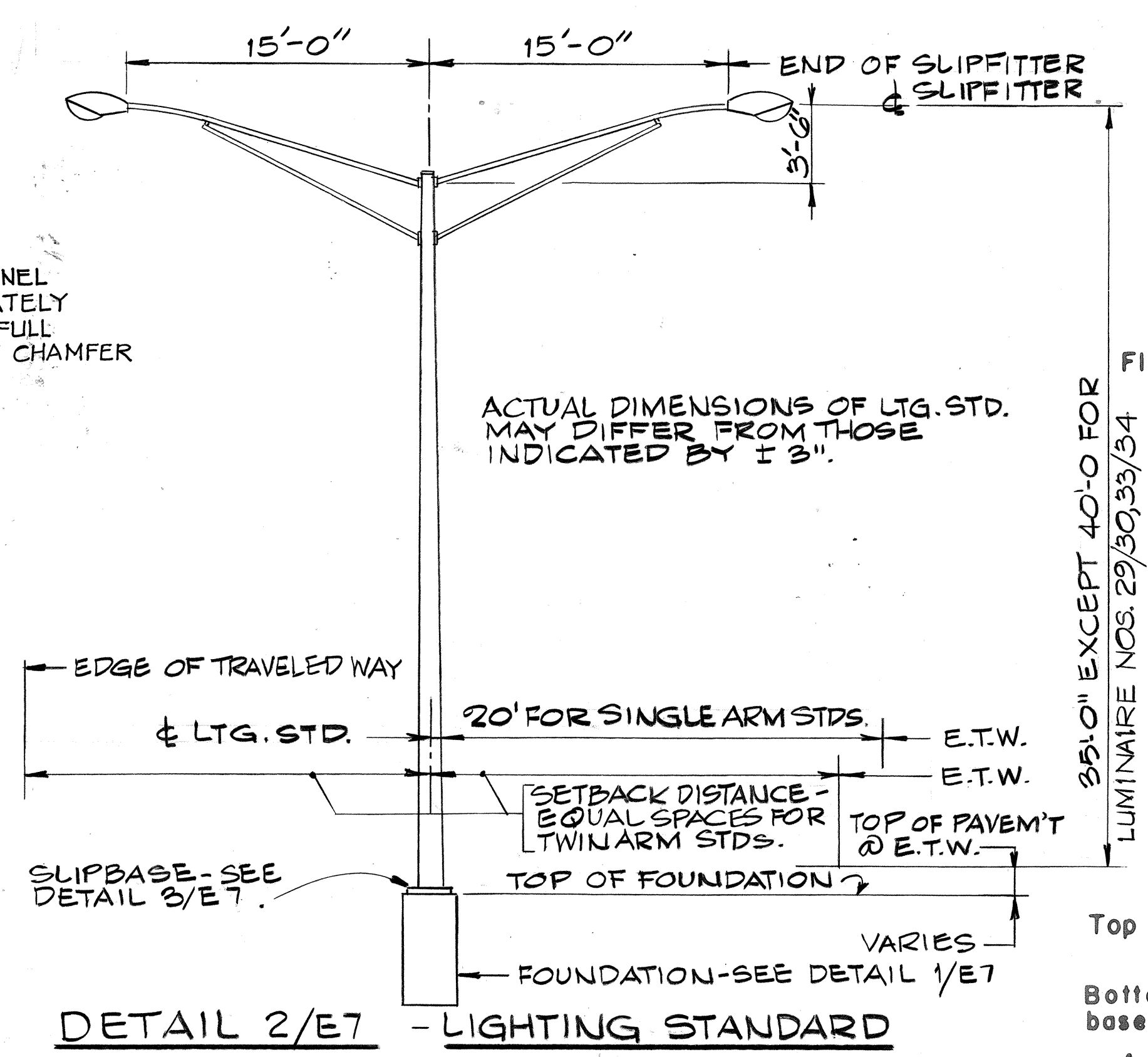
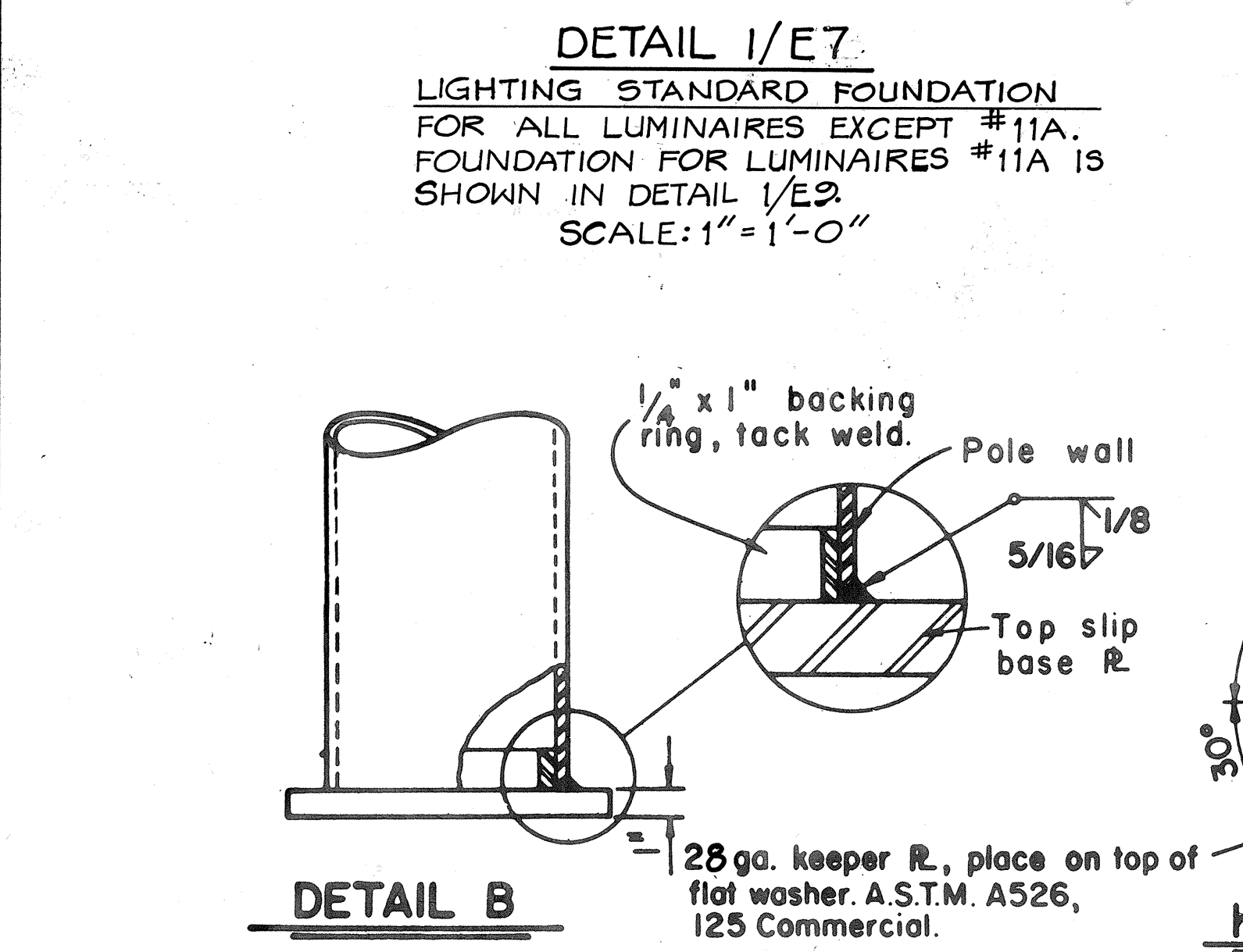
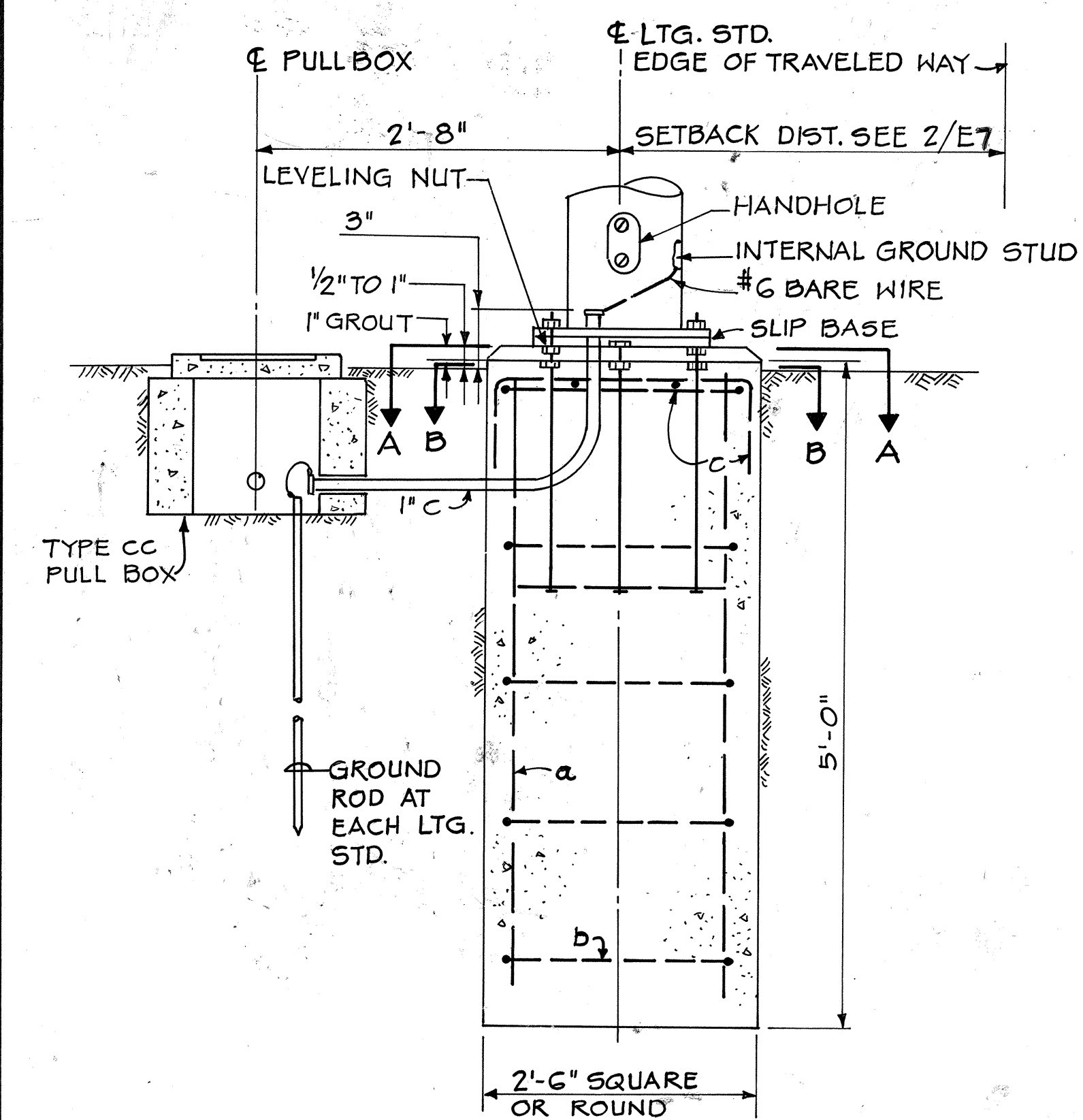
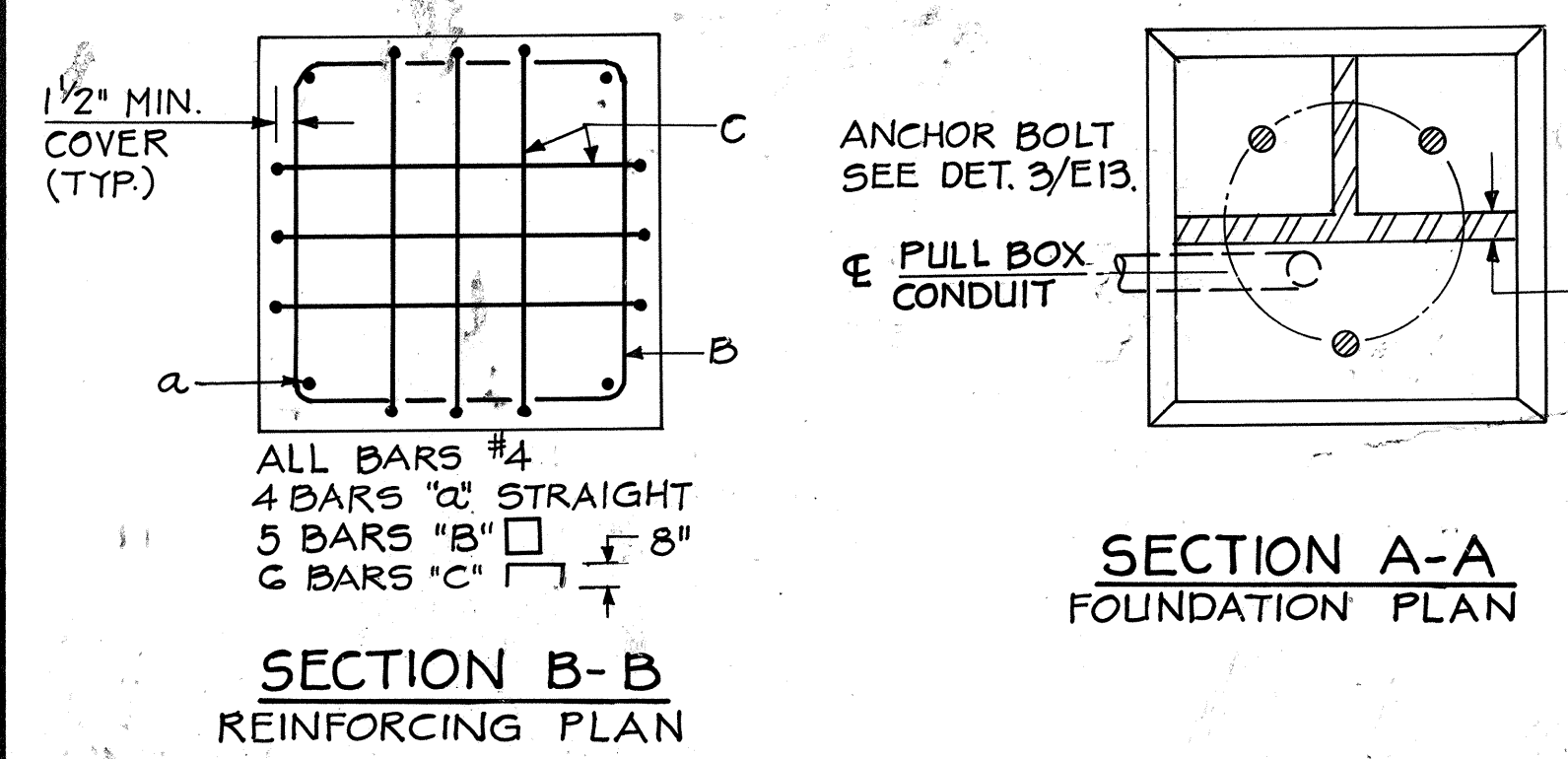
DETAIL 1/EG - INTERSECTION NO 2-1 SIGNAL PLAN
REQUIRED PERMANENT FACILITIES
SEE NOTE 1/EG.



