

CONSTRUCTION NOTES

- Minimum depths of ducts encased in concrete from finished grade to top of duct encasement.
 - In exist. or proposed pavement area - 24"
 - In exist. or proposed sidewalk area - 18"
- Minimum depths of ducts directly buried from finished grade to top of duct:
 - In exist. or proposed sidewalk area - 18"
- Concrete for duct encasements shall be Class B-1 concrete.
- For duct line construction standards see H.E. Co. Drawing U-18585A.
- Existing Poles to be removed by others.
- All new poles and anchors belong to H.E. unless otherwise noted in the Plans.
- Bracing onto existing pull boxes, manholes and cutting and plugging existing duct lines shall be incidental to the various items in the proposal.

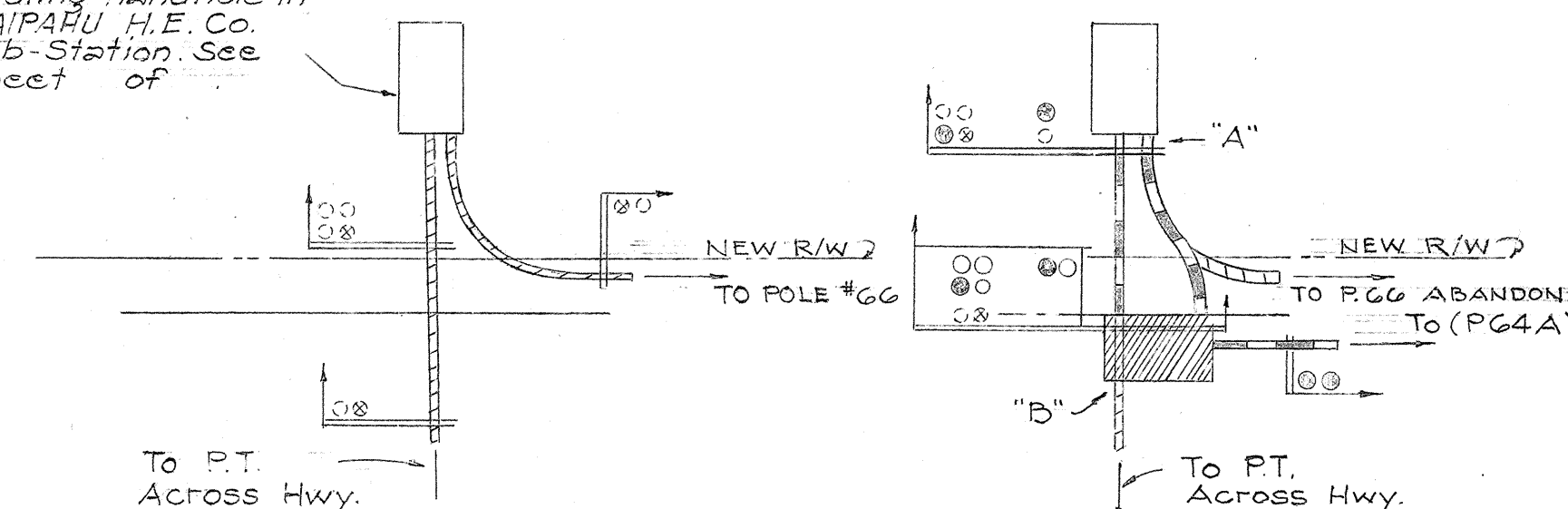
LEGEND

— E — E — E —	New Direct Burial Ducts
— TC —	New Hawaiian Telephone Co. Ducts encased in Conc.
— EC —	New Hawaiian Electric Co. Ducts encased in Conc.
— TC —	Existing Hawaiian Telephone Co. Ducts encased in Conc.
— EC —	Existing Hawaiian Electric Co. Ducts encased in Conc.
●	New Hawaiian Electric Co. Poles
TR X	Existing Hawaiian Telephone Poles
EP X	Existing Hawaiian Electric Co. Poles

H.E. CO. CONSTRUCTION NOTES

- The Contractor shall complete excavation for each manhole, vault, handhole or service box and 30 lineal feet of trench excavation for all duct lines extending from the sides of manhole, vault, handhole or service box before constructing manhole, vault, handhole or service box.
- The Contractor shall maintain a minimum of 30 lineal feet completed trench excavation ahead of duct line concreting operations, except at duct line terminations.
- The Contractor shall not excavate for trenches and poles until the locations have been staked out by the State and checked by H.E. Co.
- The contractor shall notify The City and County of Honolulu, Street Lighting Division, 24 hours in advance of any work required to be done by the City. Trenches for Duct Lines shall not be backfilled until the City and County Street Lighting Division has installed their conduits (where called for).
- Where soft material is encountered while excavating for handholes, the Contractor shall excavate to a depth satisfactory to the Engineer, regardless of elevations shown on the plans. Excess excavation shall be built-up to the required grade with suitable material approved by the Engineer.
- Clean and remove all rubbish and debris from inside of forms and trenches before placing concrete. Place concrete only in the presence of the Engineer. NOTIFY THE ENGINEER 24 HOURS BEFORE PLACING ANY CONCRETE.
- The cables in existing H.E. Company underground facilities are "energized" insulated cables. These cables will remain in place during construction. When required, H.E. Company will erect temporary guards to protect the cables from external injury. Only H.E. Company's men are to handle the cables. The Contractor shall exercise due care and precautions to avoid disturbance of the "energized" insulated cables and temporary guards.
- Notify H.E. Co. five (5) days in advance of any work required to be done by them.

Existing handhole in WAIKAPU H.E. Co. Sub-Station. See Sheet of



EXISTING

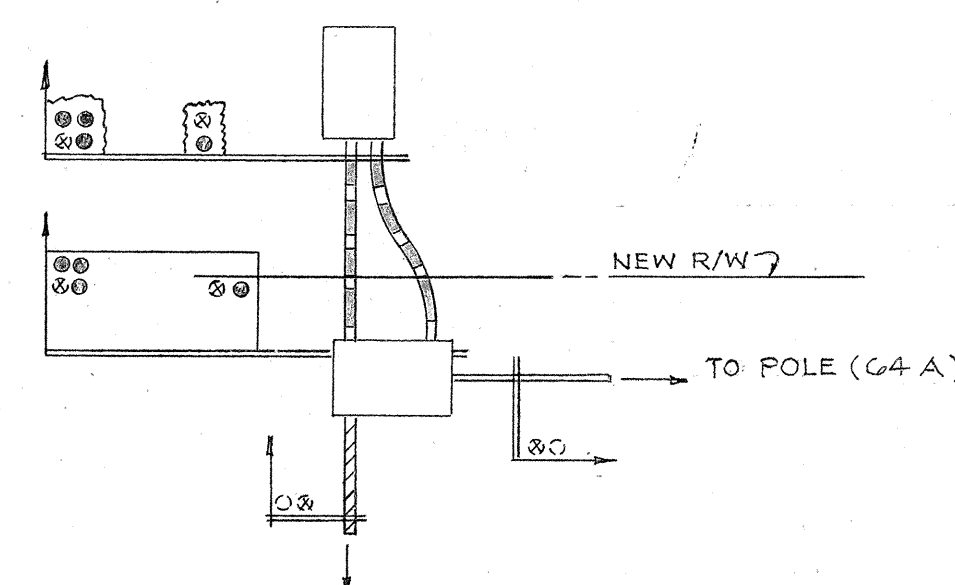
PHASE I

PHASE I

- Gen. Contractor to Construct handhole over existing duct line as shown.
- H.E. Co. to break into existing duct lines at "A" and prepare ducts for connections to proposed ducts.
- Gen. Contractor to install all ducts proposed for this phase & he is to support and protect from mechanical injury, all ducts installed on this phase.
- H.E. Co. to demolish ducts located in proposed handhole & prepare ducts at "B" for permanent connection to handhole.
- H.E. Co. to install and remove cables. See I-Line Diagram. (Sht. of)
- Contractor to proceed with construction of box culvert in this area.

PHASE II

- General Contractor is to Complete Construction of Ducts as shown.



PHASE II

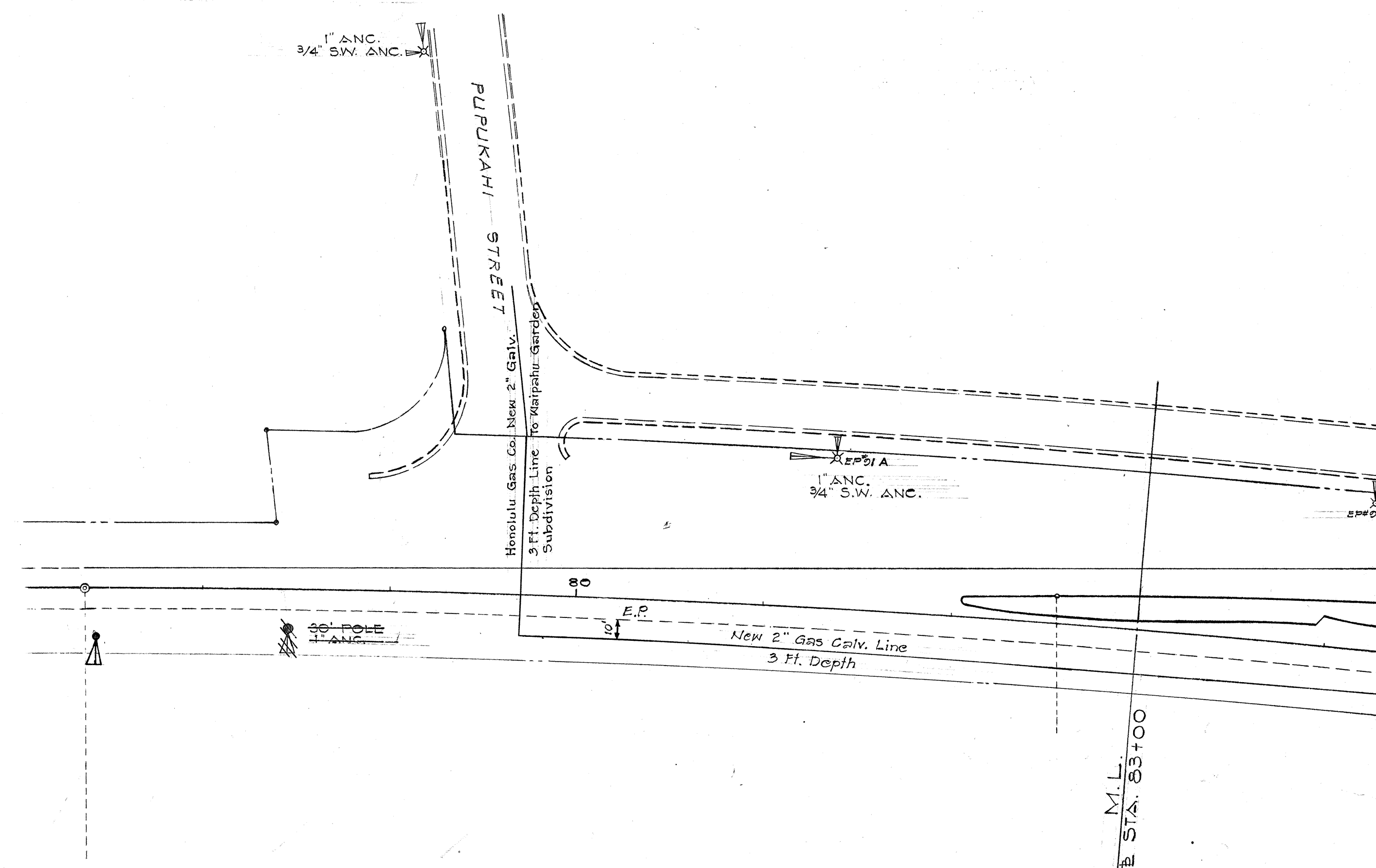
LEGEND FOR CONSTRUCTION PHASING

- EXISTING DUCTS (EMPTY)
- EXISTING DUCTS WITH CABLE
- DUCTS TO BE CONNECTED ON THIS PHASE
- PROPOSED DUCTS
- EXISTING HANDHOLE
- ▨ PROPOSED HANDHOLE

CONSTRUCTION PHASING DETAILS

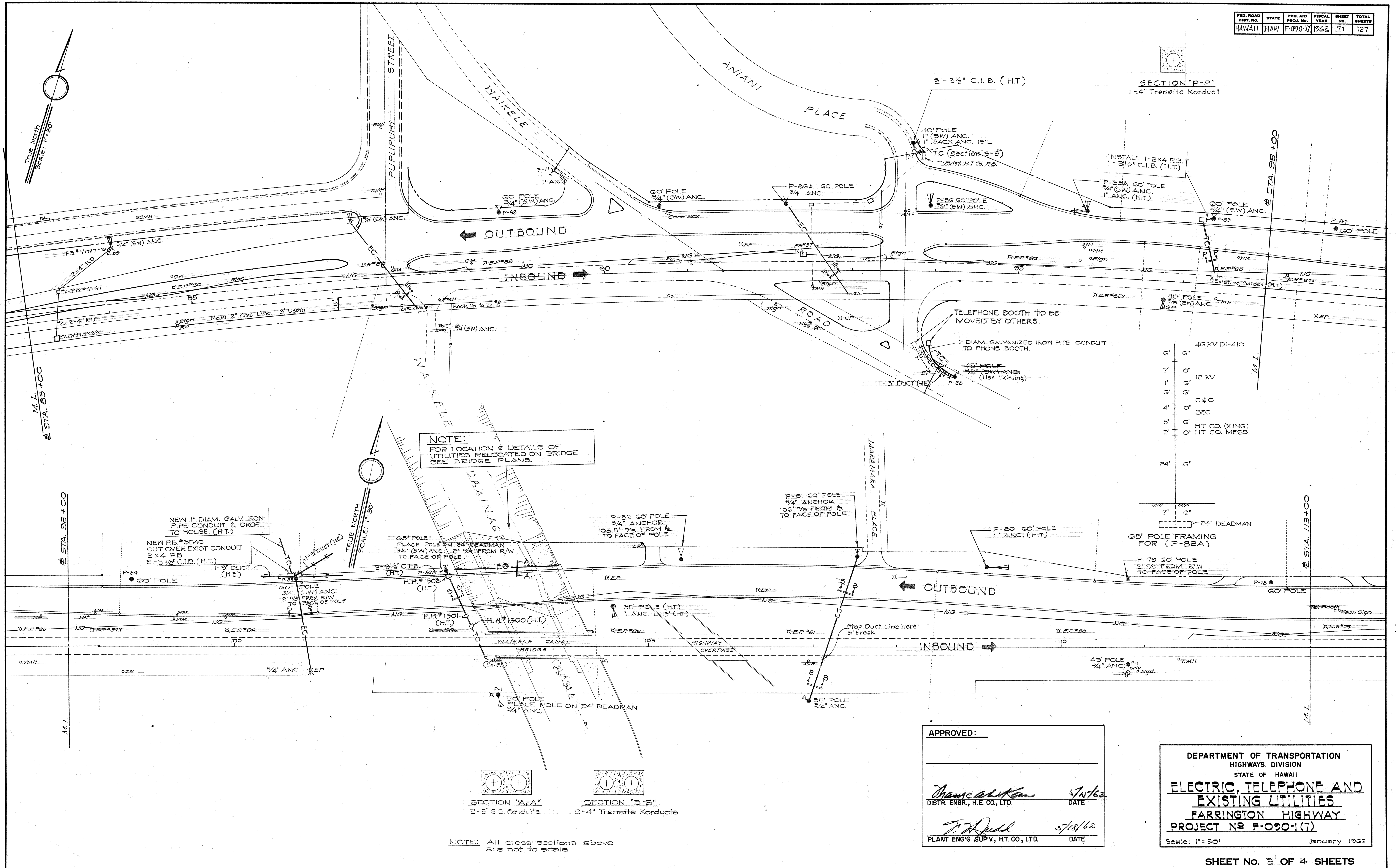
H.T.Co CONSTRUCTION NOTES

- The contractor shall plug the ends of all new ductlines when work is interrupted or completed. Duct plugs will be supplied by H.T. Co.

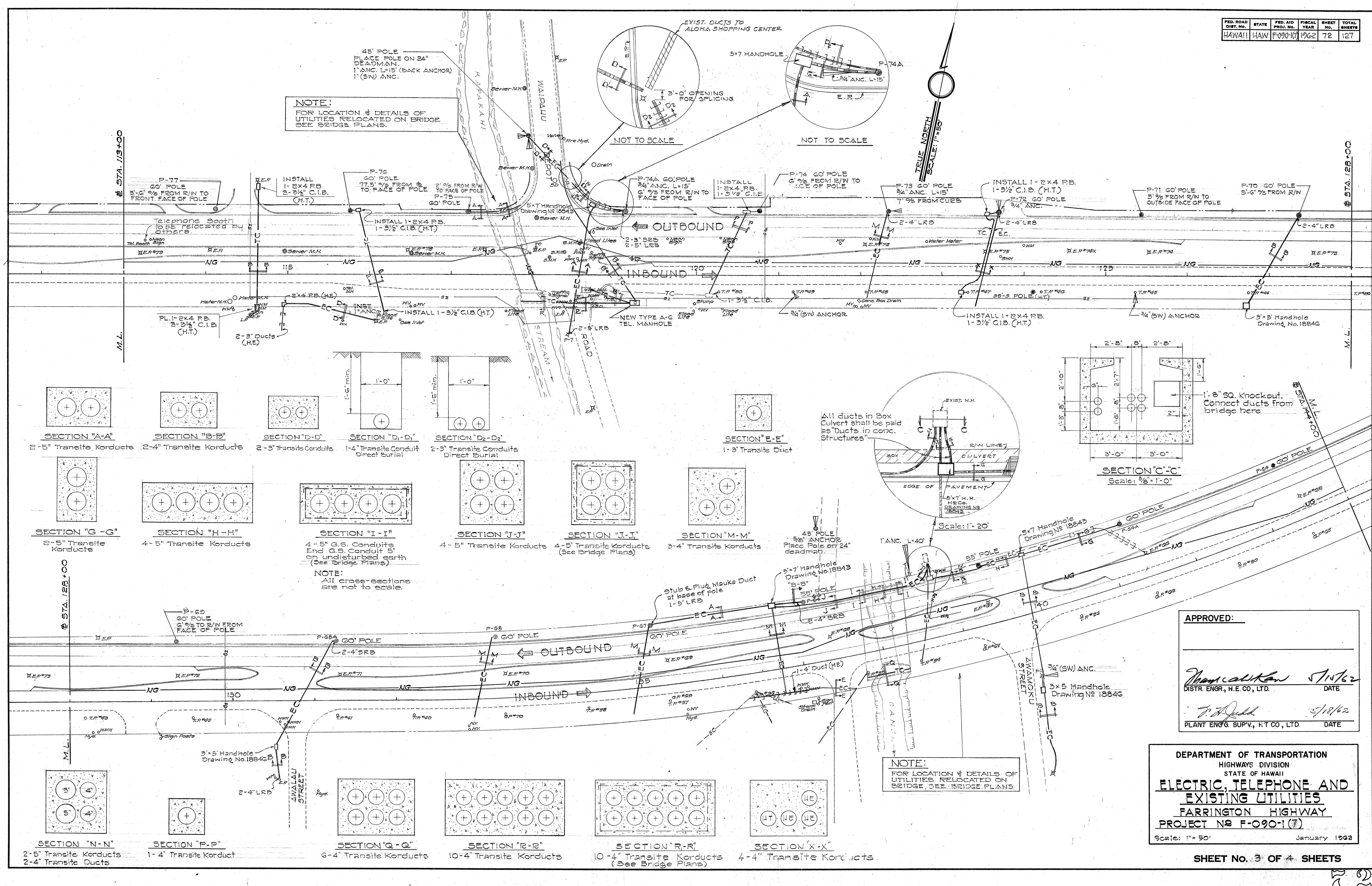


APPROVED:	
<i>Manic...</i>	5/14/62
DISTR. ENGR., H.E. CO., LTD.	DATE
<i>...</i>	5/14/62
PLANT ENGR'S. SUP'V., H.T. CO., LTD.	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRIC, TELEPHONE AND EXISTING UTILITIES	
FARRINGTON HIGHWAY PROJECT NO F-090-1(7)	
Scale: 1" = 50'	JANUARY 1962
SHEET No. 1 OF 4 SHEETS	



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



APPROVED:

