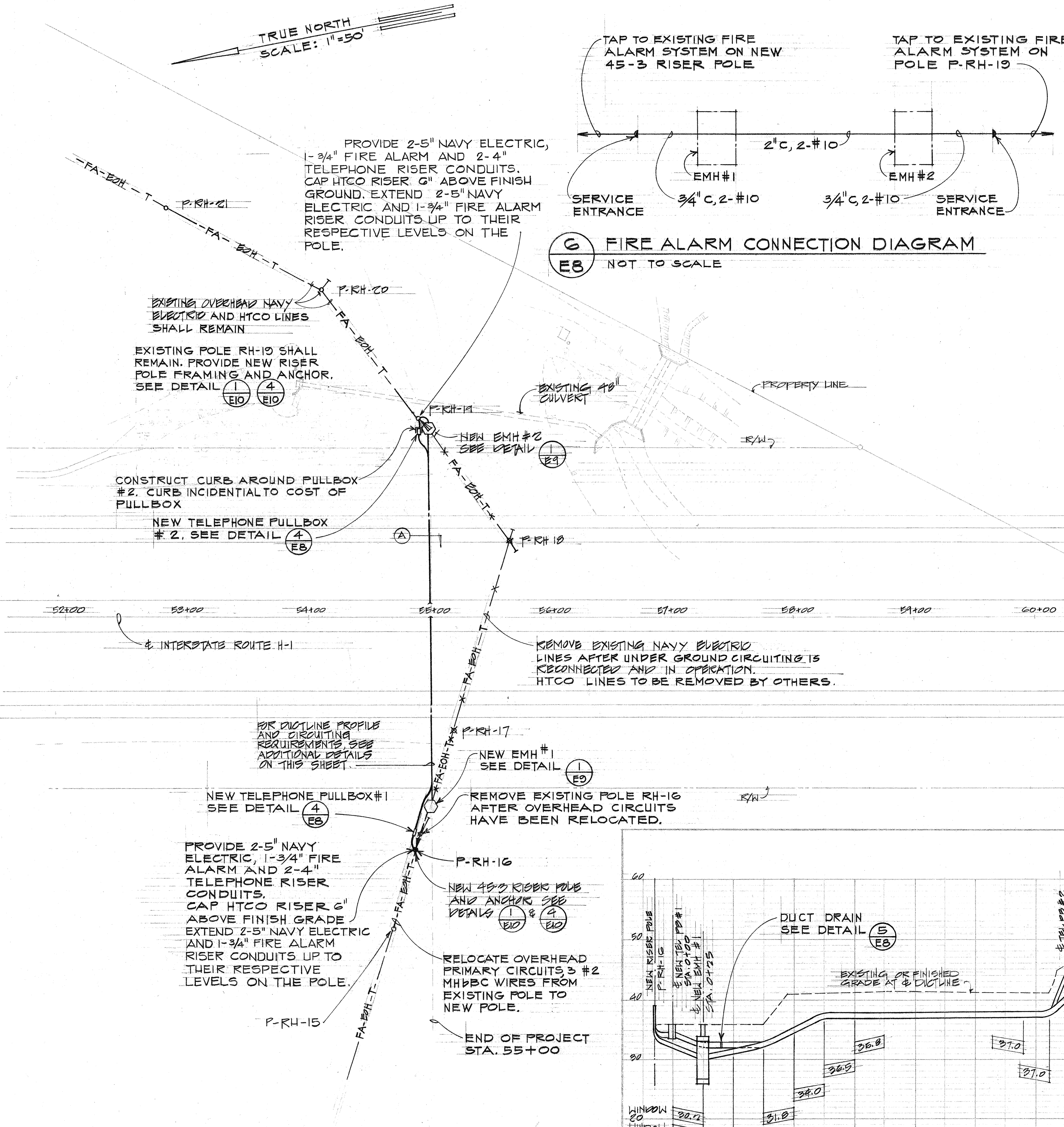
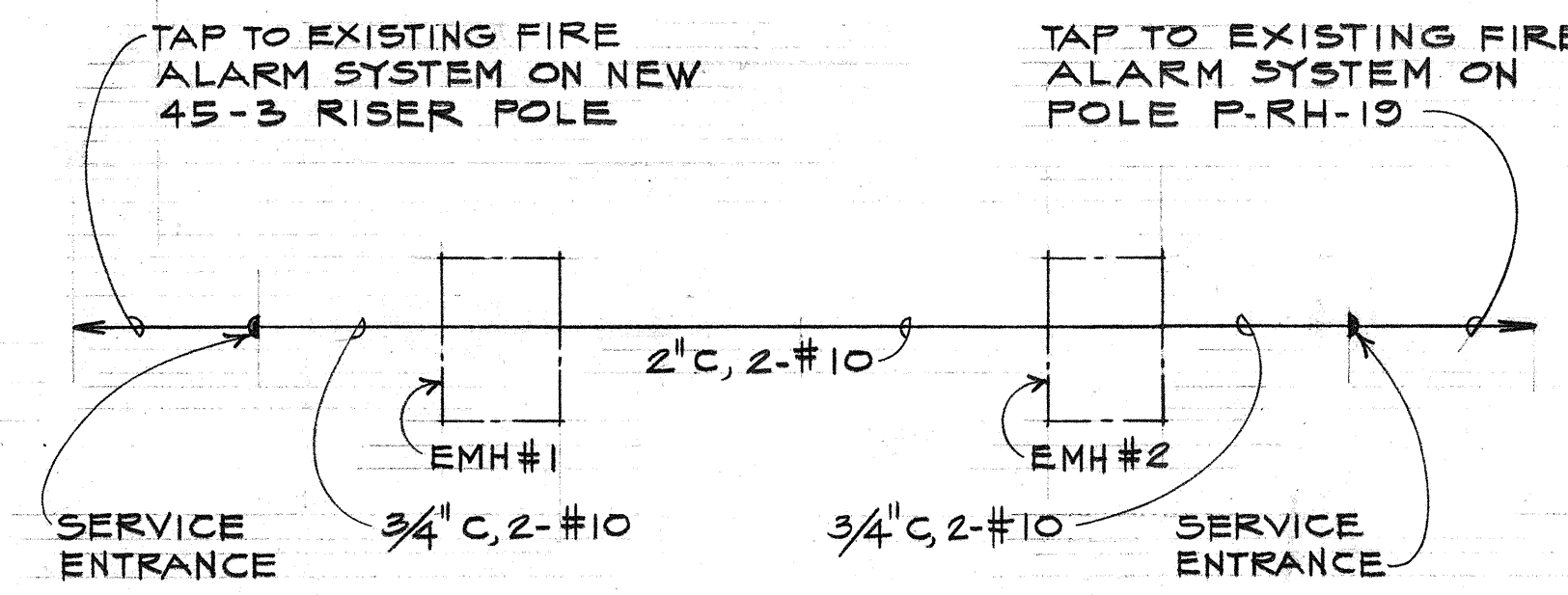


TRUE NORTH  
SCALE: 1"=50'



1  
E8  
ELECTRIC/TELEPHONE RELOCATION PLAN  
SCALE: 1"=50'



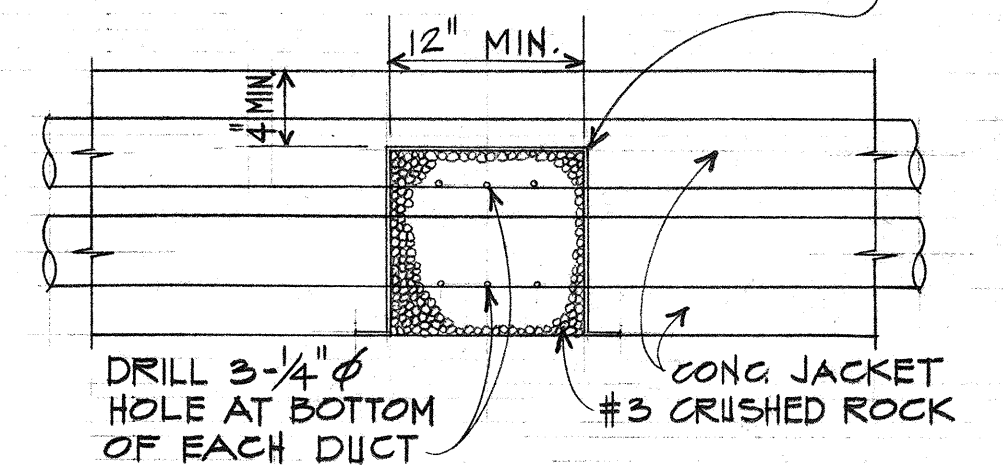
6  
E8  
FIRE ALARM CONNECTION DIAGRAM  
NOT TO SCALE

ELECTRICAL SYMBOL LIST

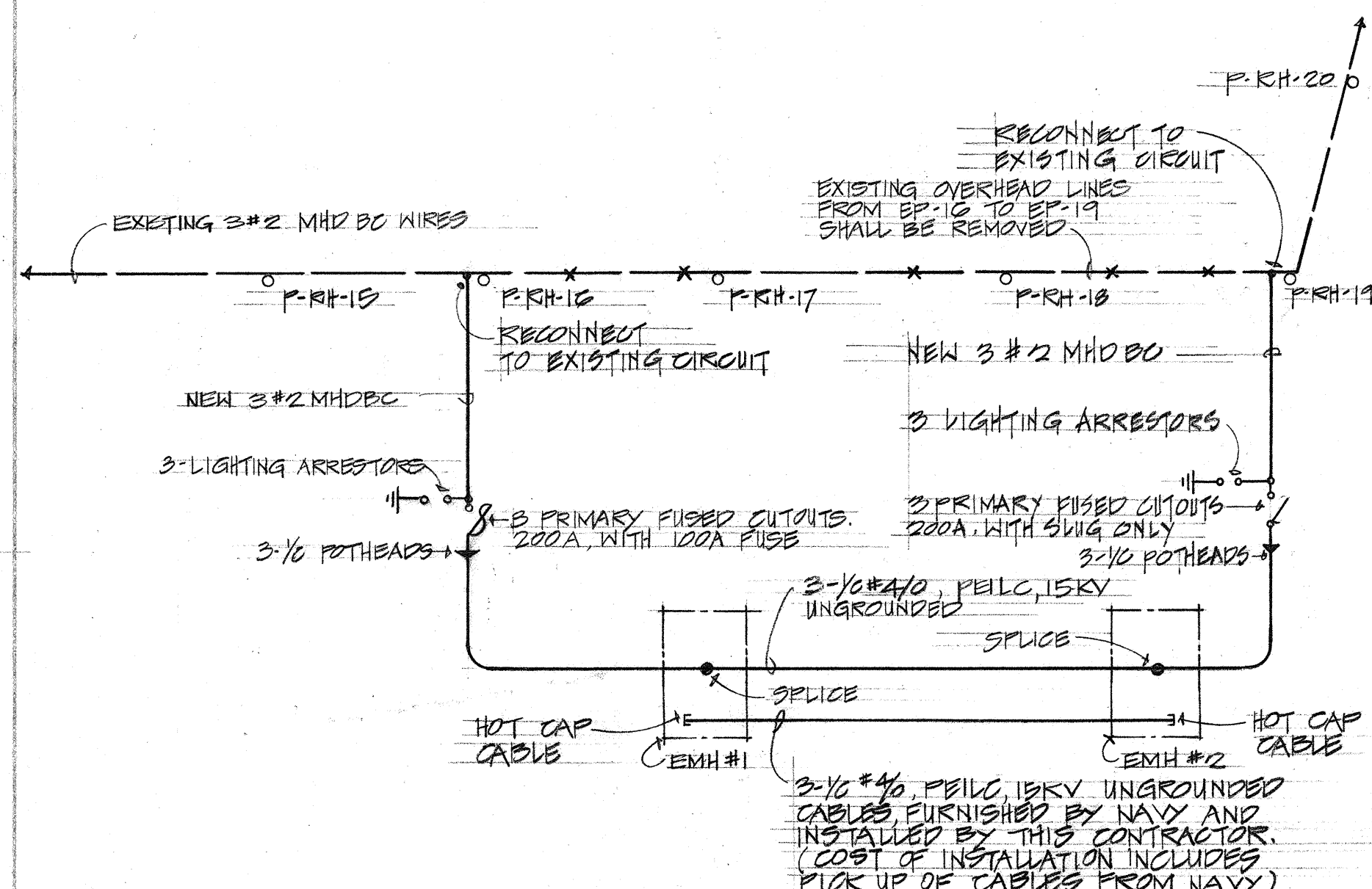
--FA-EOH-T--	EXISTING ELECTRIC, HTCO AND FIRE ALARM OVERHEAD TO REMAIN
X-FA-EOH-TX-	EXISTING ELECTRIC, HTCO AND FIRE ALARM OVERHEAD TO BE REMOVED
---	NEW ELECTRIC OVERHEAD, 3Φ, 3W
○ EP	EXISTING ELECTRIC POLE TO REMAIN
⊗ EP	EXISTING ELECTRIC POLE TO BE REMOVED
● EP	NEW ELECTRIC POLE
⊕	NEW ANCHOR AND GUY
○ EMH	NEW ELECTRIC MANHOLE
---	NEW DUCTLINE
⊕ (A)	DUCTLINE INDICATOR, SEE DUCT SECTION DETAIL
⚡	LIGHTNING ARRESTOR
↓	POTHEAD
□	NEW HTCO PULLBOX

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1974	40	61	

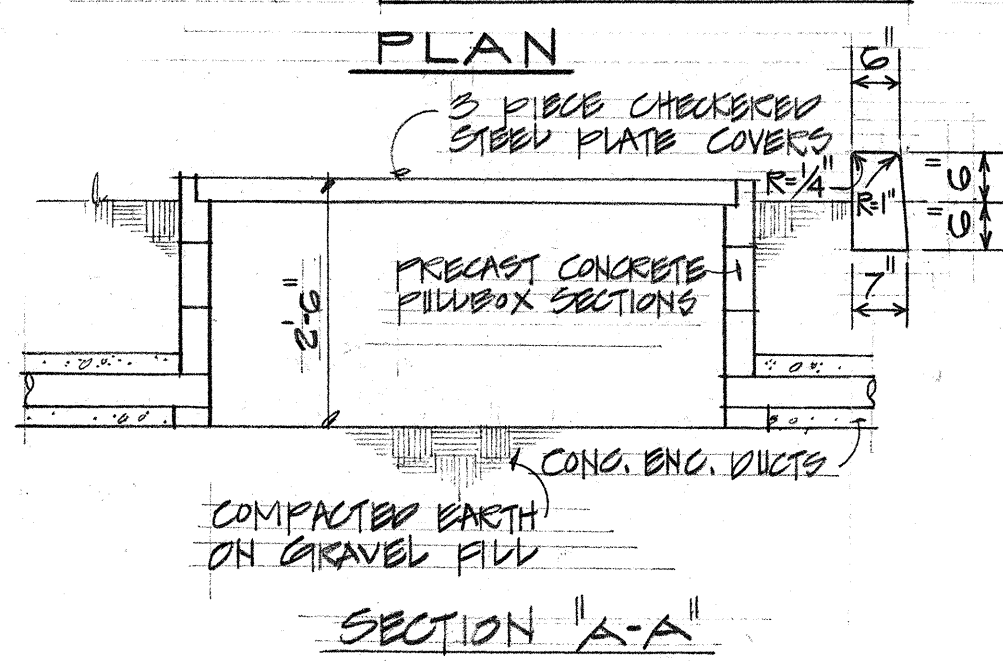
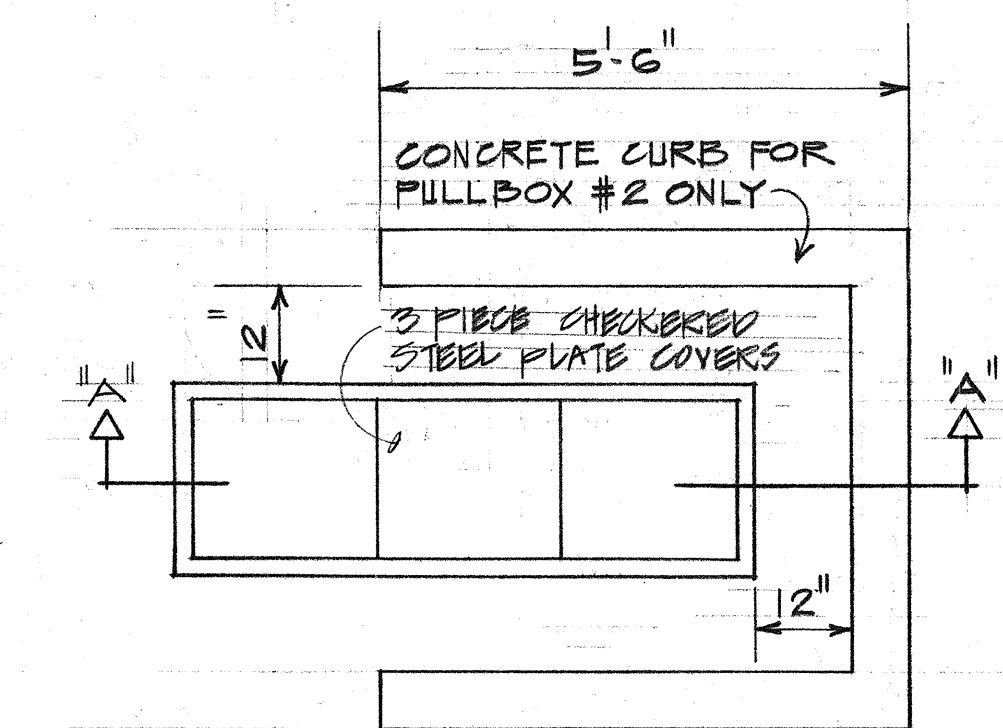
NOTE:  
BEFORE PLACEMENT OF CONCRETE, CONTRACTOR SHALL SEAL OFF THE CRUSHED ROCK AREA WITH A PLASTIC SHEET TO PREVENT CONCRETE FROM COZING INTO 1/4" HOLES FOR DRAINAGE.