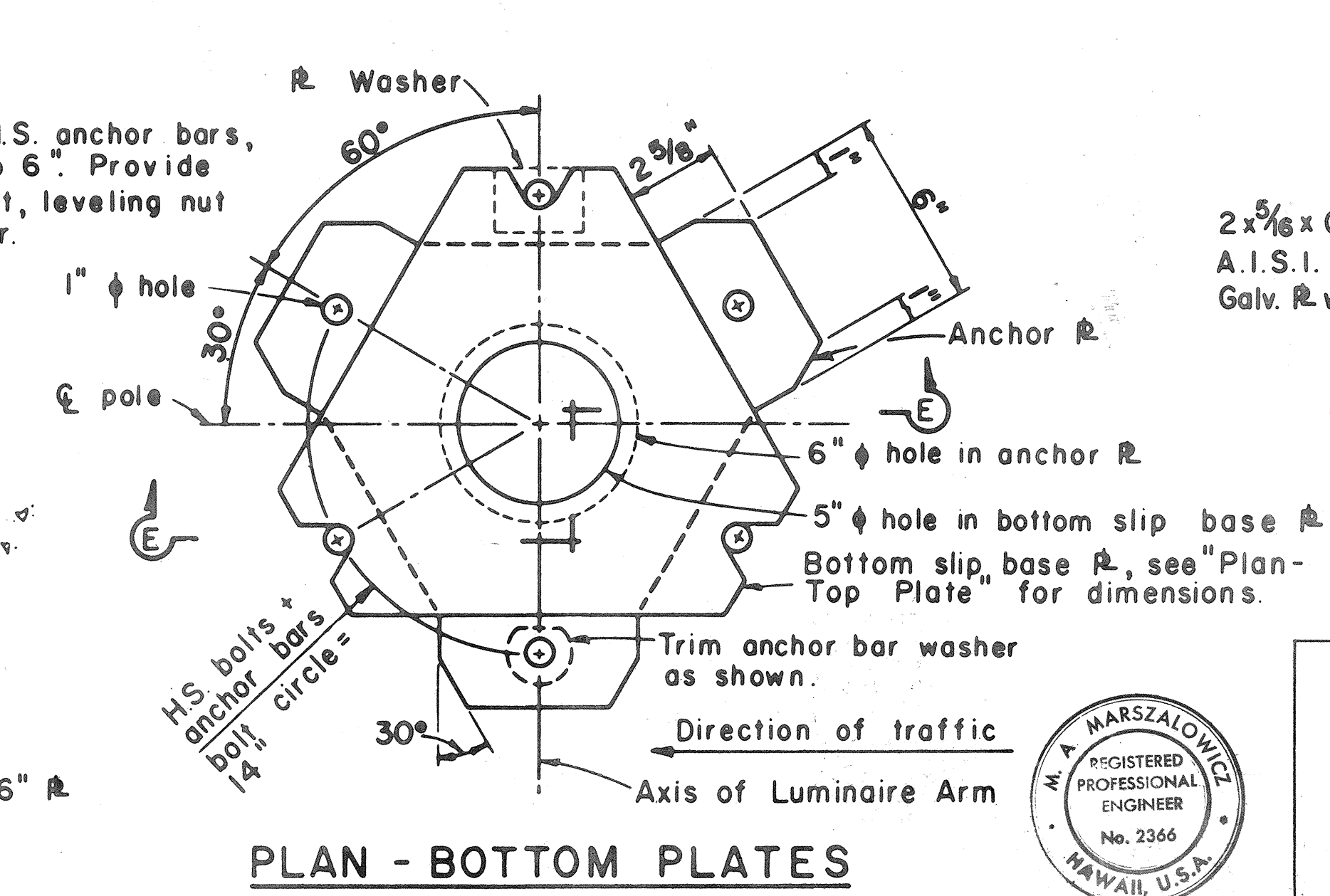
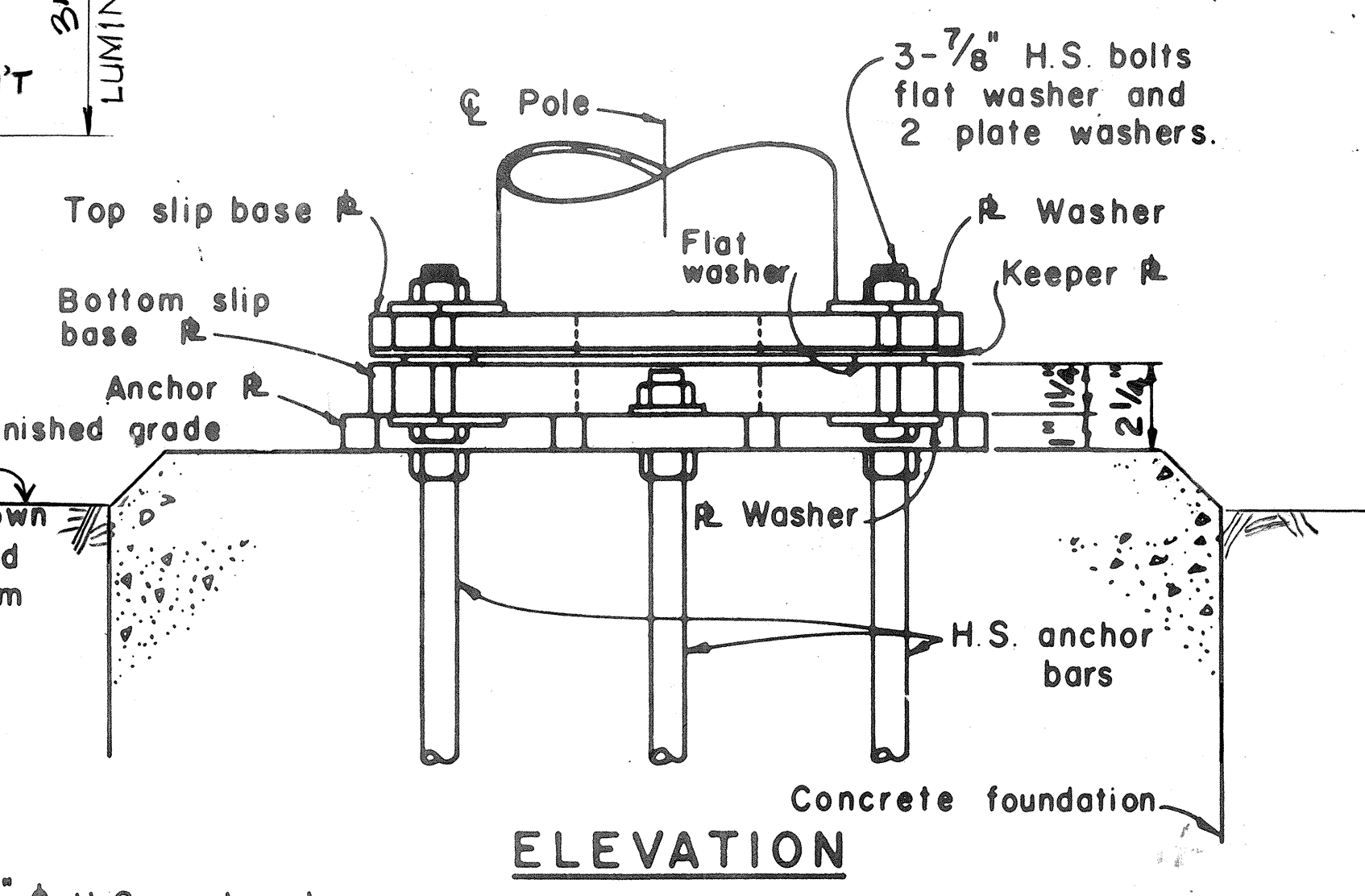
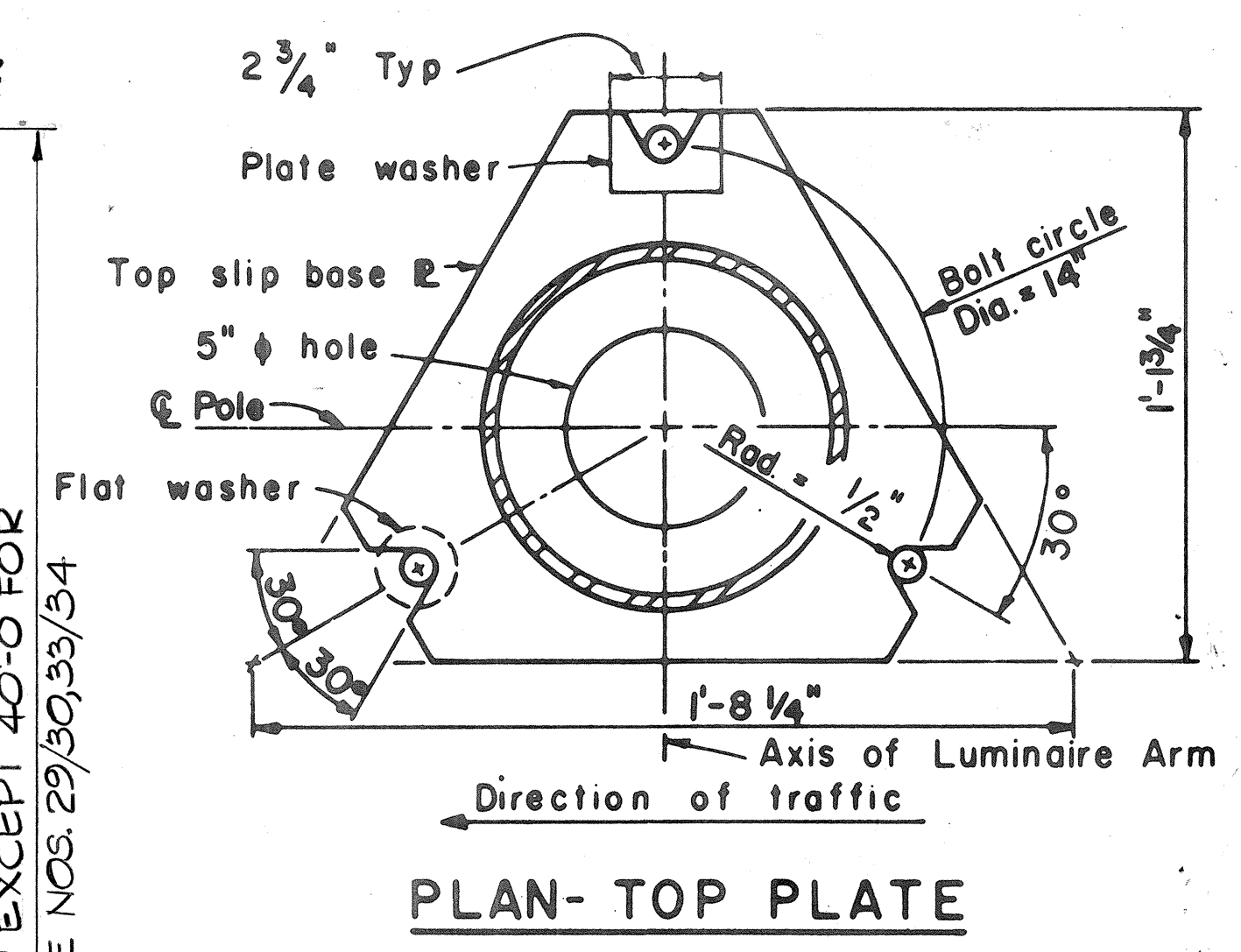
DATE	REVISION
10/24/83	ADDED PEDESTRIAN SIGNALS FOR RENTON/ARIZONA ROADS.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART II
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: 1"=20' DATE: APRIL 1982
SHEET No.E6 OF E12 SHEETS

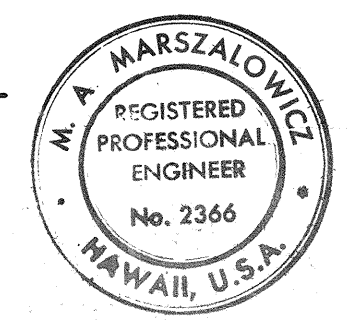
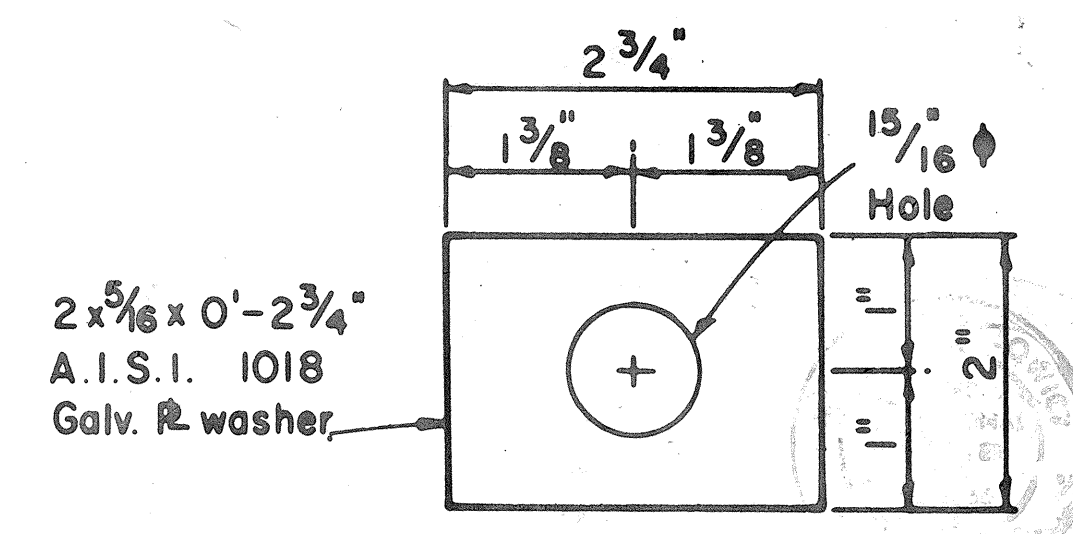
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	73	163



SECTION E-E
LIGHTING STANDARD SLIP BASE



SLIP BASE PLATE DETAILS



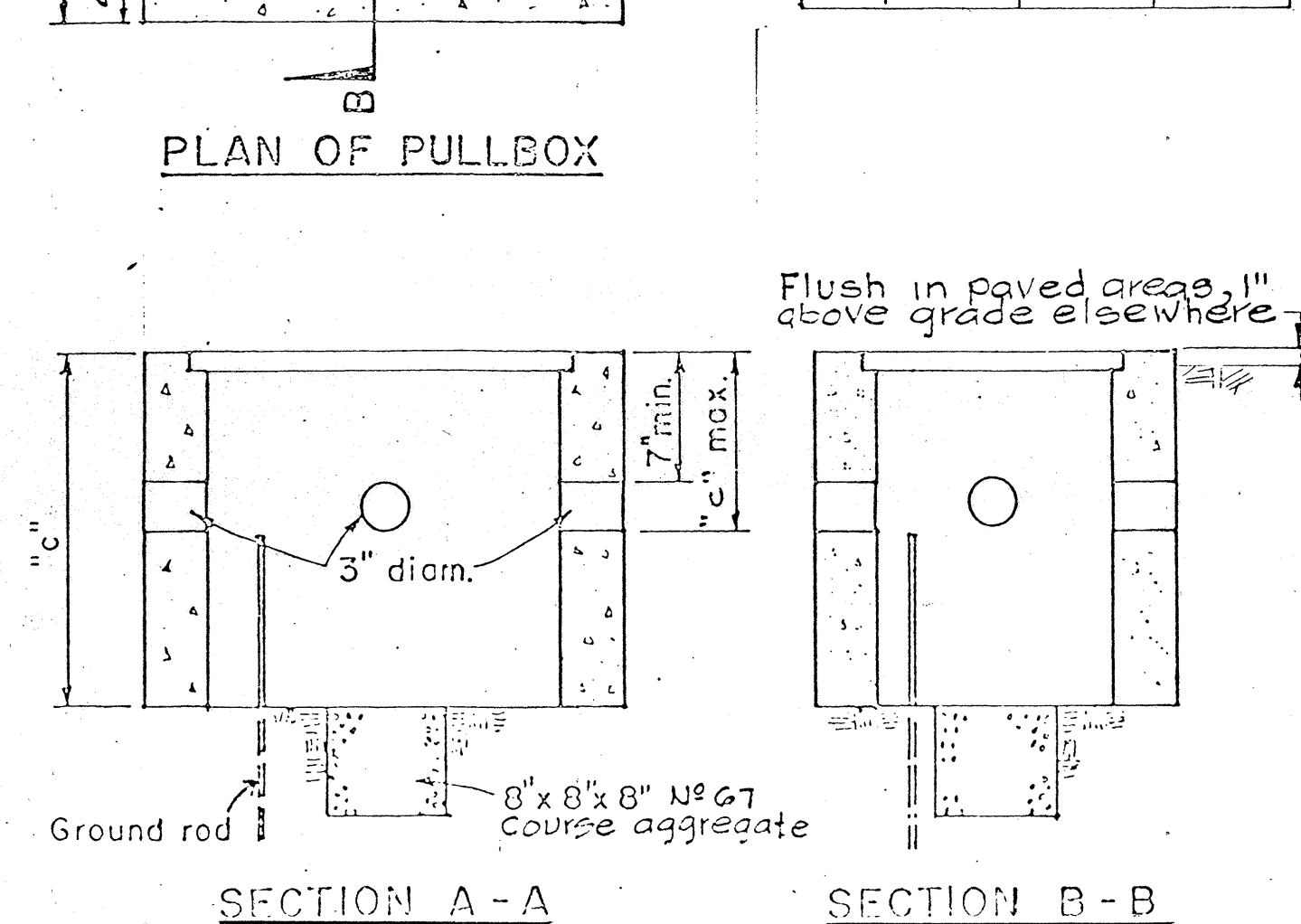
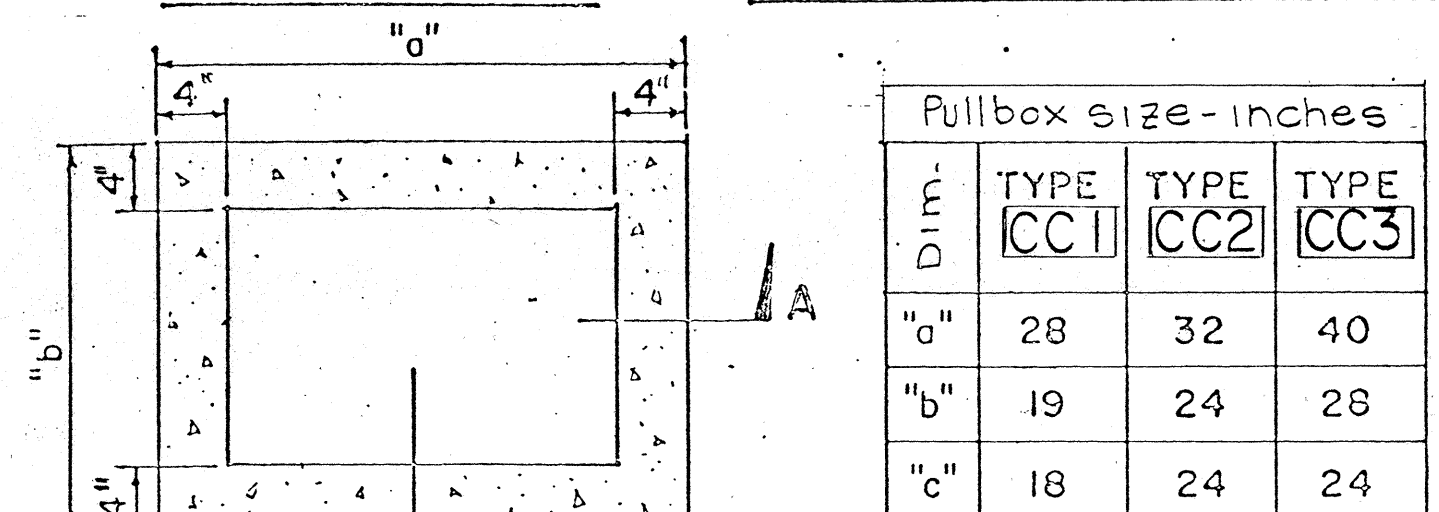
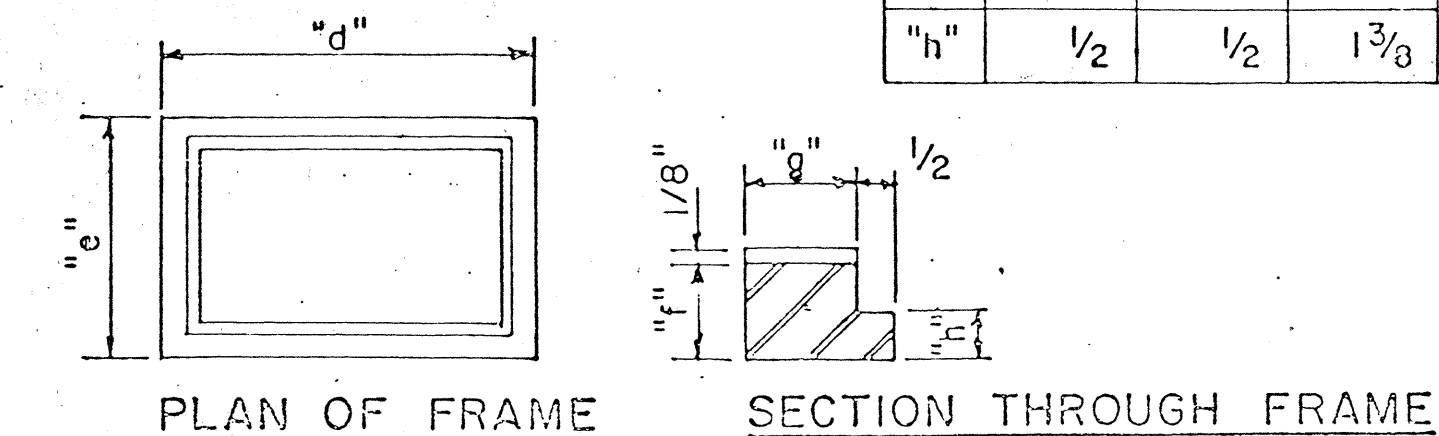
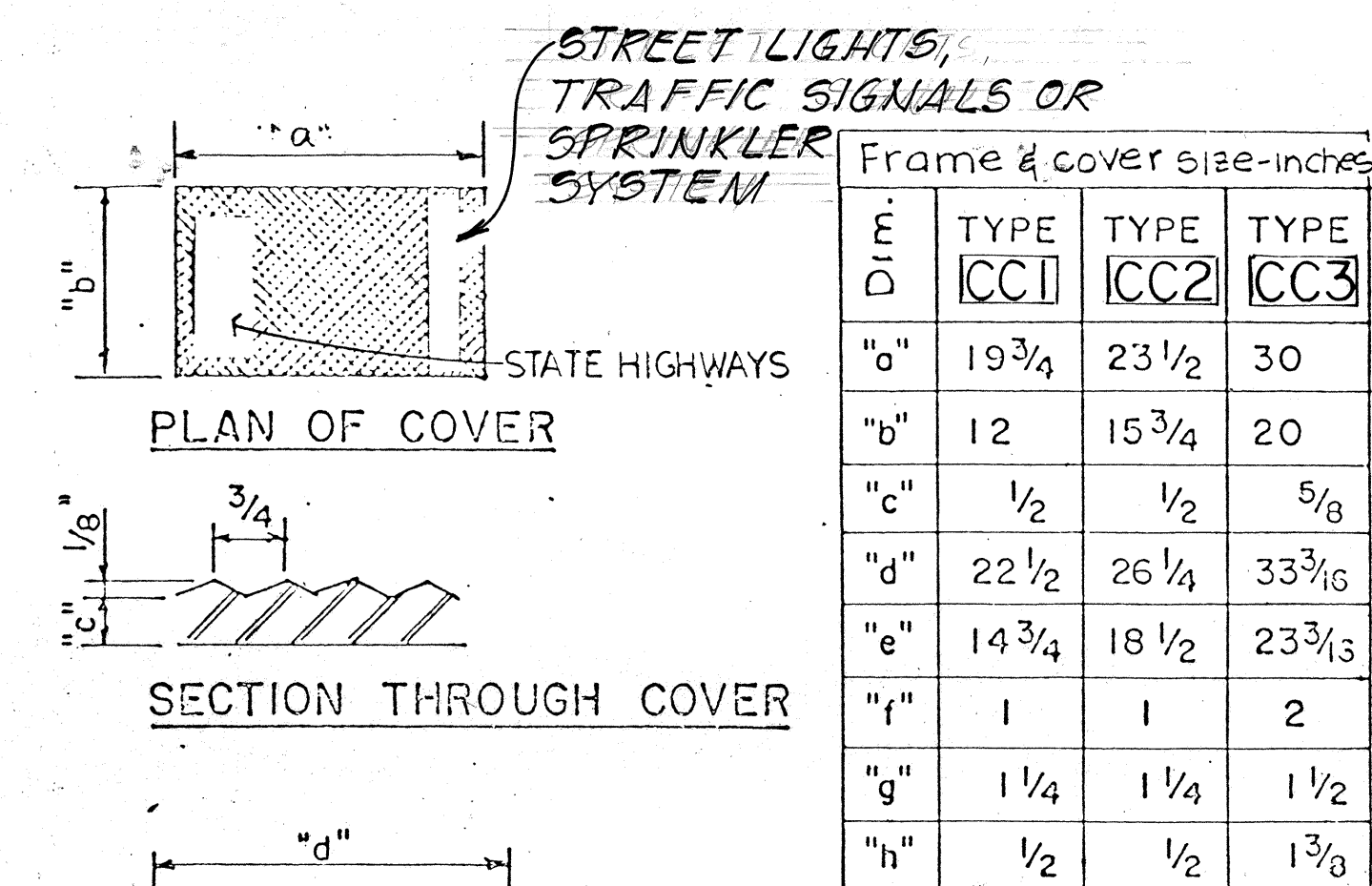
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART III
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: AS SHOWN DATE: APRIL 1982
SHEET No.E7 OF E12 SHEETS