Shamcaikan 5/1/62
DISTR. ENGR., H.E. CO., LTD. DATE

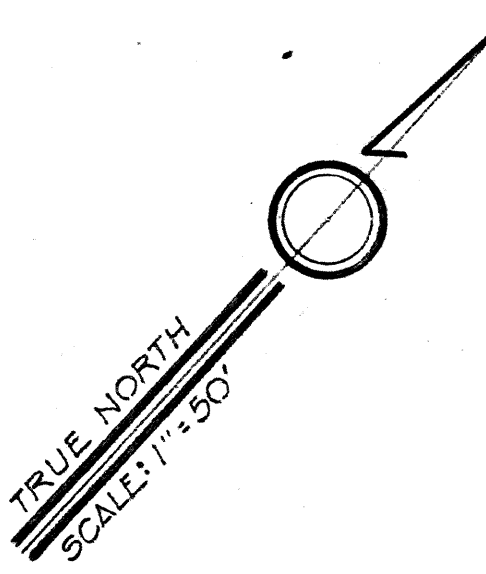
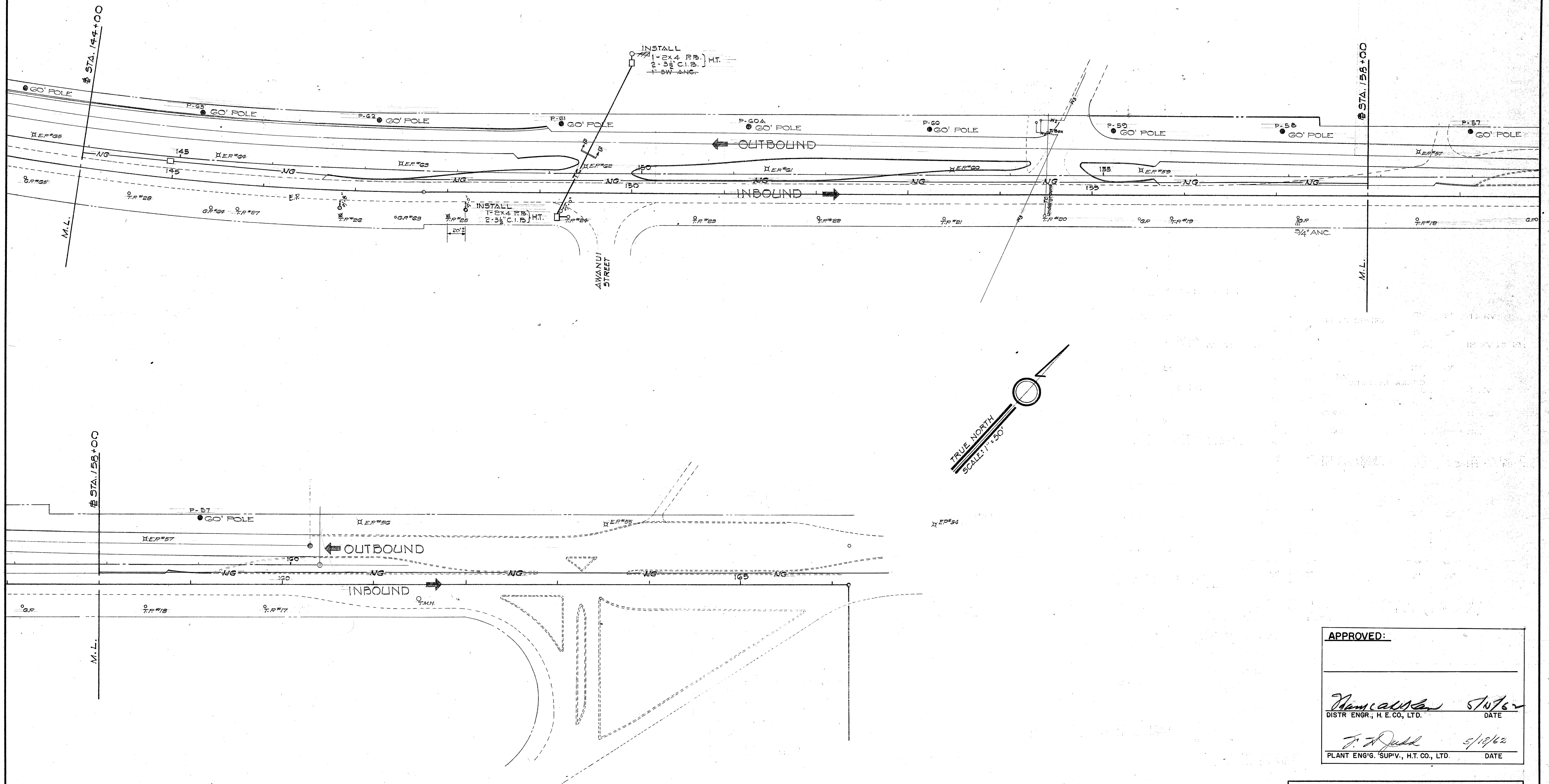
T.A. Dell 5/18/62
PLANT ENGR. SUPV., H.T. CO., LTD. DATE

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STATE OF HAWAII

ELECTRIC, TELEPHONE AND EXISTING UTILITIES
FARRINGTON HIGHWAY
PROJECT NO. F-090-1(7)

Scale: 1" = 50' January 1962

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	F-090-1(7)	1962	73	127

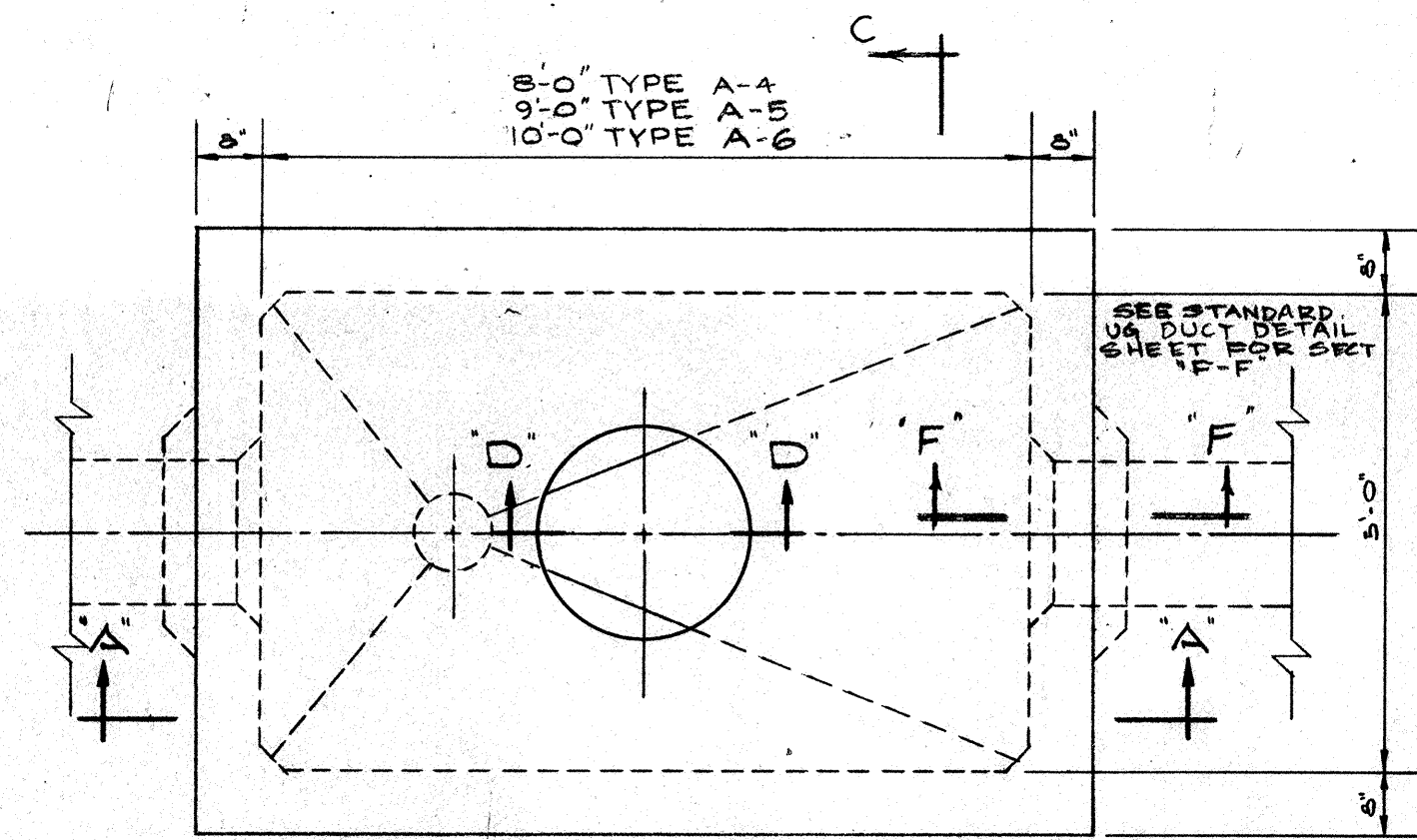


ORIGINAL PLAN	DATE
NOTED BY	
QUANTITIES CHECKED BY	
CHECKED BY	

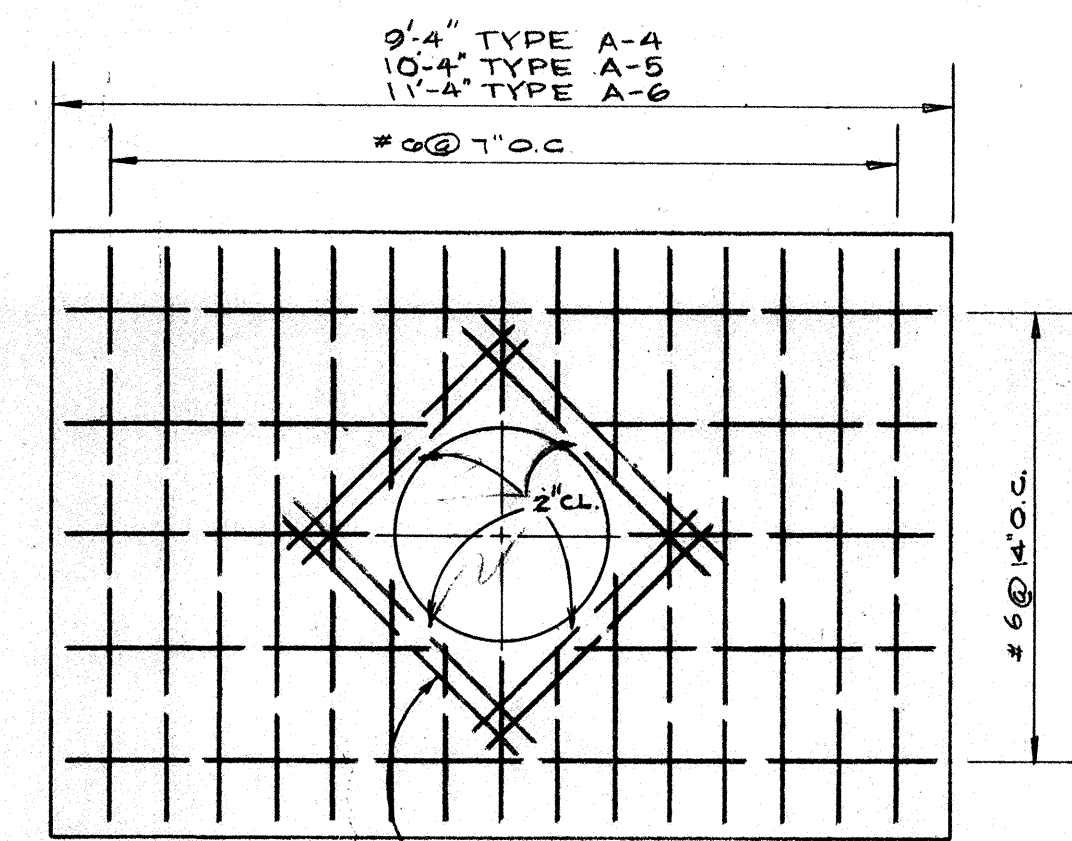
APPROVED:	
<i>Hannan</i>	5/18/62
DISTR. ENGR., H. E. CO., LTD.	DATE
<i>J. D. Dill</i>	5/18/62
PLANT ENGR'G. SUPV., H.T. CO., LTD.	DATE

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STATE OF HAWAII
**ELECTRIC, TELEPHONE AND
EXISTING UTILITIES**
FARRINGTON HIGHWAY
PROJECT NO F-090-1(7)
Scale: 1"=50' January 1962

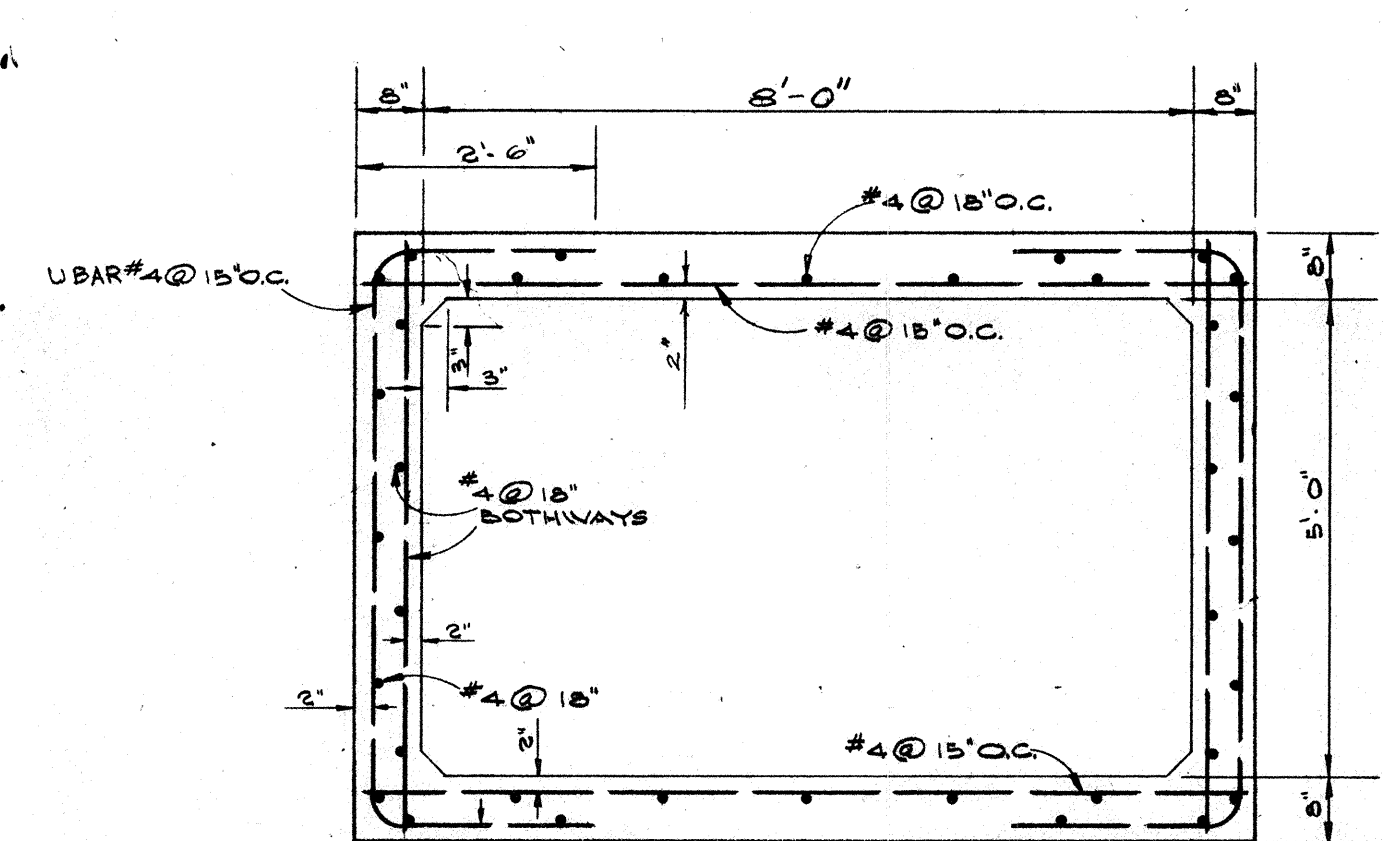
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAU.	F-090-1(7)	1962	74	127



PLAN - M.H. TYPE 'A'
FOR ROADWAY AREAS
SCALE: 1/2" = 1'-0"



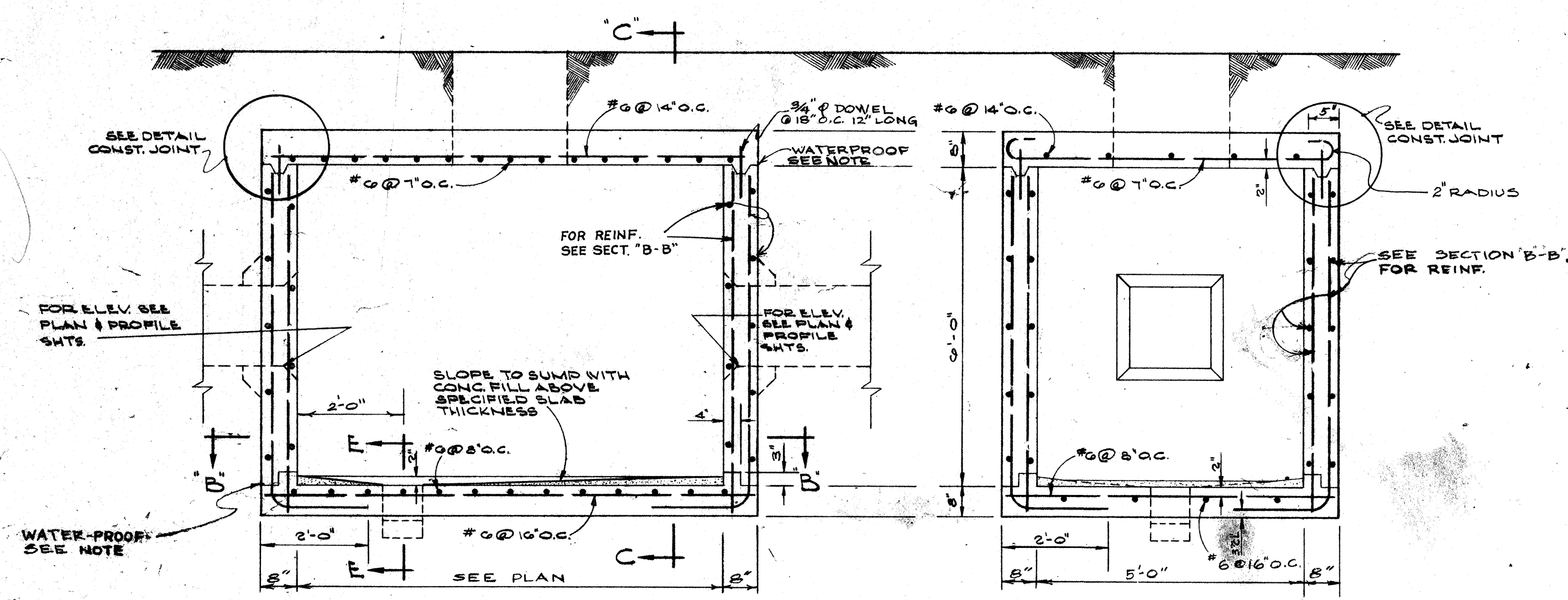
ROOF SLAB REINF. PLAN
SCALE: 1/2" = 1'-0"



SECTION B-B TYPE A-4
SCALE: 1/2" = 1'-0"

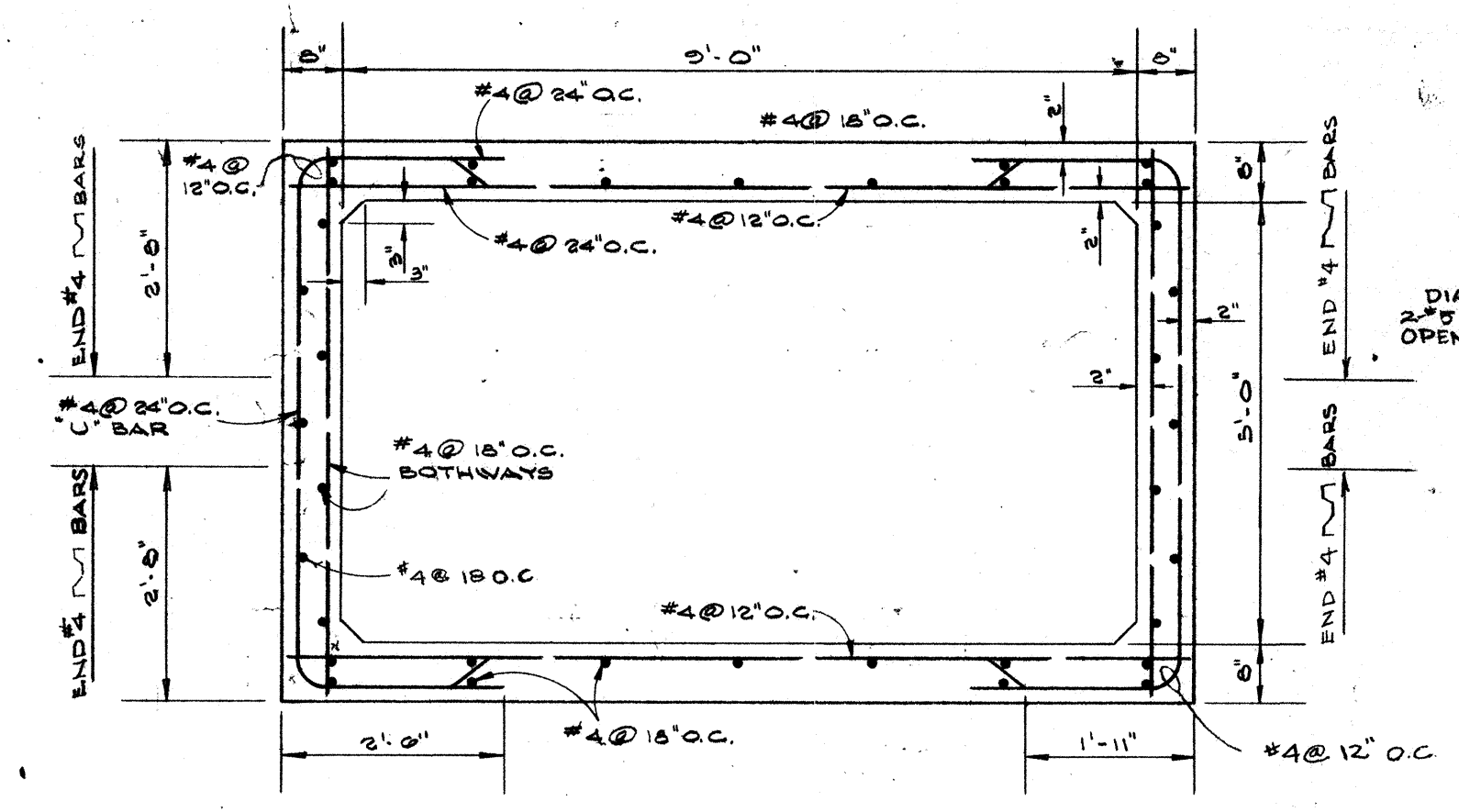
NOTE:

1. ALL CONSTRUCTION JOINTS SHALL BE WATERPROOFED WITH TWO APPLICATIONS OF THORO SEAL OR EQUAL (Incidental to Class 'A-1' Conc.)