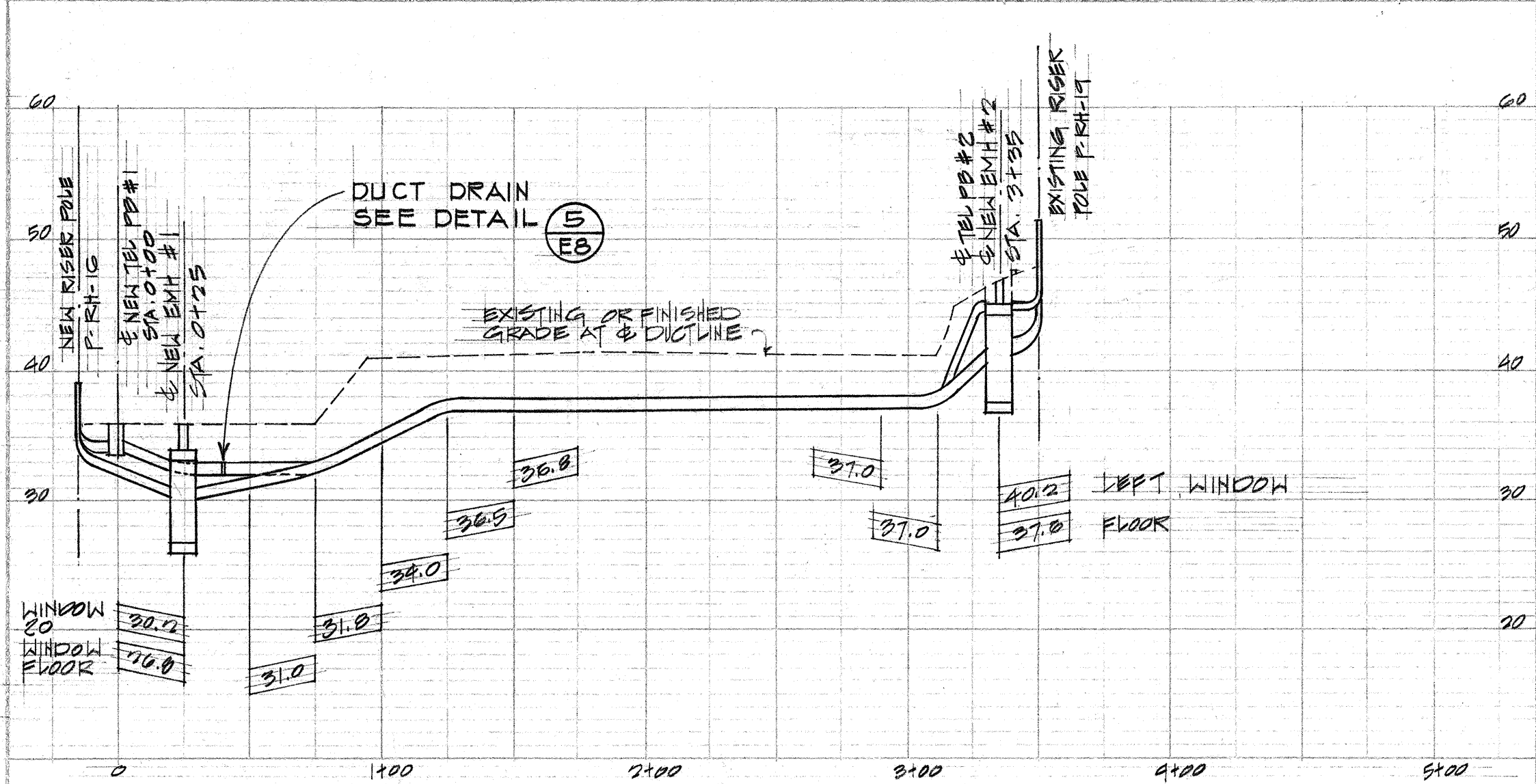
5  
E8  
DUCT DRAIN DETAIL  
SCALE: 1"=1'-0"



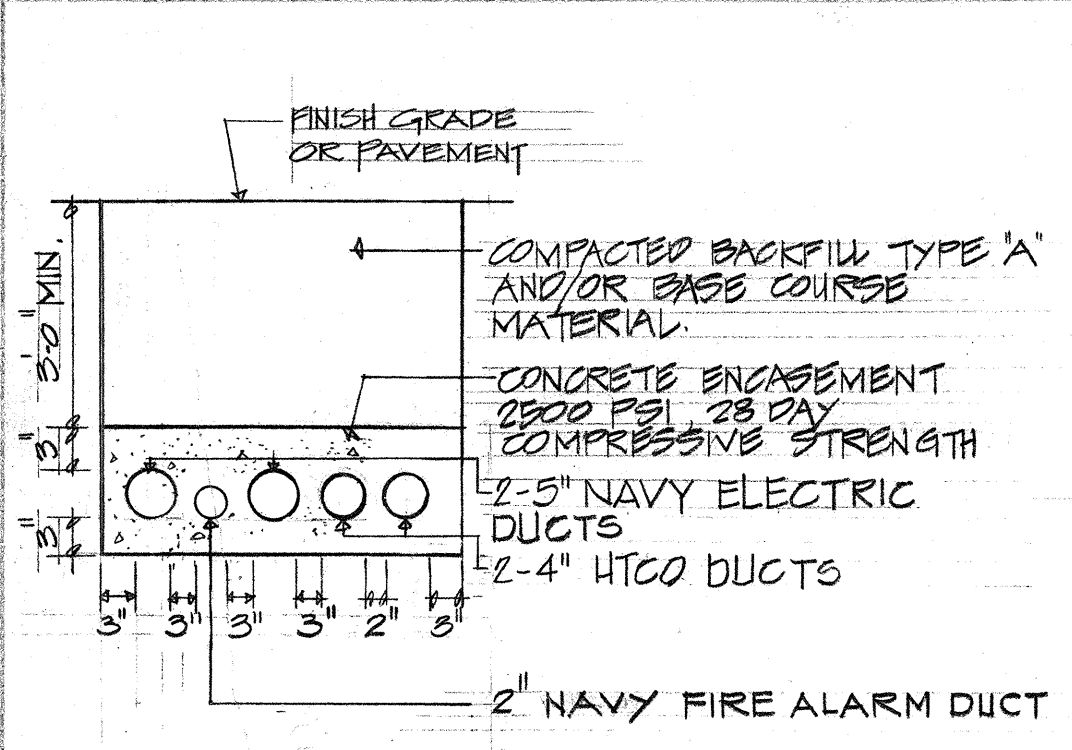
3  
E8  
ONE LINE DIAGRAM



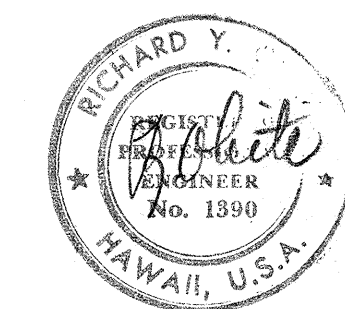
4  
E8  
2'x6' TELEPHONE PULLBOX DETAIL  
NOT TO SCALE



2  
E8  
DUCTLINE PROFILE  
SCALE: HORIZONTAL: 1"=50', VERTICAL: 1"=10'



DUCT SECTION (A)  
NOT TO SCALE



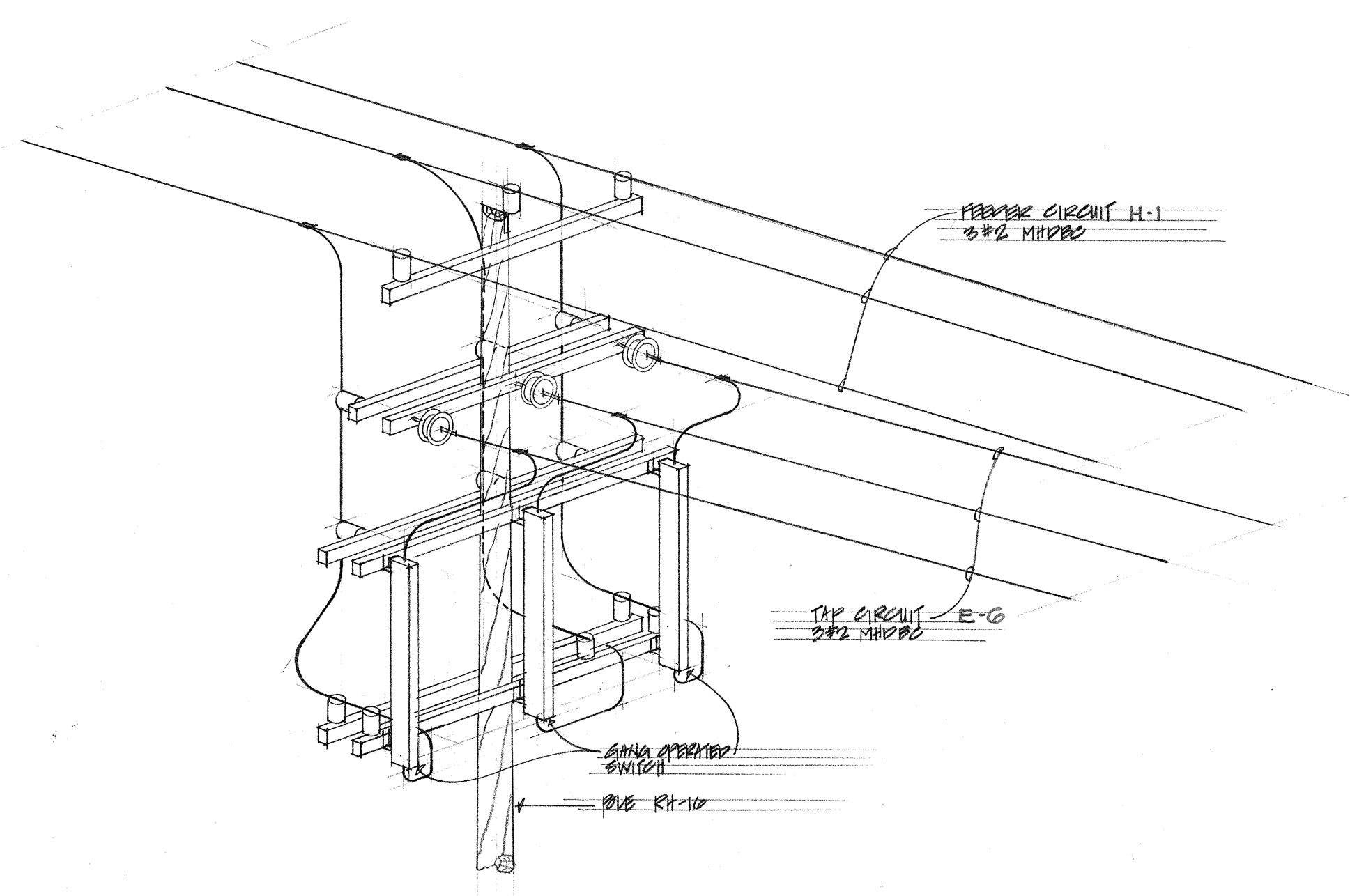
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APPROVED:  
*R. Man* 6-25-74  
Hawaiian Telephone Co., Ltd. Date

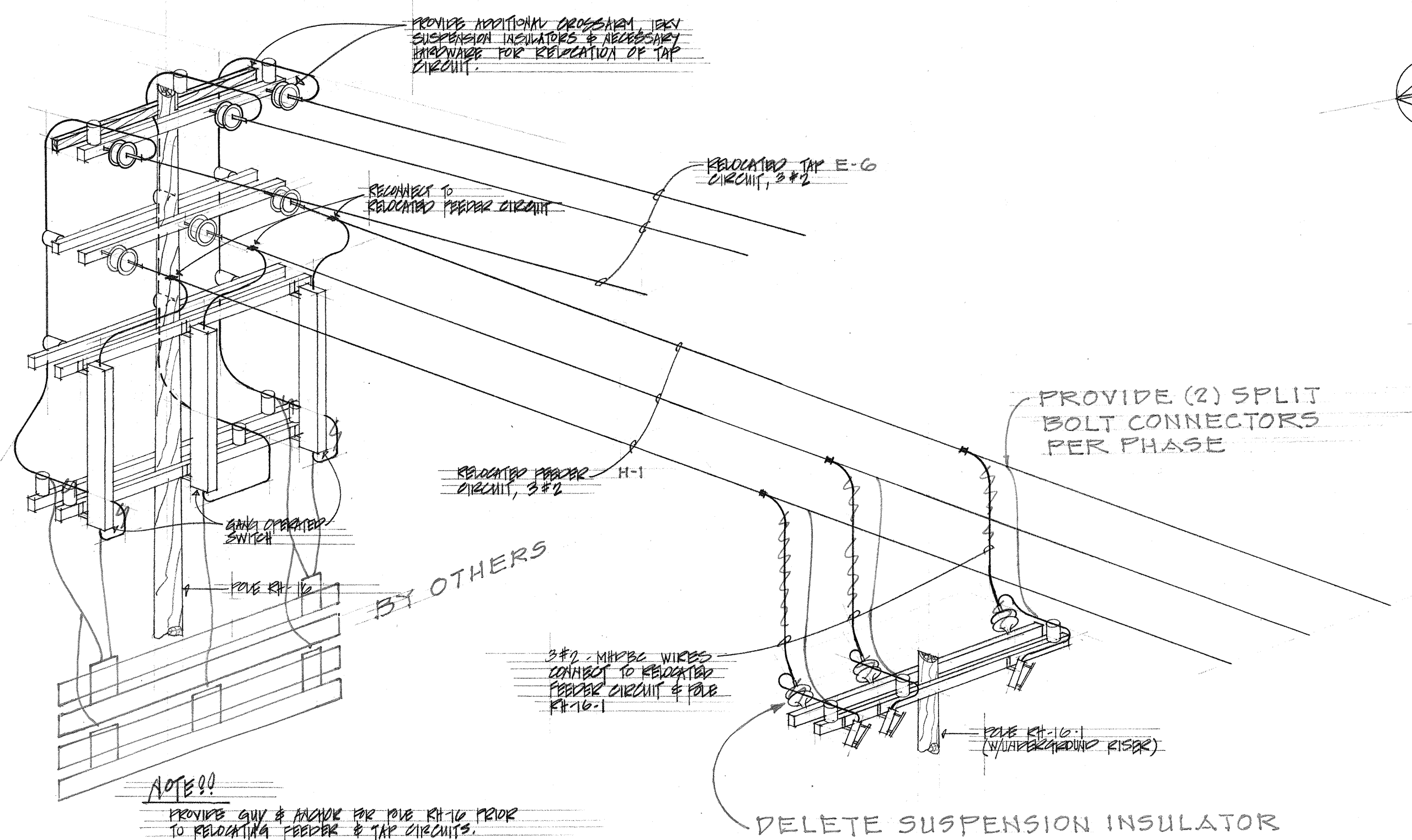
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
INTERSTATE ROUTE H-1  
NORTH LEG ROADWAY SECTION (PAVING)  
**NAVY ELECTRIC/HTCO.  
RELOCATION PLAN**  
F.A.I. PROJ. NO. I-HI-1(71):4  
SCALE: AS SHOWN DATE: 7/13/72  
**SHEET No. E8 OF 12 SHEETS**

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

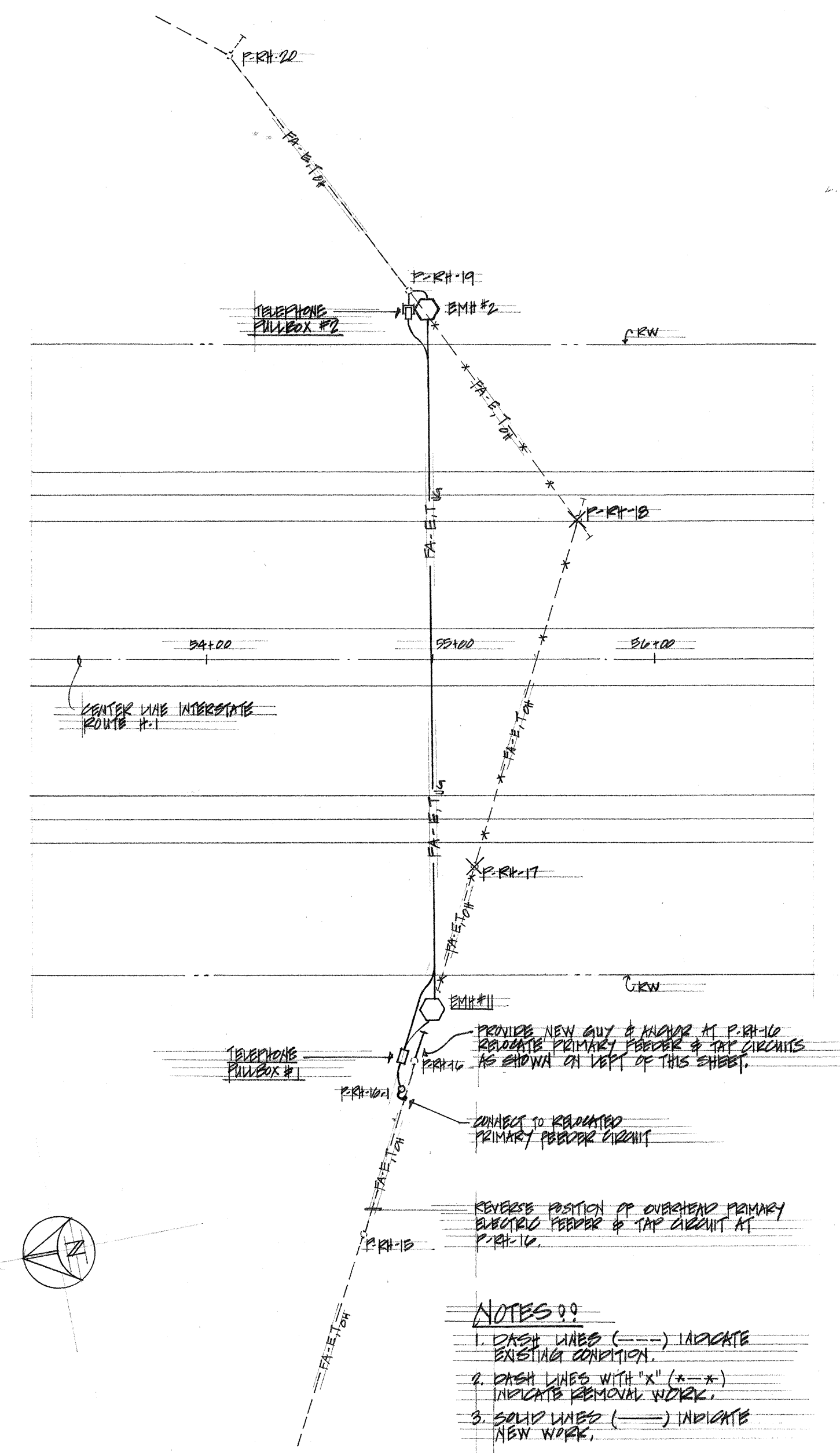




EXISTING CONDITION AT POLE RH-10  
NOT TO SCALE



FINAL CONDITION AT POLES RH-16 and RH-16-1  
NOT TO SCALE



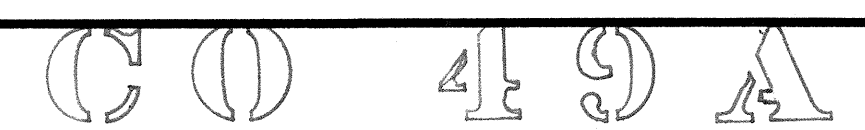
PARTIAL ELECTRIC/TELEPHONE RELOCATION PLAN  
SCALE: 1" = 30'-0"

- NOTES !!
1. DASH LINES (---) INDICATE EXISTING CONDITION.
  2. DASH LINES WITH 'X' (---X---) INDICATE REMOVAL WORK.
  3. SOLID LINES (—) INDICATE NEW WORK.