- NOTES - DETAIL 3/E7**
1. PLATES SHALL CONFORM TO A.S.T.M. A-36, EXCEPT AS NOTED.
 2. CAST OPTION SHALL CONFORM TO A.S.T.M. A-27 GRADE 70-40 ALTERNATIVE DETAILS APPROVED BY THE ENGINEER MAY BE SUBSTITUTED FOR THE ARM CONNECTIONS SHOWN.
 3. TORQUE 7/8" H.S. BOLTS TO 84 FOOT-POUNDS.
 4. 7/8" HIGH STRENGTH ANCHOR BARS, WRENCH TIGHTEN, TORQUE REQUIREMENT WAIVED. FABRICATORS ELECTING TO USE LARGER MINIMUM ARM DIAMETERS MUST ADJUST THE DETAILS AS REQUIRED TO PERMIT SOLID SEATING OF CAP SCREWS. IN LIEU OF THE TORQUE REQUIREMENTS FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN-OF-NUT METHOD 1/6 TURN FROM SNUG TIGHT CONDITION. NO WASHER WILL BE REQUIRED.
 5. H.S. BOLTS, FLAT WASHERS & NUTS AND WASHERS FOR H.S. ANCHOR BARS SHALL CONFORM TO A.S.T.M. A-325.

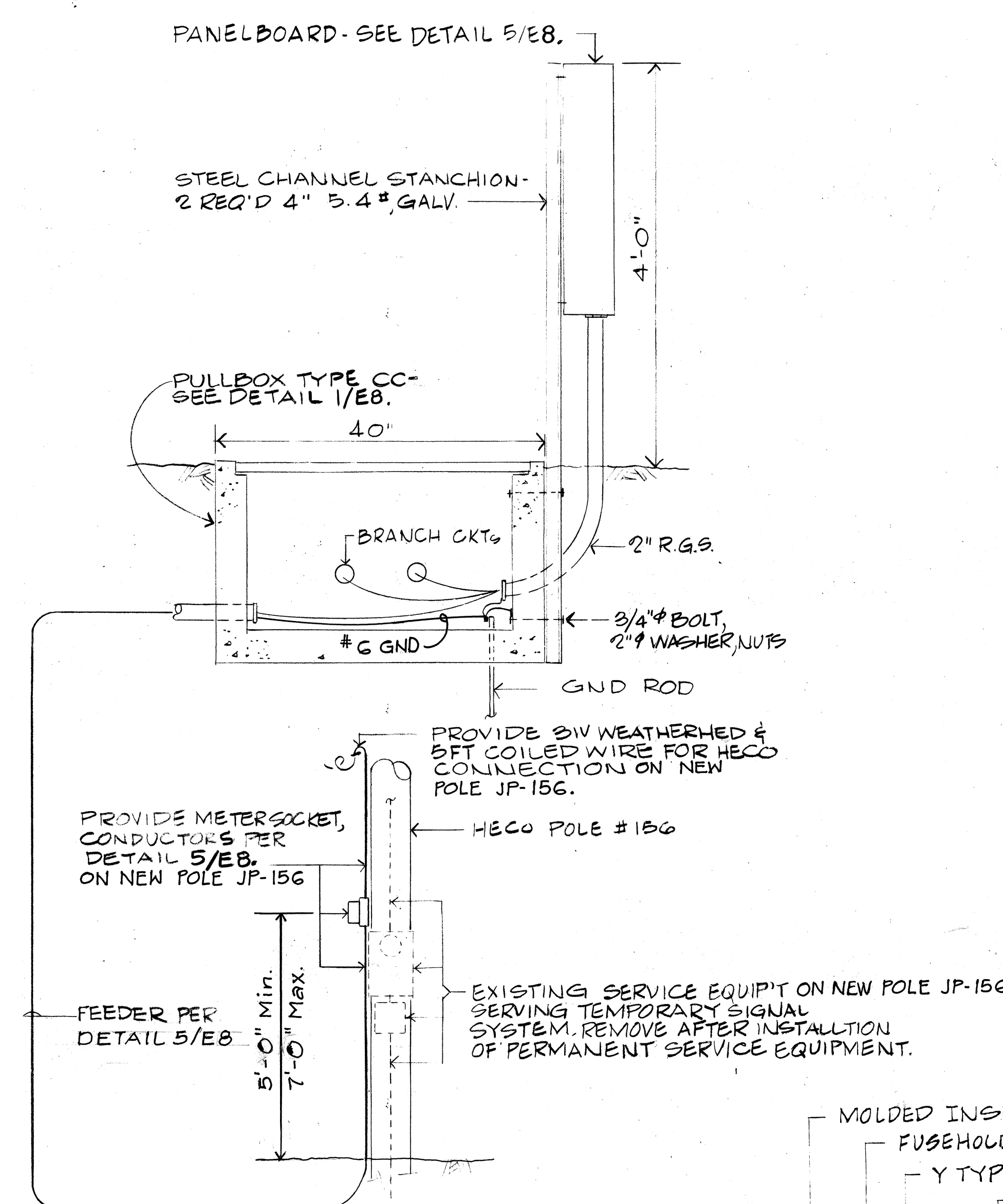
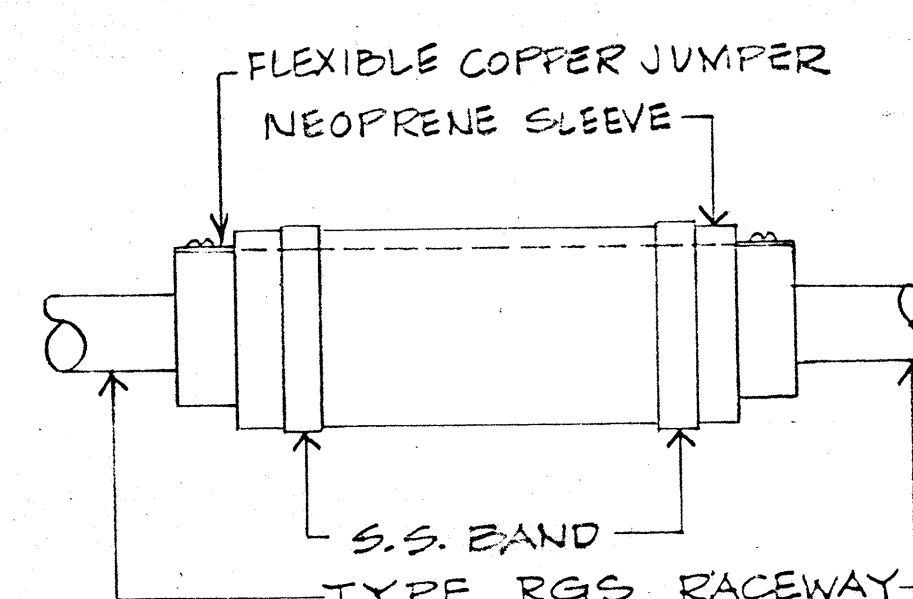
SURVEY PLOTTED BY	DATE
PLAN	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL	
NOTE BOOK	
No.	

DATE	REVISION
7/20/82	Revised Details 5/E8 & 6/E8 to include HECO's recommendations on metering.

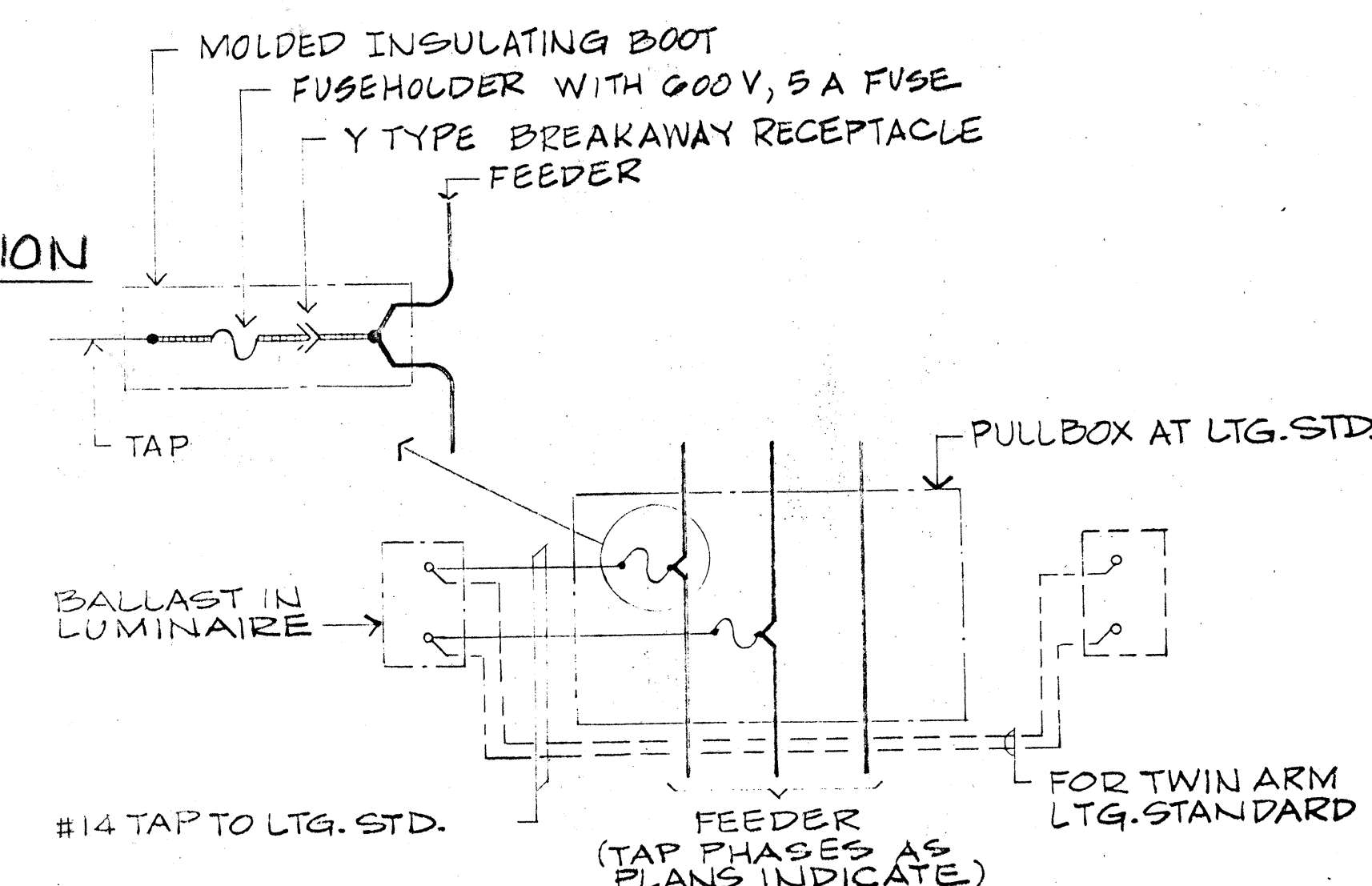
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	74	163