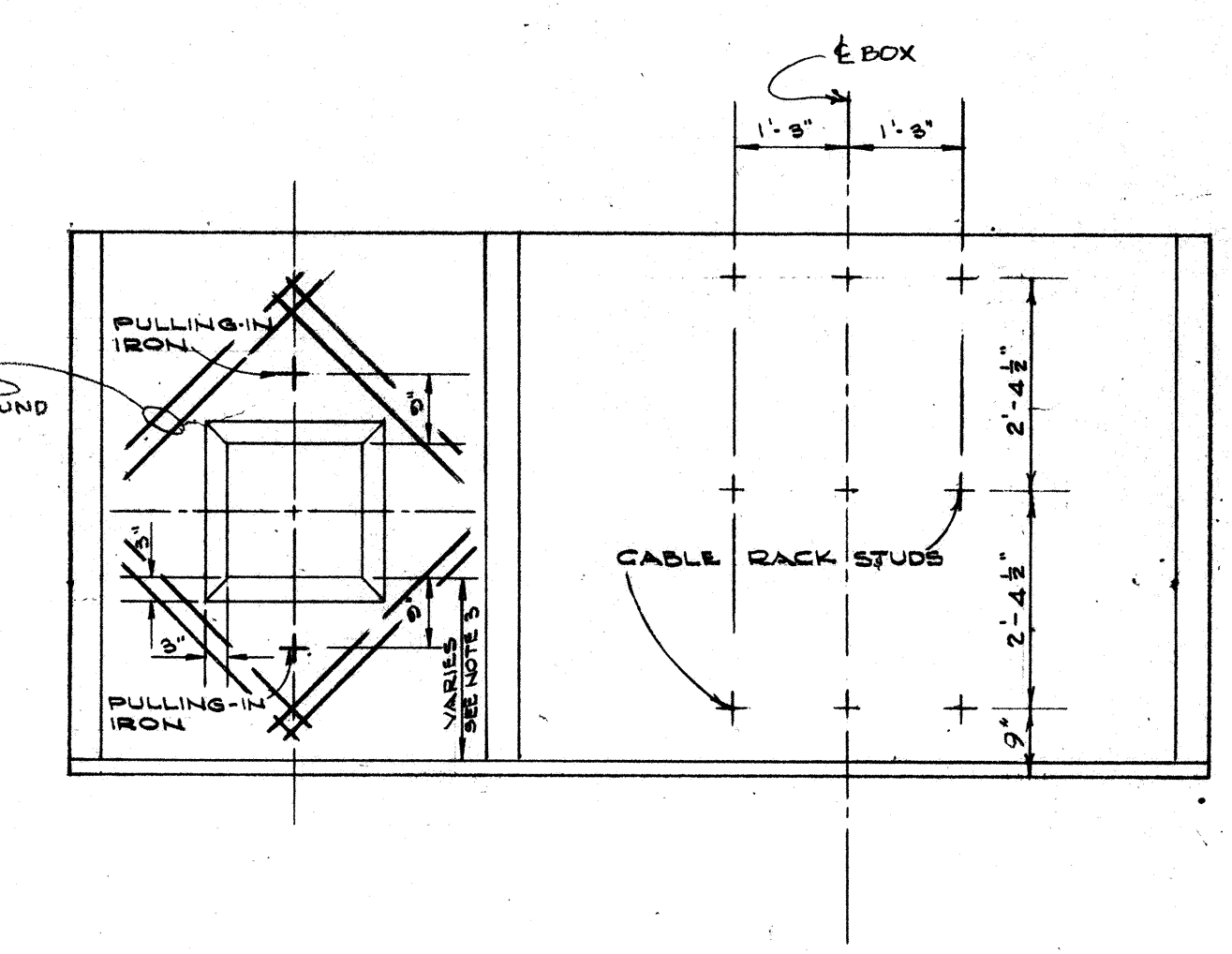


SECTION A-A
SCALE: 1/2" = 1'-0"

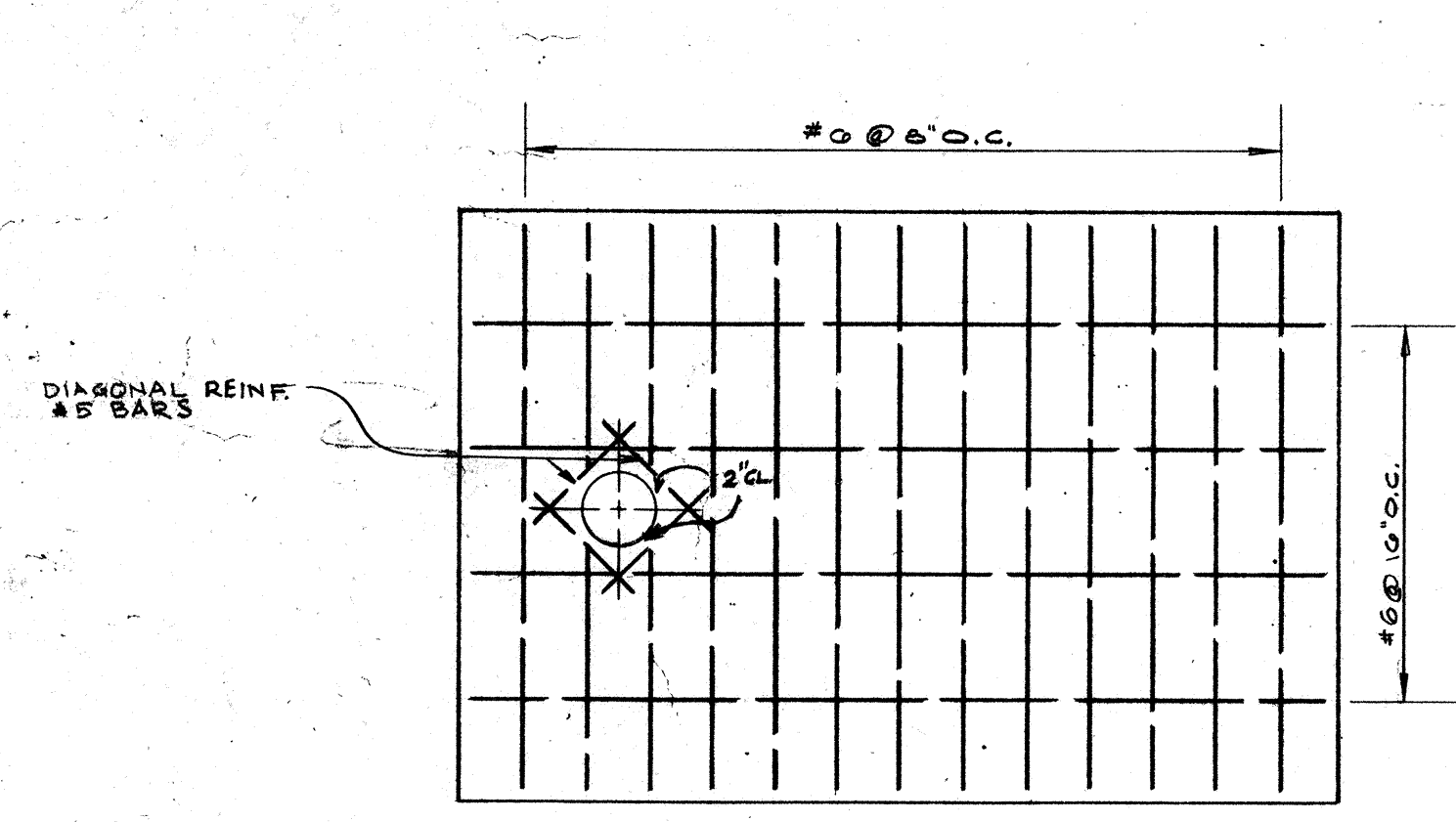
SECTION C-C
SCALE: 1/2" = 1'-0"



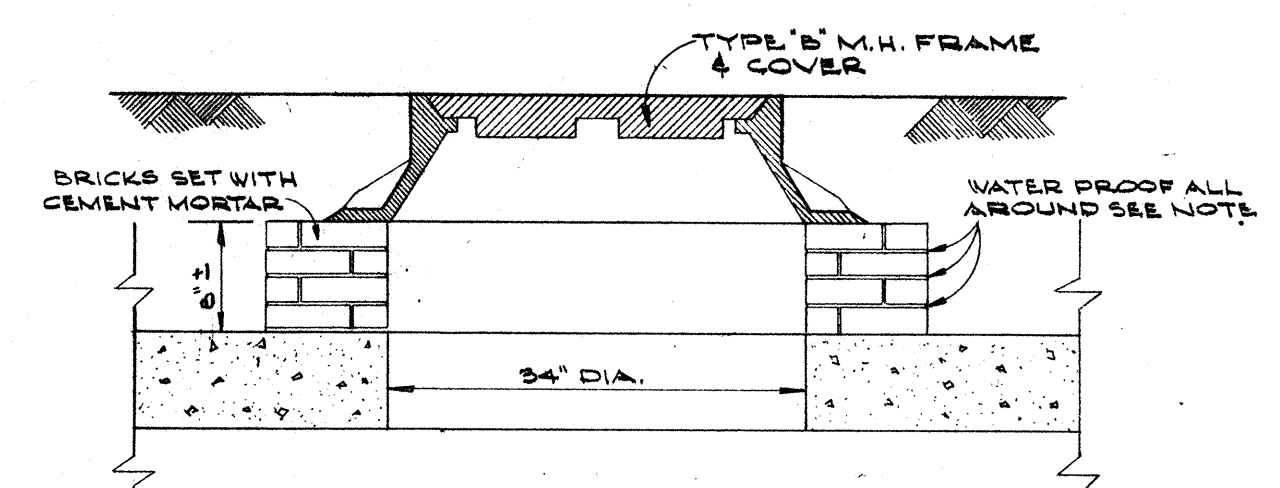
SECTION B-B TYPE A-5
SCALE: 1/2" = 1'-0"



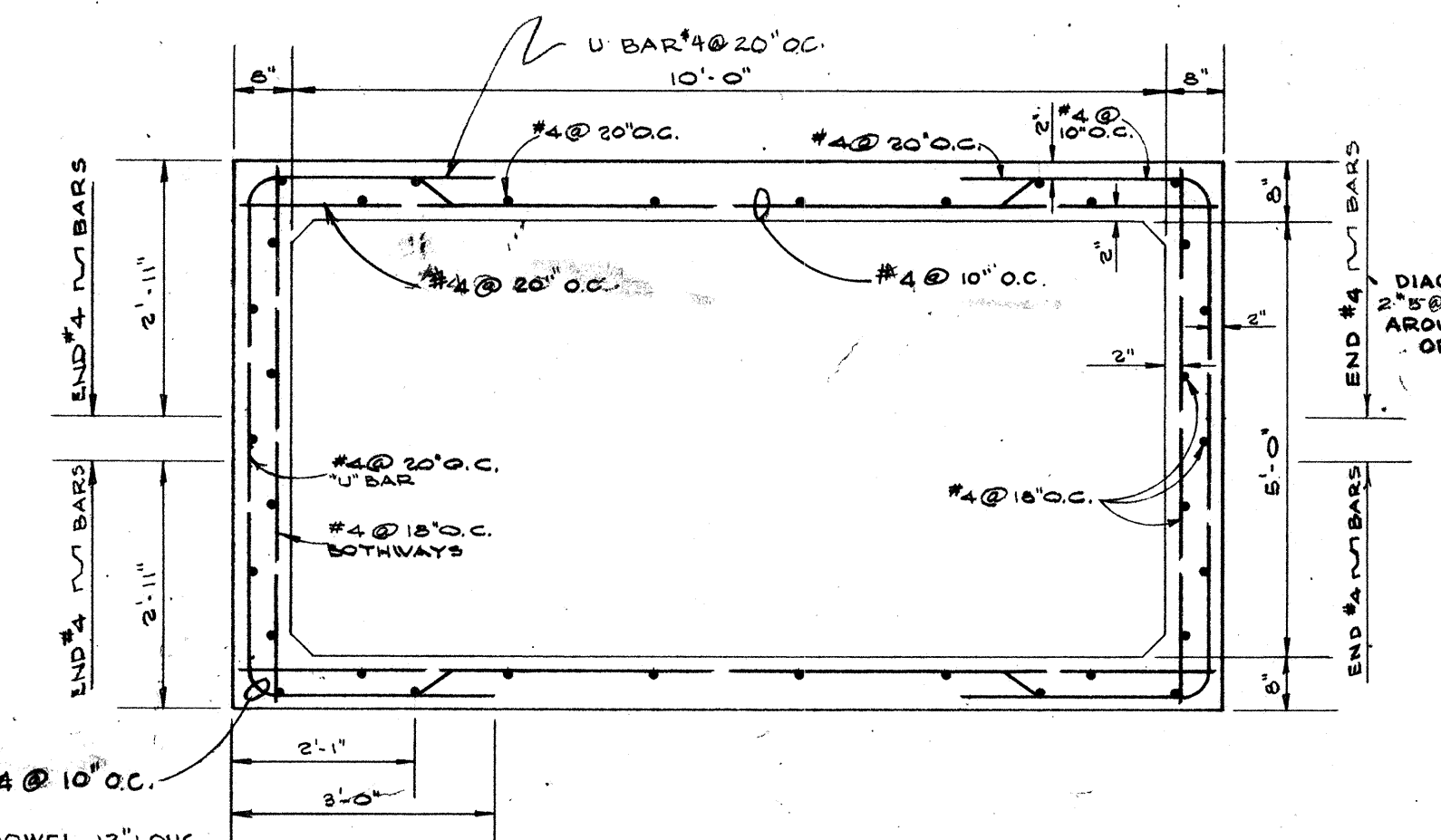
ELEV. OF INSIDE WALLS - TYPE A-4
(OPPOSITE FACES SIMILAR)
SCALE: 1/2" = 1'-0"



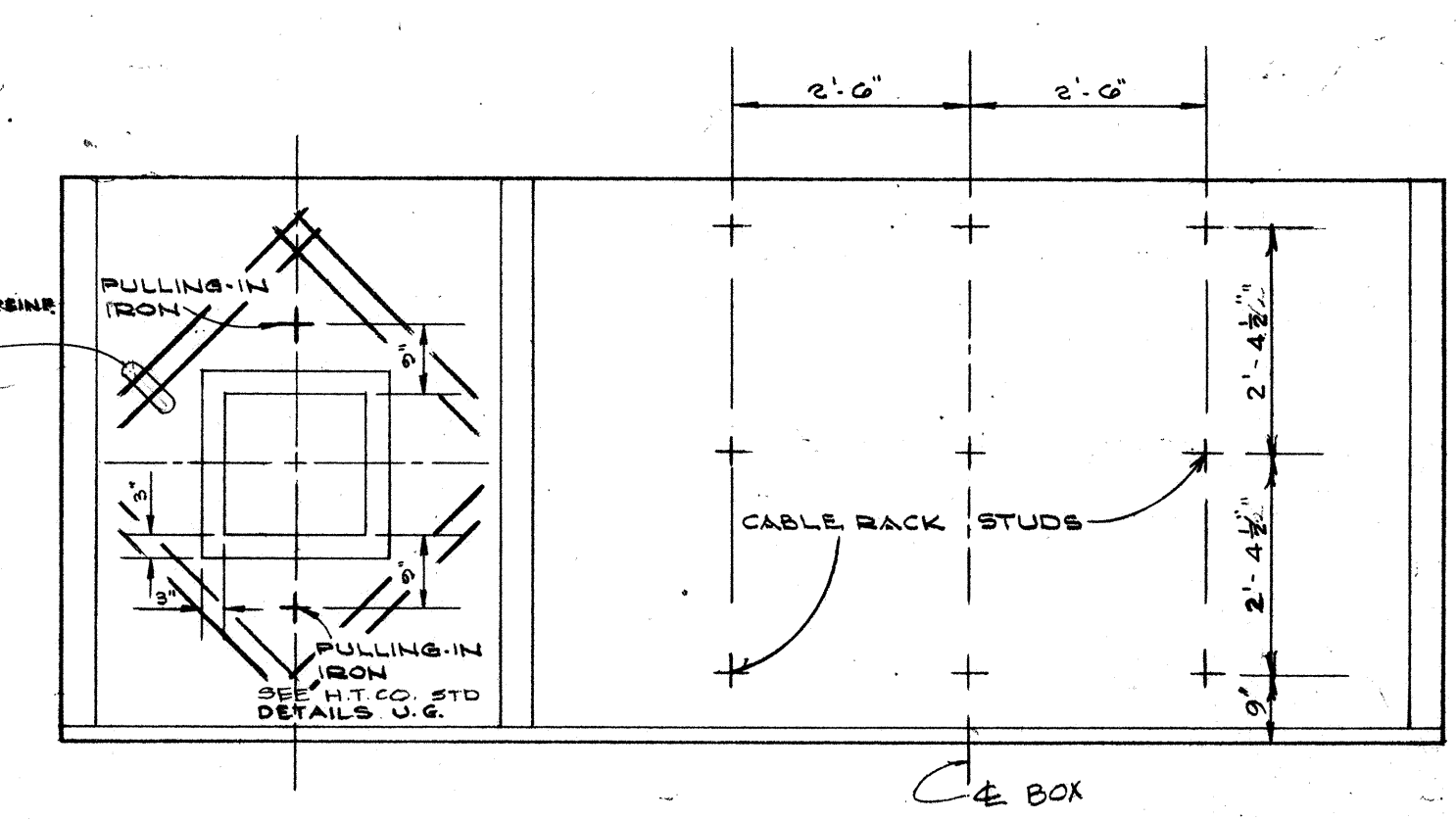
FLOOR SLAB REINF. PLAN
SCALE: 1/2" = 1'-0"



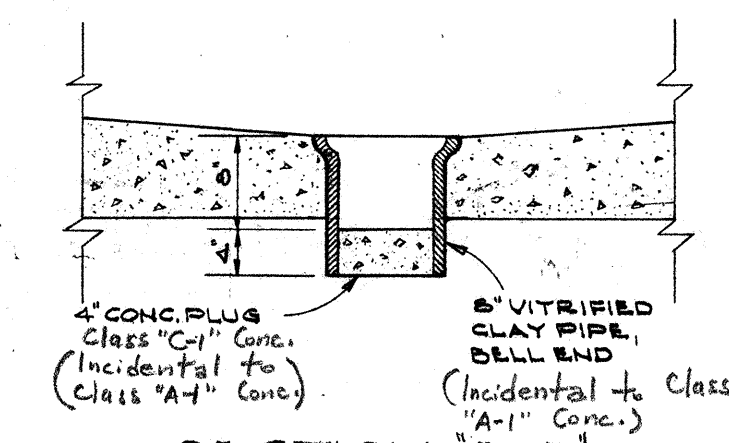
SECTION D-D
M.H. COVER DETAIL
SCALE: 1/2" = 1'-0"