CLARIFICATION DRAWING

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
INTERSTATE ROUTE H-1  
NORTH LEG ROADWAY SECTION (PAVING)  
NAVY ELECTRIC/H100  
RELOCATION PLAN  
PAL PROJ. NO I-H1-1(71)-14  
SCALE: AS SHOWN DATE: 9 MAR 1970

SHEET No. OF SHEETS

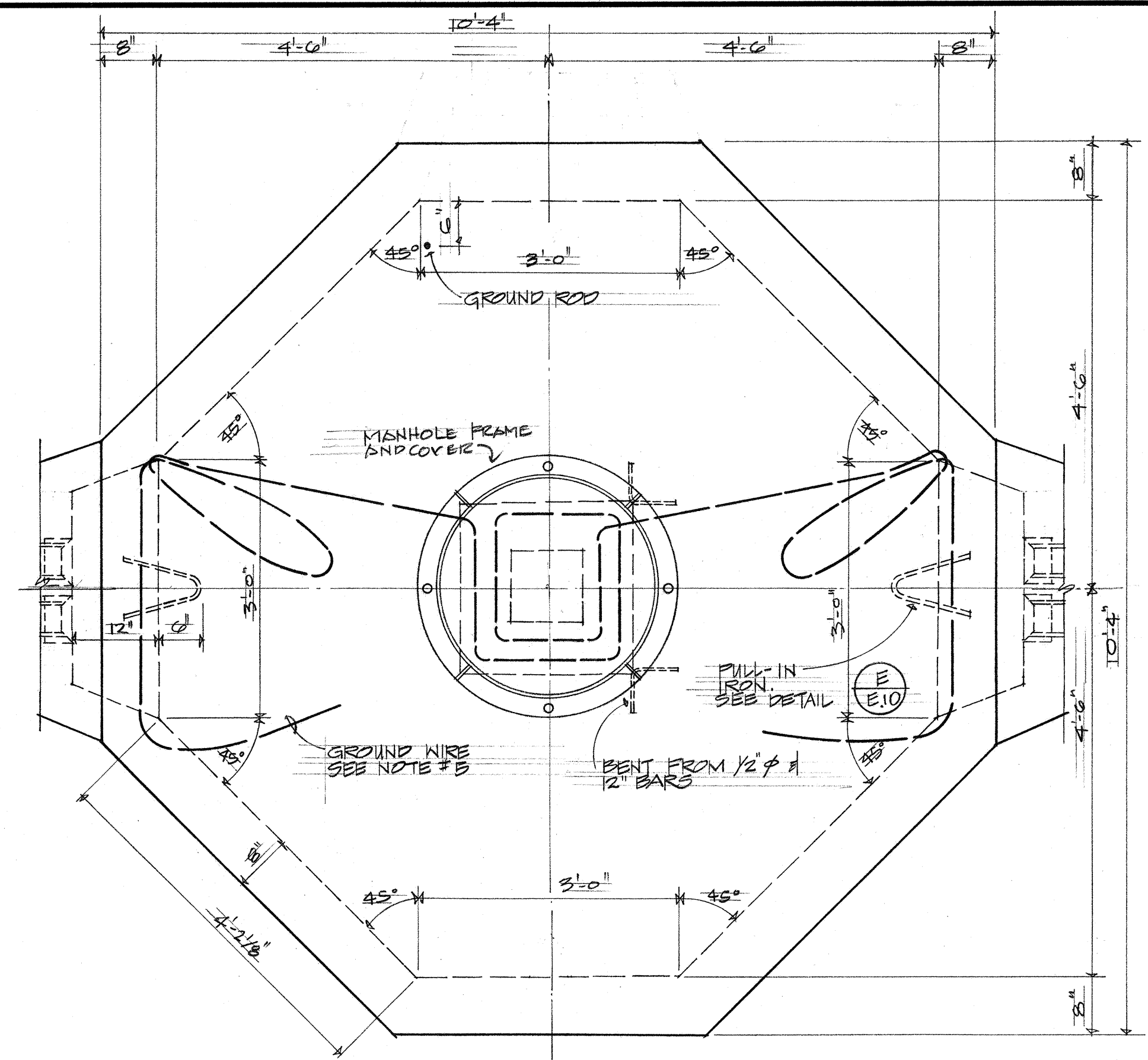


Sheet No. of Sheets

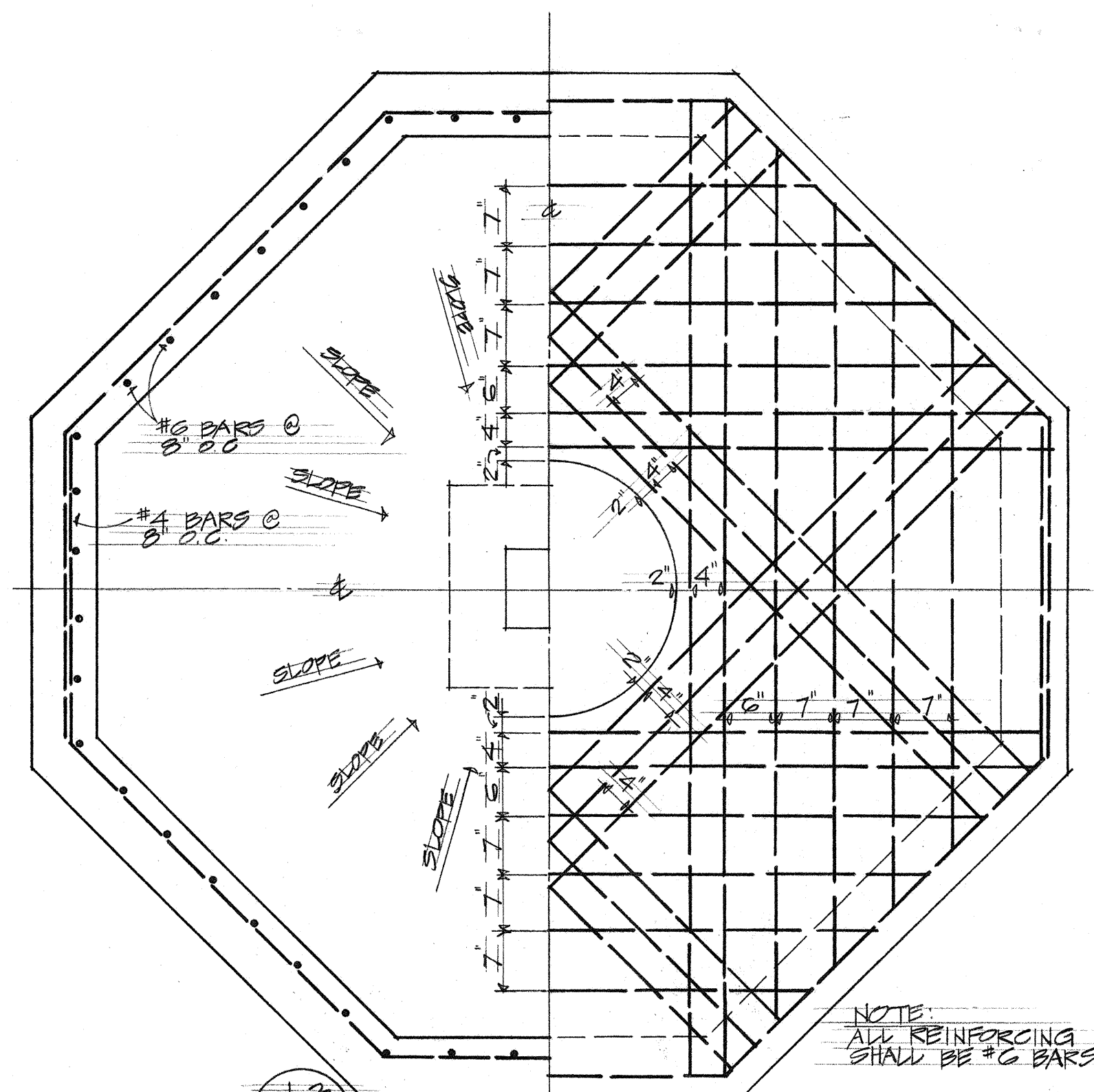
FILE	POCKET	FOLDER	NO.



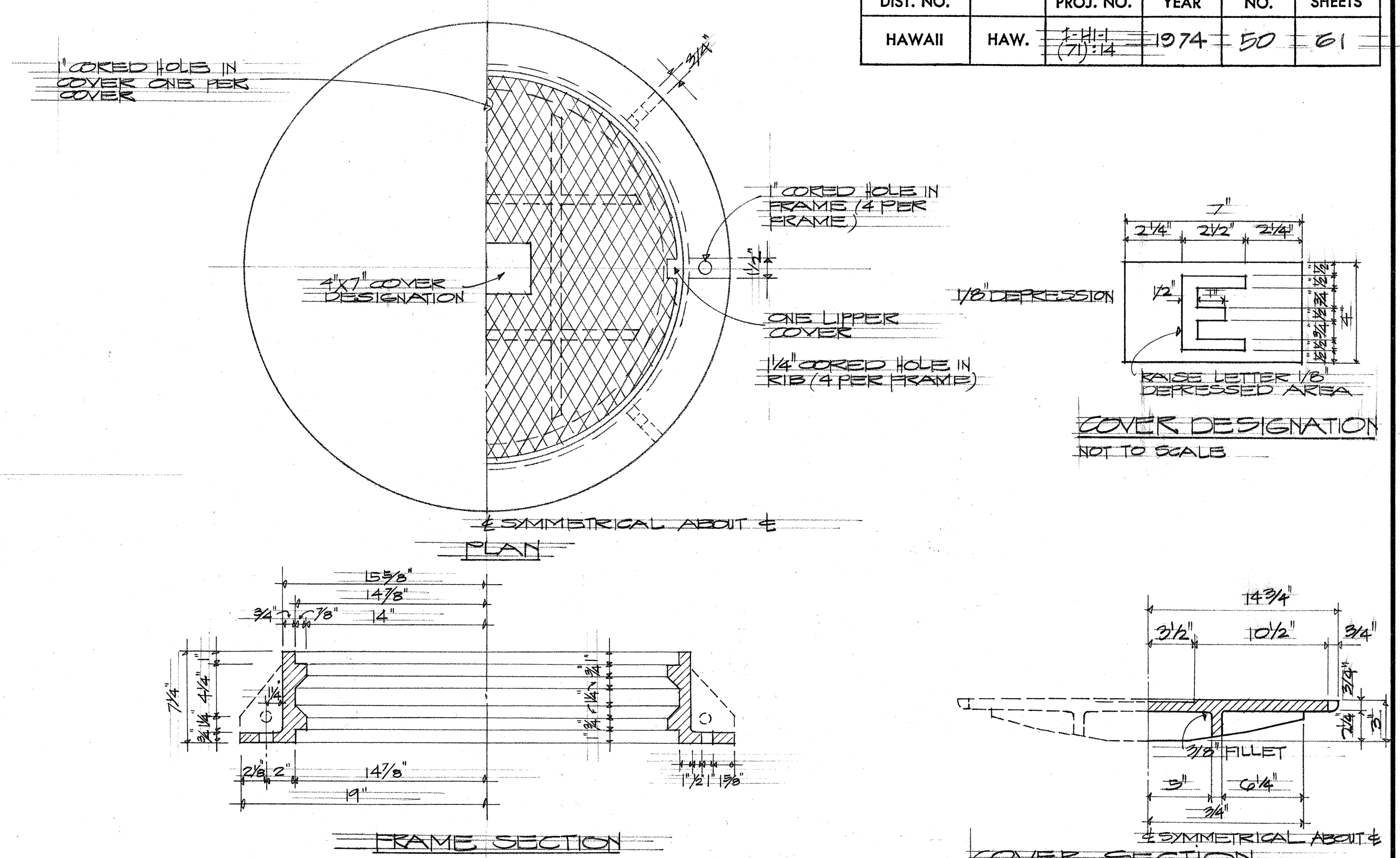
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-14 (71)14	1974	50	61



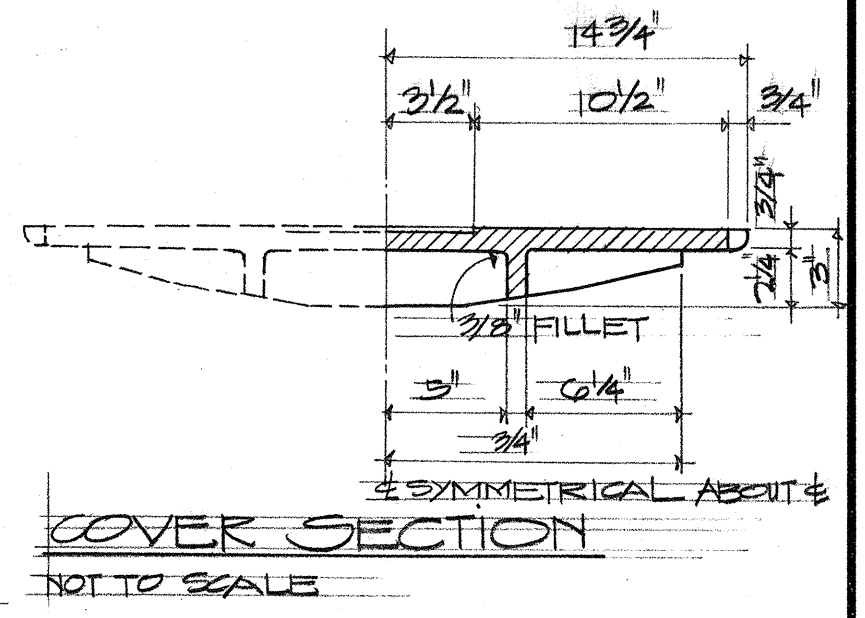
1.1 PLAN  
SC: 3/4"=1'-0"



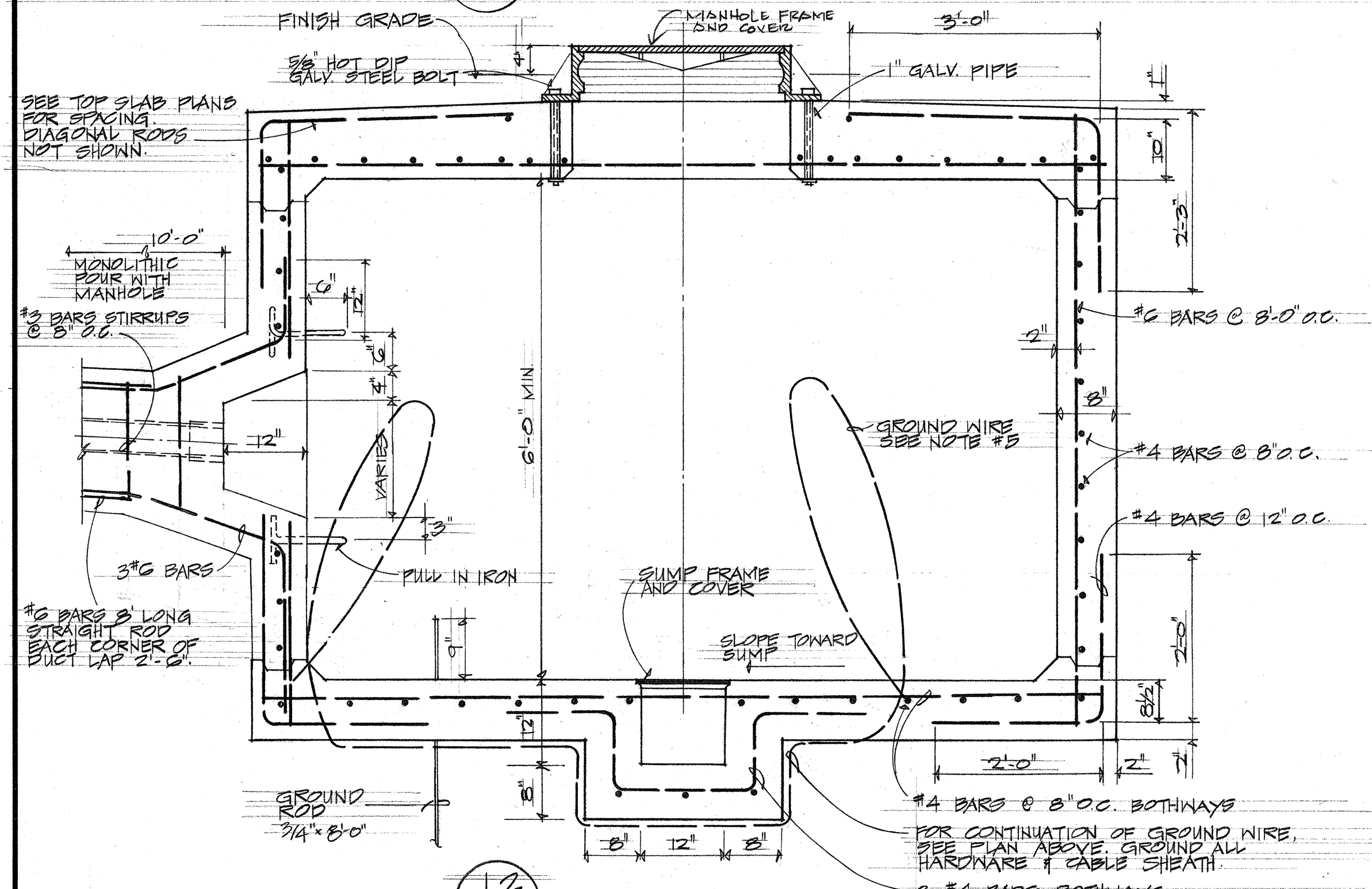
1.3 REINFORCING FOR SECTION UNDER TOP TOP SLAB - BOT FACE  
SCALE: 3/4"=1'-0"