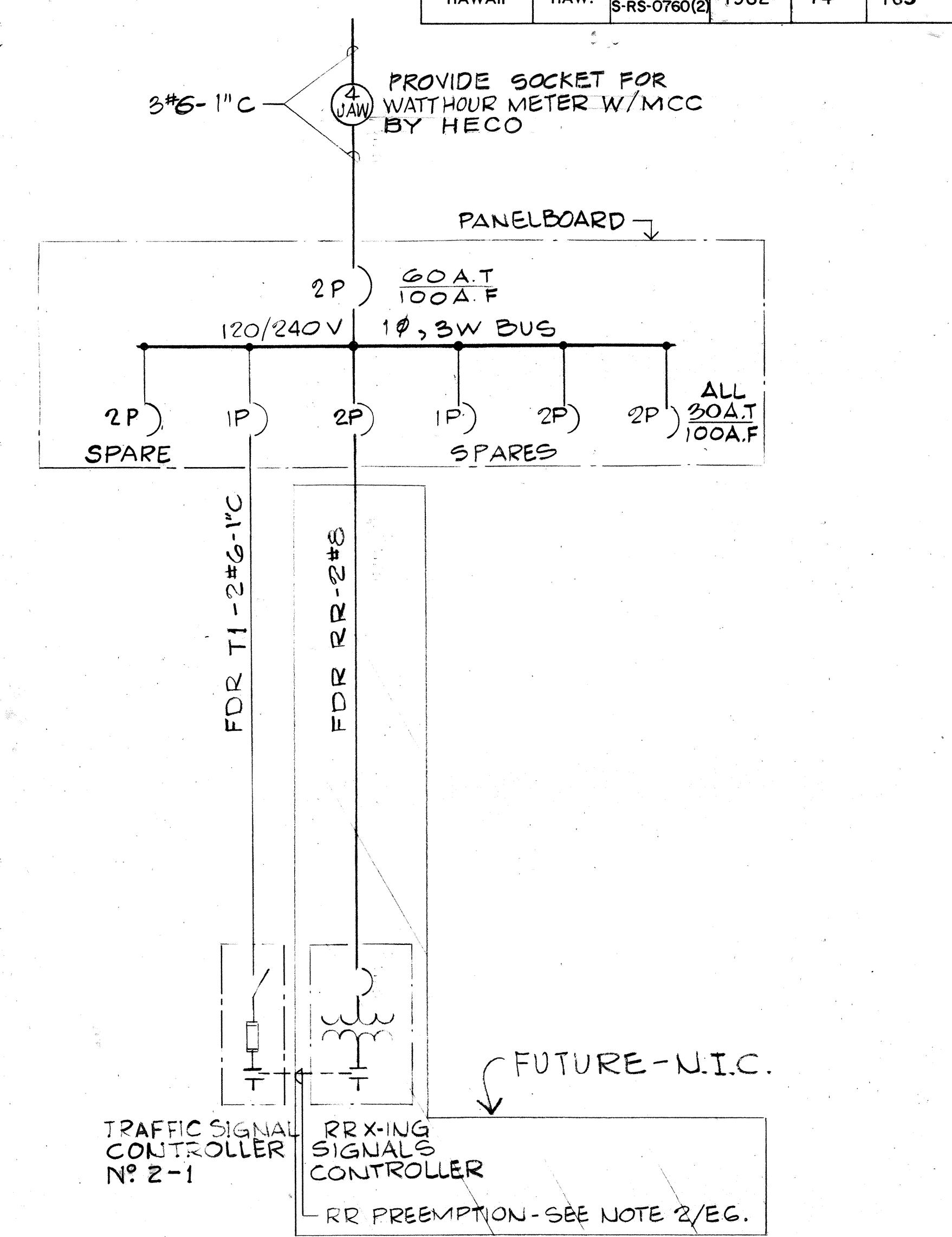
DETAIL 1/E8
PULLBOX TYPES CC



DETAIL 6/E8 - SERVICE INSTALLATION



DETAIL 4/E8
TAP TO LTG. STD. LUMINAIRE



DETAIL 5/E8 - ONE LINE DIAGRAM of SERVICE



WAS PREPARED BY
M. A. Marszalowicz

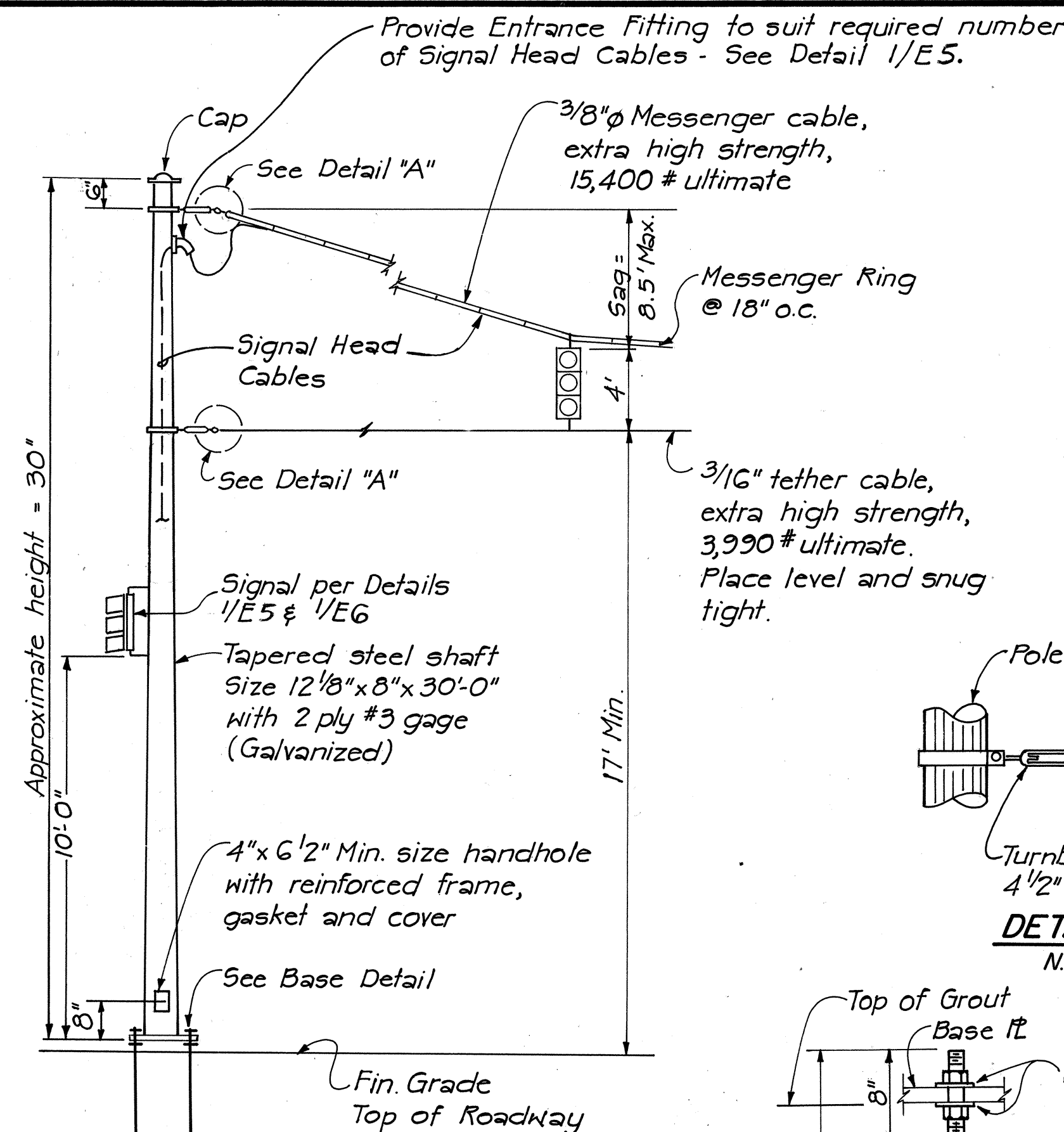
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
PART IV

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: NONE DATE: APRIL 1982
SHEET No.E8 OF E12 SHEETS

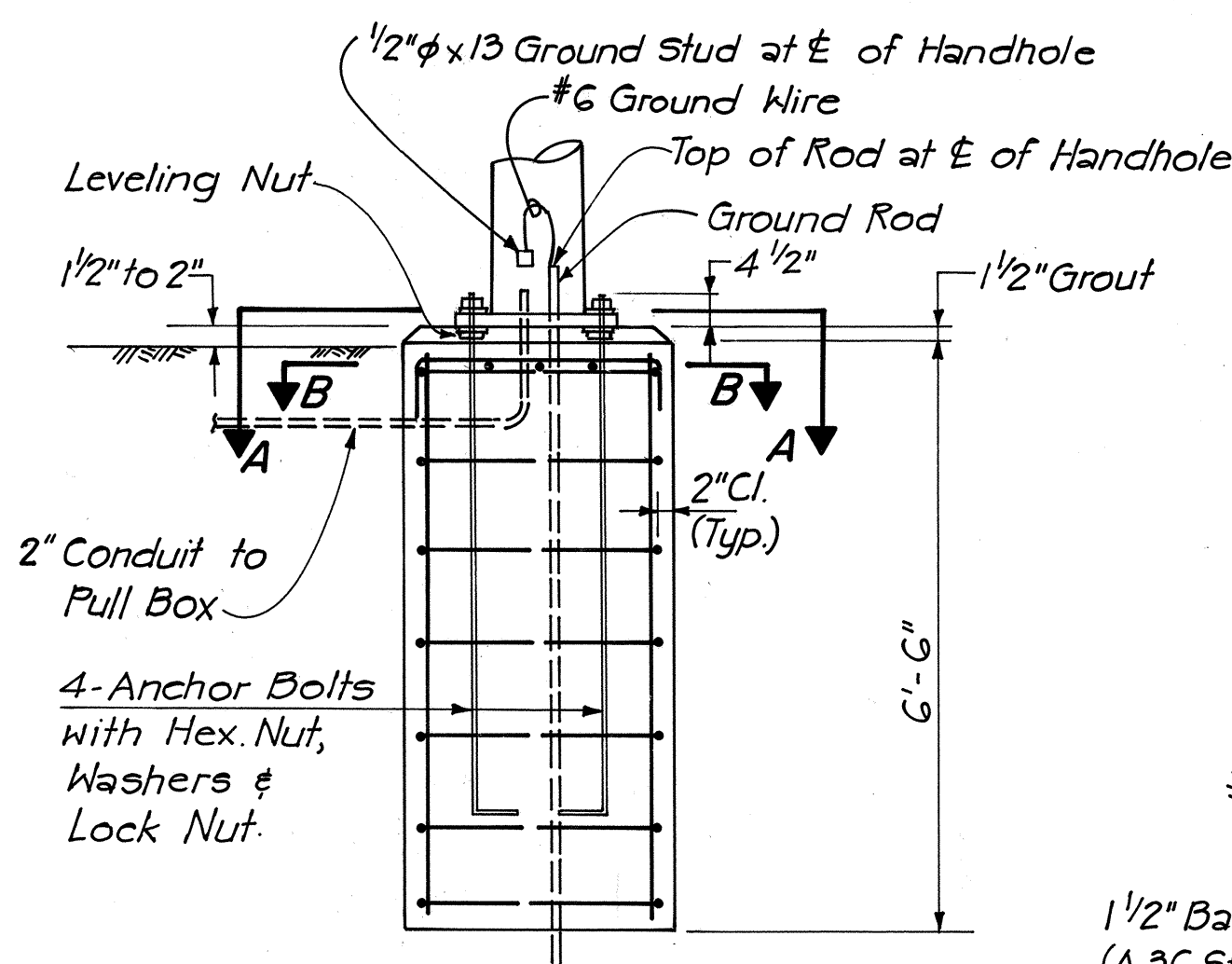
SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	75	163



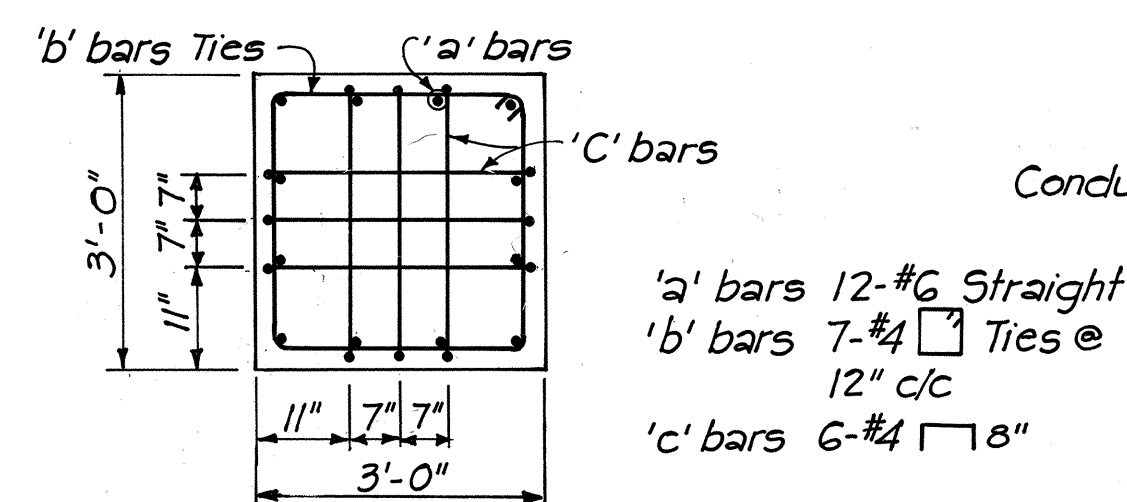
DETAIL 2/E9
POLE 3H OR 3G

(FOR SPAN AND LOCATION SEE DETAIL 1/E5.)
N.T.S.

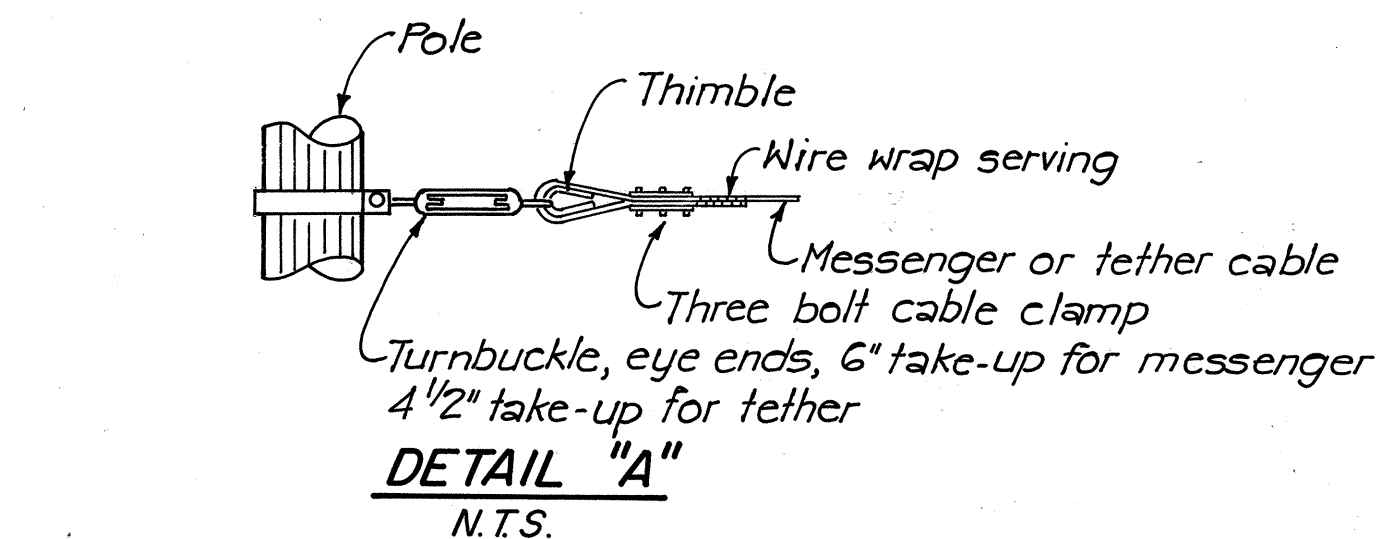


BASE DETAIL

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

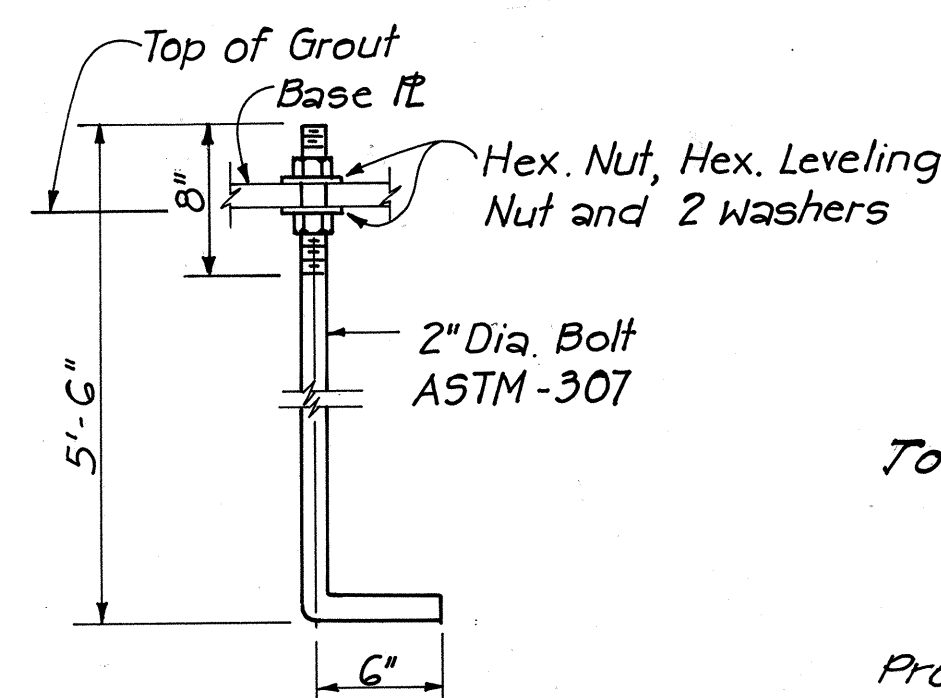


SECTION B-B
Scale: 1/2" = 1'-0"



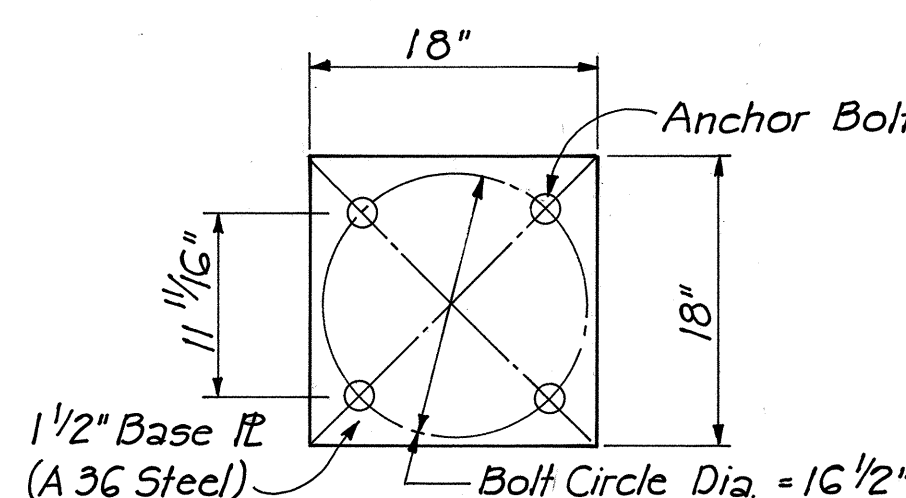
DETAIL "A"

N.T.S.