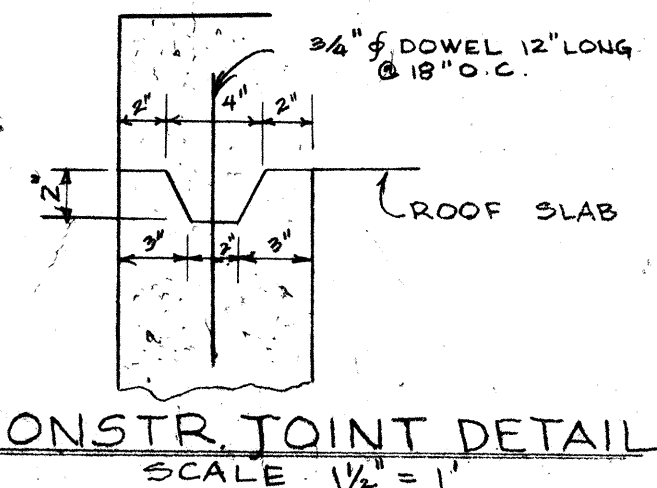
SECTION B-B TYPE A-6
SCALE: 1/2" = 1'-0"



ELEVATION OF INSIDE WALLS TYPES A-5, A-6
SCALE: 1/2" = 1'-0"



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

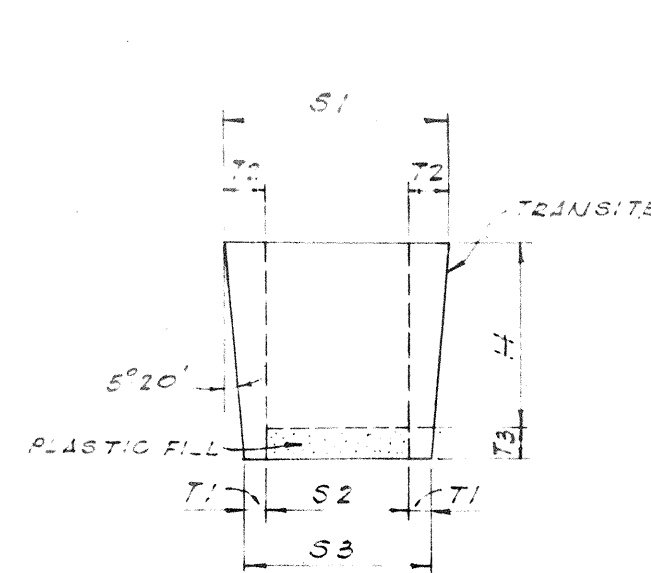


CONSTR. JOINT DETAIL
SCALE: 1 1/2" = 1'-0"

SHEET NO. OF SHEETS

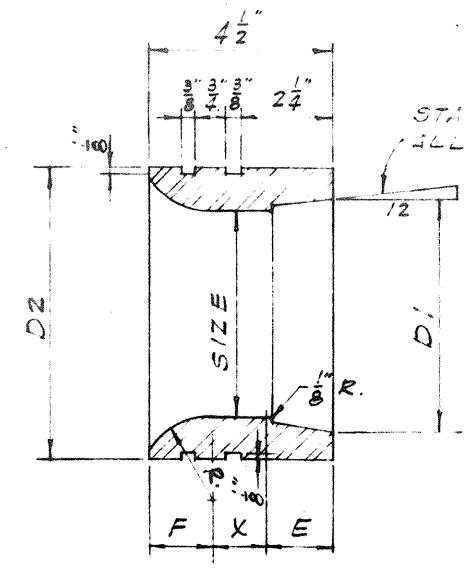
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY FARRINGTON HIGHWAY PROJECT NO. F-090-1(7)		TYPE 'A' MANHOLES FOR ROADWAY AREAS	
FILE	DR. 1	ENG. 1	DATE
ASSIGNMENT	CHK. 2	APP'D. 2	SHEET 74 OF 127
CONSTRUCTION	INDEX		
MAINTENANCE			
TOTAL PRINTS	HAWAIIAN TELEPHONE COMPANY	HAWAII	

SPEED SHADE



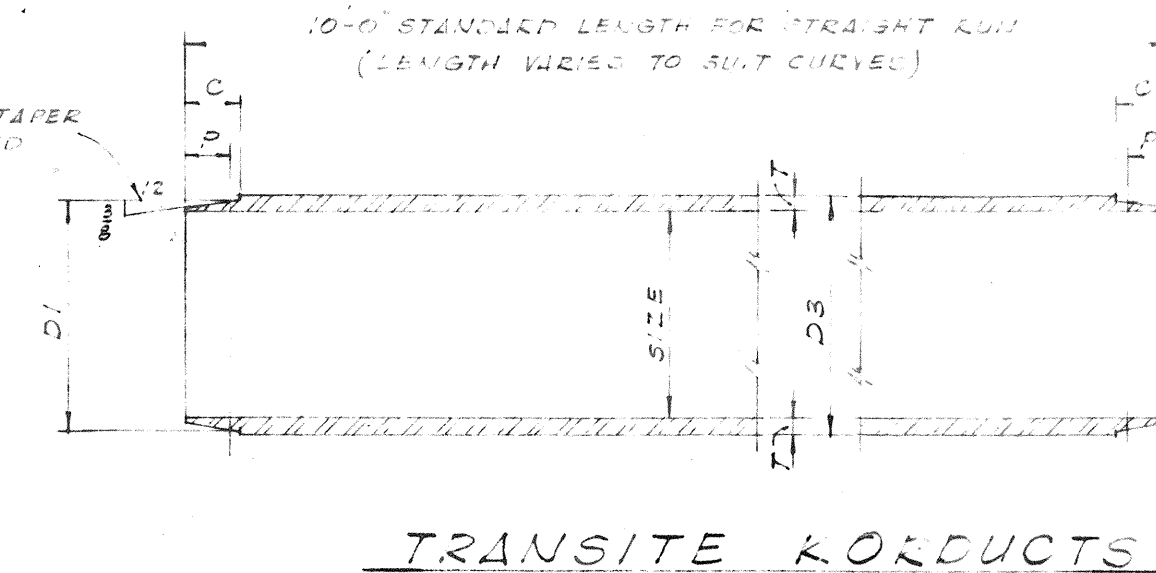
PLUGS FOR TRANSITE KORDUCTS
3"=1'-0"

SIZE	H	S1	S2	S3	T1	T2	T3
3"	4"	3 1/8"	2"	2 5/8"	5 1/8"	1 1/8"	3"
4"	4 1/2"	4 1/8"	2 1/4"	3 3/8"	5 3/8"	1 3/8"	3 1/4"
4 1/2"	4 1/2"	4 5/8"	3"	4 5/8"	5 5/8"	1 5/8"	3 1/2"
5"	4 1/2"	5 1/8"	3 1/4"	4 5/8"	5 5/8"	1 5/8"	3 3/4"



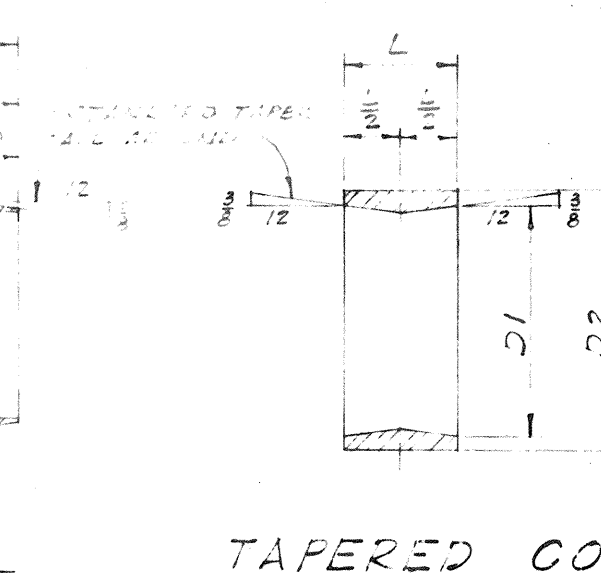
JUNIOR END BELLS
3"=1'-0"

SIZE	D1	D2	F	K	E	R
3"	3 3/8"	4 1/8"	1 1/8"	1 3/8"	1 1/8"	1 1/8"
4"	4 1/8"	5 1/8"	1 1/8"	1 3/8"	1 1/8"	2"
4 1/2"	4 5/8"	6 1/8"	1 1/8"	1 3/8"	1 1/8"	2"
5"	5 1/8"	7"	1 1/8"	1 3/8"	1 1/8"	2"



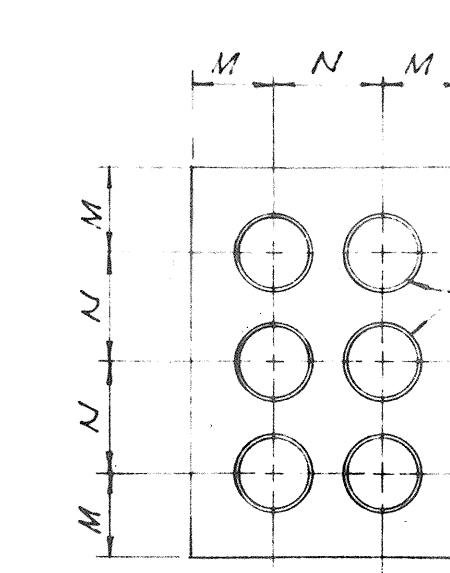
TRANSITE KORDUCTS
3"=1'-0"

SIZE	D1	D3	C	P	T
3"	3 3/8"	3 3/8"	1 1/8"	1"	1 1/8"
4"	4 1/8"	4 1/8"	1 1/8"	1"	1 1/8"
4 1/2"	4 5/8"	5 1/8"	1 1/8"	1"	1 1/8"
5"	5 1/8"	5 1/8"	1 1/8"	1"	1 1/8"



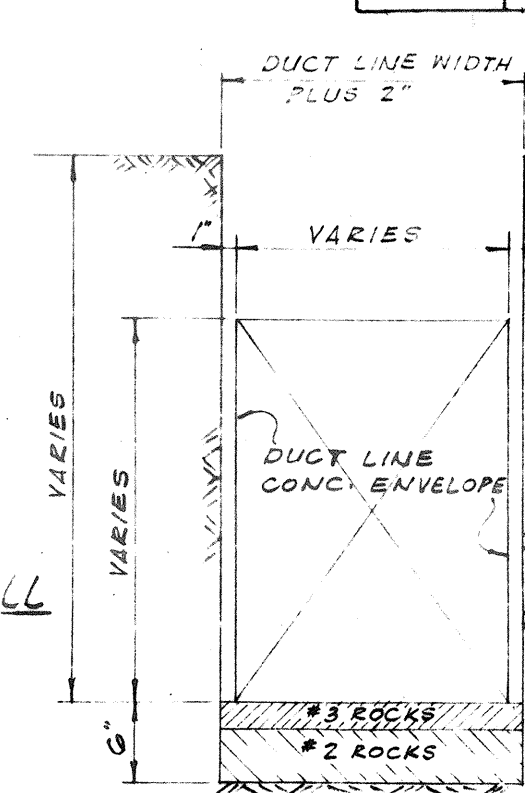
TAPERED COUPLINGS
3"=1'-0"

SIZE	D1	D2	L
3"	3 3/8"	4 1/8"	2 1/2"
4"	4 1/8"	5 1/8"	2 1/2"
4 1/2"	4 5/8"	5 5/8"	2 1/2"
5"	5 1/8"	6 1/8"	2 1/2"



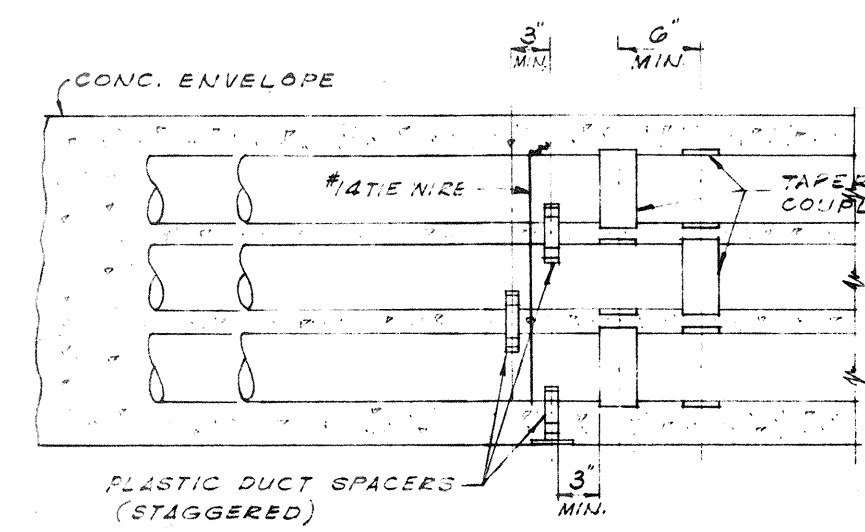
TYP. DUCT DET. @ MANHOLE WALL
NO SCALE

SIZE	M	N
3"	5"	6"
4"	5 1/2"	7"
4 1/2"	5 3/4"	7 1/2"
5"	6"	8"

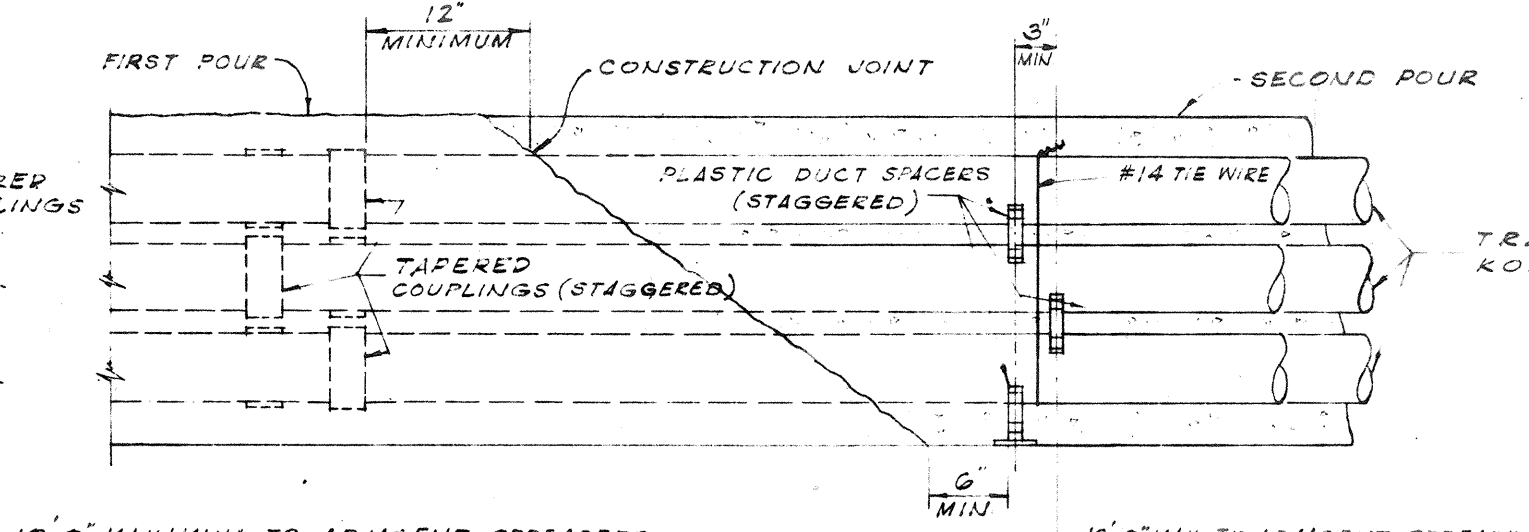


TYPICAL EXCAVATION DETAIL
NO SCALE

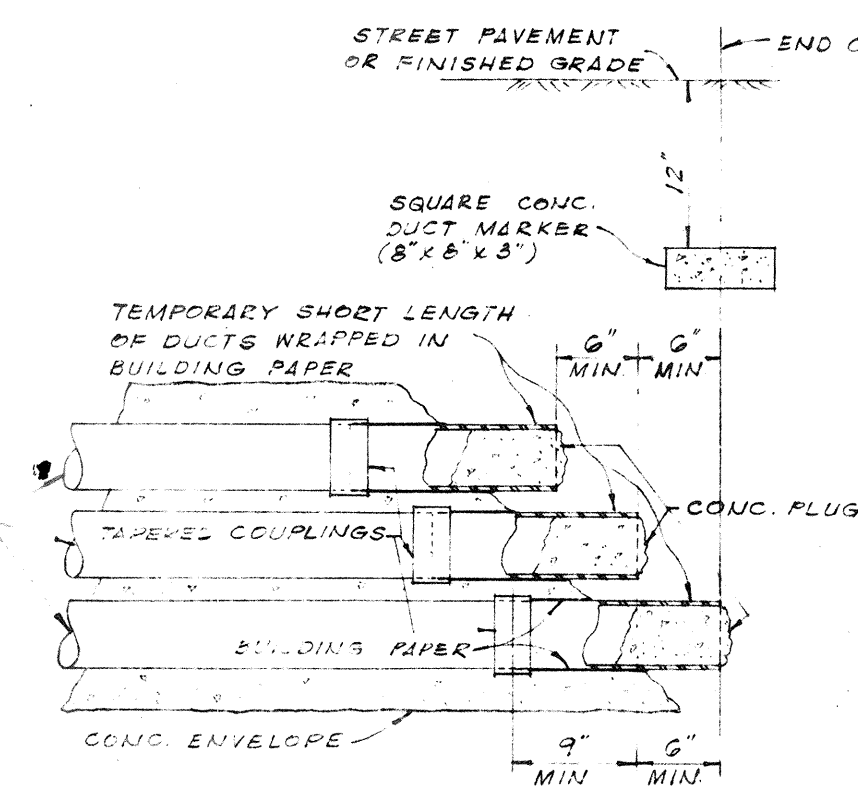
NOTES:
1. SIZE OF CONC. ENVELOPE AND DEPTH OF EXCAVATION TO BE DETERMINED BY PROJECT ENGINEER.
2. WIDEN TRENCH EXCAVATION WHEN FORMS ARE USED.
3. ROCK FOUNDATION REQUIRED ONLY WHEN WATER IS ENCOUNTERED. (SEE DRAINAGE DETAIL.)