1.2 28" MANHOLE FRAME & COVER  
NOT TO SCALE



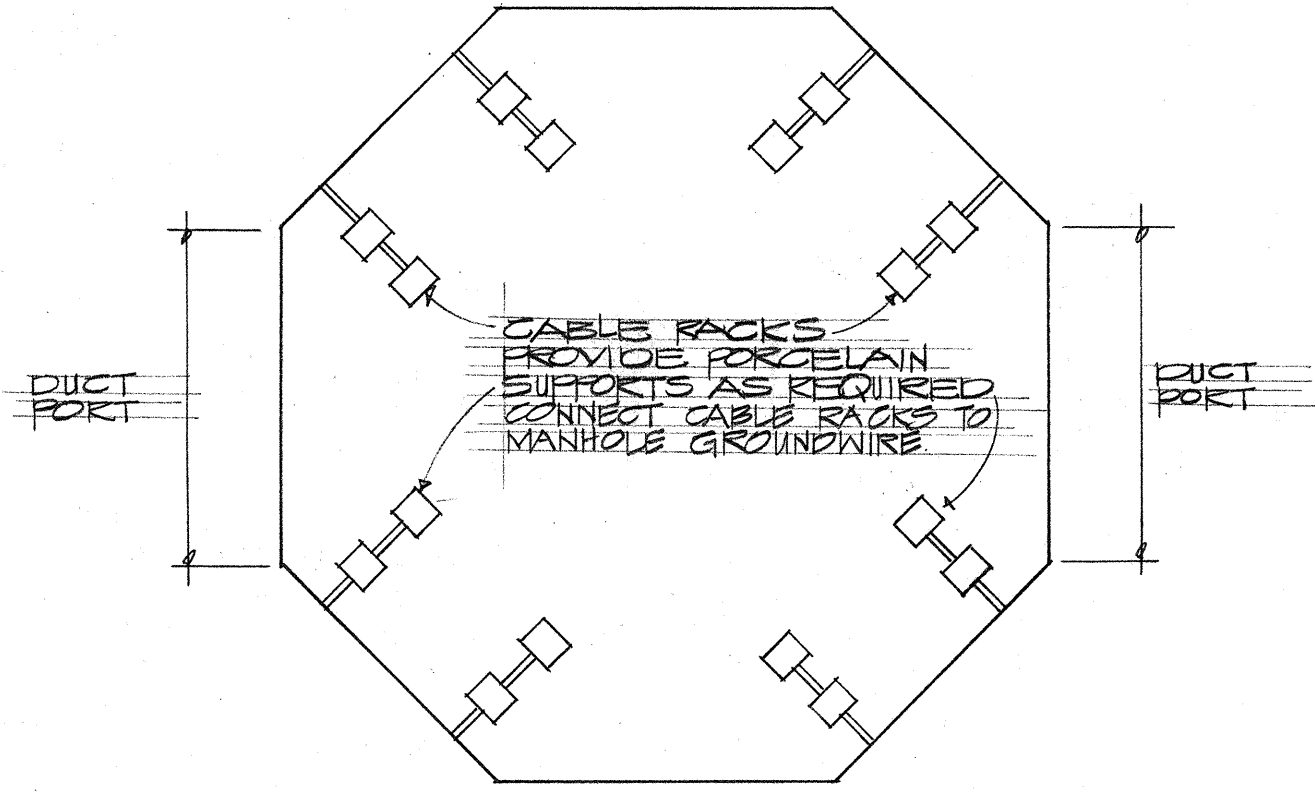
COVER SECTION  
NOT TO SCALE



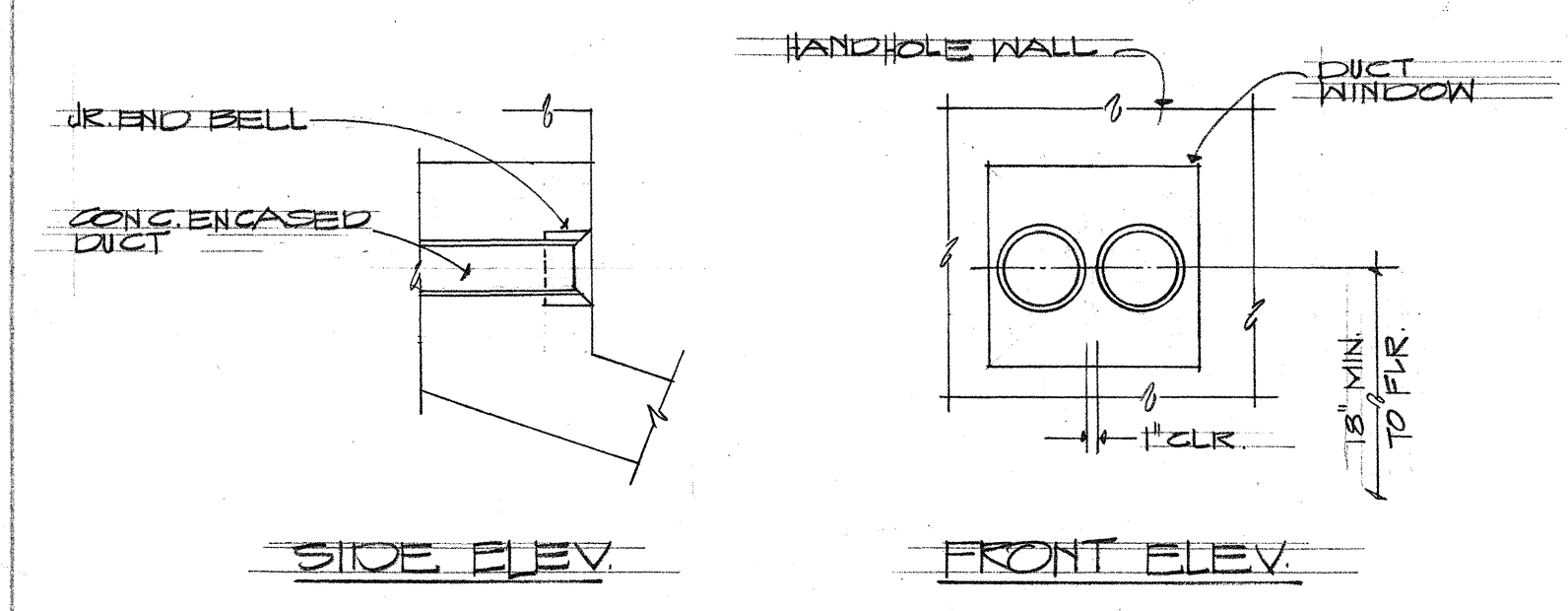
1.2 SECTION A-A  
E-9

- NOTES:
1. CONC. FOR MANHOLE SHALL BE 3000 PSI, 28 DAY COMPRESSIVE STRENGTH.
  2. CONC. FOR DUCTLINE SHALL BE 2500 PSI, 28 DAY COMPRESSIVE STRENGTH.
  3. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE - 24,000 PSI.  
#4 LAPPED 40 DIAMETERS AT ALL SPLICES, WHICH SHALL BE STAGGERED.
  4. DIMENSIONS FROM STEEL TO FACE OF CONC DENOTES CLEAR COVER.
  5. GROUND WIRE SHALL BE NO. 10 AWG TINNED COPPER.

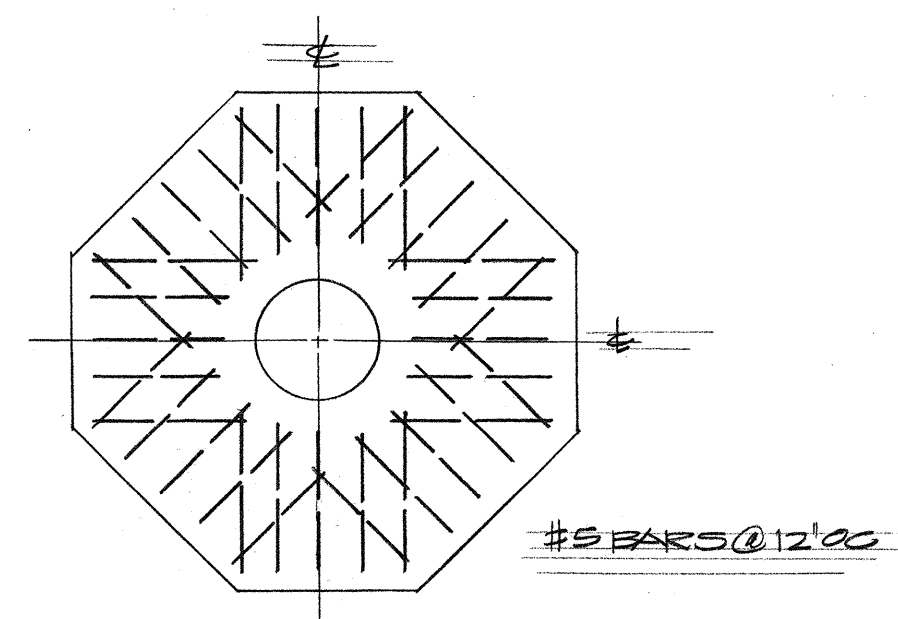
1.1 DETAIL - NAVY ELECTRIC MANHOLE  
SCALE: 3/4"=1'-0"



1.4 CABLE RACKS LOCATION  
E-9 PLAN NOT TO SCALE

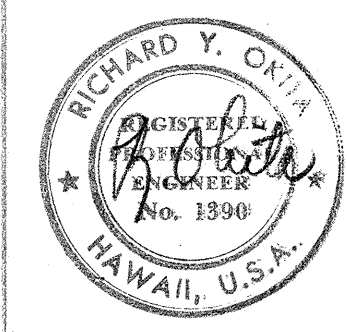


1.0 TYPICAL DUCT ENTRANCE DETAIL  
E-9 NOT TO SCALE



1.7 REINFORCING FOR TOP SLAB - TOP FACE  
SCALE: 1/4"=1'-0"

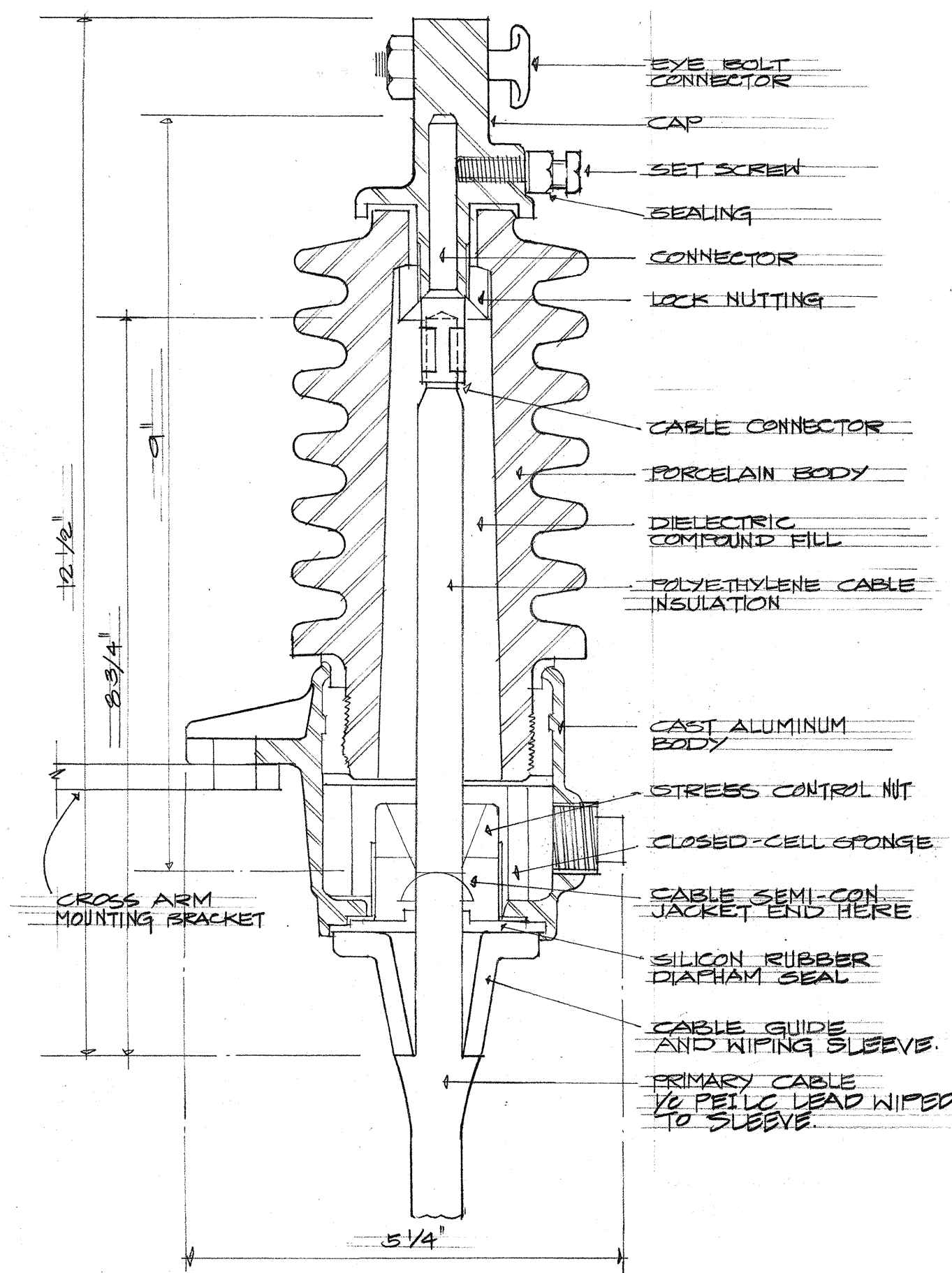
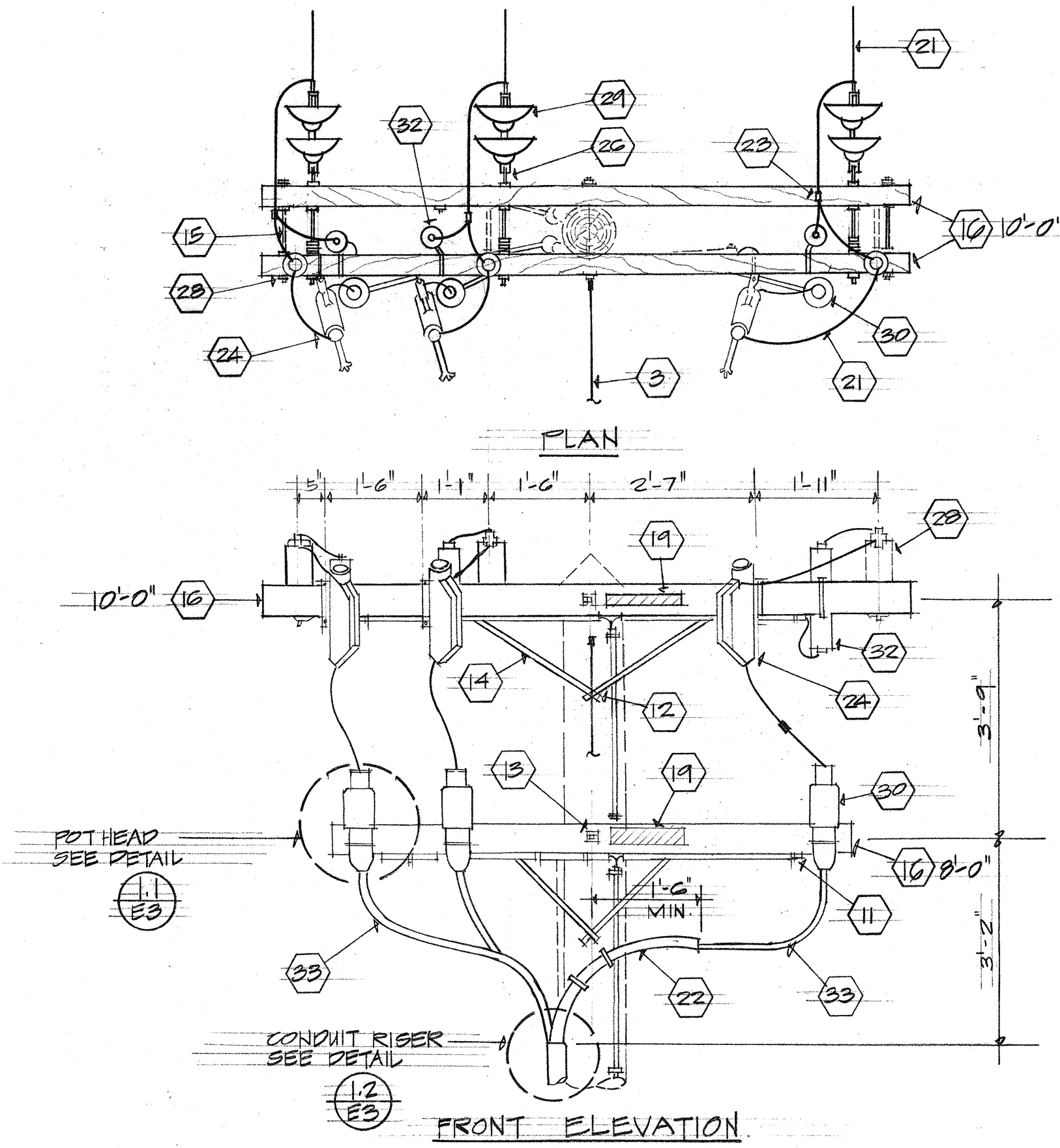
DATE	
SURVEY PLATTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	