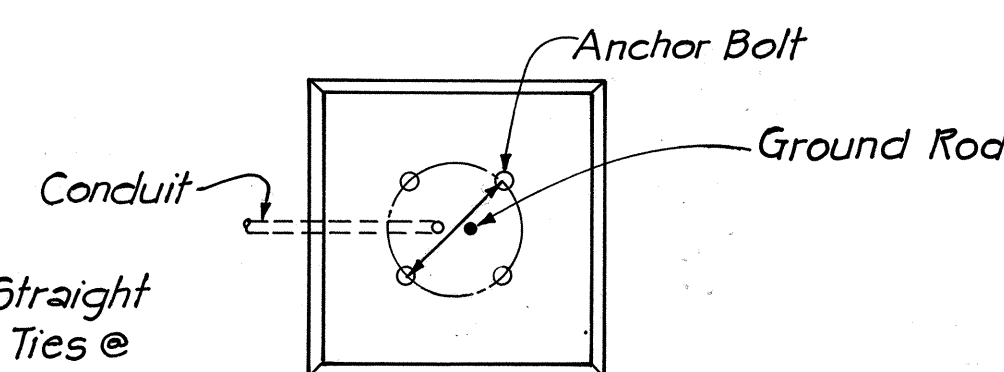
ANCHOR BOLT DETAIL

N.T.S.

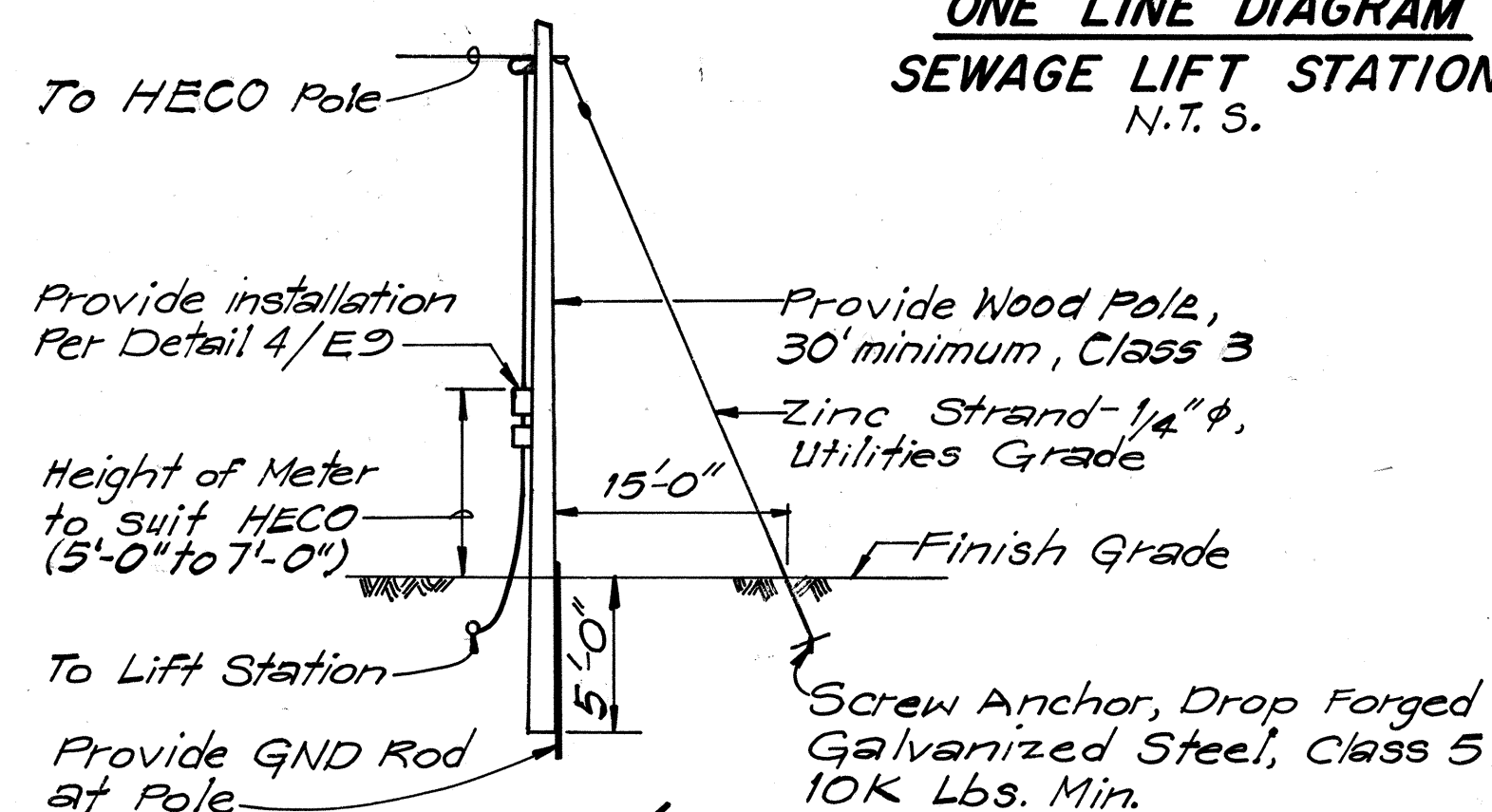


ANCHOR BASE PLATE

N.T.S.



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



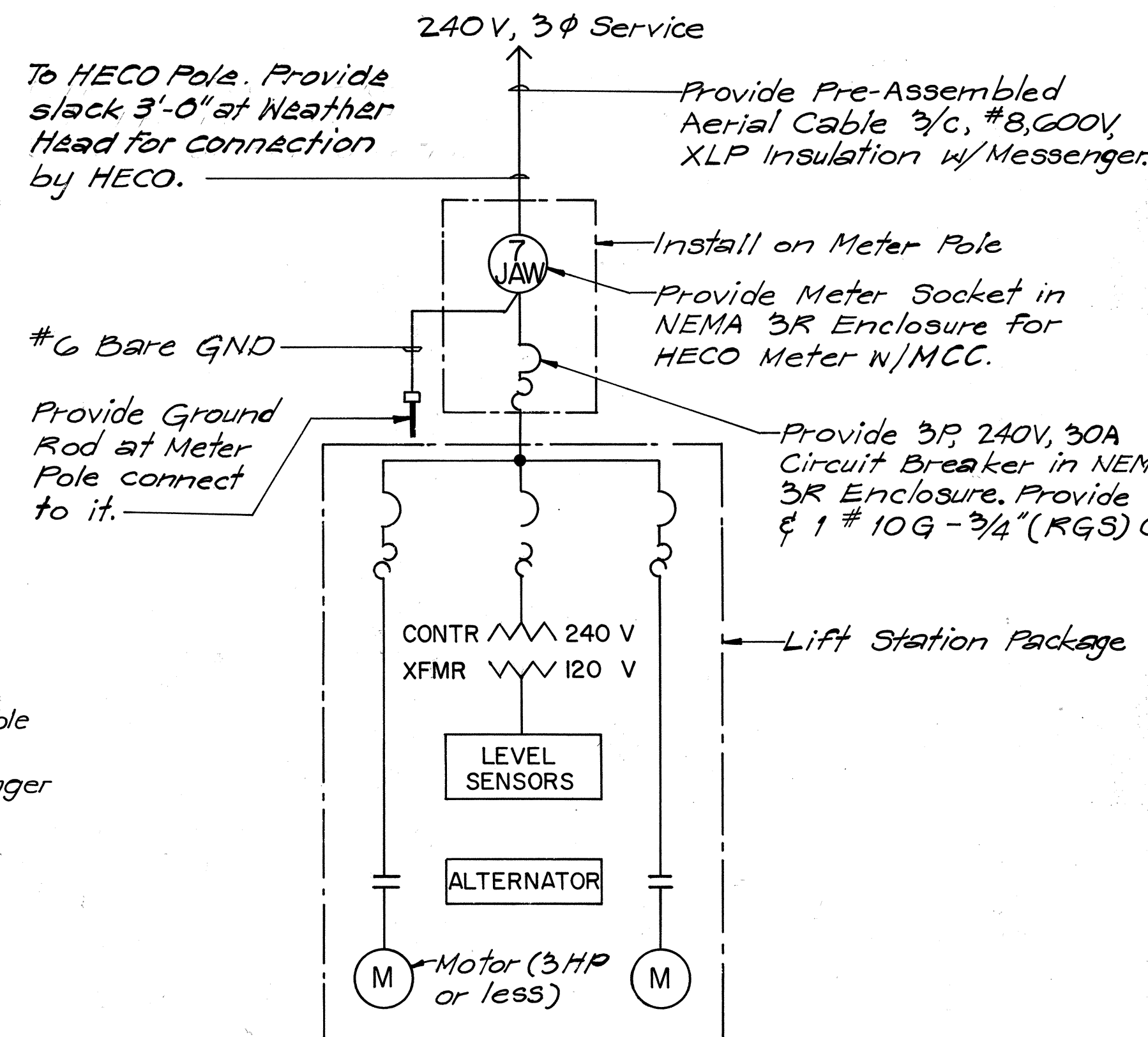
DETAIL 3/E9
METER POLE

N.T.S.

NOTE:

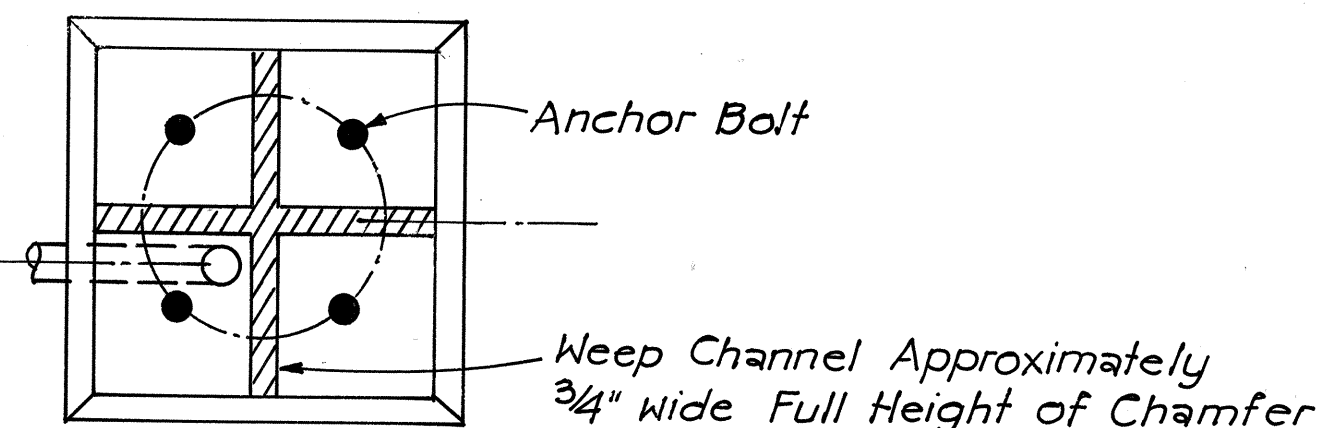
1. Tapered Steel Pole shall have a yield stress $f_y = 40$ ksi. after fabrication.
2. Base fl. Plates, Anchor Bolts, Nuts and Washers shall be hot dipped galvanized after fabrication.

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

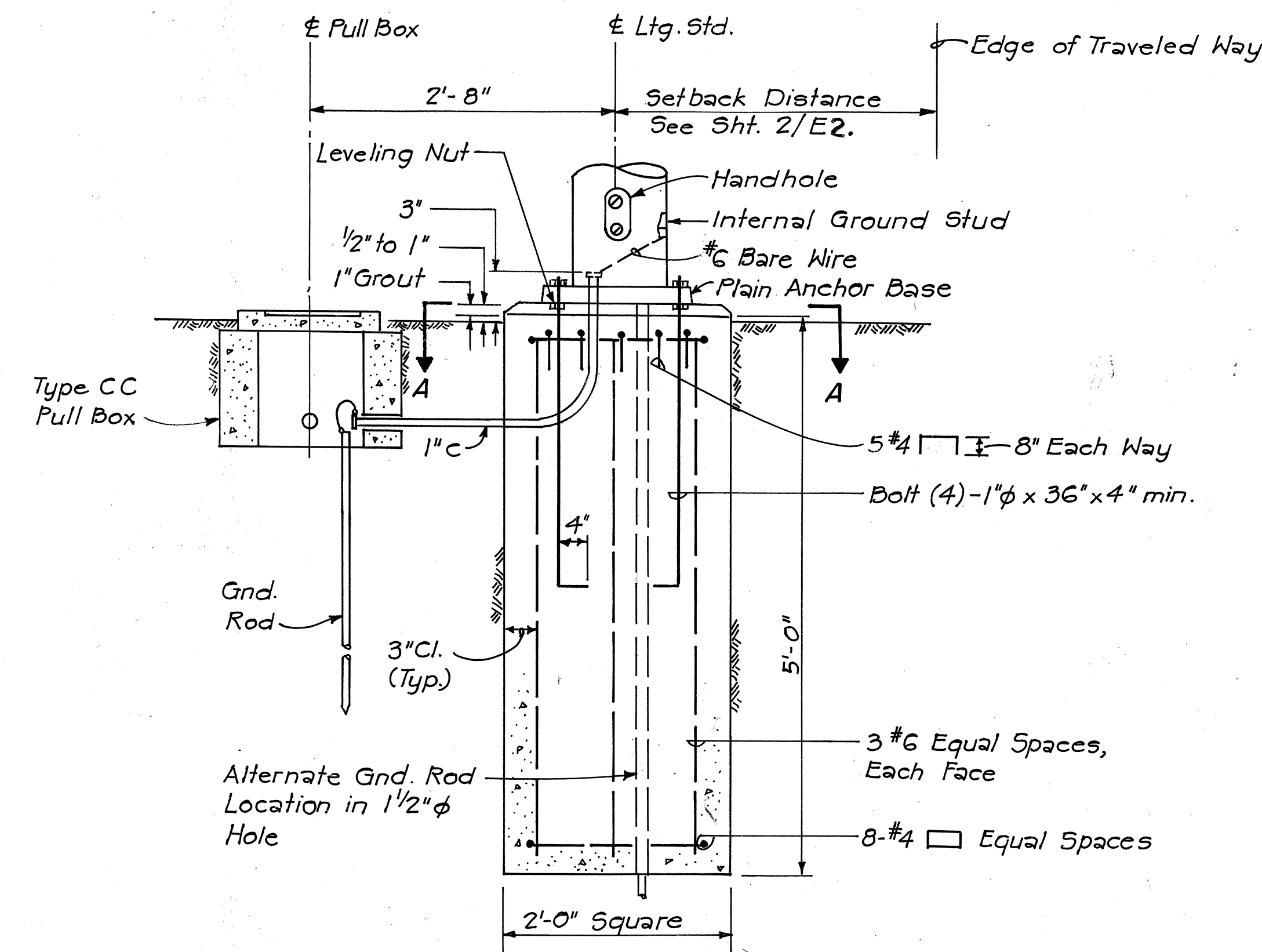


DETAIL 4/E9
ONE LINE DIAGRAM
SEWAGE LIFT STATION

N.T.S.



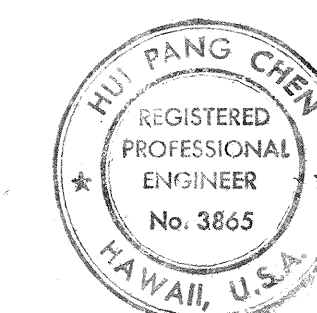
SECTION A-A



DETAIL 1/E9

LIGHTING STANDARD FOUNDATION, PLAIN BASE

For Luminaire 11A Only
Not to Scale



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Hui Pang Chen

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL DETAILS

PART V

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN DATE: APRIL 1982

SHEET No. E9 OF E12 SHEETS

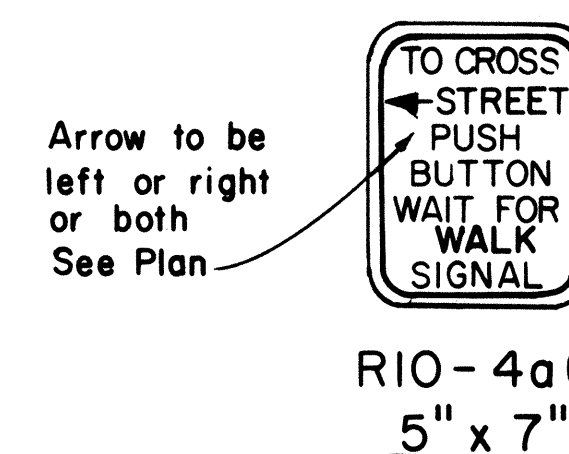
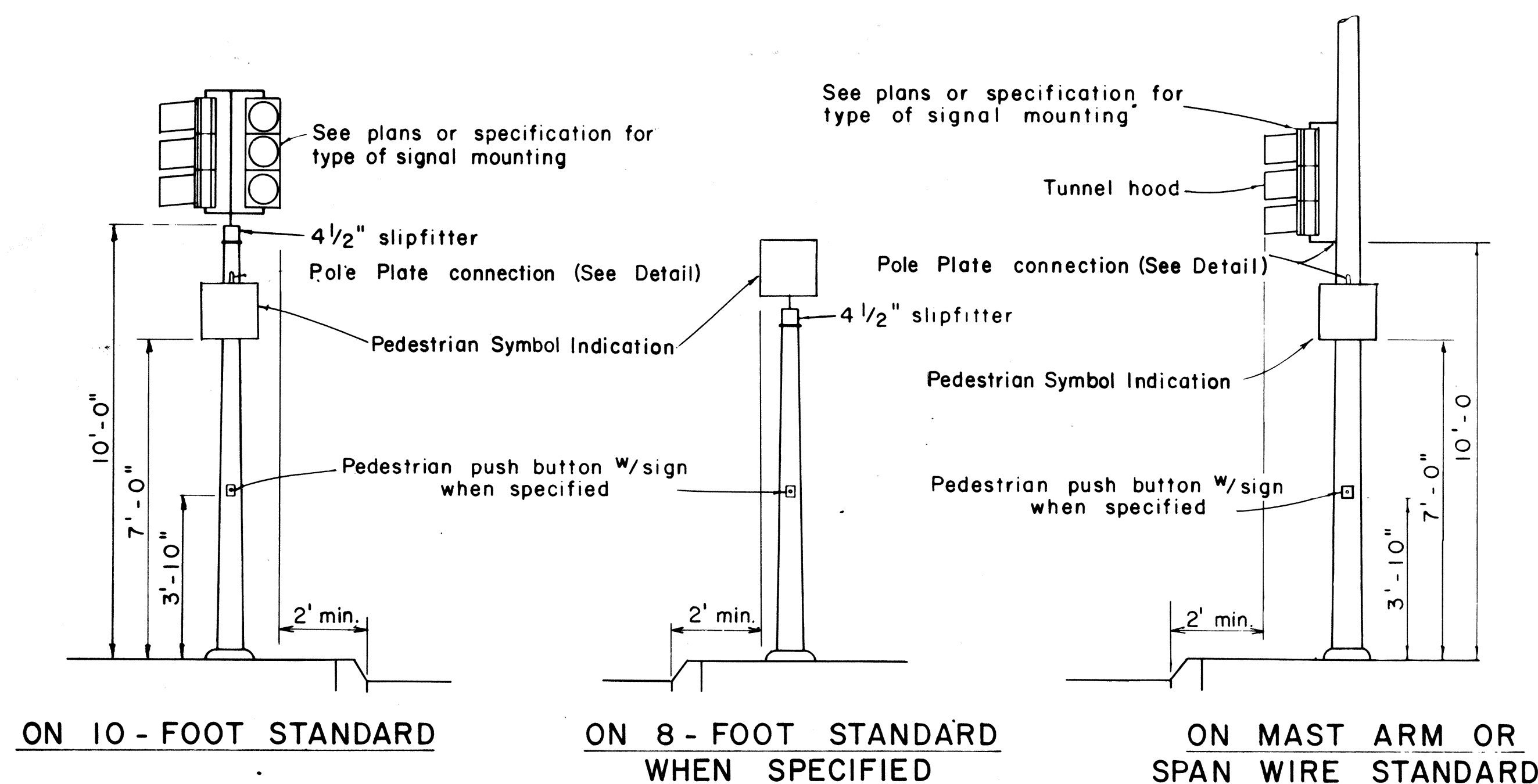
ADD 75

6/10/82 Revised Details 3/E9 & 4/E9 to include HECO's recommendations on metering and service connection.