TYPICAL DUCT ENVELOPE ELEVATION
(6 WAY DUCT LINE SHOWN)
1"=1'-0"



TYPICAL STUB OUT DETAIL
1"=1'-0"

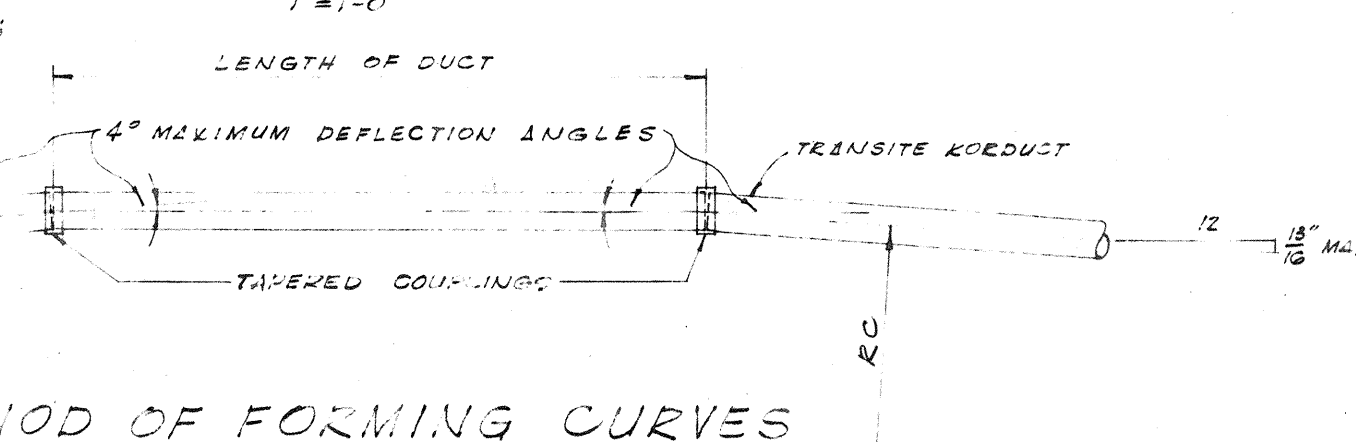


TYP. PLASTIC SPACERS
NO SCALE

SIZE	R	E	W	A	L
3"	1 1/8"	1 1/8"	3 1/8"	3 1/8"	5"
4"	1 3/8"	1 3/8"	3 3/8"	3 3/8"	6"
4 1/2"	1 5/8"	1 5/8"	3 5/8"	3 5/8"	6 1/2"
5"	2"	2"	4"	4"	7"

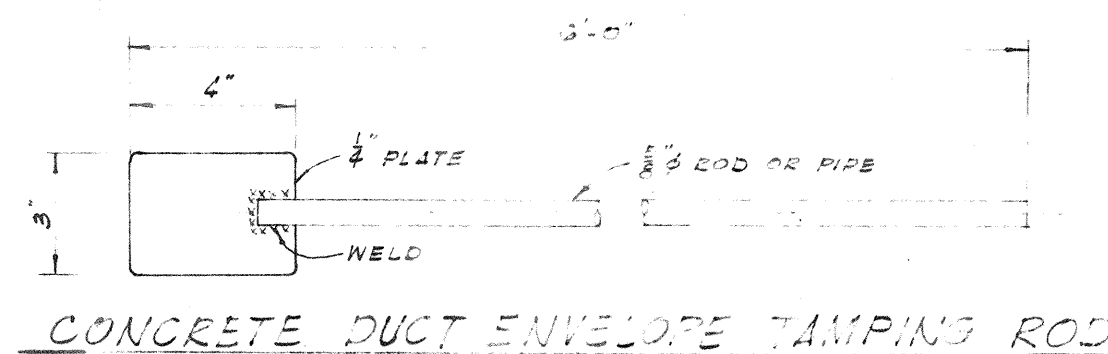
TYP. DUCT PLASTIC SPACERS & DRAINAGE SECTION
(6 WAY DUCT SHOWN - 3 HIGH - 2 WIDE)
NO SCALE

NOTE "X"
PROVIDE ONE SET OF SPACERS;
(a) 10 FT. STRAIGHT RUN FOR 4 DUCTS HIGH OR LESS
(b) 5 FT. STRAIGHT RUN FOR 5 DUCTS HIGH OR MORE.

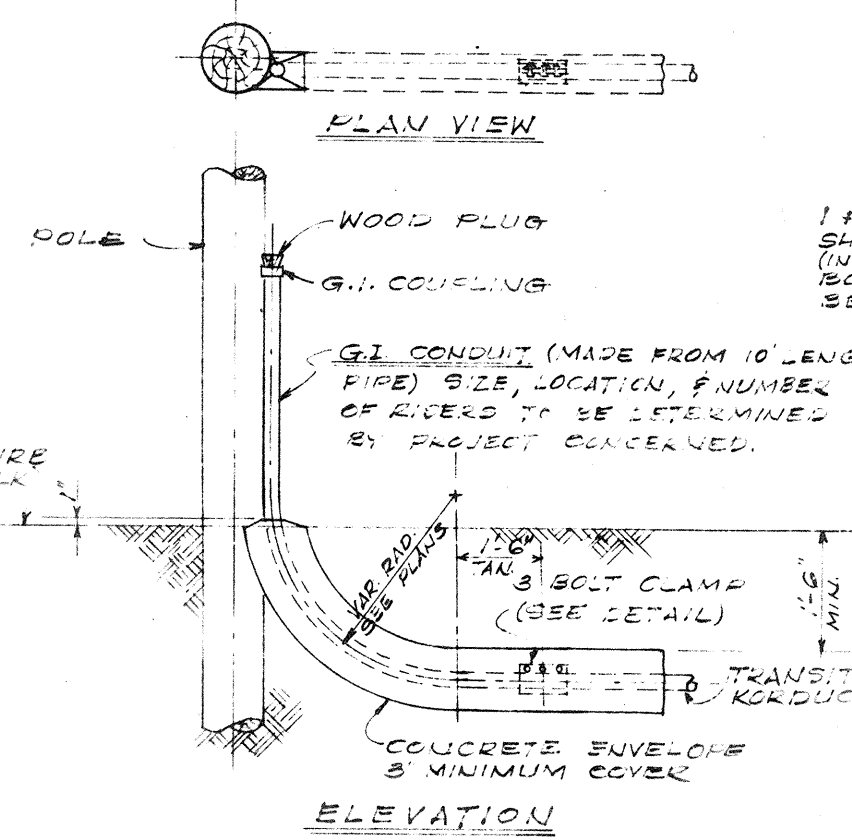


METHOD OF FORMING CURVES
1"=1'-0"

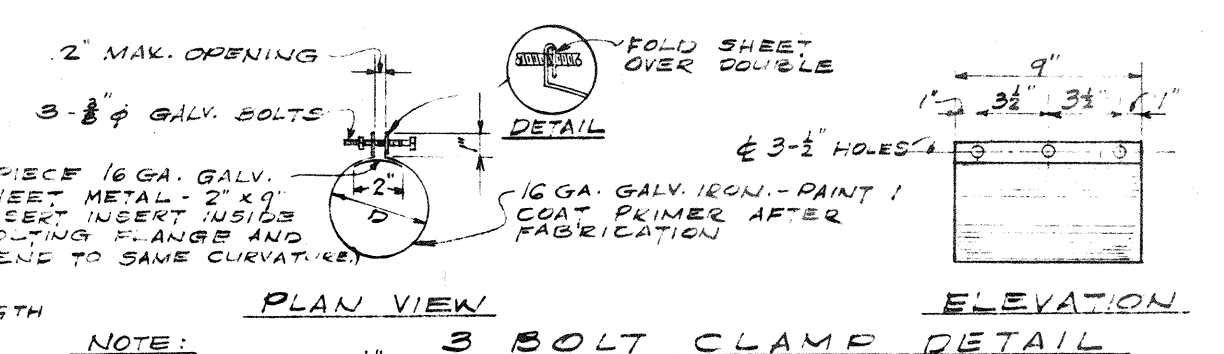
LENGTH OF DUCT	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"
MIN. RAD. TO FORM CURVES	1'-4"	2'-0"	2'-8"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"



CONCRETE DUCT ENVELOPE TAMPING ROD
3"=1'-0"



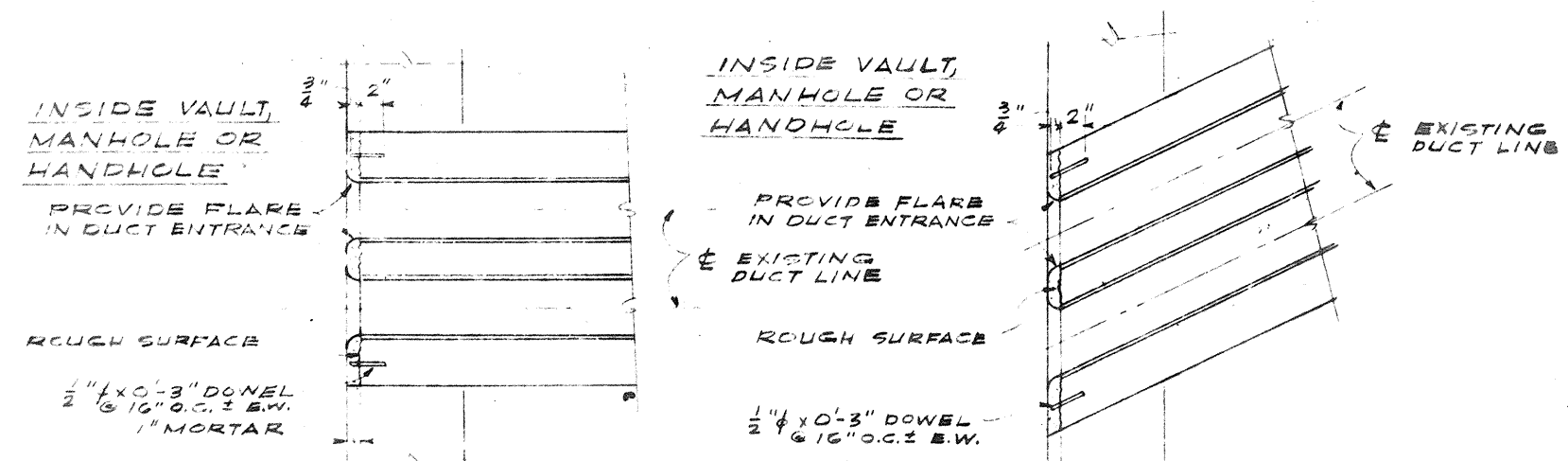
TYPICAL POLE RISER DETAIL
3/8"=1'-0"



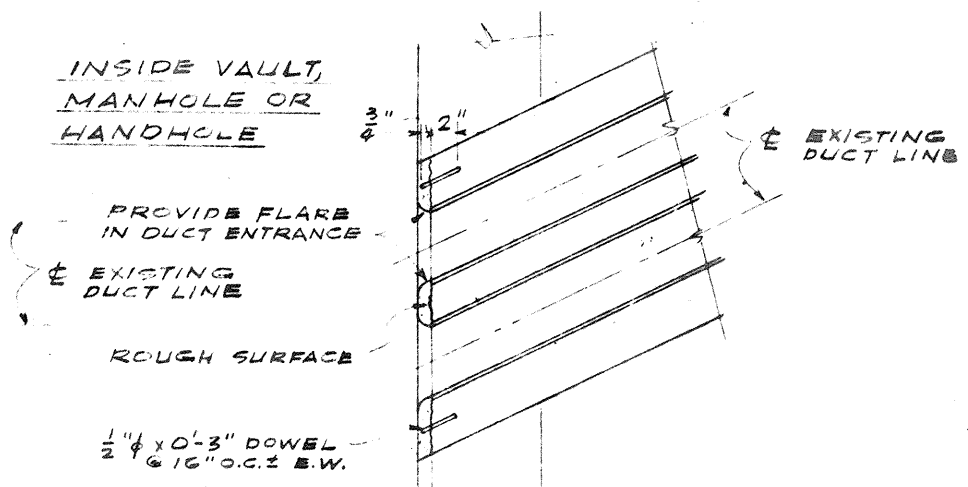
3-BOLT CLAMP DETAIL
1 1/2"=1'-0"

REFER TO SPECIFICATION SHEET U-18585A

ALL MATERIALS SHALL BE NEW AND SHALL BE MANUFACTURED IN THE UNITED STATES



DUCT LINE ENTRANCE AT EXISTING DUCT LINE
1"=1'-0"



DUCT LINE DIAGONAL ENTRANCE
1"=1'-0"

REDUCED PLANS
SCALES REDUCED
ACCORDINGLY

DRAWING NUMBER
U-18585

APPROVED:

DISTR. ENGR., H. E. CO., LTD.

5/15/62
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CONSTRUCTION STANDARDS
TRANSITE KORDUCTS
UNDERGROUND DUCT LINES
FARRINGTON HIGHWAY
PROJECT NO. F-090-1(7)

SCALES: AS SHOWN
FEBRUARY 1962

GENERAL NOTES

- CONCRETE TO DEVELOP COMPRESSIVE CYLINDER STRENGTH OF 3000 P.S.I. IN 28 DAYS.
- CONCRETE FINISH: TOP OF H.H. WOOD FLOATED (SIDEWALK FINISH) ACCORDING TO STATE HIGHWAY OR CITY & COUNTY OF HONOLULU SPECIFICATIONS WHICH EVER THE CASE MAY BE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
FLOOR - SMOOTH METAL TROWELLED EXPOSED WALL SURFACES & EDGES - SMOOTH AND FREE FROM DEFECTS.
CONCRETE POURING - NOTIFY THE HAWAII ELEC. CO. LTD. ENGINEER. REINFORCING SHALL BE PLACED IN THE PRESENCE OF H.E.C.O. ENGINEER OR ITS REPRESENTATIVE.
- REINFORCING: ROUND DEFORMED BARS, NEW BILLET STOCK INTERMEDIATE GRADE ASTM A15.
- FORMS: FORM HANDHOLE TO SIZE & SHAPE AS SHOWN. EXTERIOR FACE OF HANDHOLE WALL SHALL BE FORMED EXCEPT:
A) EXCAVATION IN SOLID MATERIAL SUCH AS CORAL OR ROCK - NEAT CUT, NO FORMS REQUIRED.
B) EXCAVATION IN SOLID MATERIAL OTHER THAN CORAL OR ROCK - LINING SUCH AS SALVAGED CORRUGATED IRON, CANES ETC. SHALL BE USED.
- PULLING EYE INSERTS: FOR LOCATION & NUMBER REQUIRED SEE DUCT ENTRANCE PLAN OF PROJECT CONCERNED.
- DRAINAGE: SLOPE FLOOR DOWN $\frac{1}{8}$ " TO SUMP.
- SLOPE OF TOP OF HANDHOLE: SEE PLAN OF PROJECT CONCERNED.
- FINISH STEEL WORK: ANGLE IRON FRAMES & LIFTING DEVICES FOR REMOVABLE CONG. SLAB SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- EXCAVATION: EXCAVATE FOR HANDHOLE TO ACCURATE ALIGNMENT GRADES AND DIMENSIONS AS SHOWN ON DWG. ALL EXCAVATION MUST BE APPROVED BY THE ENG. DEPT., THE HAWAII ELEC. CO. LTD. BEFORE ANY CONG. IS POURED. ALL EXCAVATION CUT SHALL BE BACKFILLED WITH CONG. OR ROCK.
- BACKFILL: REMOVE ALL DEBRIS BEFORE BACKFILLING. BACKFILL IN ACCORDANCE WITH LATEST SPECIFICATIONS OF AND SUBJECT TO APPROVAL OF STATE HIGHWAY OR CITY & COUNTY OF HONOLULU WHICHEVER THE CASE MAY BE UNLESS OTHERWISE DIRECTED.
- FOR DUCT LINE CONSTRUCTION STANDARDS, SEE H.E.C.O. DWS U-18555, REV. #2 & SPEC. SHEET U-18555A.
- DUCTS: FOR SIZE, LOCATION & NUMBER REQUIRED SEE DUCT ENTRANCE PLAN OF PROJECT CONCERNED.
- ALL MATERIALS SHALL BE NEW AND SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.

REINFORCED CONG. QUANTITIES

QUANTITY OF MATERIALS FOR DEPTH D'-5'-0", CONCRETE = 4 CU. YDS.
REINF. STEEL = 107 LBS.

WEIGHT PER REMOVABLE CONG. SLAB, CONCRETE = 150 LBS.
ANGLE FRAME = 40 "
REINF. + MISC. STEEL = 10 "

TOTAL 200 LBS.

MATERIALS FOR 6" DEPTH OF 6" THICK WALL, CONCRETE = 0.3 CU. YDS.
REINF. STEEL = 23 LBS.