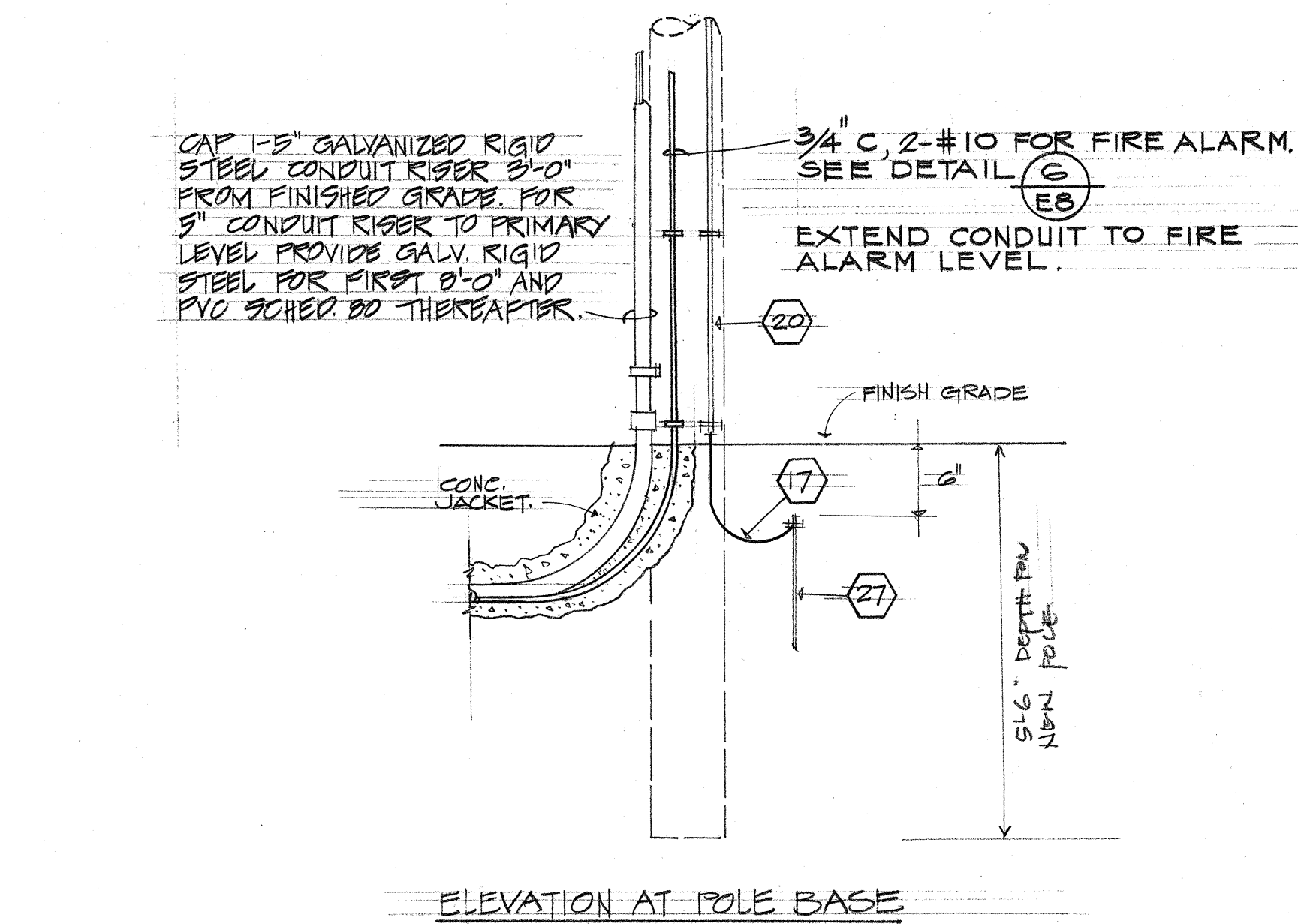
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
INTERSTATE ROUTE H-1  
NORTH LEG. ROADWAY SECTION (PAVING)  
NAVY  
ELECTRIC MANHOLE DETAILS  
P.A.I. PROJ. NO. I-HI-1(71)14  
SCALE: AS SHOWN DATE: 7/12/72  
SHEET No. E-9 OF 12 SHEETS



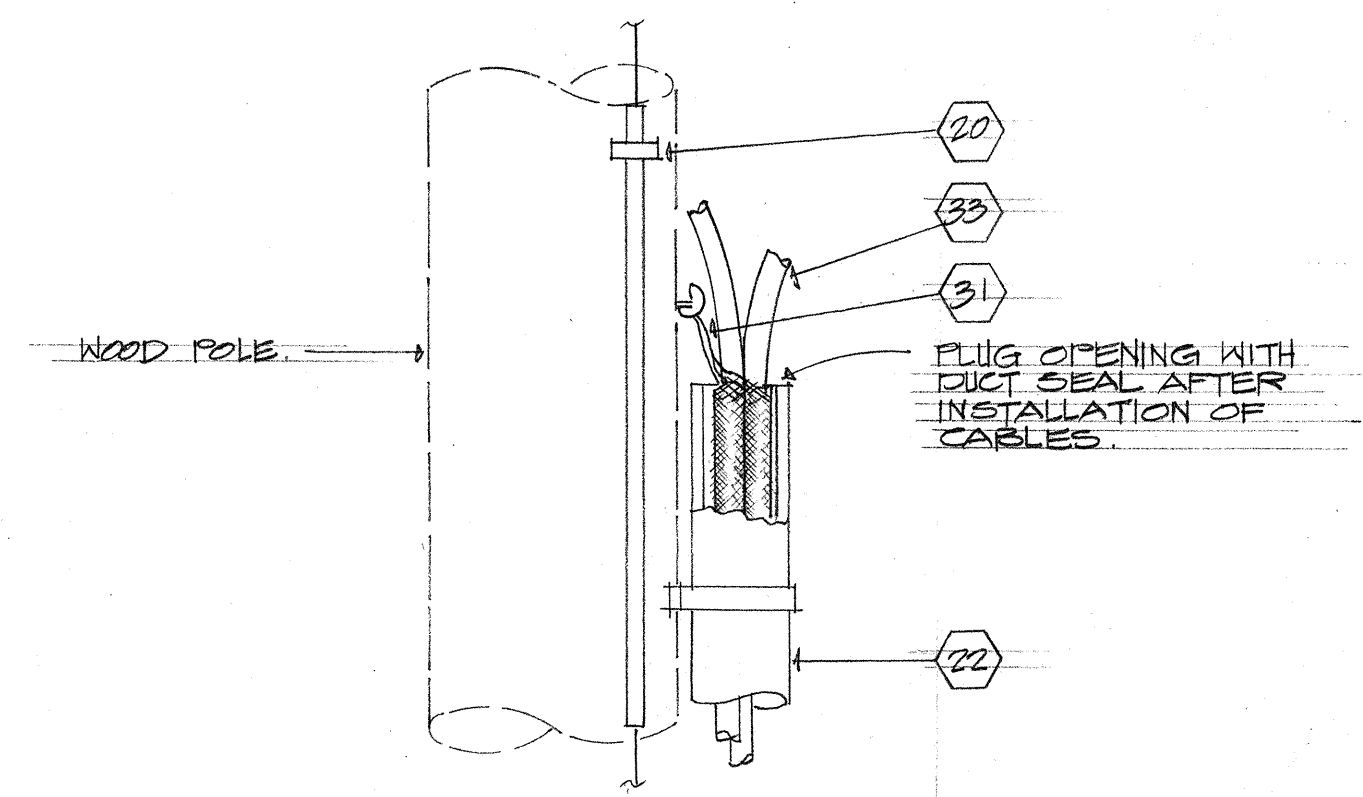
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-11-1(71):14	1974	51	61



**1.1 PRIMARY CABLE TERMINATOR**  
E-10 NOT TO SCALE

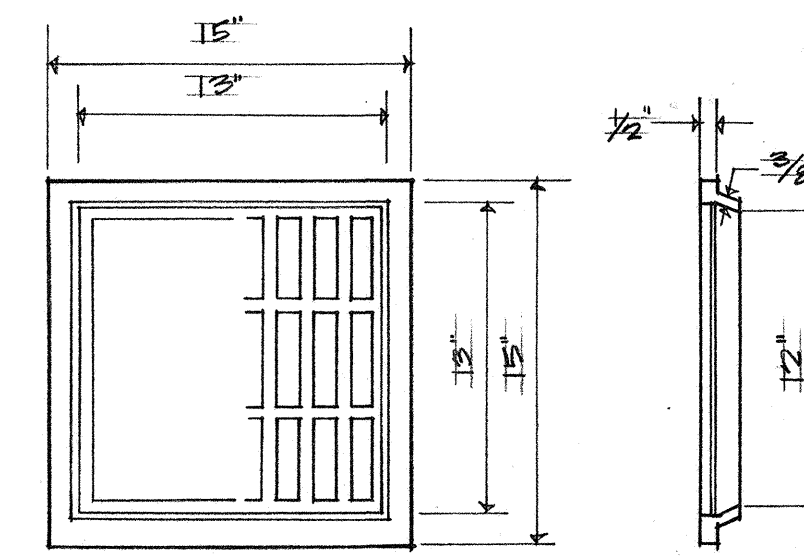


**1.1 DETAIL-PRIMARY SERVICE RISER-TYPE I**  
E-10 NOT TO SCALE

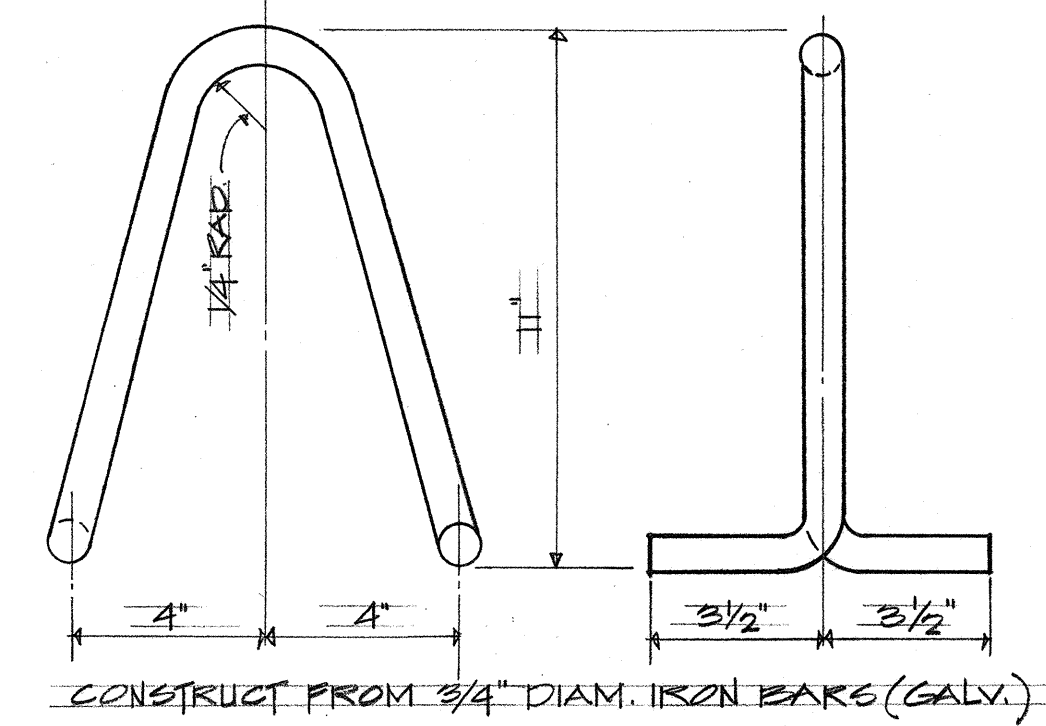


**1.2 DETAIL-CONDUIT RISER**  
E-10 NOT TO SCALE

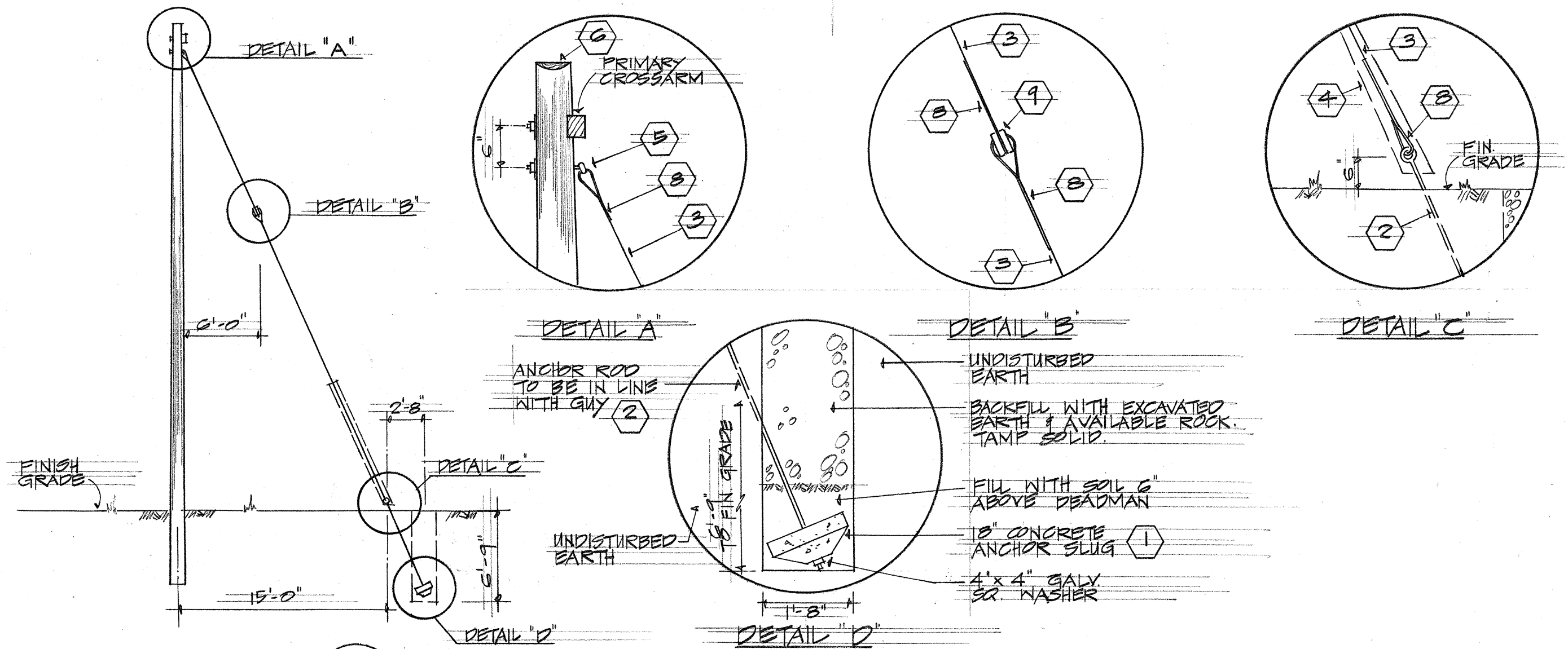
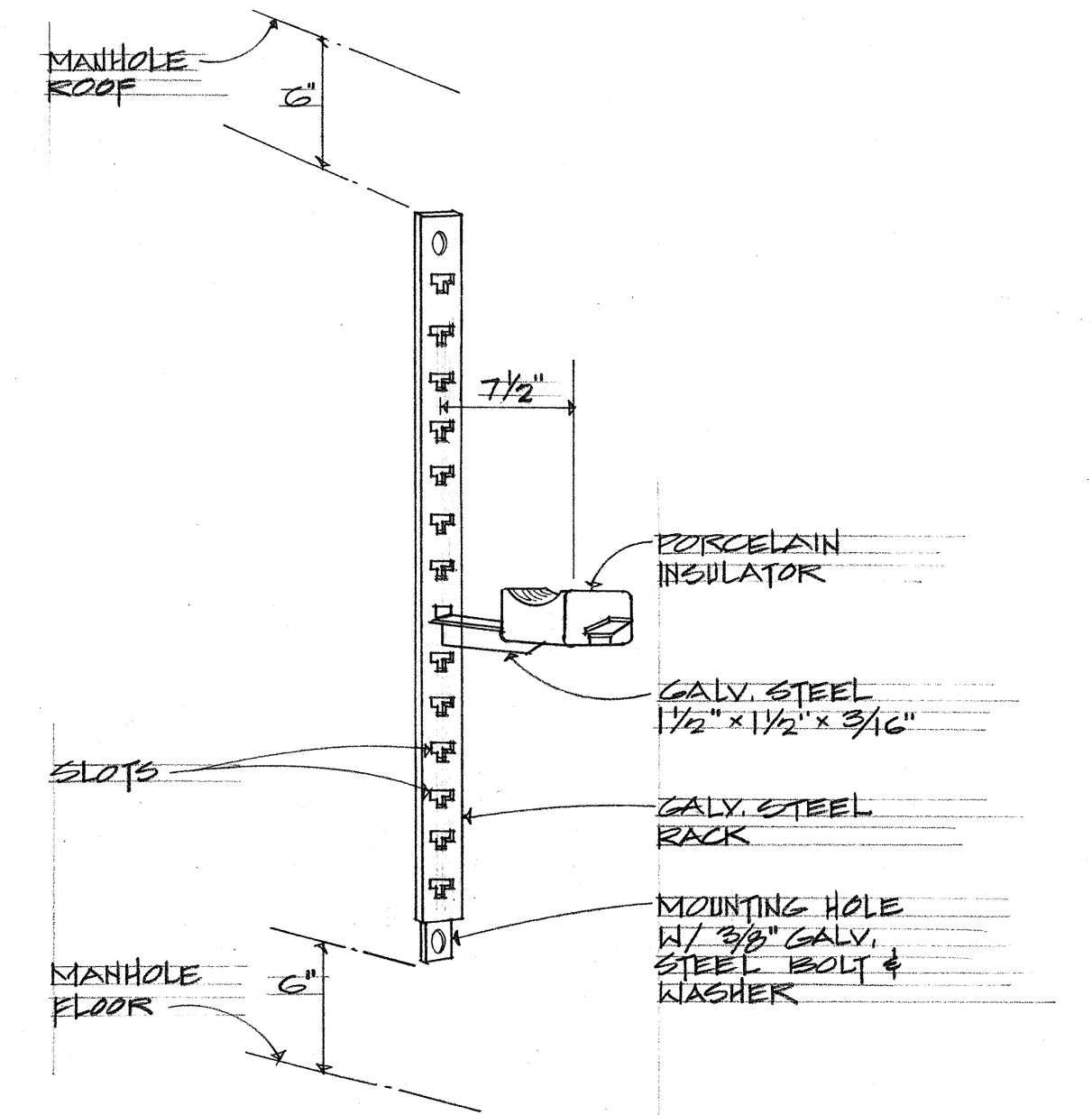
**2 DETAIL-SUMP FRAME AND COVER**  
E-10 NOT TO SCALE