DATE REVISION

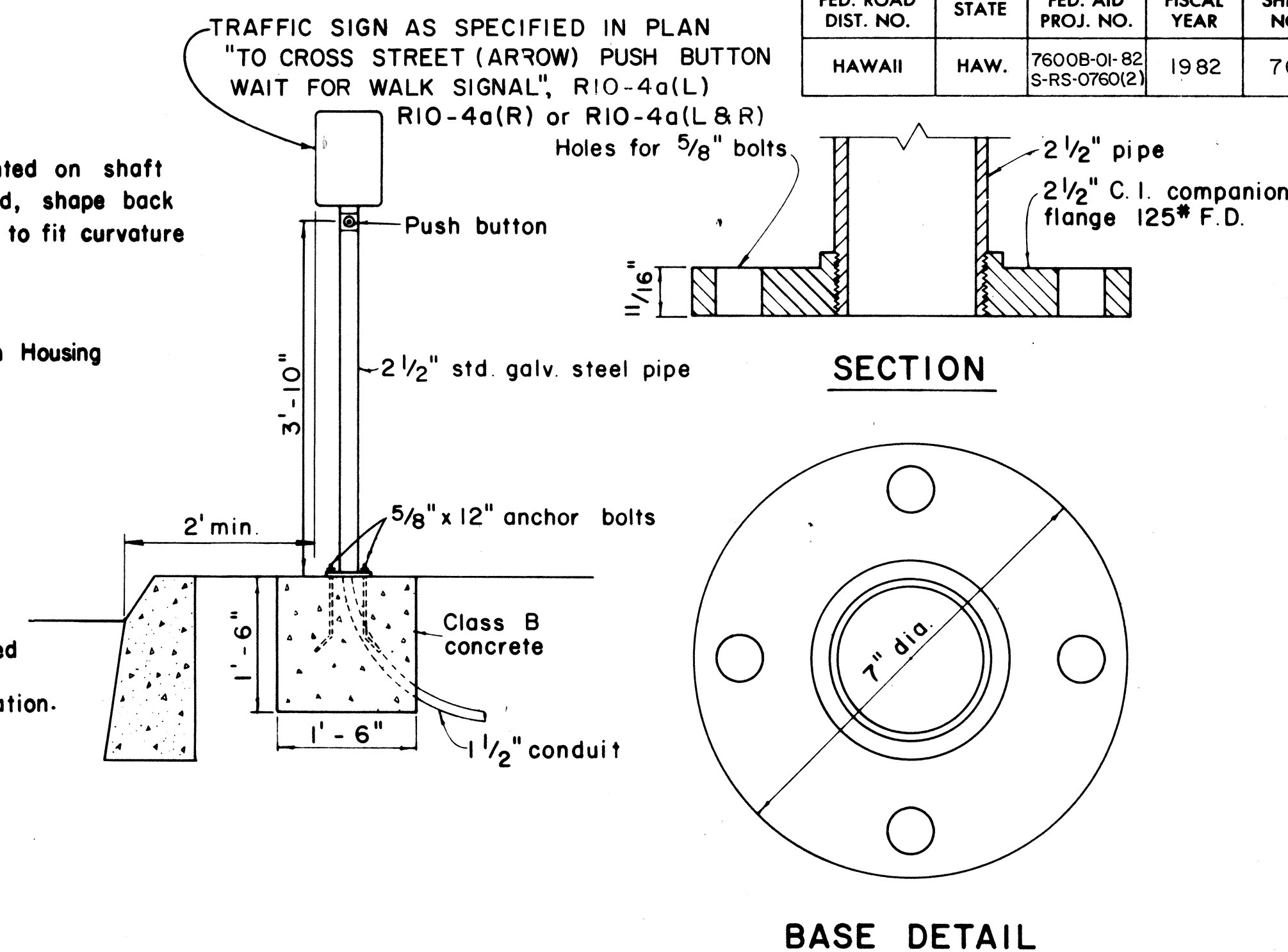
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	76	163

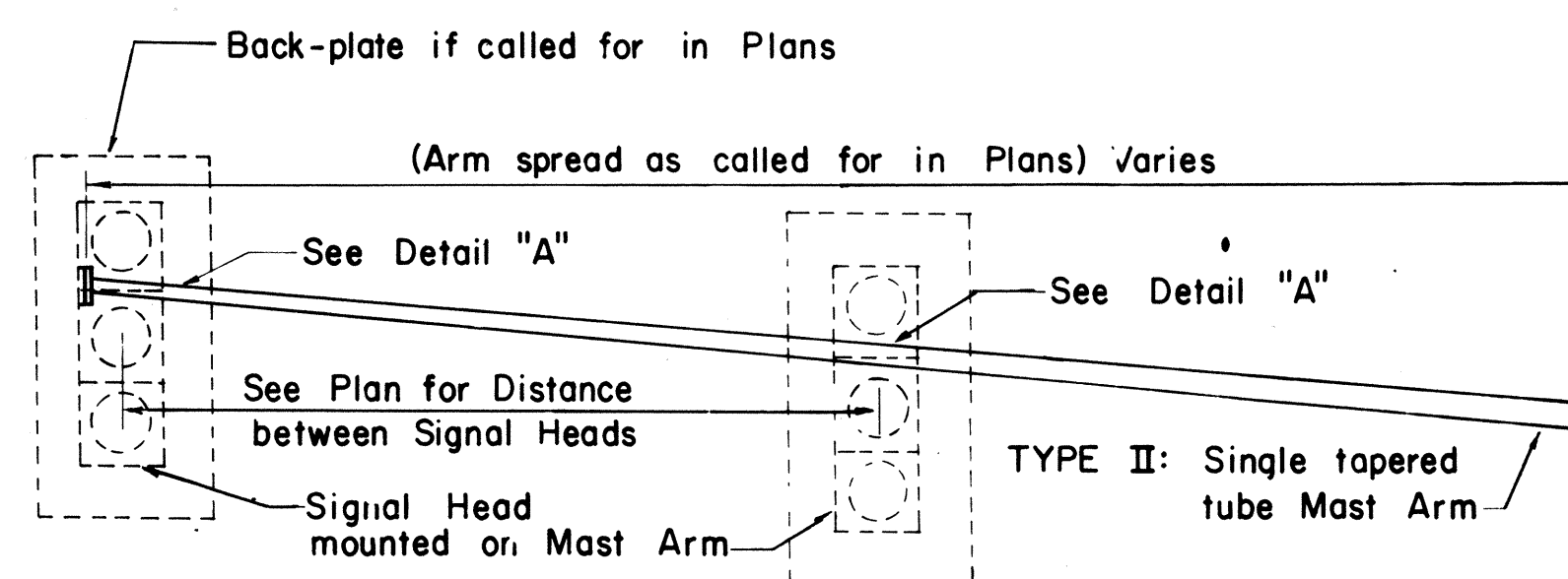
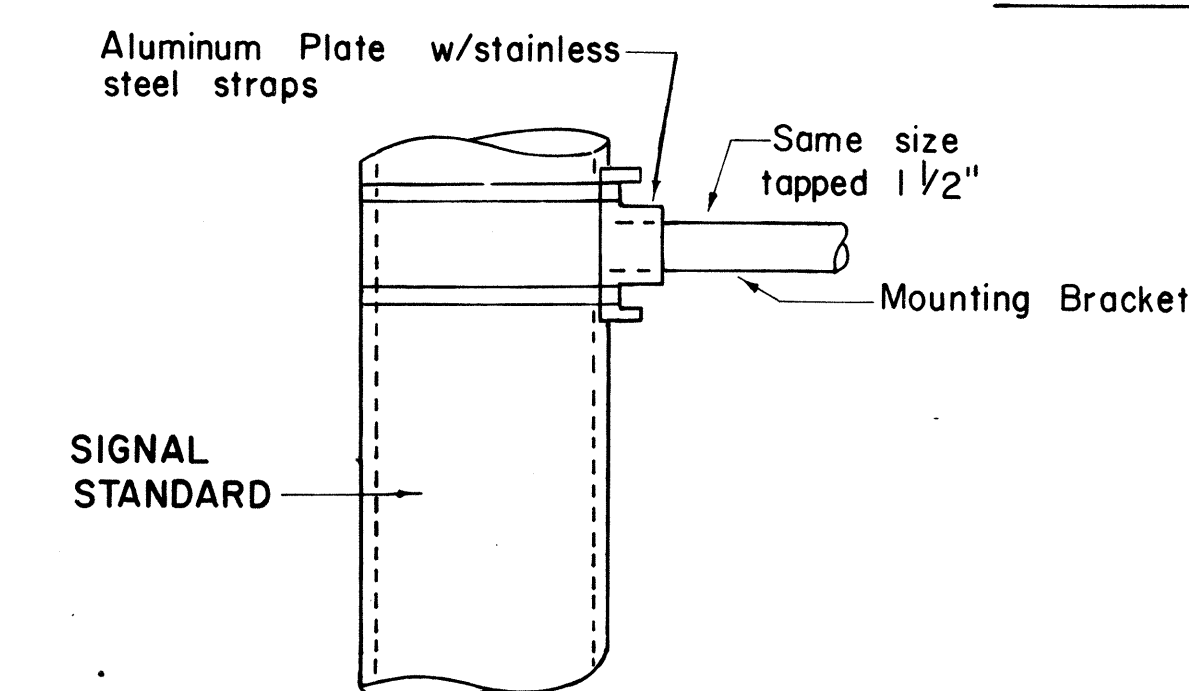


NOTE:

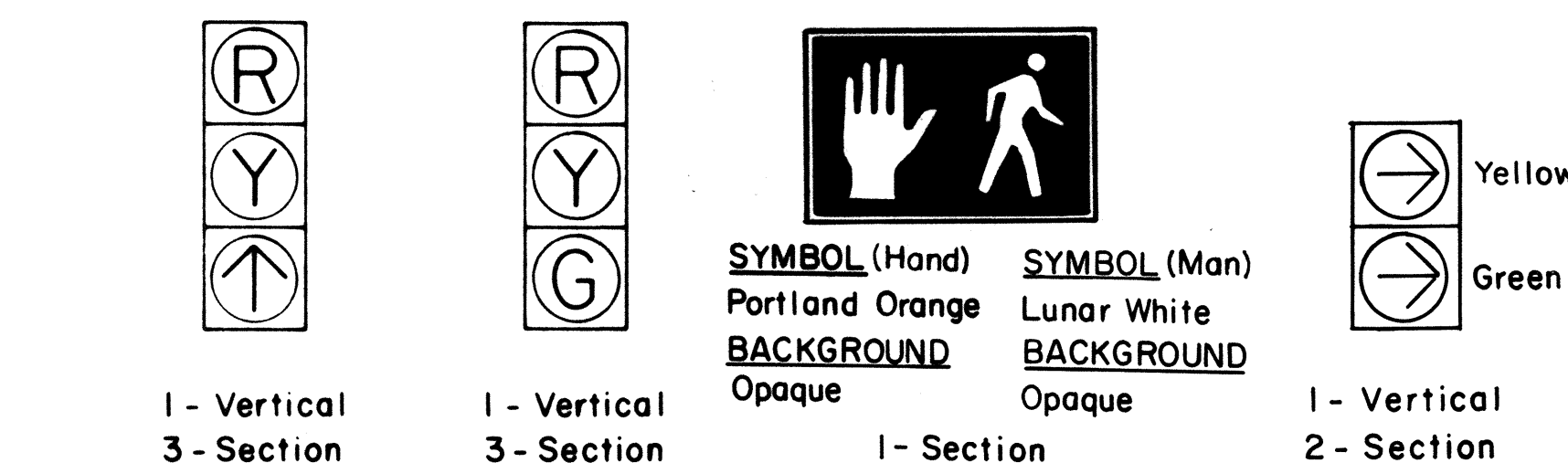
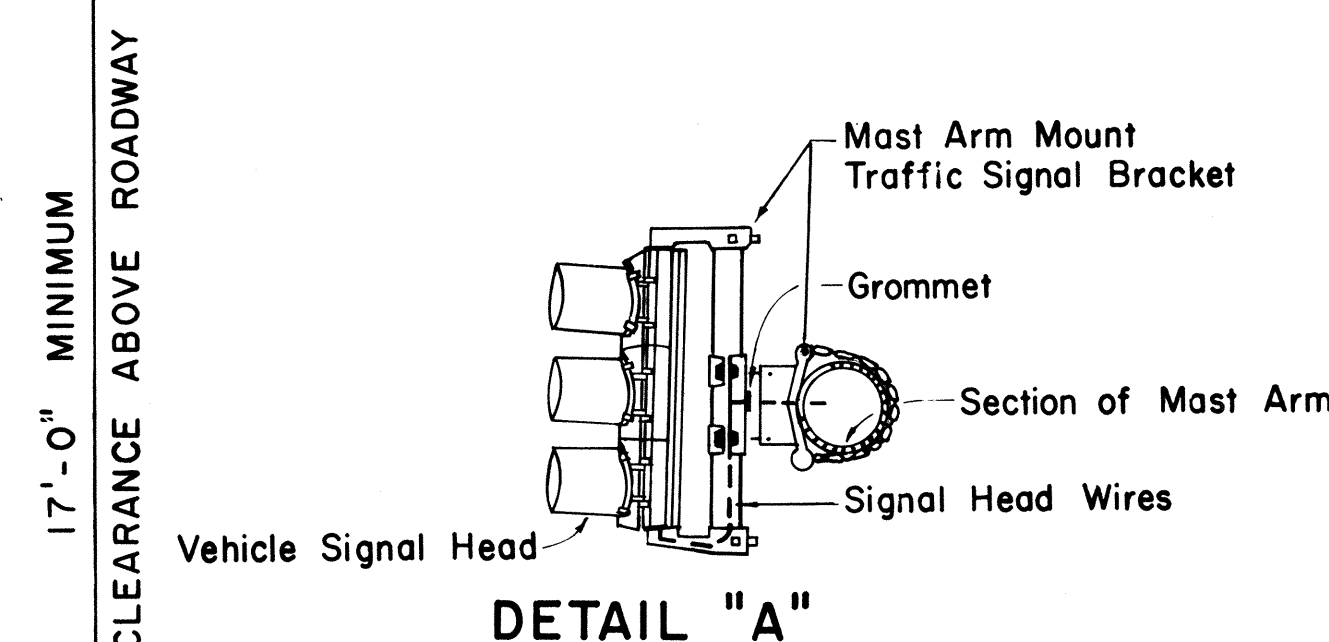
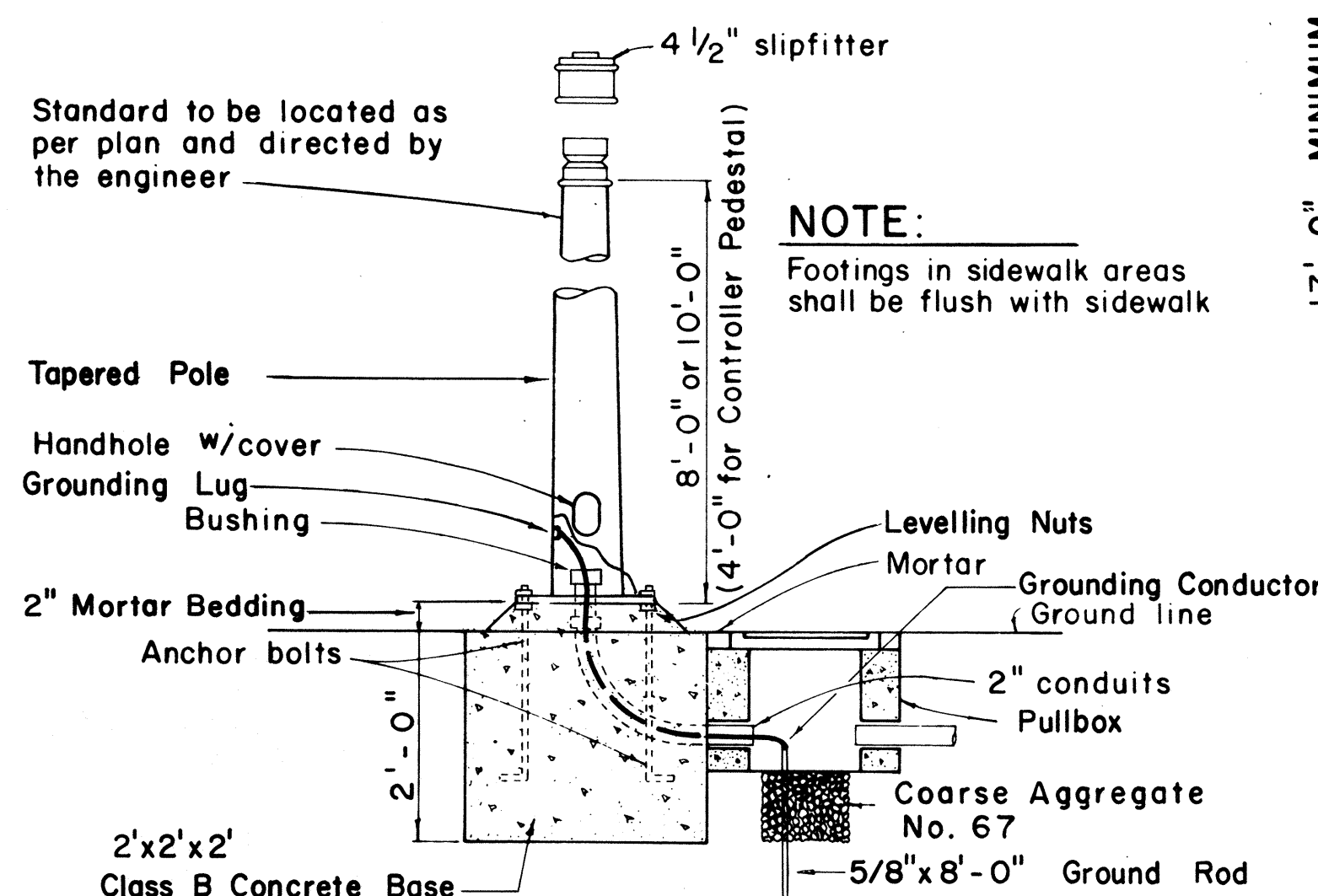
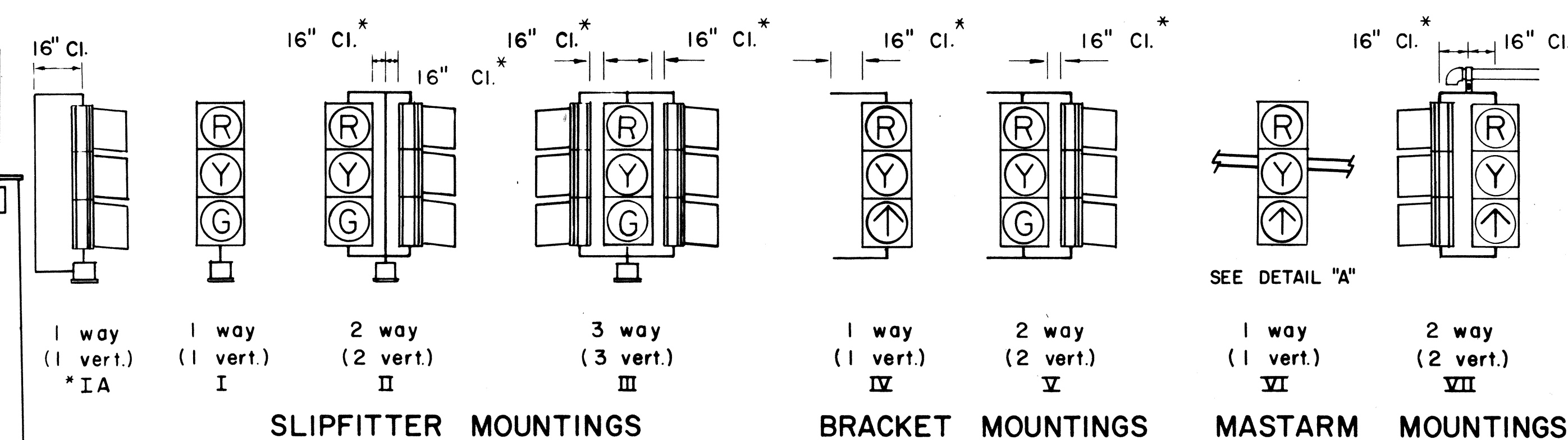
1. Conduits shall protrude 2" max. above finished surface of foundation.
2. Conduits shall slope away from pole foundation.