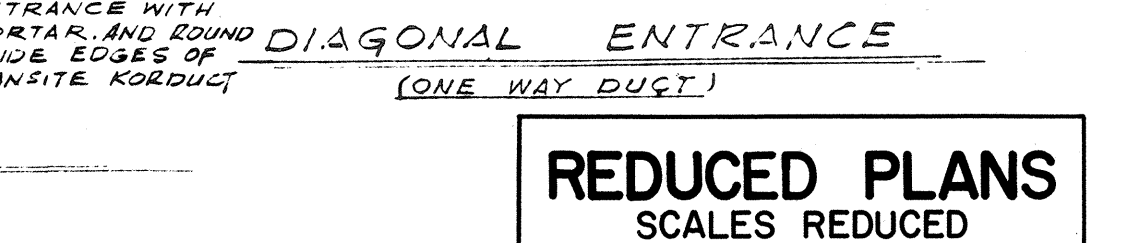
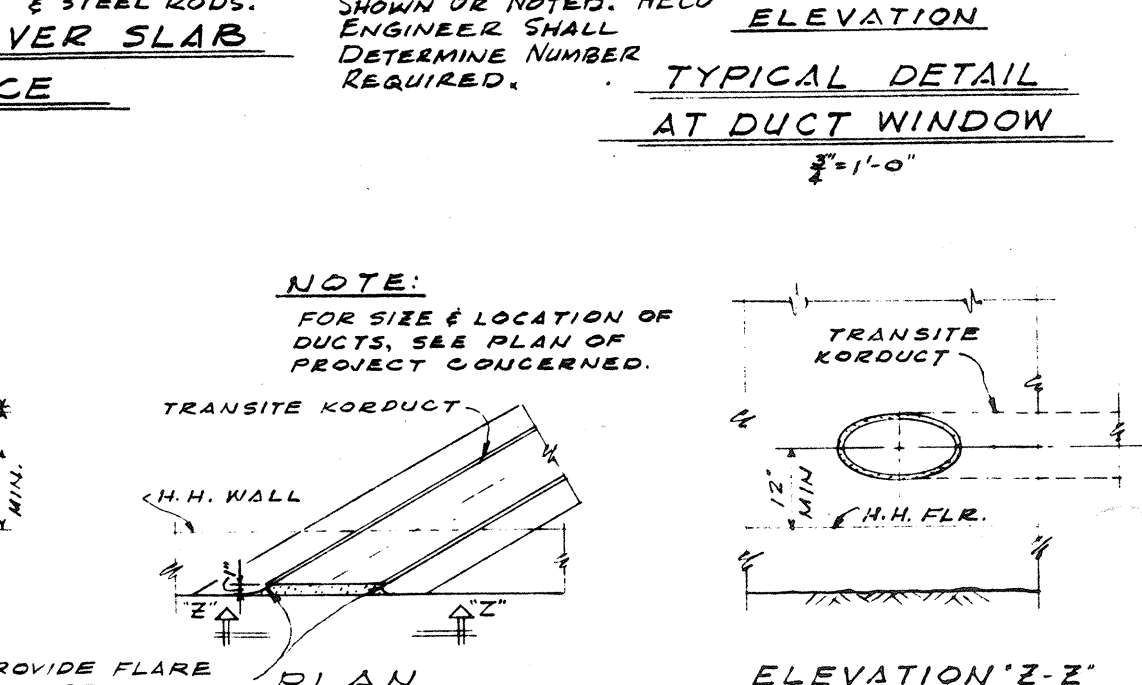
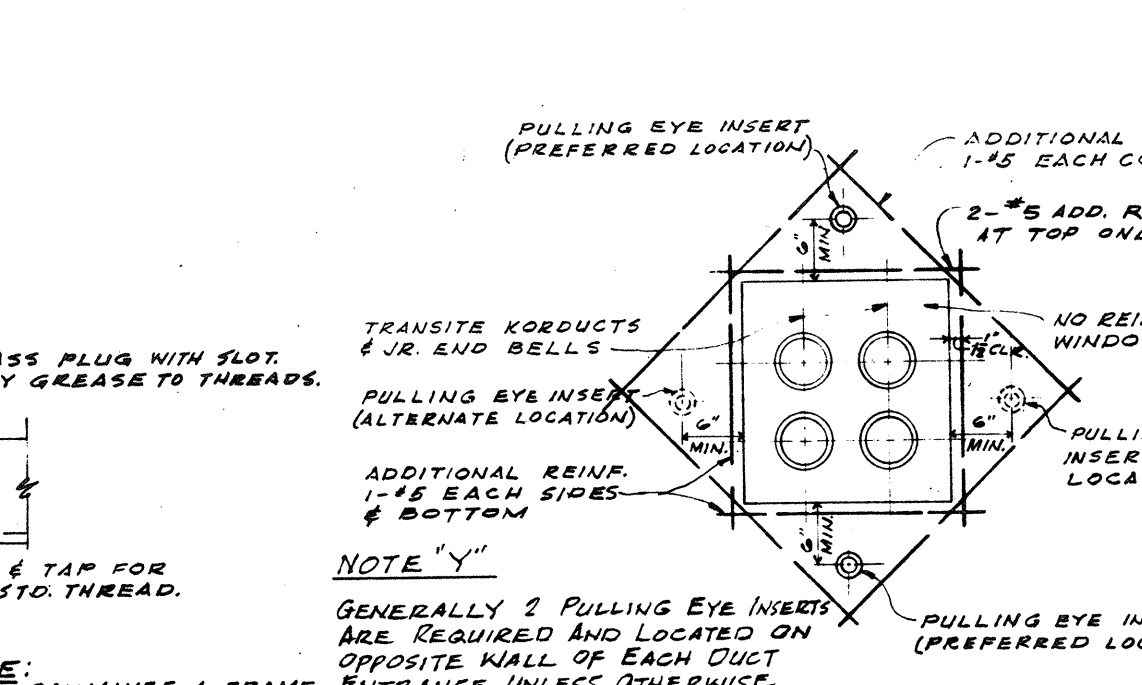
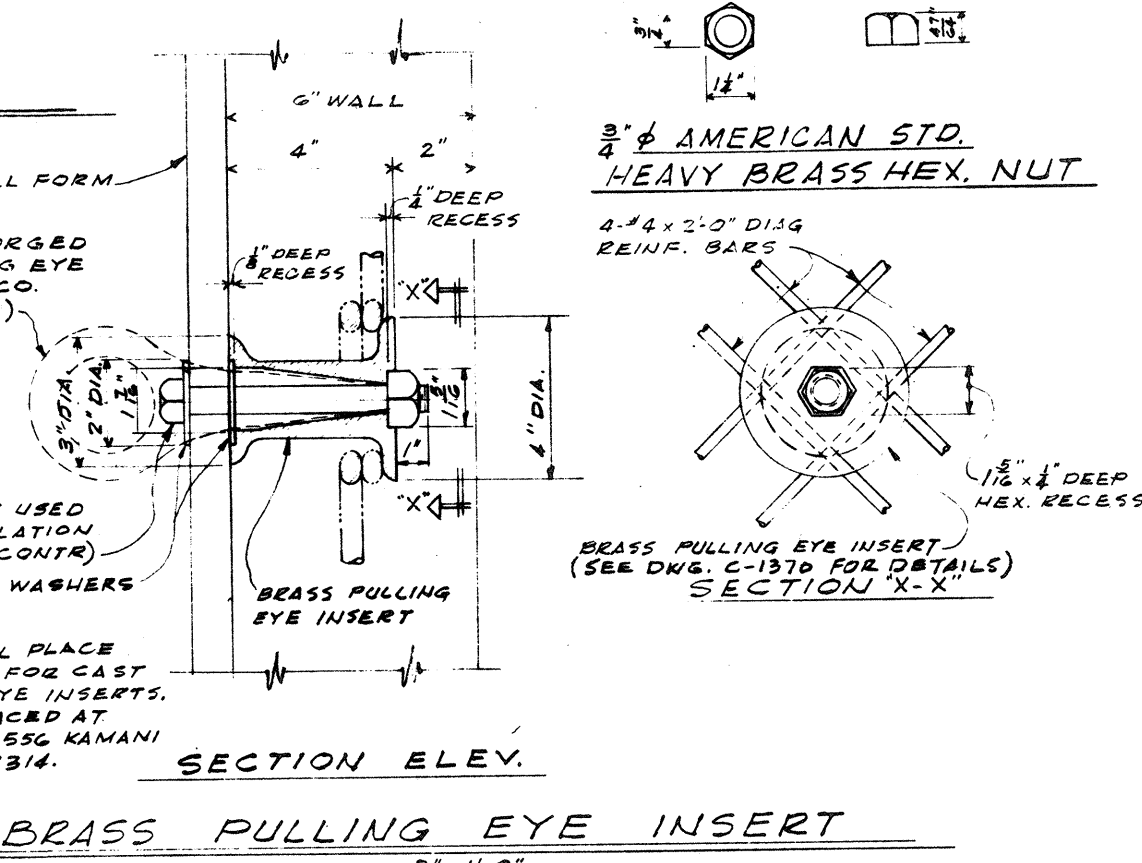
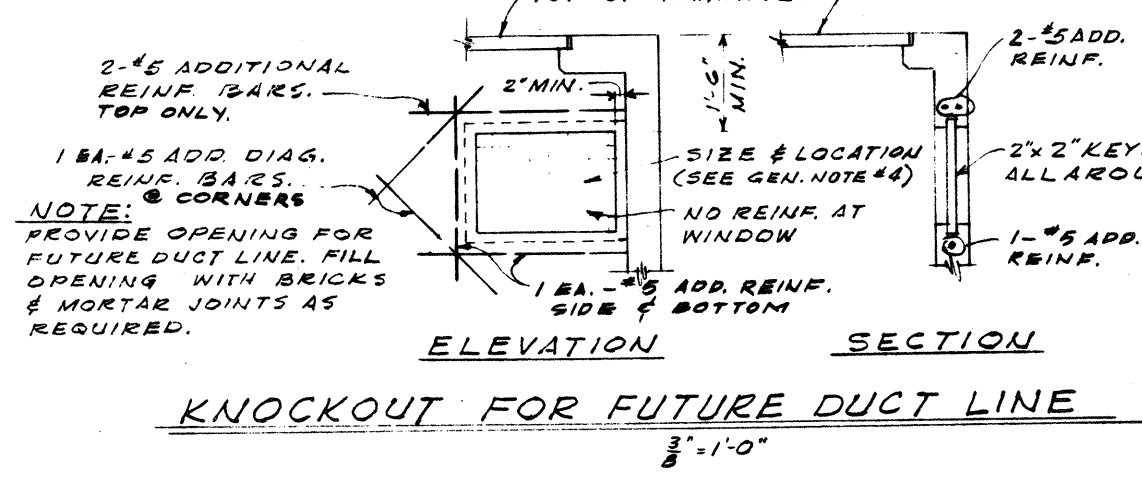
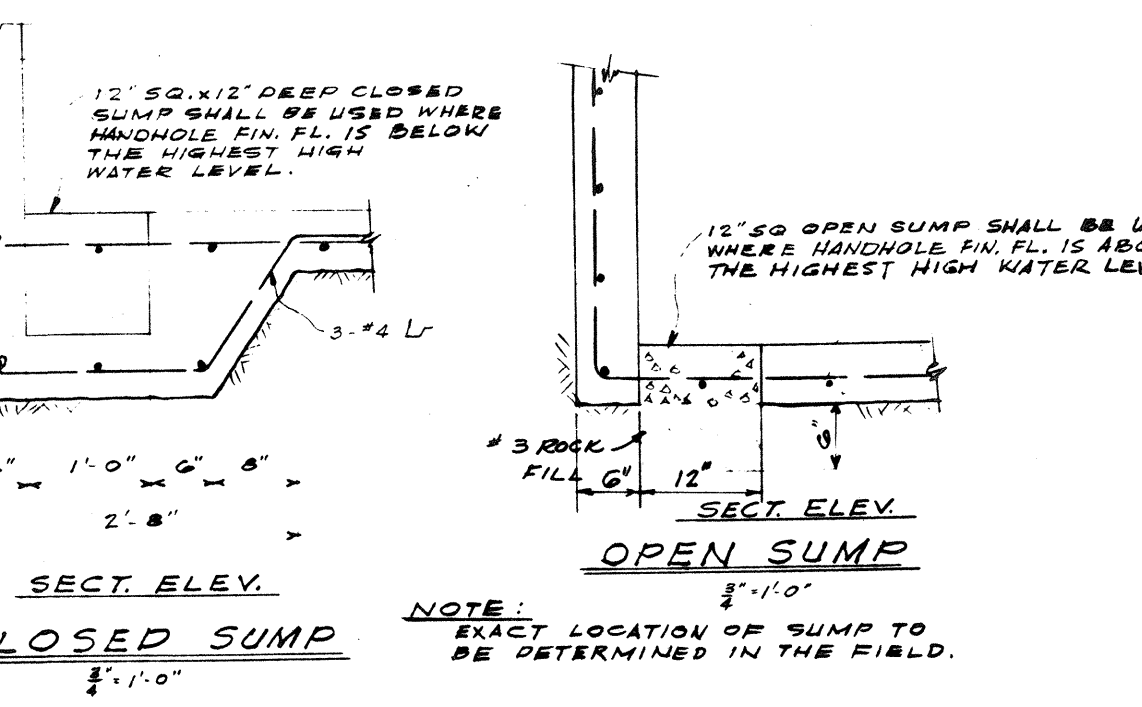
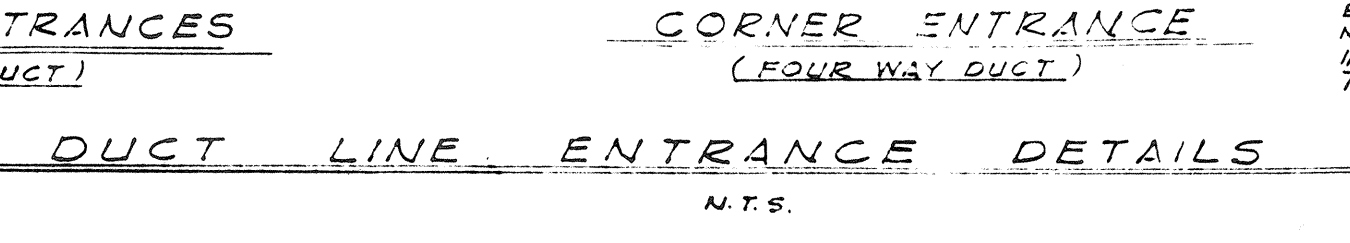
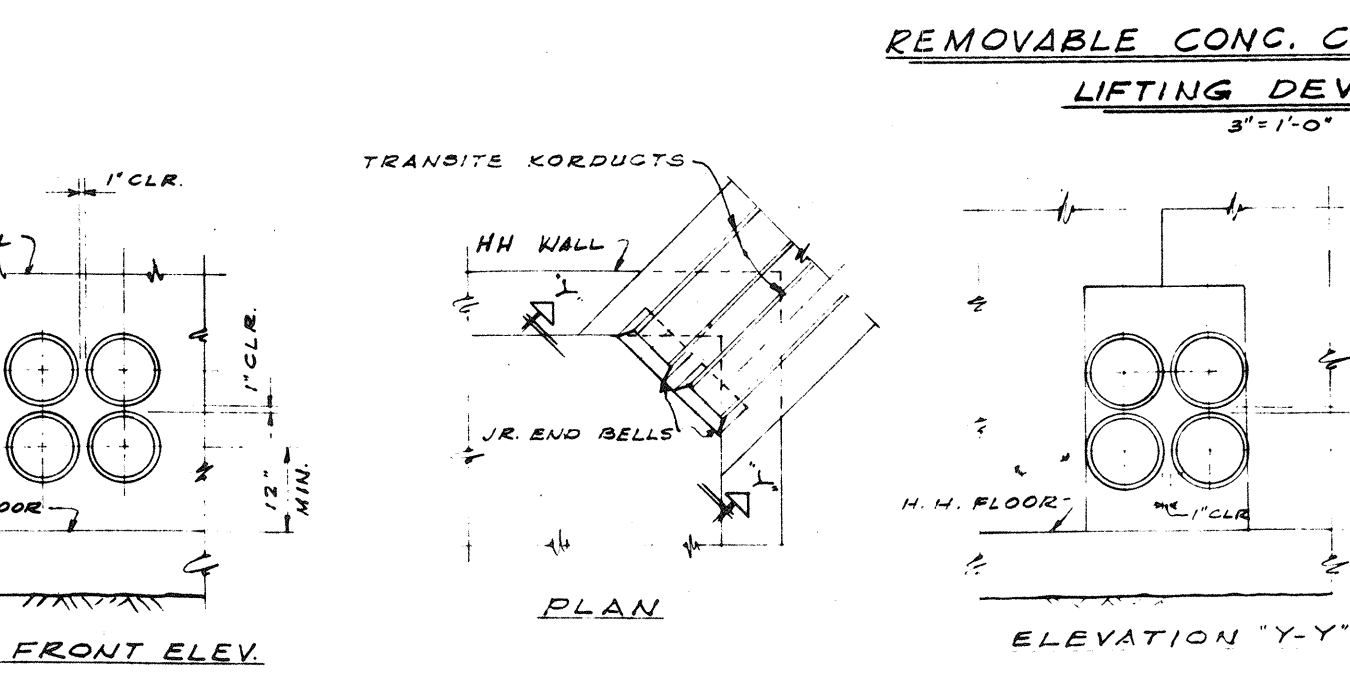
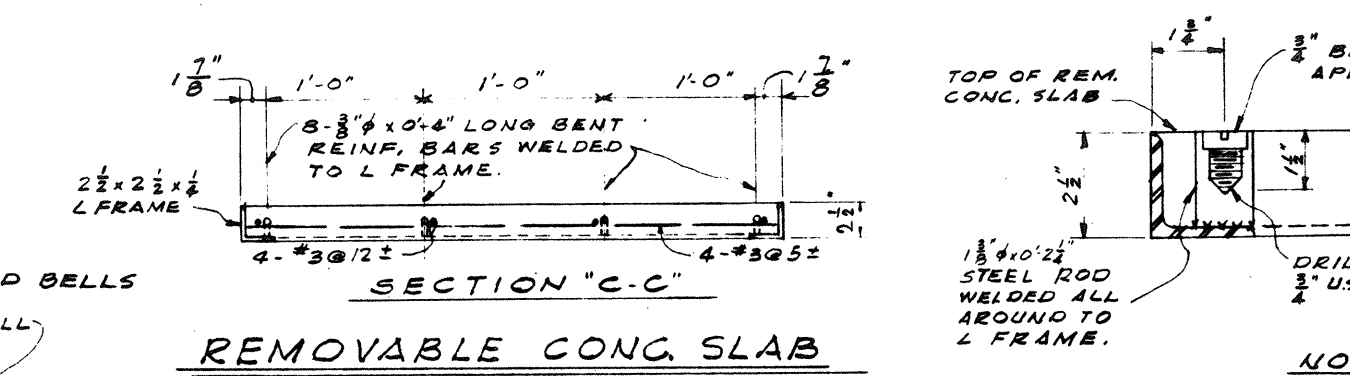
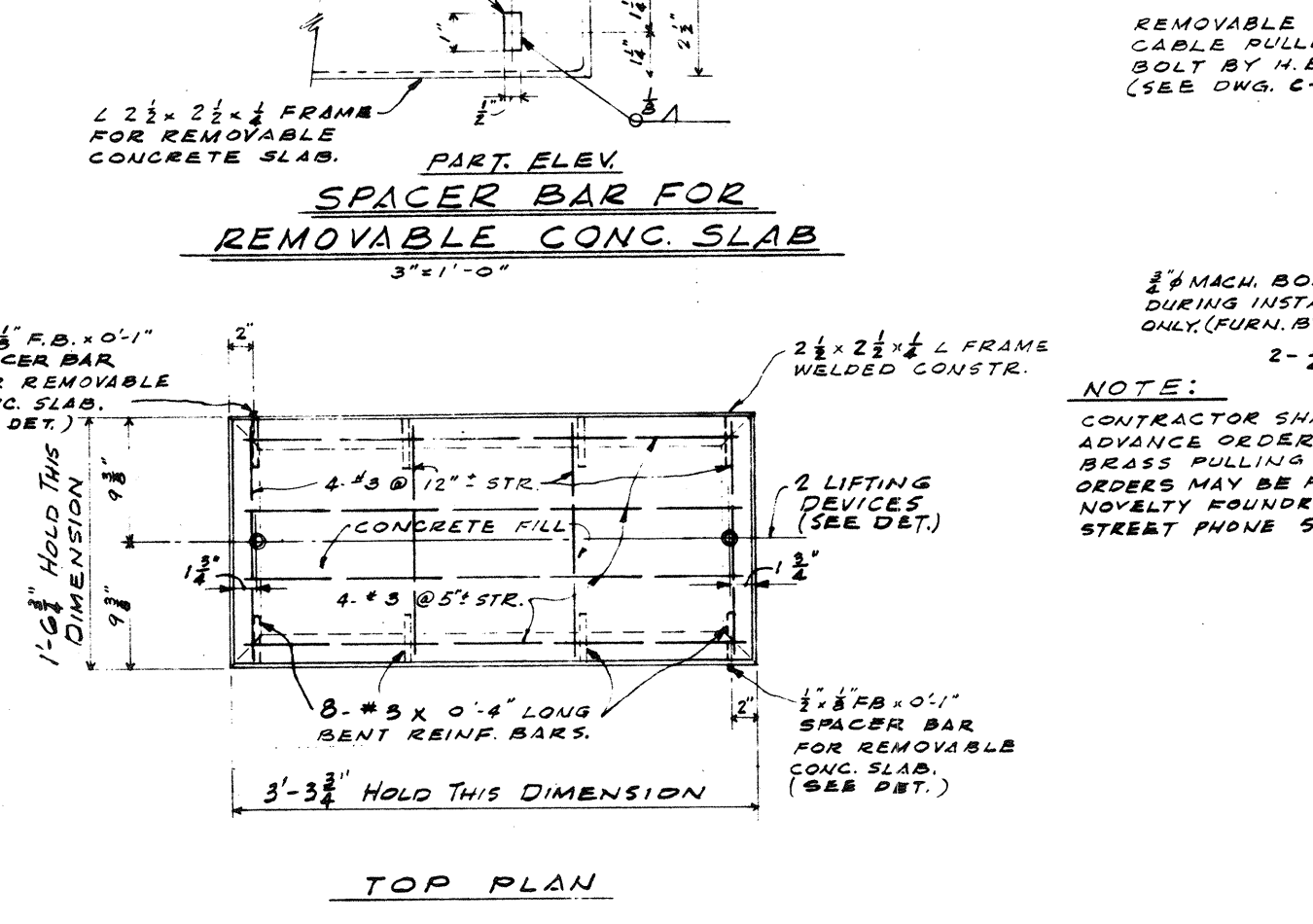
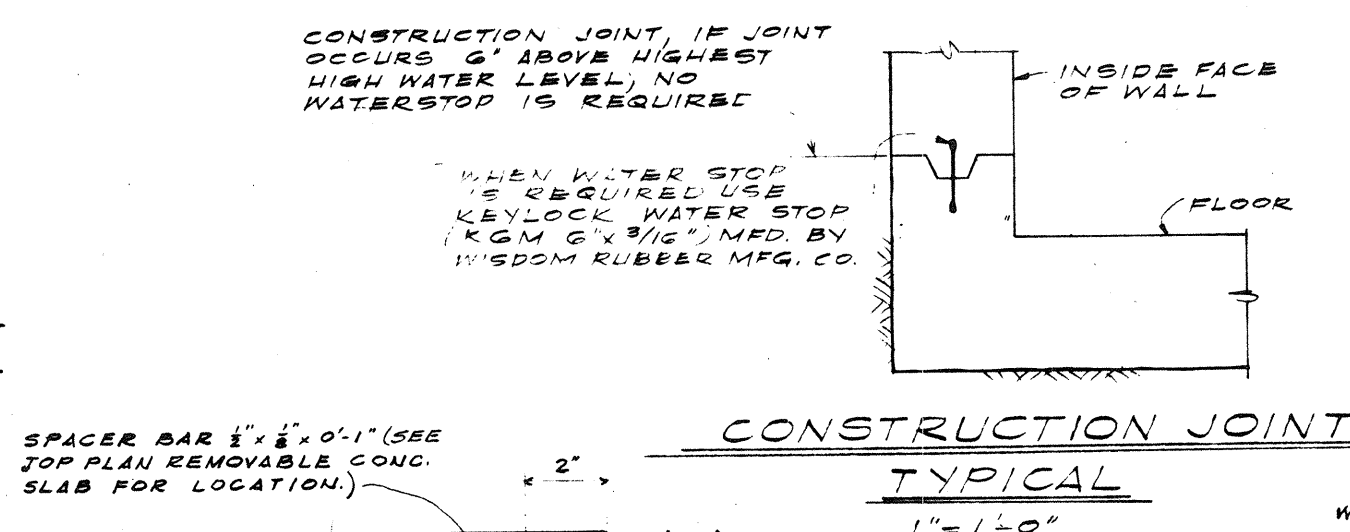
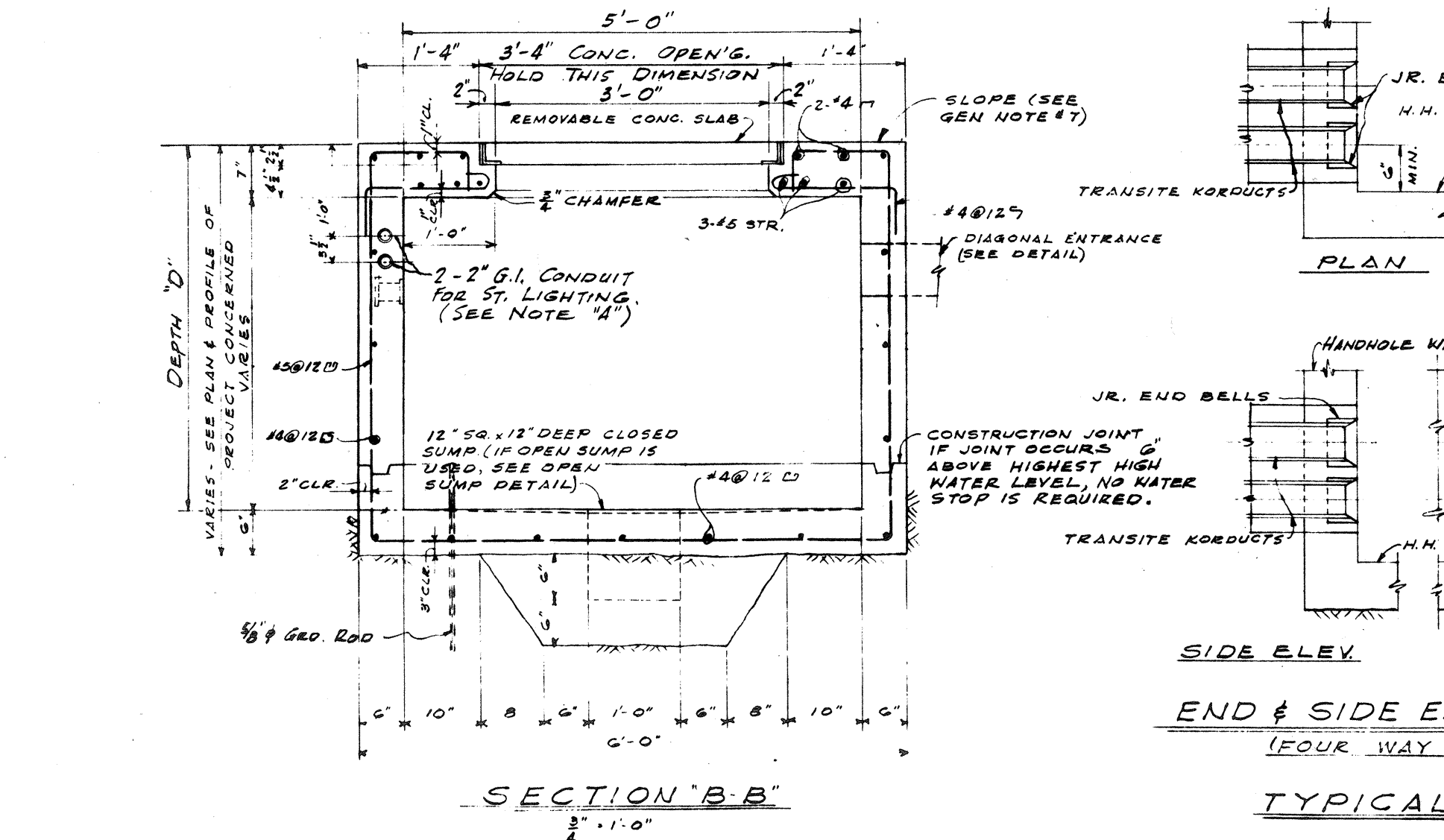
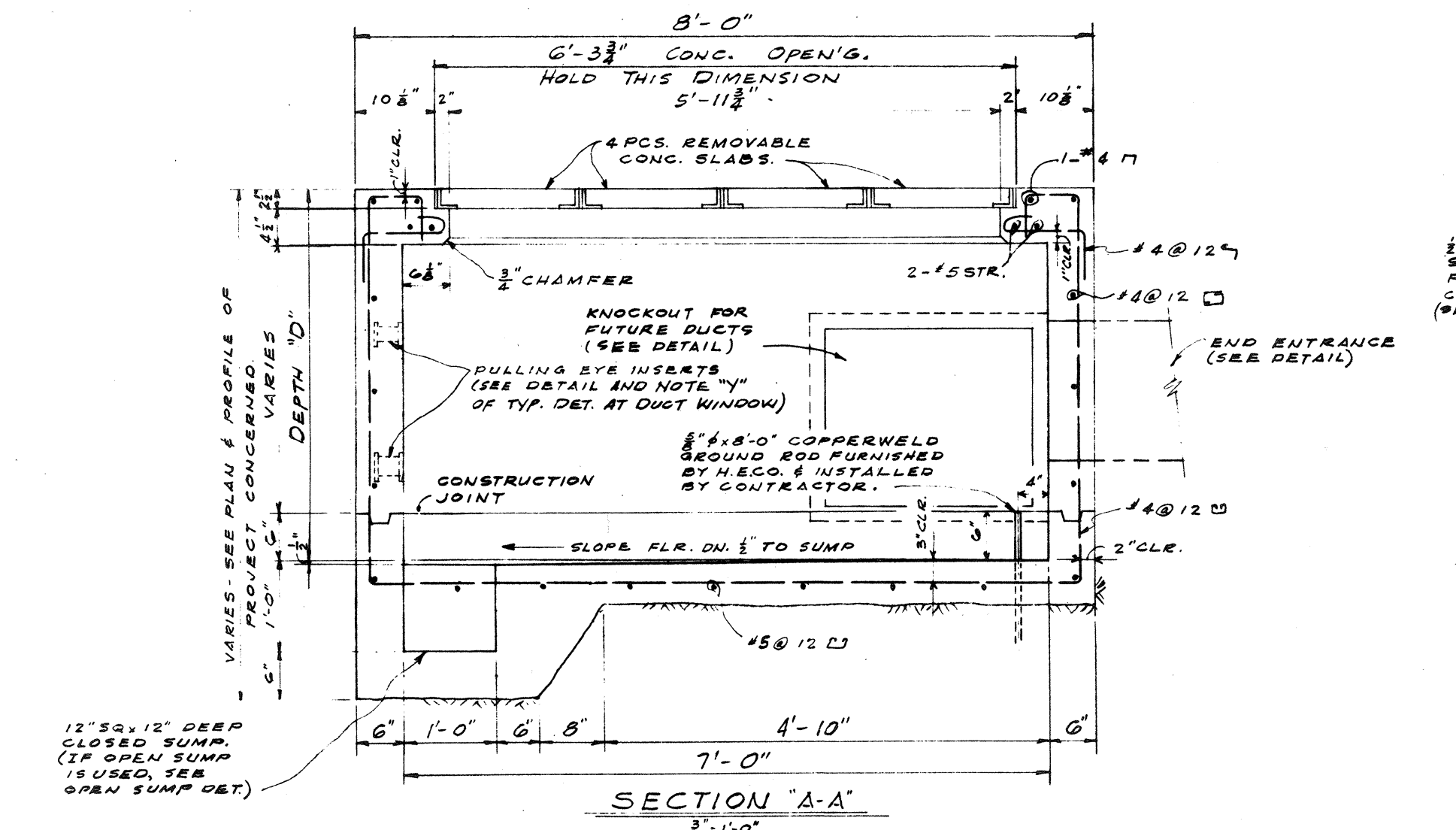
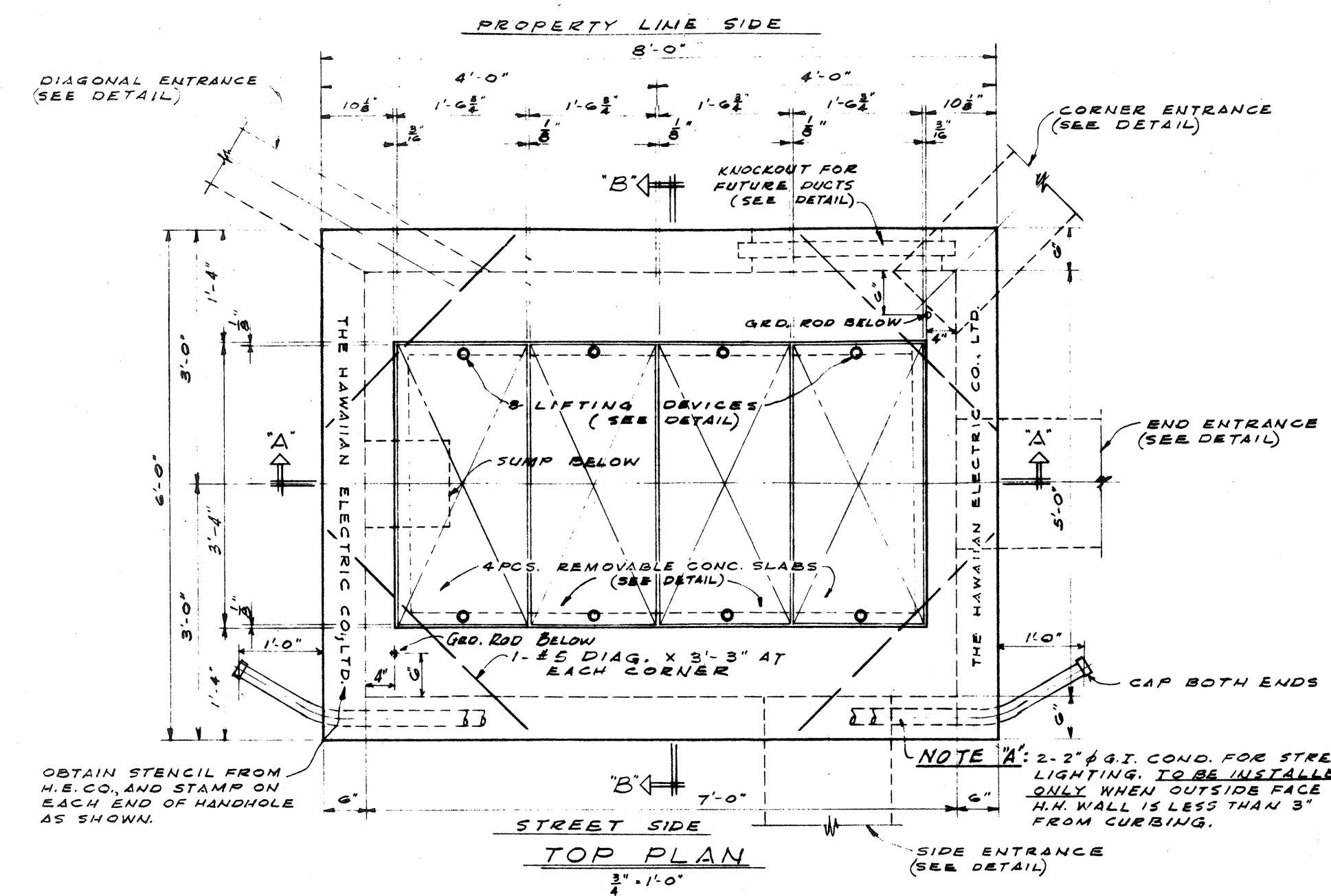
FOR USE IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC

DRAWING NUMBER **18843**

APPROVED:

Thomas A. Ken 5/15/62
DISTR. ENGR., H.E.C.O., LTD. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HANDHOLE
TYPE 57 (5'-0" x 7'-0")
UNDERGROUND STANDARDS
FARRINGTON HIGHWAY
PROJECT NO. F-090-1(7)
SCALES: AS SHOWN FEBRUARY 1962



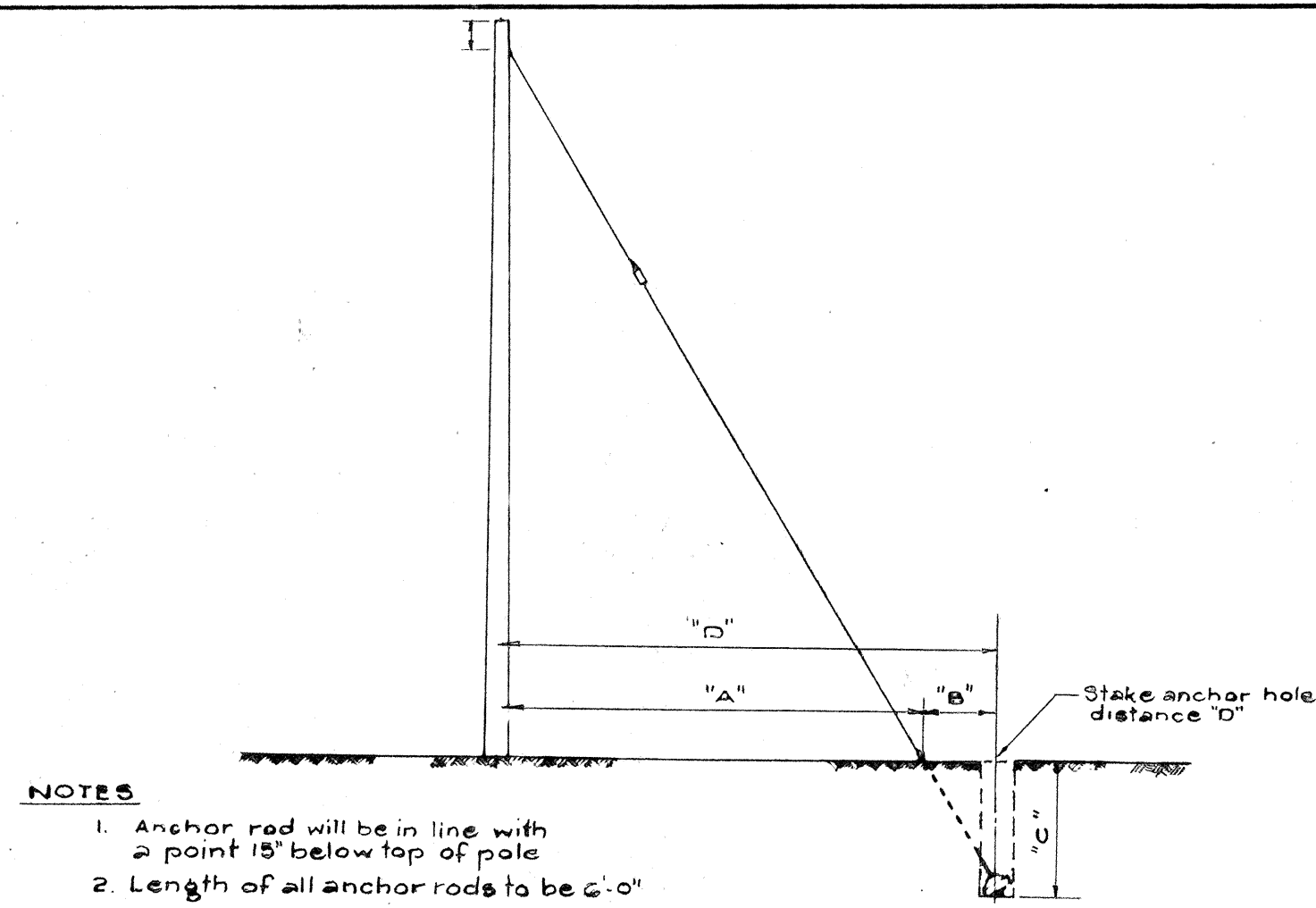
REDUCED PLANS
SCALES REDUCED ACCORDINGLY

END & SIDE ENTRANCES (FOUR WAY DUCT)

CORNER ENTRANCE (FOUR WAY DUCT)

TYPICAL DUCT LINE ENTRANCE DETAILS

N.T.S.



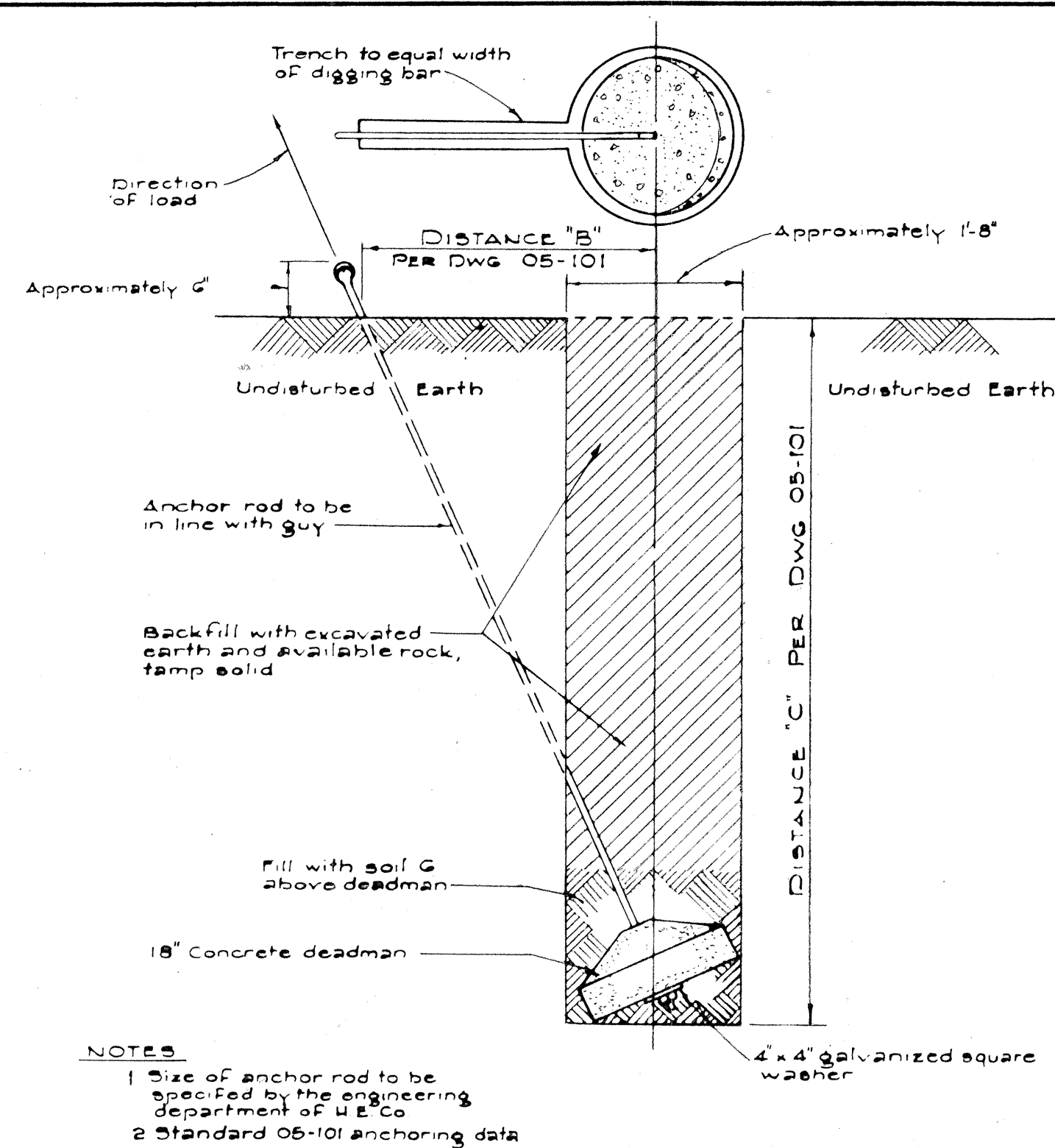
- NOTES
1. Anchor rod will be in line with a point 15' below top of pole
 2. Length of all anchor rods to be 6'-0"

FOR 35', 40', 45', 50' & 55' POLES				
LEAD ANCHOR ROD TO E. OF POLE 'A'	ANCHOR ROD TO E. OF HOLE 'B'	VERTICAL DEPTH 'C'	TOTAL DISTANCE POLE TO HOLE 'D' (A+B)	
5'-0"	1'-0"	7'-3"	7'-4"	8'-0"
10'-0"	1'-11"	7'-1"	7'-3"	11'-11"
15'-0"	2'-8"	6'-5"	7'-1"	17'-8"
20'-0"	3'-3"	6'-6"	6'-10"	23'-3"
25'-0"	3'-10"	6'-2"	6'-7"	28'-10"
FOR 25' & 30' POLES				
5'-0"	1'-6"	7'-1"	7'-4"	8'-6"
10'-0"	3'-0"	6'-7"	7'-0"	13'-0"
15'-0"	4'-0"	6'-1"	6'-6"	19'-0"
20'-0"	4'-8"	5'-6"	5'-10"	24'-8"
25'-0"	5'-2"	4'-11"	5'-4"	30'-2"

DM = DEADMAN
Lead (Dimension "A") For H.T. Co. anchors (H.T. Co. ONLY) shown on plan