**3 DETAIL-PULL-IN IRON**  
E-10 NOT TO SCALE



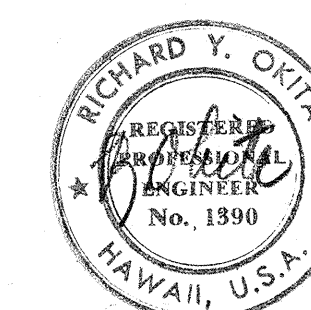
**5 DETAIL-CABLE RACK AND INSULATOR (SLOT TYPE)**  
NOT TO SCALE



**4 TYPICAL ANCHOR & GUYING DETAILS**  
E-10 NOT TO SCALE

**MATERIAL LIST - OVERHEAD SYSTEM**

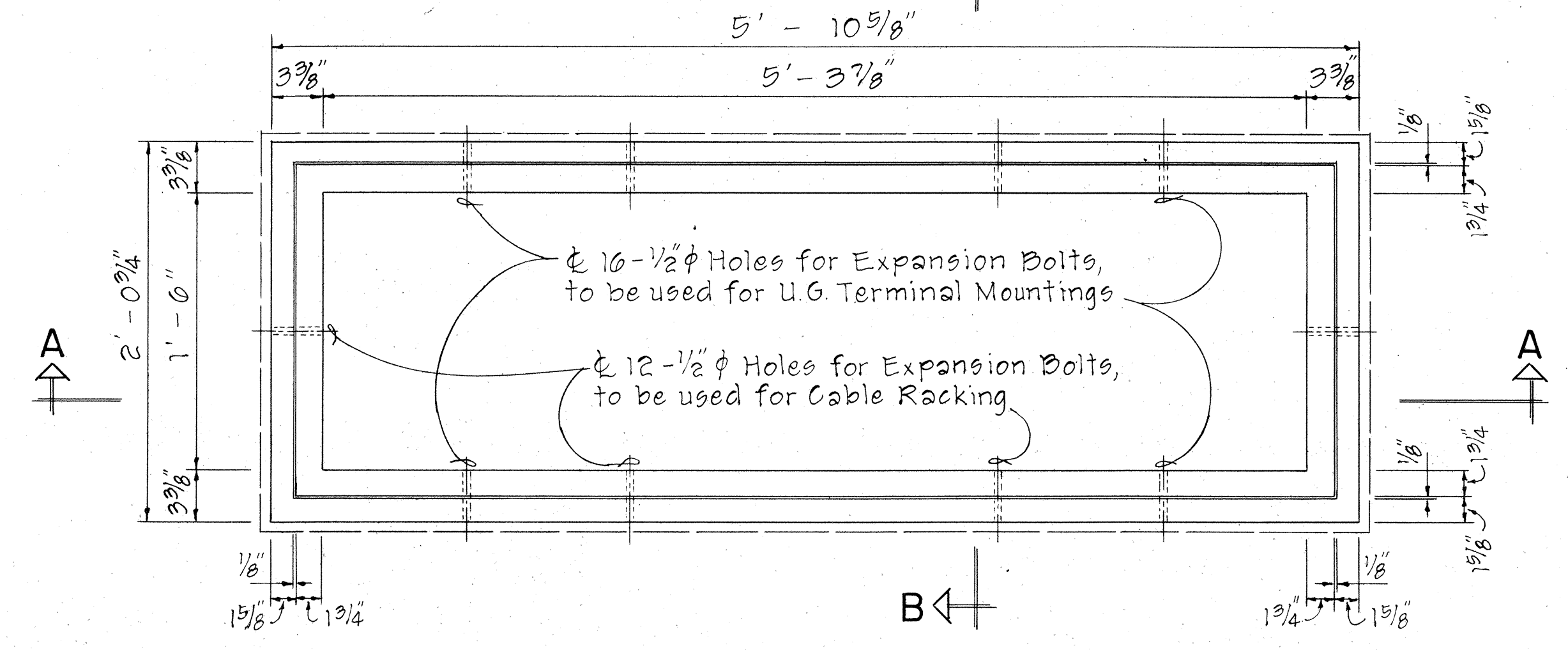
1 ANCHOR SLUG, CONCRETE, 18" DIAMETER	10 EYE NUT, 5/8" DIA. BOLT HOLE	19 SIGN. HIGH VOLTAGE WITH FLATHEAD NAILS	28 INSULATOR, 15KV, POST TYPE WITH STEEL PINS
2 ANCHOR ROD, 1" x 8'-0", TRIPLE EYE W/ WASHER & NUT	11 BONDING WIRE, #6 SDOBC & STAPLES	20 WOOD Moulding, 1/2" WIRING WITH 2 HOLE STRAPS & NAILS	29 INSULATOR, 15KV, CLEVELIS DEADEND WITH 3/8" MOUNTING BOLT, WASHER & NUT
3 GUY STRAND, 3/8" DIAMETER	12 CROSSARM BRACE BOLT, CARRIAGE, 3/8" DIA., WASHERS & NUT	21 CONDUCTOR, PRIMARY, 15,000 VOLTS, NO. 2 MHDC	30 POTHEAD, 15KV, WITH CROSSARM MOUNTING BRACKET
4 GUY GUARD, 8'-0" STEEL	13 CROSSARM BOLT, 5/8" DIA., WASHERS & NUT	22 CONDUIT, PVC WITH 2 HOLE STRAPS	31 GRIP, CABLE, BRONZE
5 GUY EYE BOLT, 5/8" DIAMETER	14 CROSSARM BRACE, 1/4" x 1/4" x 34" (8'-0" ARM)	23 CONNECTOR, SPLIT BOLT, BRONZE	32 LIGHTING ARRESTOR, 15KV, WITH CROSSARM MOUNTING BRACKET
6 POLE, CREOSOTE, ANPA CLASS 3, 40'	15 DOUBLE ARMING BOLT, 5/8" DIA., WASHERS & NUT	24 CUTOUT 200 AMPERES, 15KV, OPEN, FUSED 100A	33 PRIMARY CABLE, 1/2" x 40, PEILC, 15KV, UNGROUNDED
7 POLE STEPS, GALVANIZED, STEEL	16 CROSSARM, 3/4" x 4 1/2" x 8'-0"	25 EYEBOLT, 5/8" DIAMETER	
8 PREFORMED STRAND GRIPS	17 GROUND WIRE, #4 SDOBC AND STAPLES	26 EYENUT, 15KV, CLEVELIS STRAIN INSULATOR WITH WIRE GRIP	
9 STRAN INSULATOR, 20,000#	18 LAG SCREW, 1/2" DIAMETER	27 GROUND ROD, 3/4" x 8'-0" WITH CLAMP	



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
INTERSTATE ROUTE #1  
NORTH LEG ROADWAY SECTION (PAVING)  
**ELECTRIC MANHOLES AND RISER DETAILS**  
P.A.I. PROJ. NO. I-11-1(71):14  
SCALE: AS SHOWN DATE: 7/12/72  
SHEET No. E-10 OF 12 SHEETS

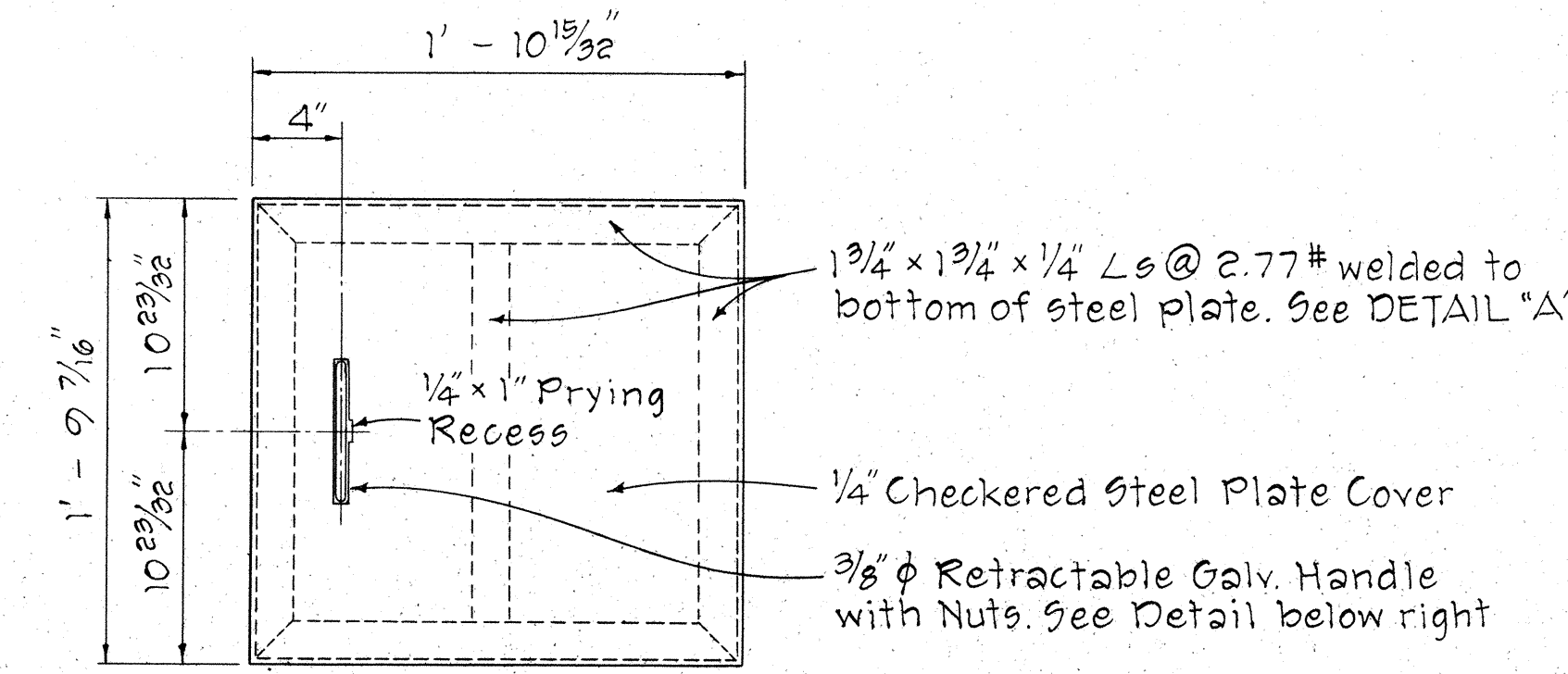


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI(71):14	1974	52	61

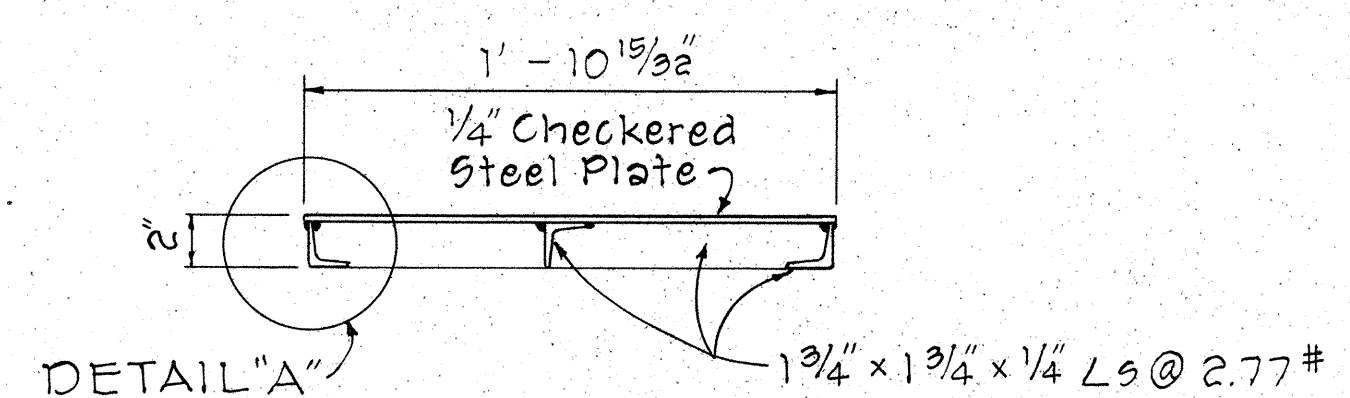


**PLAN**  
Scale: 1/2" = 1'-0"

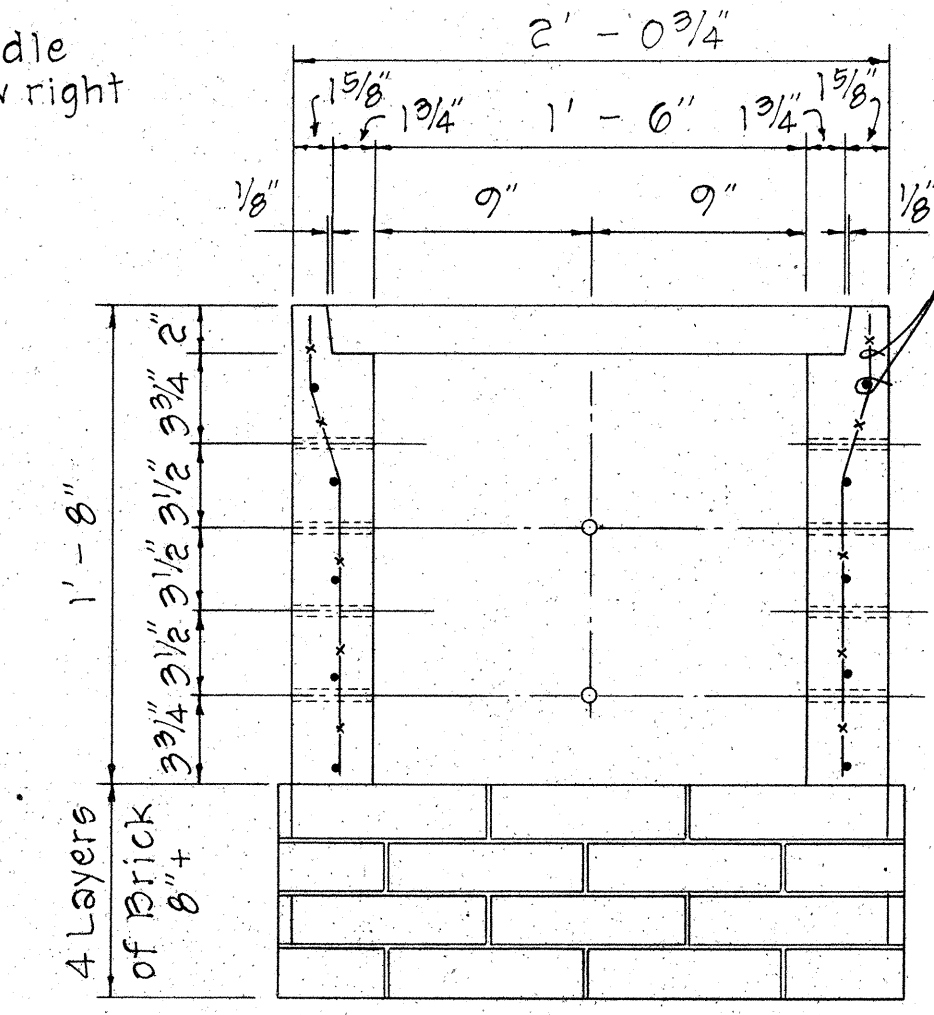
**NOTE:**  
Concrete Compressive Strength - 3000 P.S.I. in 28 Days.  
Use 3-435 T-B Covers for each Pullbox.



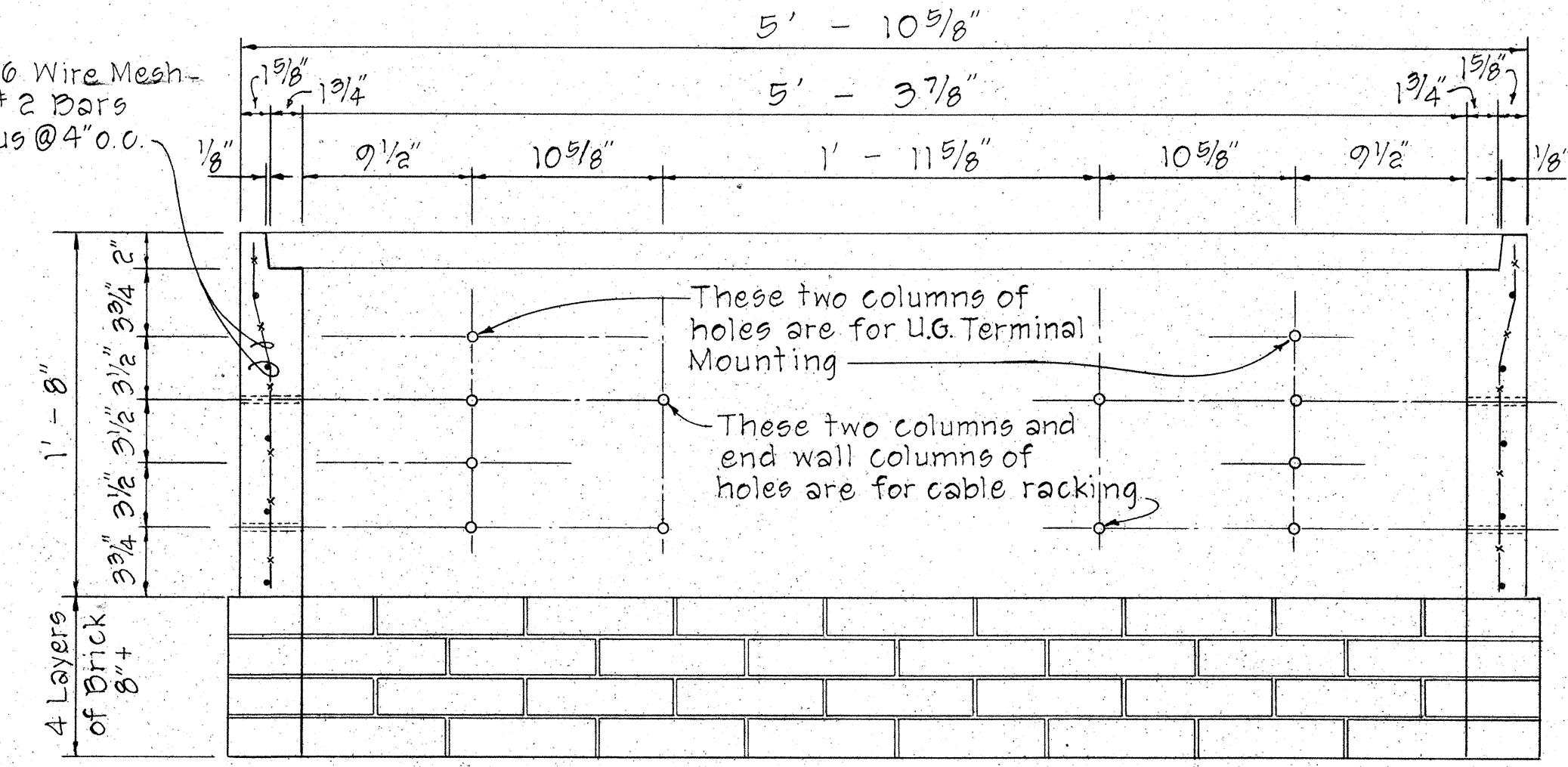
**PLAN**  
Scale: 1/2" = 1'-0"