TYPICAL EQUIPMENT MOUNTINGS



PEDESTRIAN PUSH BUTTON POST AND FOOTING



APPROVAL RECOMMENDED:
Eichi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

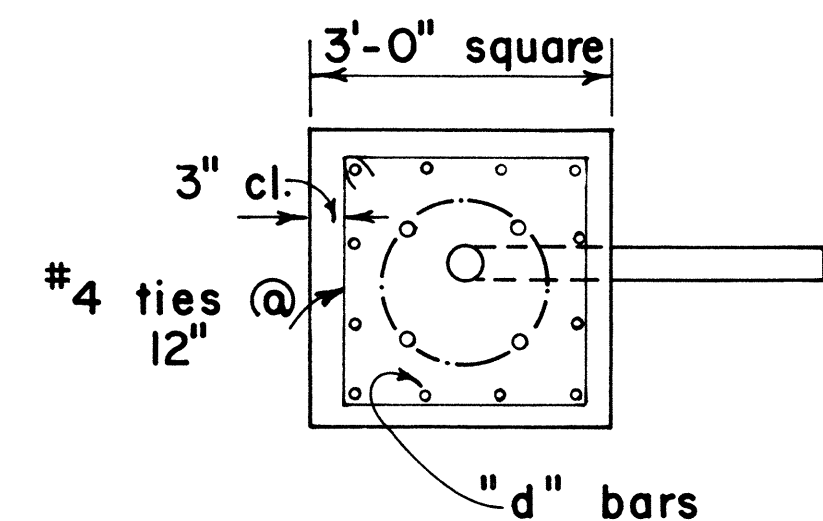
John J. St. John
ASSISTANT CHIEF, ENGINEER

12/29/69
DATE

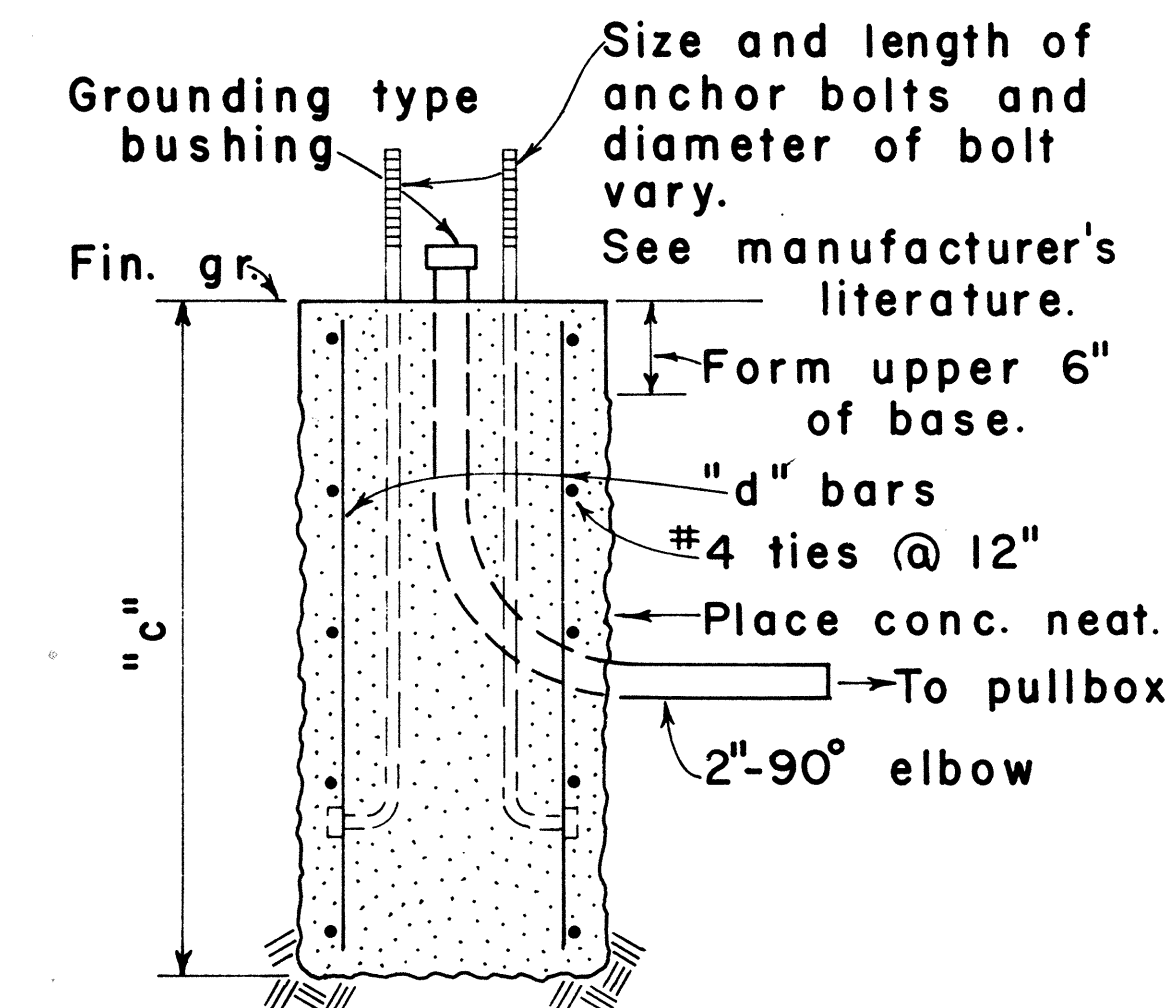
NO	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/23/72
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	H.T.	3/5/72
3	Revise signal indications.	H.T.	9/22/74
4	Remove Note No. 3 & Revise clearance and dimension.	H.T.	9/19/77
5	Revise Ped. Signal Indication	H.T.	8/6/80

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS 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.	7600B-01-82 S-RS-0760(2)	1982	77	163



PLAN - SECTION

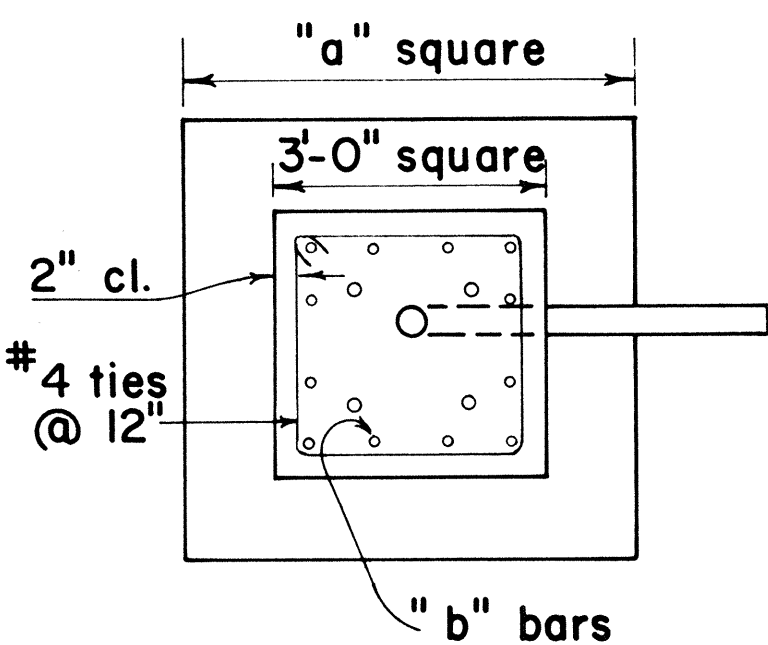


NOTE:
Concrete shall be Class B.

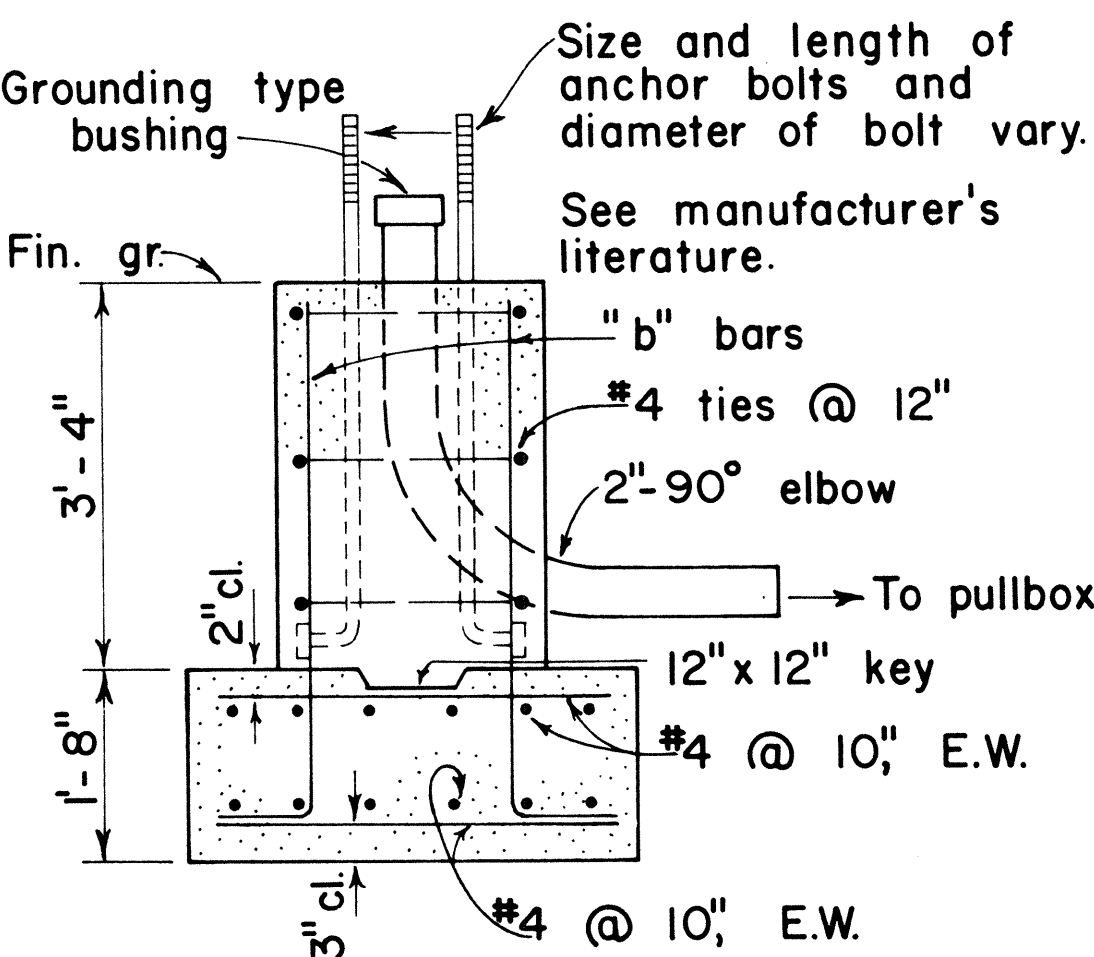
SECTION

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



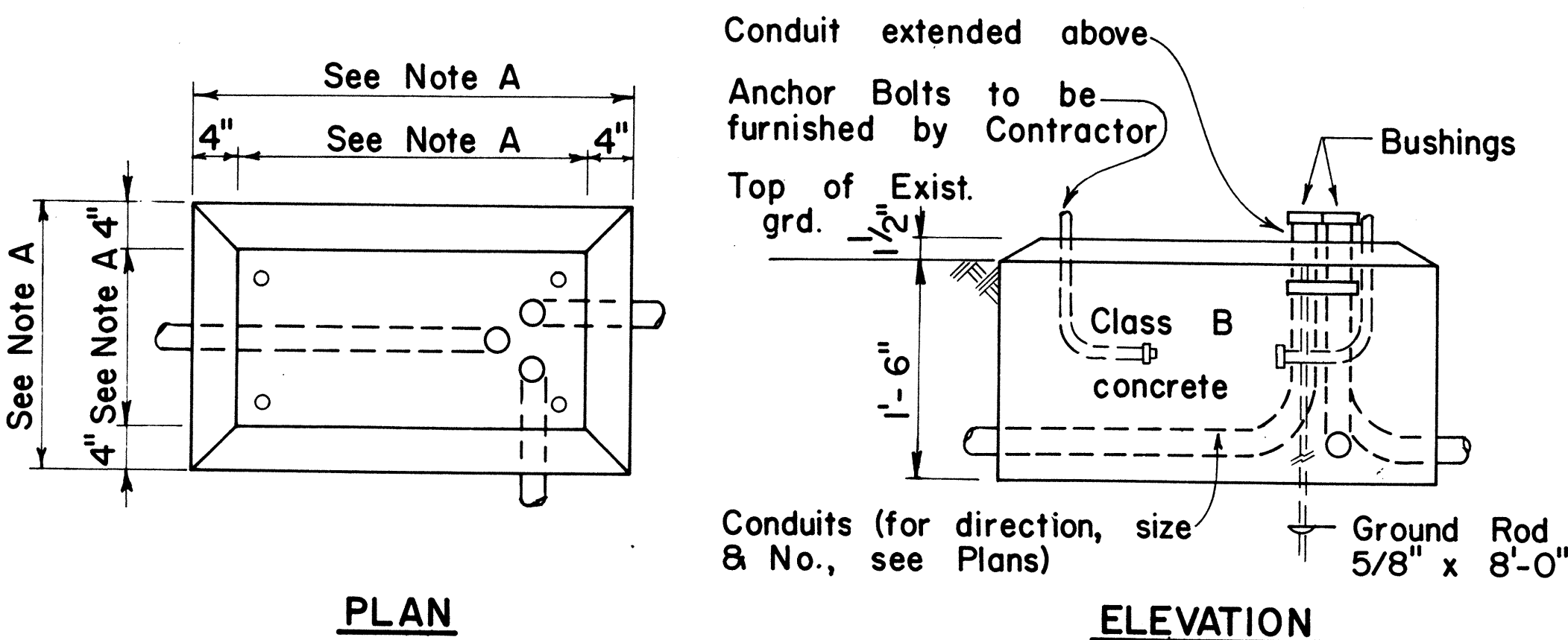
NOTE:
Concrete shall be Class B.

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 IIA

FOOTING FOR MAST ARM STANDARD



PLAN

ELEVATION

CONCRETE BASE FOR CONTROLLER CABINET

- 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:
Robert S. Sakashii 3-5-76
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

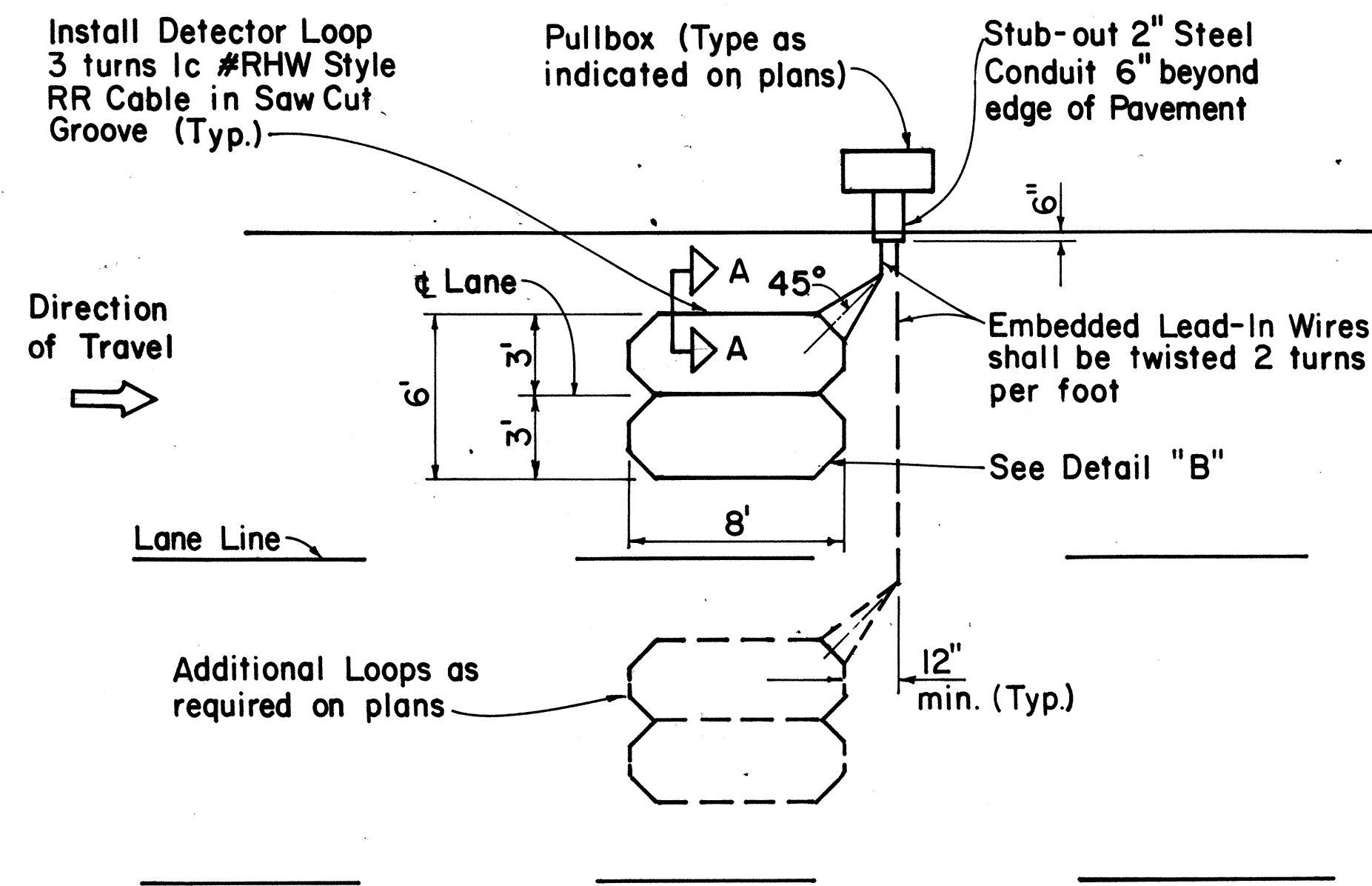
TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

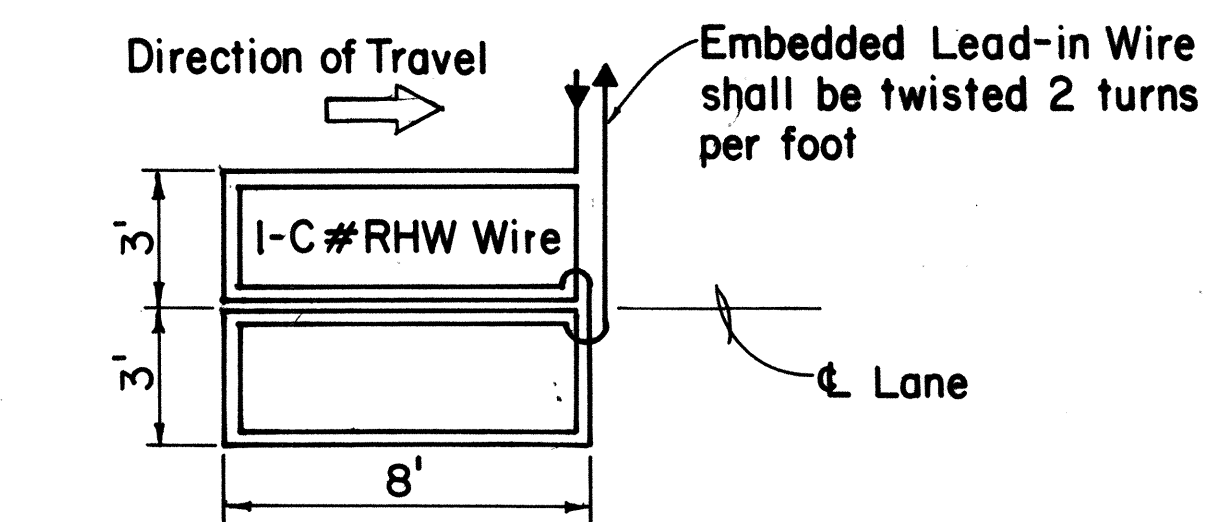
SHEET No. E11 OF E12 SHEETS DT404

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

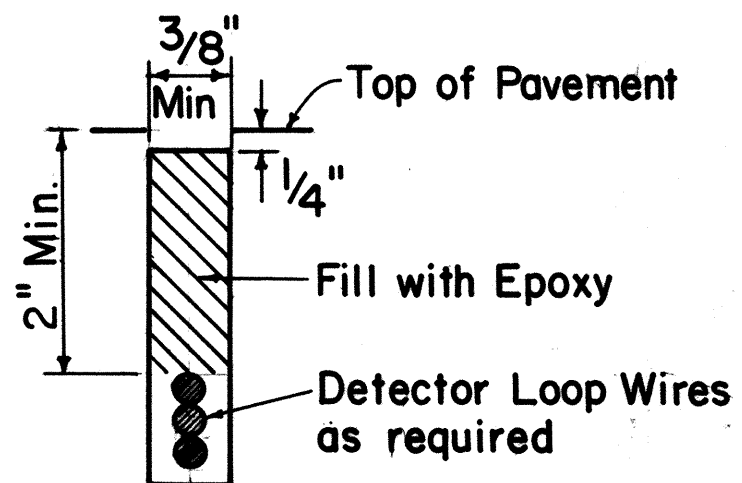
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-076012	1982	78	163



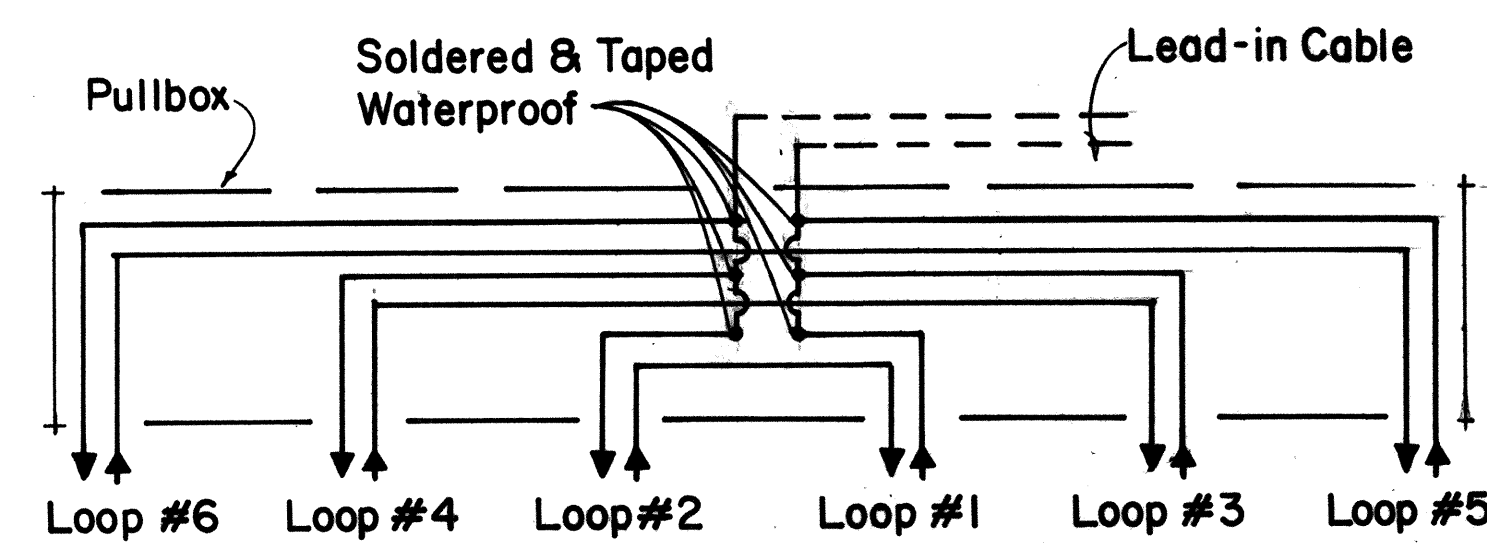
SINGLE LOOP LAYOUT



WIRING DIAGRAM



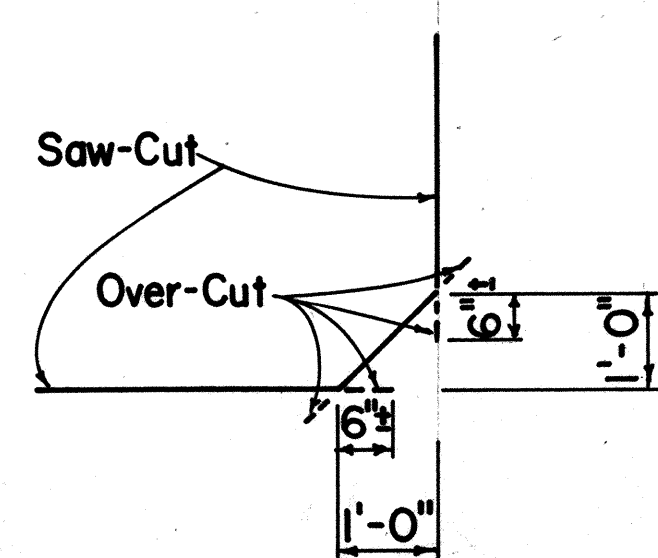
DETECTOR LOOP SAW-CUT SECTION A-A (TYPICAL)



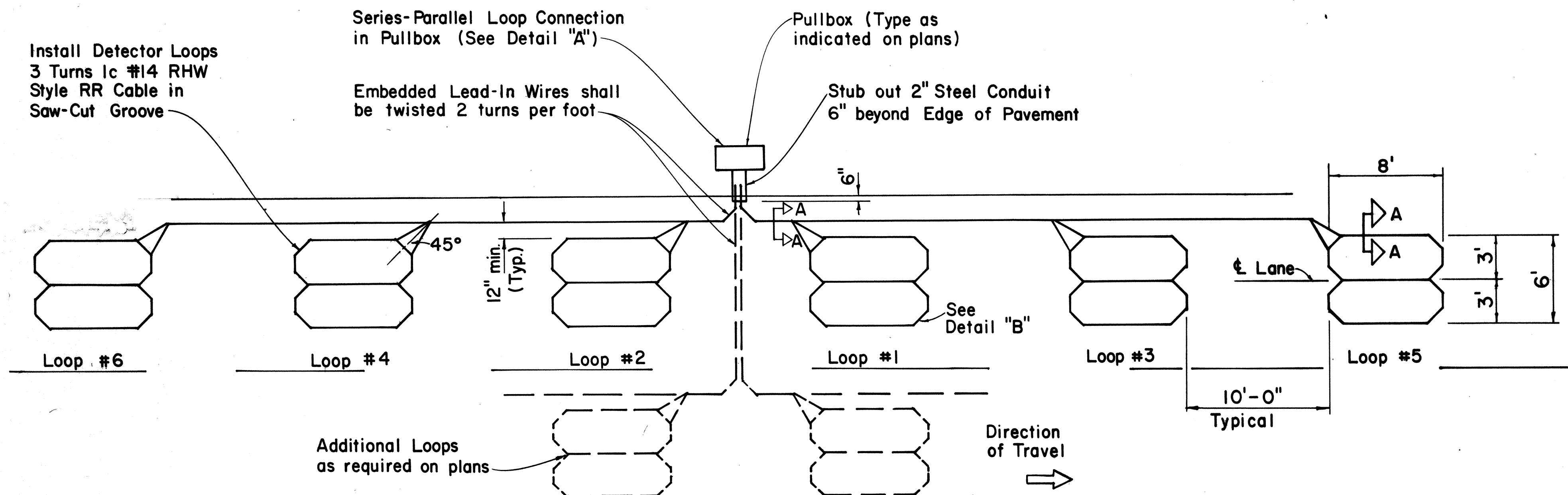
DETAIL "A"

TYPICAL SERIES-PARALLEL LOOP CONNECTION

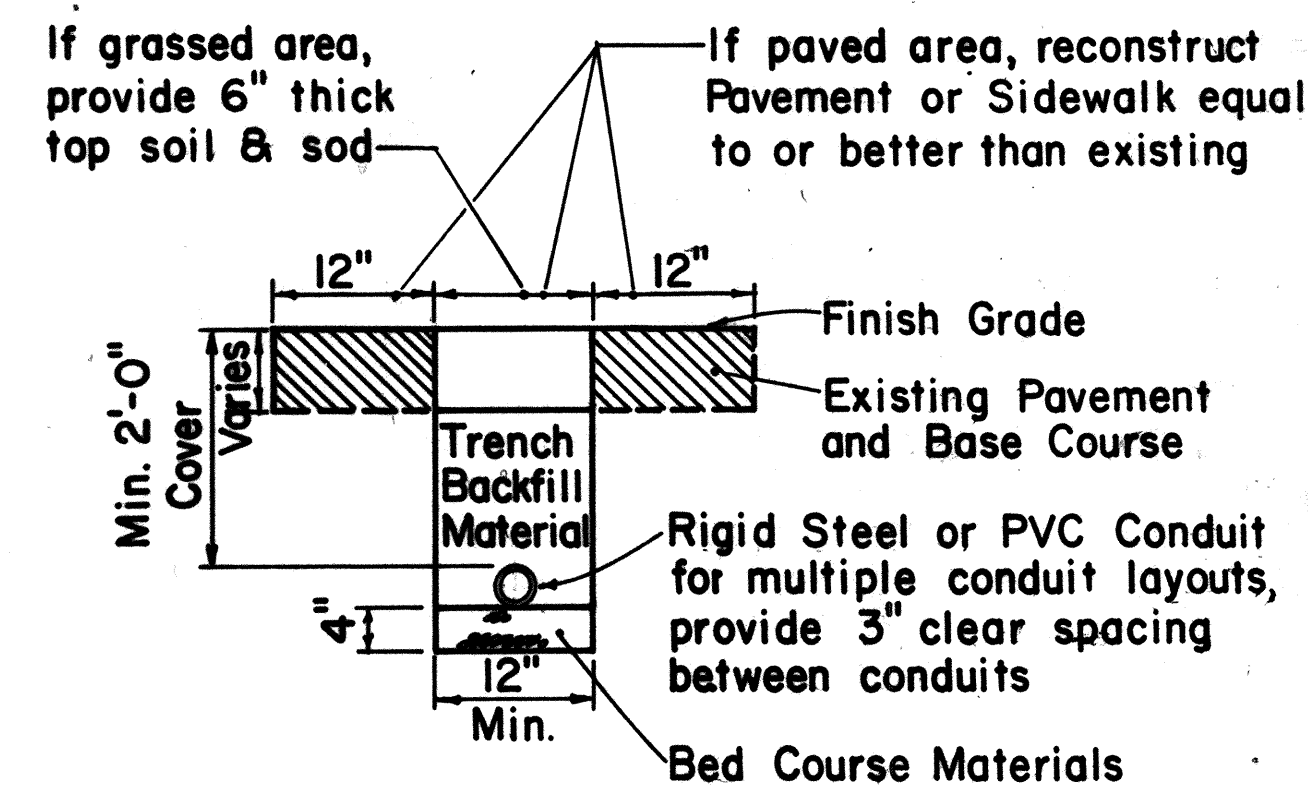
Note: Back-Fill Over-Cuts with Epoxy



DETAIL "B" SAW-CUT AT CORNERS



MULTIPLE LOOP LAYOUT



TYPICAL TRENCH SECTION FOR CONDUIT

NOTE:

- All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.

APPROVAL RECOMMENDED:

Enrich Tanaka 9/26/80
TRAFFIC ENGINEER DATE

APPROVED:

Shawar Zafar 9/30/80
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces Sht. DT 405 dated 3/5/76	H.T.	9/30/80
2	Revised Section A-A	H.T.	5/15/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

LOOP DETECTORS

Not to Scale

SHEET No. E12 OF E12 SHEETS DT 405