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

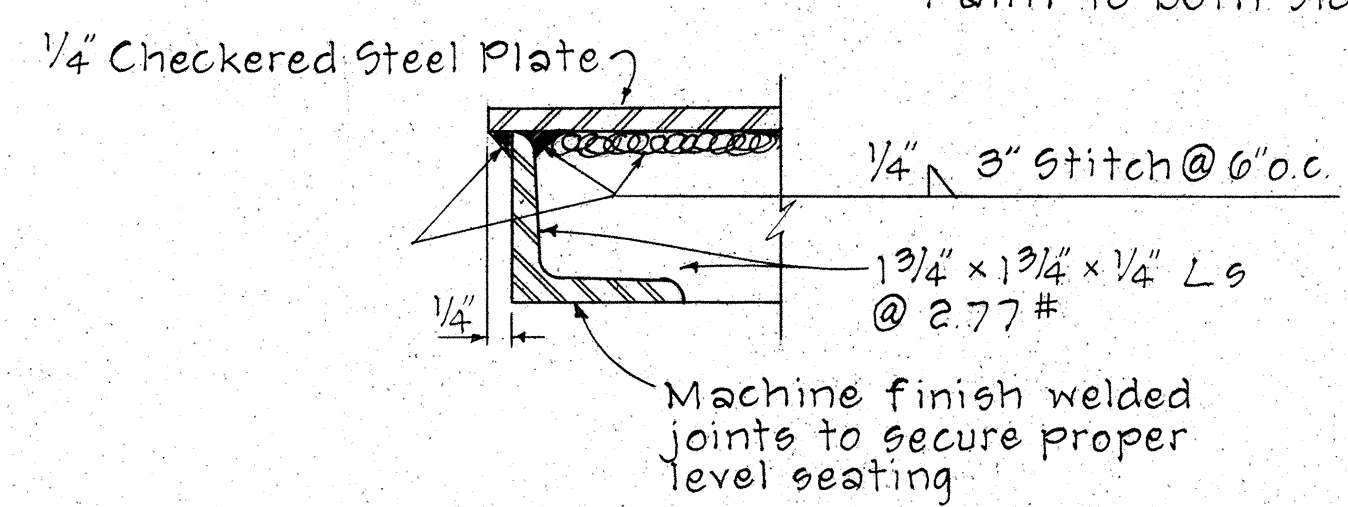


**SECTION "B-B"**  
Scale: 1/2" = 1'-0"

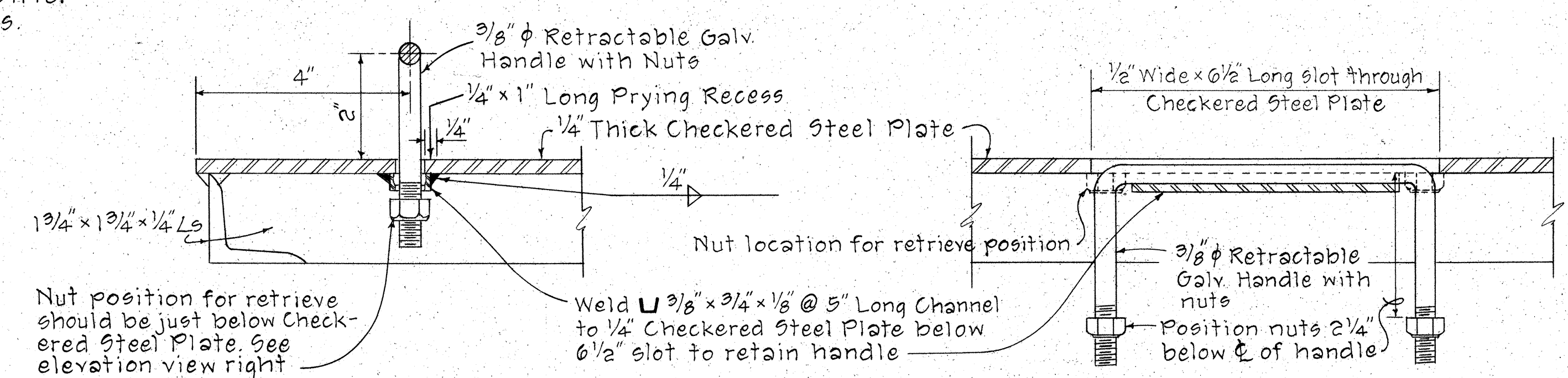


**SECTION "A-A"**  
Scale: 1/2" = 1'-0"

**NOTE:**  
After fabrication of cover, apply one coat of Silver Paint to both sides.



**DETAIL "A"**  
HALF - SIZE



**SECTION - RETRIEVE POSITION**      **ELEVATION - AT REST POSITION**  
**RETRACTABLE HANDLE**  
HALF - SIZE

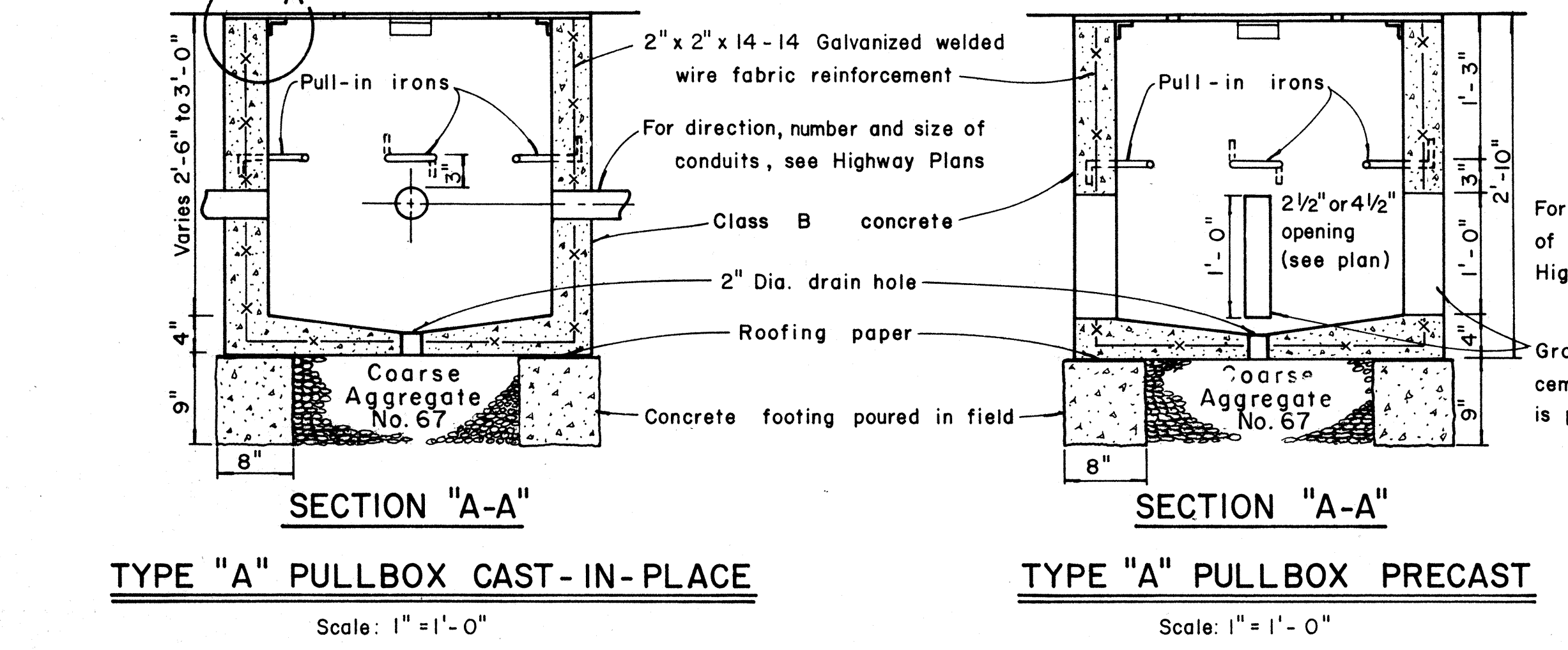
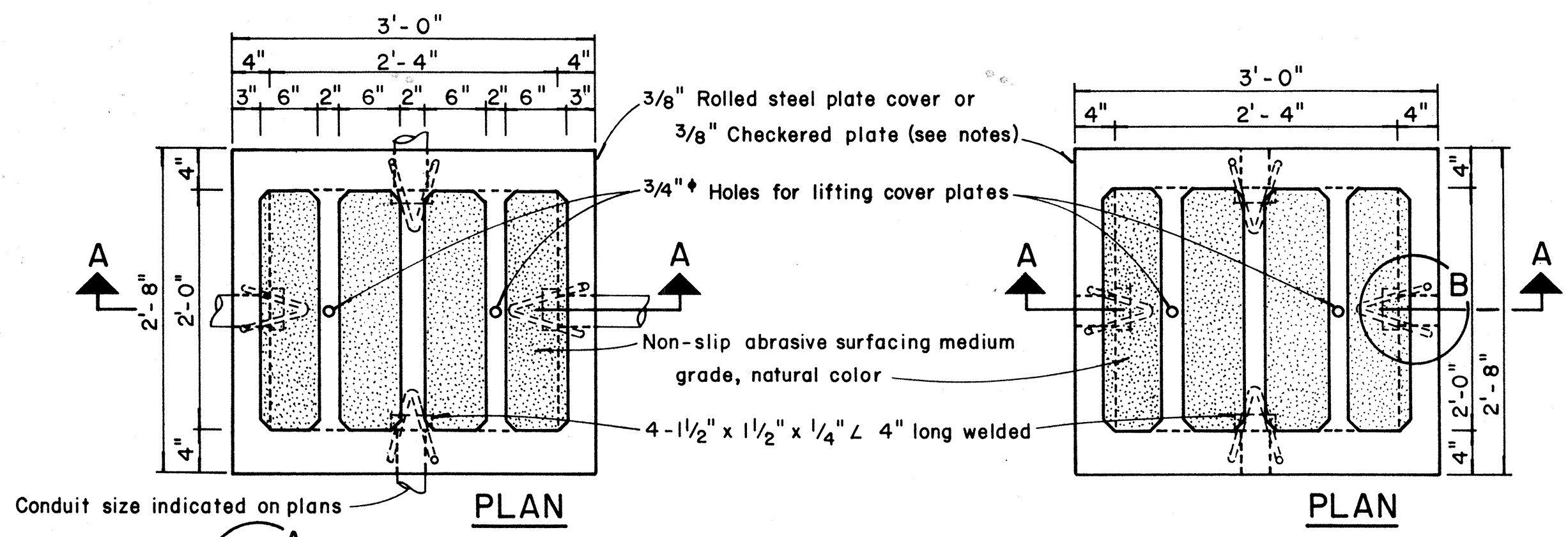
**CHECKERED STEEL PLATE COVER (435 T-B)**  
APPROX. WEIGHT 55 LBS.

APPROVED: *R. Man* 6-25-74  
Date  
Hawaiian Telephone Co., Ltd.  
Date  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SPECIAL PULLBOX**  
Scale: As Noted  
SHEET No. E-11 OF 12 SHEETS

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



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1 (71):14	1974	53	61

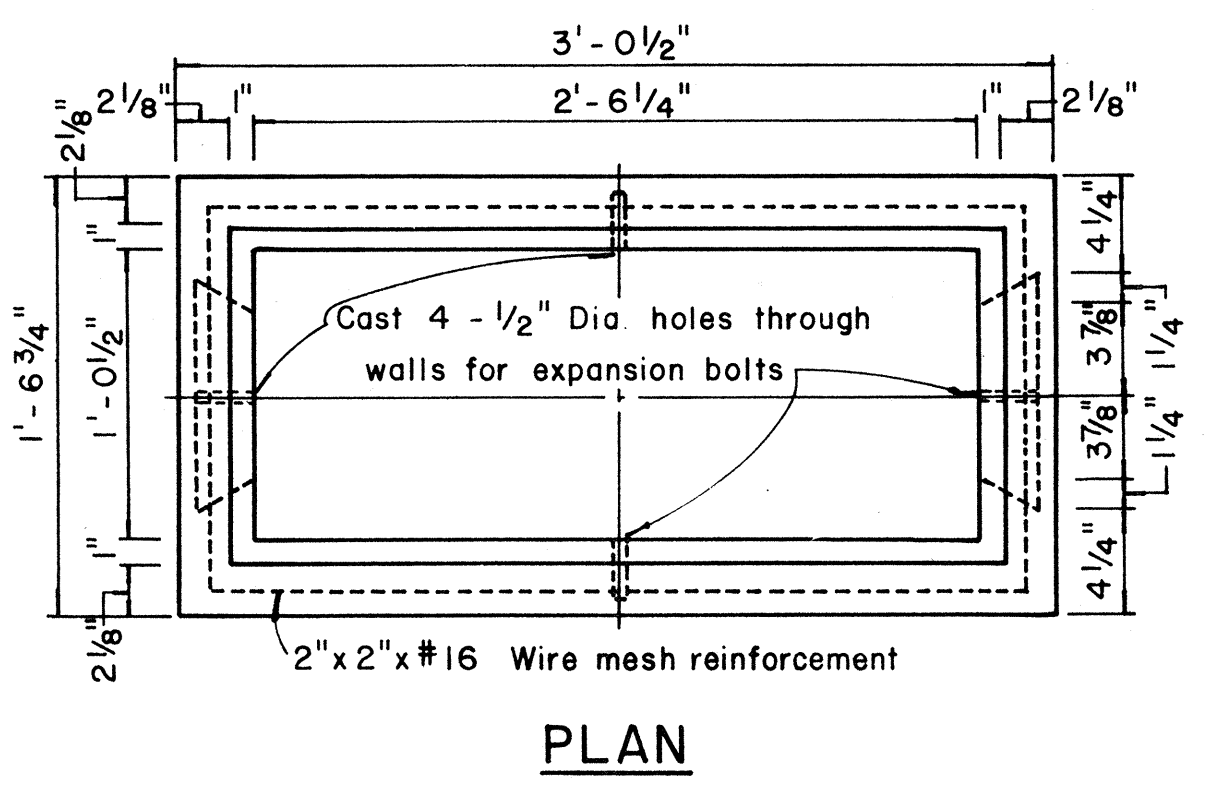


**TYPE "A" PULLBOX CAST-IN-PLACE**

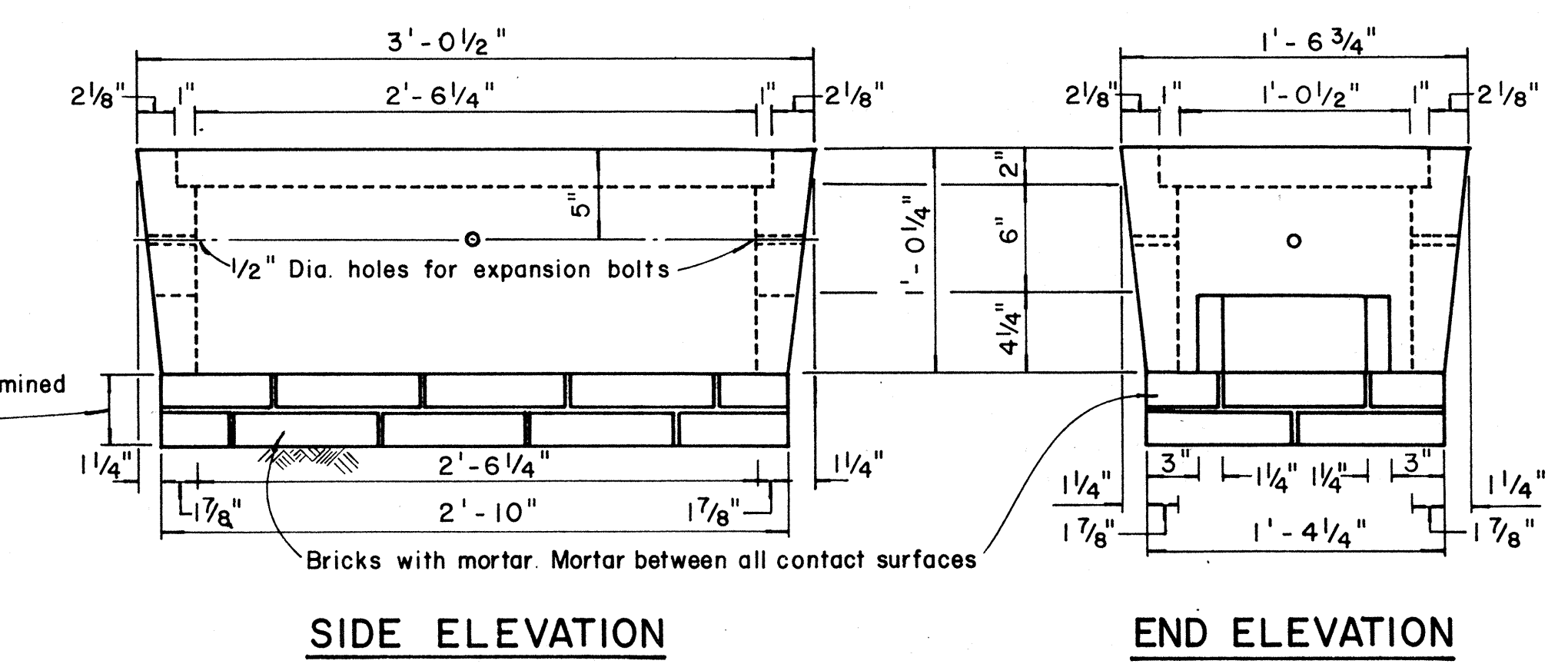
Scale: 1" = 1'-0"

**TYPE "A" PULLBOX PRECAST**

Scale: 1" = 1'-0"



**PLAN**

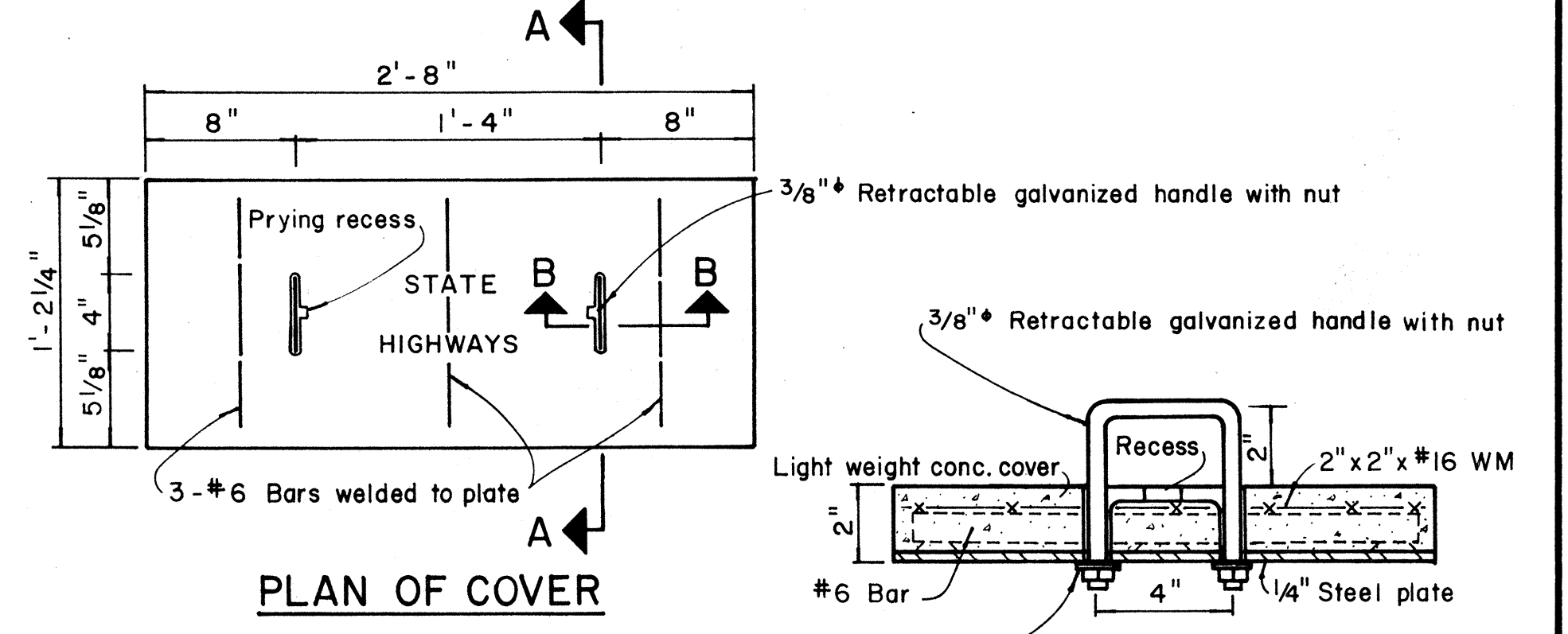


**SIDE ELEVATION**

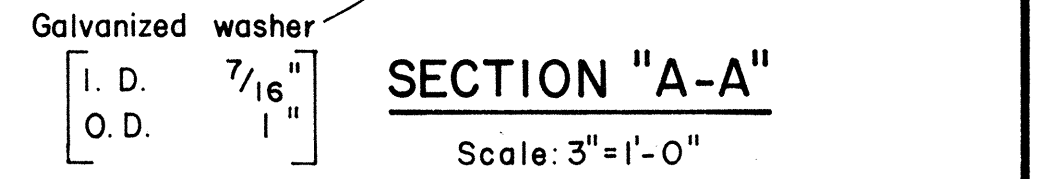
**END ELEVATION**

**TYPE "C" PULLBOX**

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

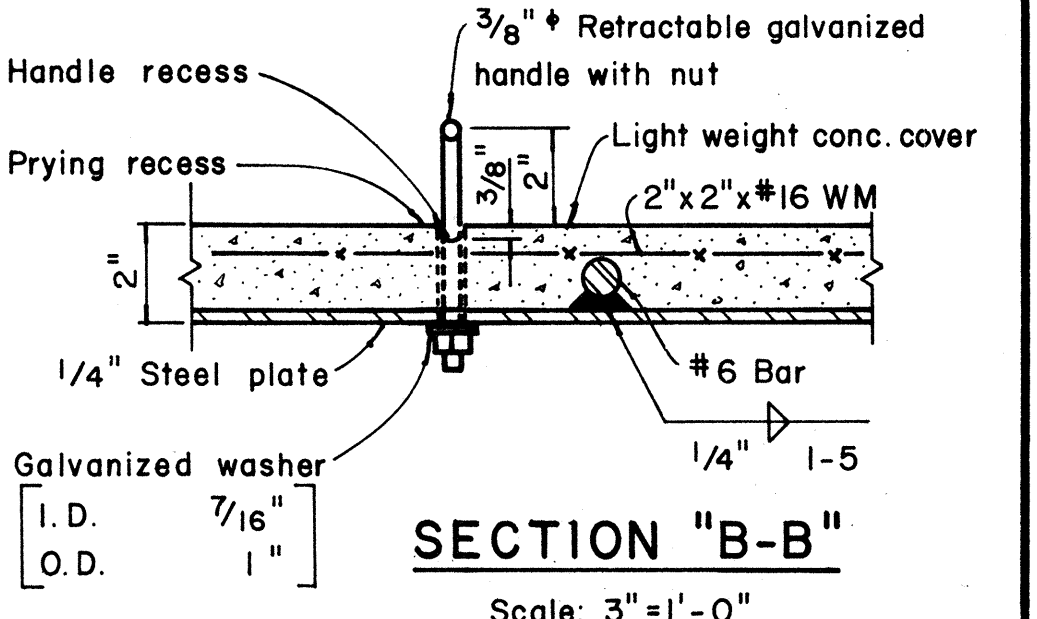


**PLAN OF COVER**



**SECTION "A-A"**

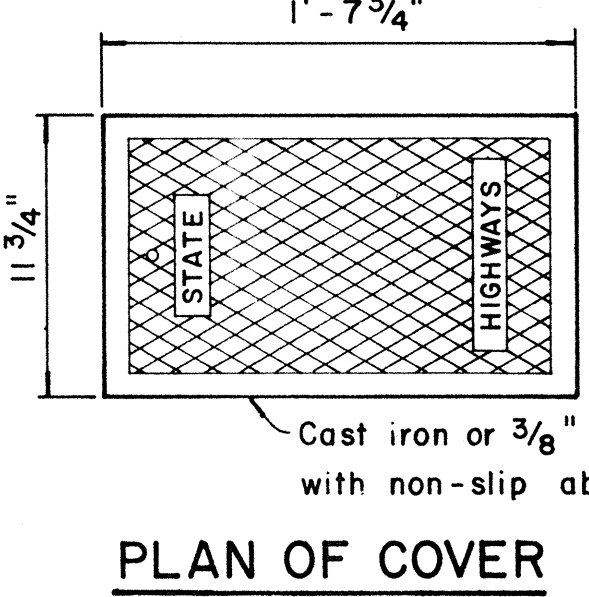
Scale: 3" = 1'-0"



**SECTION "B-B"**

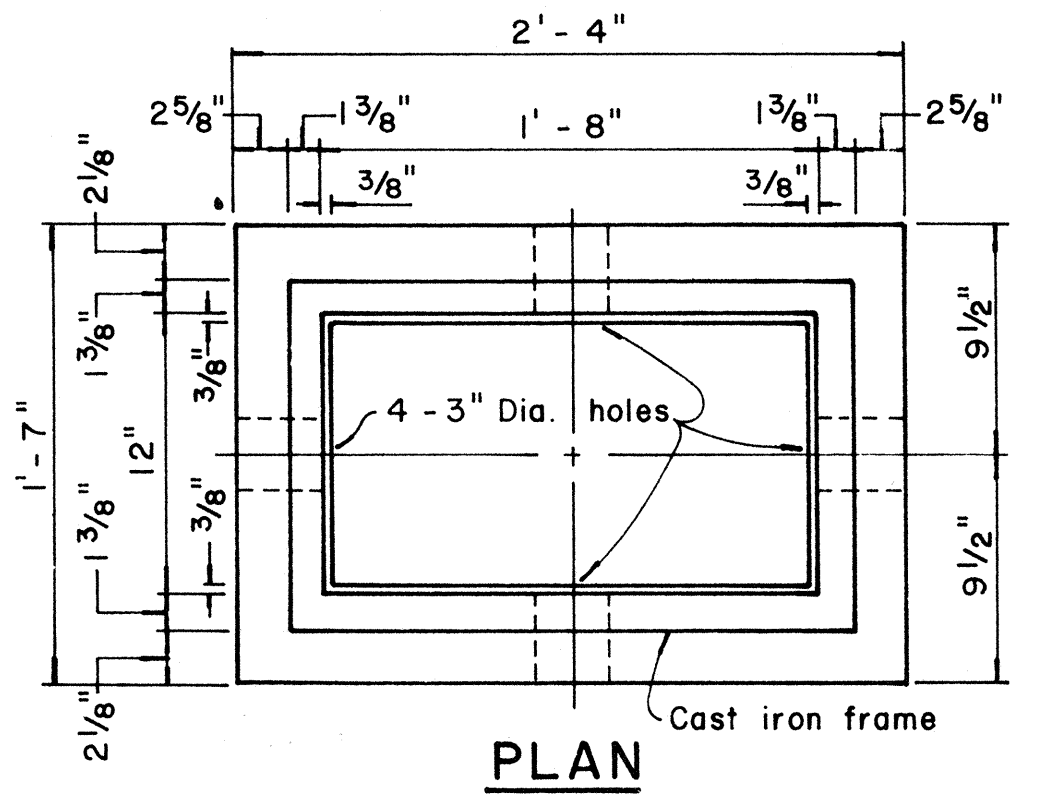
Scale: 3" = 1'-0"

**NOTE:**  
Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush.



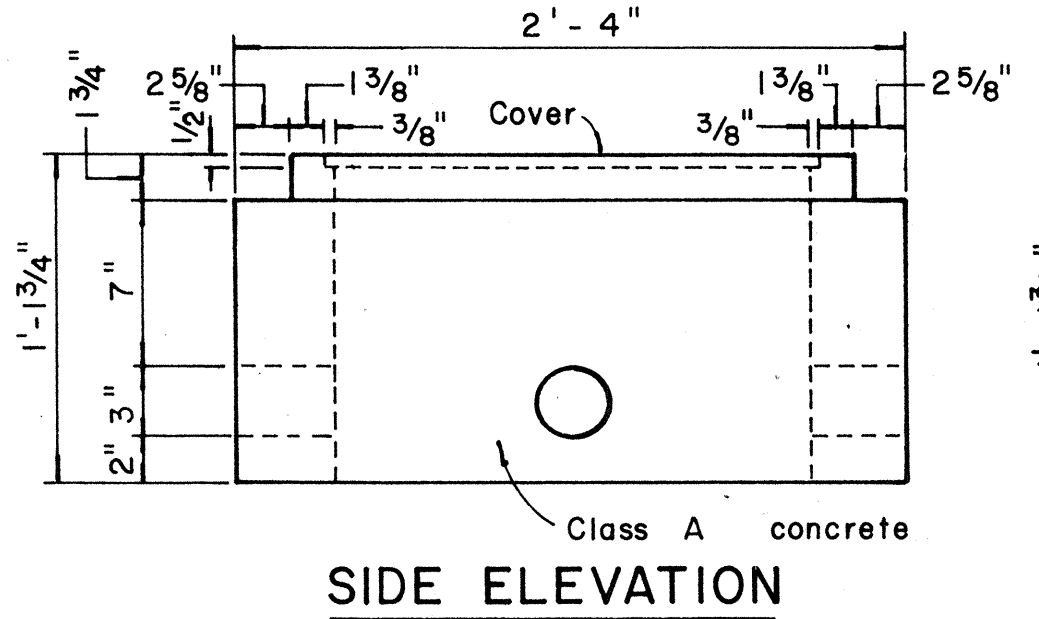
**PLAN OF COVER**

Cast iron or 3/8" rolled steel plate with non-slip abrasive surfacing



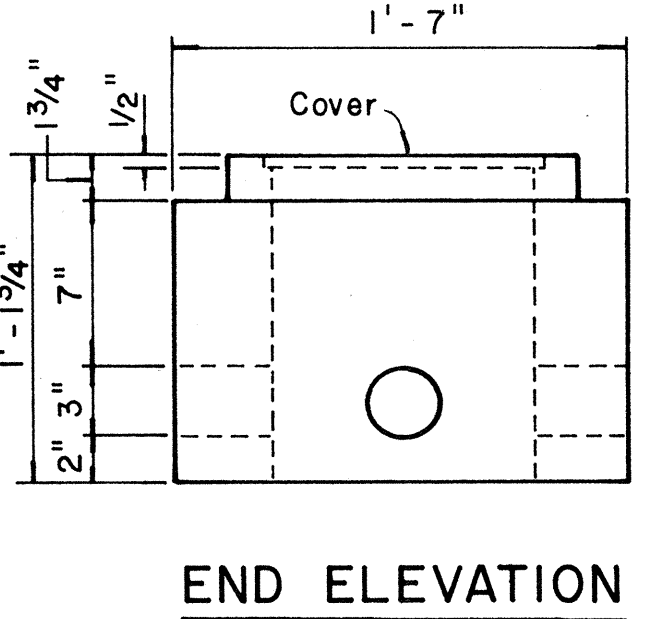
**PLAN**

Cast iron frame



**SIDE ELEVATION**

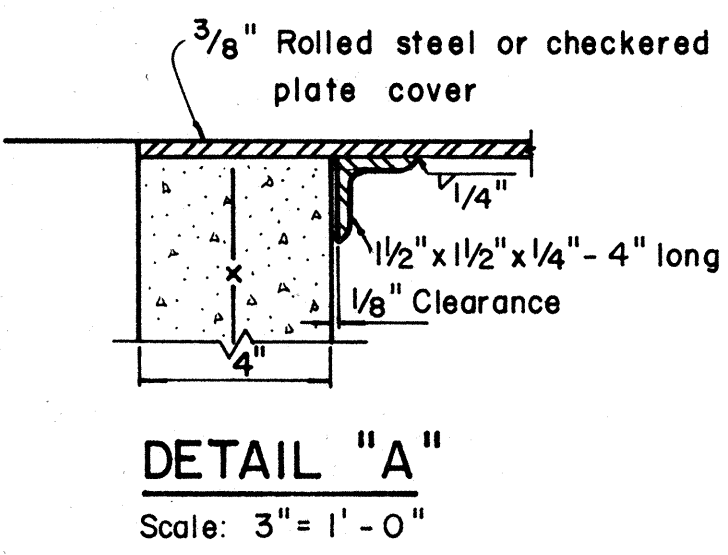
Class A concrete



**END ELEVATION**

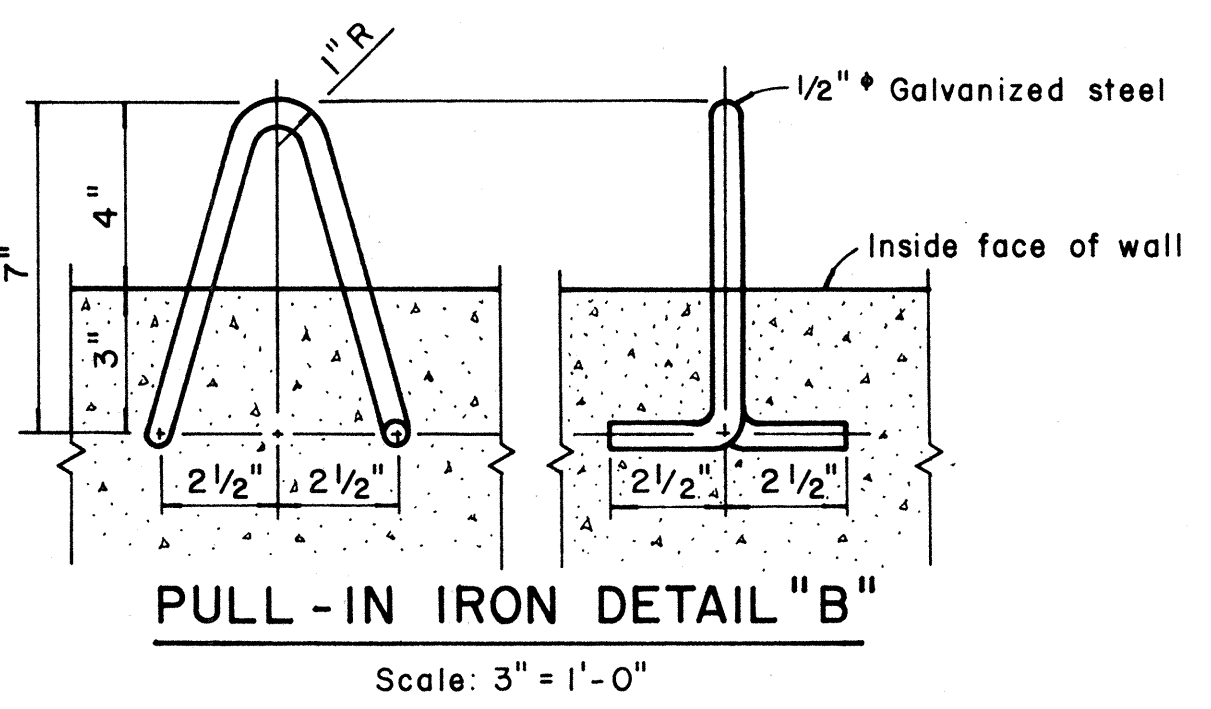
**TYPE "B" PULLBOX**

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



**DETAIL "A"**

Scale: 3" = 1'-0"



**PULL-IN IRON DETAIL "B"**

Scale: 3" = 1'-0"

**NOTES: (FOR TYPE "A" PULLBOX)**

- 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
- 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
- Pull irons shall be placed opposite each conduit slot.
- Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
- Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NO.	_____

APPROVAL RECOMMENDED:  
*Eishi Tanaka* 12/2/69  
TRAFFIC ENGINEER DATE

APPROVED:  
*[Signature]* 12-30-69  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**PULLBOXES**

Scale as noted Date

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