ANCHORING DATA
Not to Scale

05-101



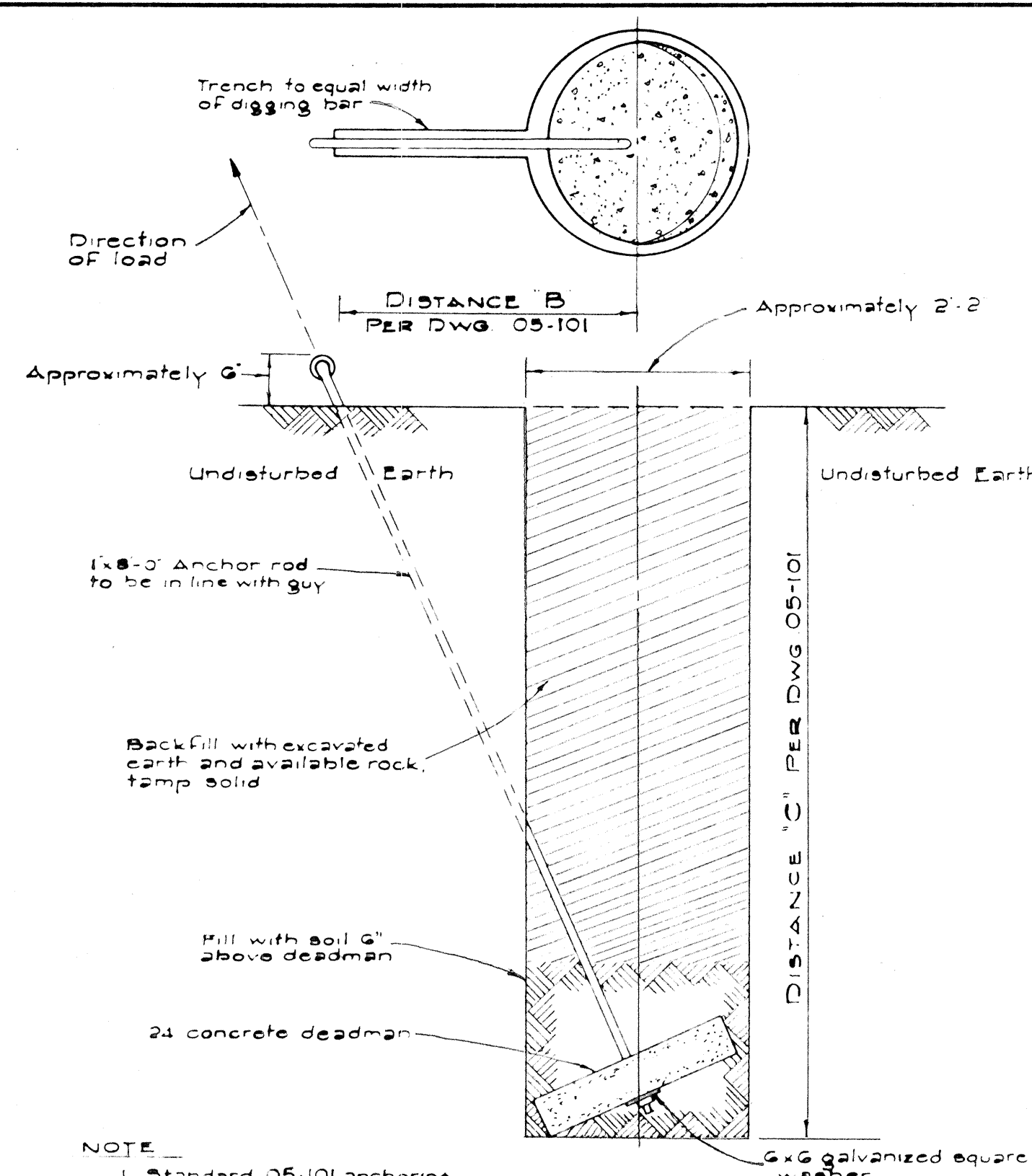
- NOTES
1. Size of anchor rod to be specified by the engineering department of H.T. Co.
 2. Standard 05-101 anchoring data

ALLOWABLE LOAD
(1/2 OF ULTIMATE)

5/8" Anchor rod	8,000 lbs
3/4" Anchor rod	12,500 lbs
3/8" Copperweld anchor rod	2,250 lbs

GUY ANCHOR, 18" DEADMAN
Scale: 3/4" = 1'-0"

05-102



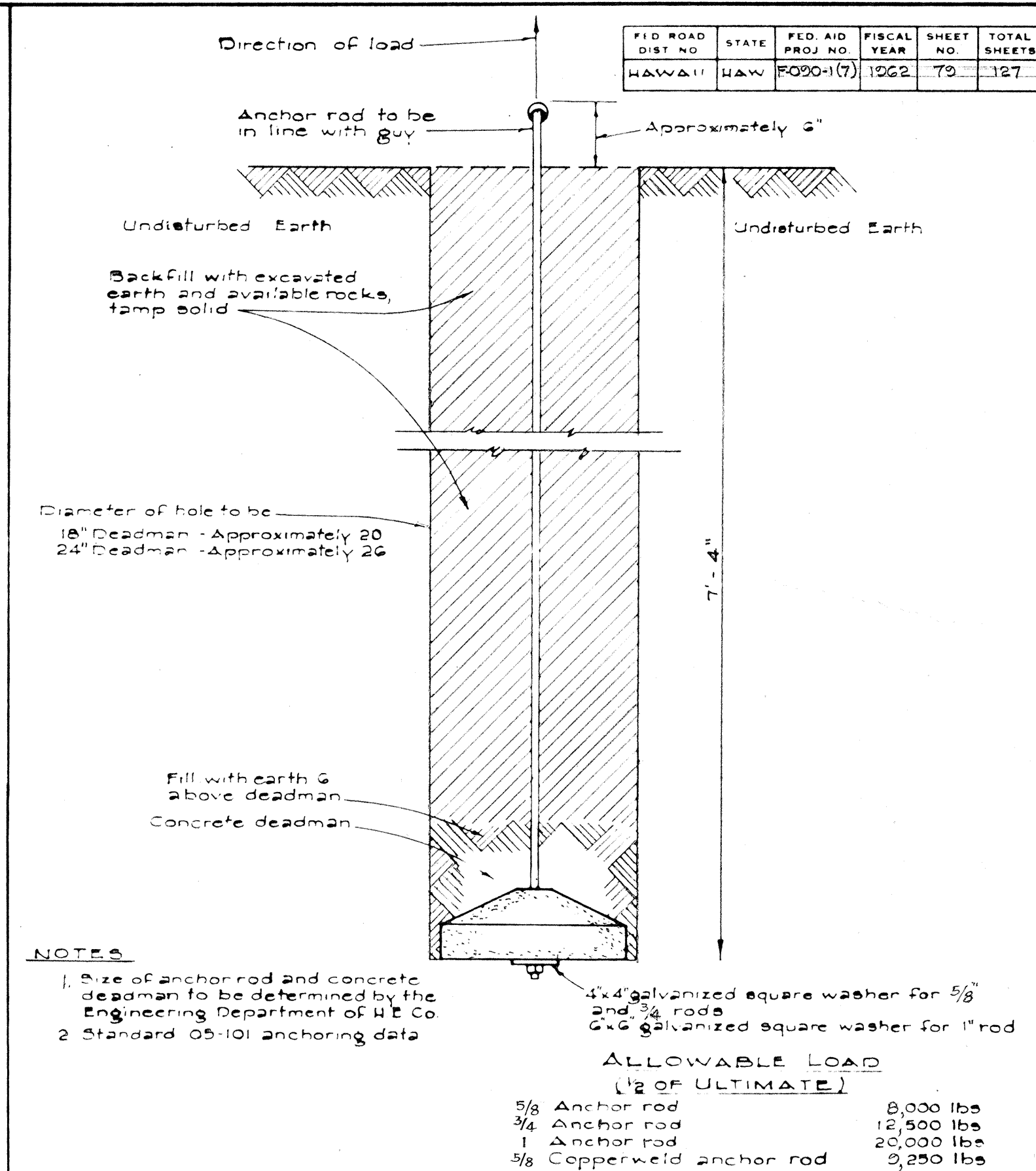
- NOTE
1. Standard 05-101 anchoring data

ALLOWABLE LOAD
(1/2 OF ULTIMATE)

1" Anchor rod	20,000 lbs
3/4" Copperweld anchor rod	2,250 lbs

GUY ANCHOR, 24" DEADMAN
Scale: 3/4" = 1'-0"

05-103



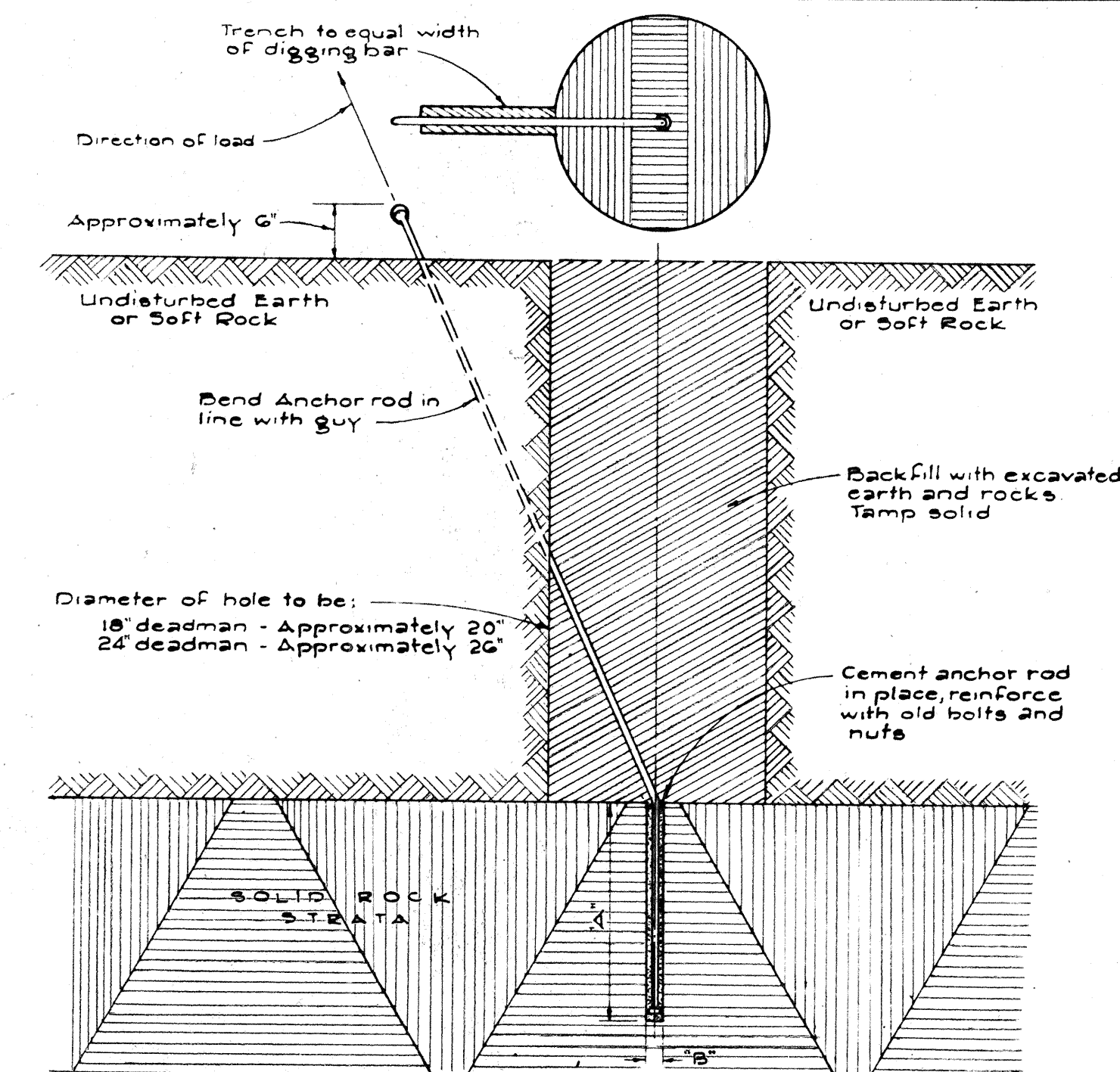
- NOTES
1. Size of anchor rod and concrete deadman to be determined by the Engineering Department of H.T. Co.
 2. Standard 05-101 anchoring data

ALLOWABLE LOAD
(1/2 OF ULTIMATE)

5/8" Anchor rod	8,000 lbs
3/4" Anchor rod	12,500 lbs
1" Anchor rod	20,000 lbs
3/8" Copperweld anchor rod	2,250 lbs

SIDE-WALK ANCHOR
Scale: 1" = 1'-0"

05-104



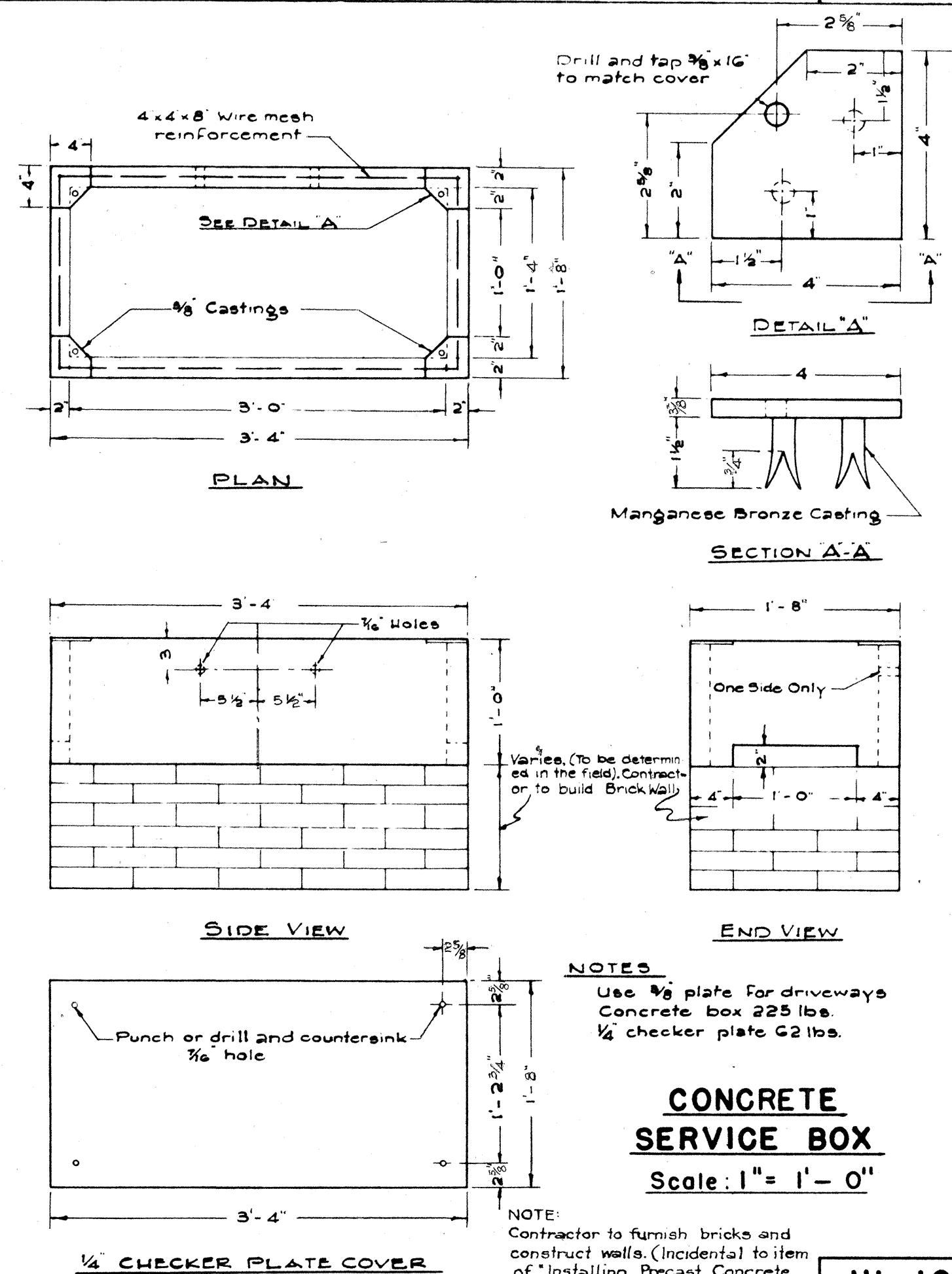
- NOTES
1. Size of anchor rod to be specified by the Engineering Department of H.T. Co.
 2. "A" should not be less than 24".
 3. "B" is less than 24", complete hole and install anchor per 04 Standard 05-102, 103, or 104.
 4. Standard 05-101 anchoring data

ALLOWABLE LOAD
(1/2 OF ULTIMATE)

5/8" anchor rod	8,000 lbs
3/4" anchor rod	12,500 lbs
1" anchor rod	20,000 lbs

ROCK ANCHOR
Scale: 3/4" = 1'-0"

05-105



- NOTES
1. Use 3/8" plate for driveways
 2. Concrete box 225 lbs.
 3. 1/2" checker plate 62 lbs.

CONCRETE SERVICE BOX
Scale: 1" = 1'-0"

NOTE: Contractor to furnish bricks and construct walls. (Incidental to item of "Installing Precast Concrete Pull Boxes")

UI-103

SOUTHERN PINE & DOUGLAS FIR 8lb. CREOSOTED TREATMENT										
LENGTH IN FEET	CLASS	APPROXIMATE MINIMUM DIMENSIONS — INCHES				AVERAGE WEIGHT		POLE SETTING DEPTH		BREAKING LOAD 2'-0" BELOW TOP OF POLE (LBS.)
		AT TOP		6'0" FROM BUTT		IN POUNDS				
		DIA.	CIR.	DIA.	CIR.	S. P.	D. F.	DEPTH IN SOIL	DEPTH IN ROCK	
JOINT POLES (J.P. POLES)										
25	5	6.05	19	8.28	26.0	491	525	4'-6"	3'-0"	1,900
30	5	6.05	19	8.92	28.0	660	600	5'-0"	3'-0"	1,900
35	5	6.05	19	9.55	30.0	862	770	5'-0"	3'-6"	1,900
40	3	7.32	23	11.79	37.0	1403	1320	5'-6"	3'-6"	3,000
45	3	7.32	23	12.26	38.5	1664	1575	6'-0"	4'-0"	3,000
50	3	7.32	23	12.73	40.0	1925	1850	6'-6"	4'-0"	3,000
55	3	7.32	23	13.23	41.5	2200	2145	7'-0"	4'-6"	3,000
TRANSMISSION POLES (T. POLES)										
45	2	7.96	25	13.23	41.5	1911	1845	6'-0"	4'-0"	3,700
50	2	7.96	25	13.69	43.0	2214	2150	6'-6"	4'-0"	3,700
60	1	8.59	27	15.77	49.5	3451	3360	7'-0"	4'-6"	4,500

S. P. — SOUTHERN YELLOW PINE
D. F. — DOUGLAS FIR

NOTE:

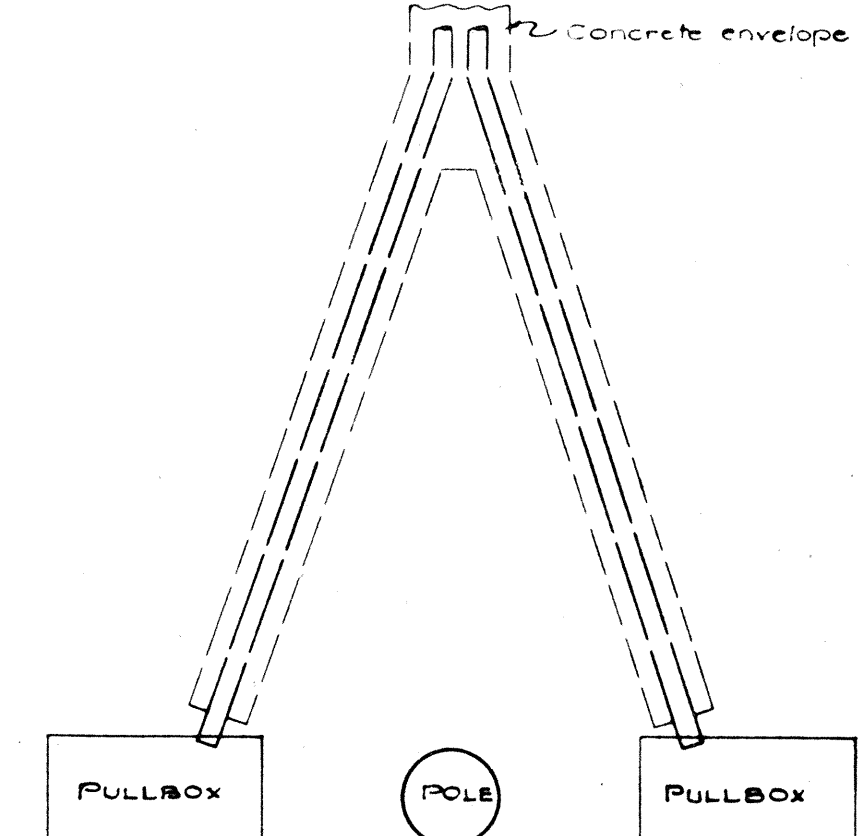
THE ULTIMATE FIBER STRESS FOR CREOSOTED SOUTHERN YELLOW PINE & DOUGLAS FIR IS 7,400 lbs. PER SQUARE INCH.

REFERENCES:

AMERICAN STANDARDS ASSOCIATION 05.4-1941, 05.6-1945
STANDARD HANDBOOK FOR ELECTRICAL ENGINEERS, EIGHTH EDITION
H. E. CO. SPECIFICATIONS FOR POLES.

WOOD POLE DATA

05-501



TYPICAL BOX AND DUCT DETAIL
Scale: 3/8" = 1'-0"

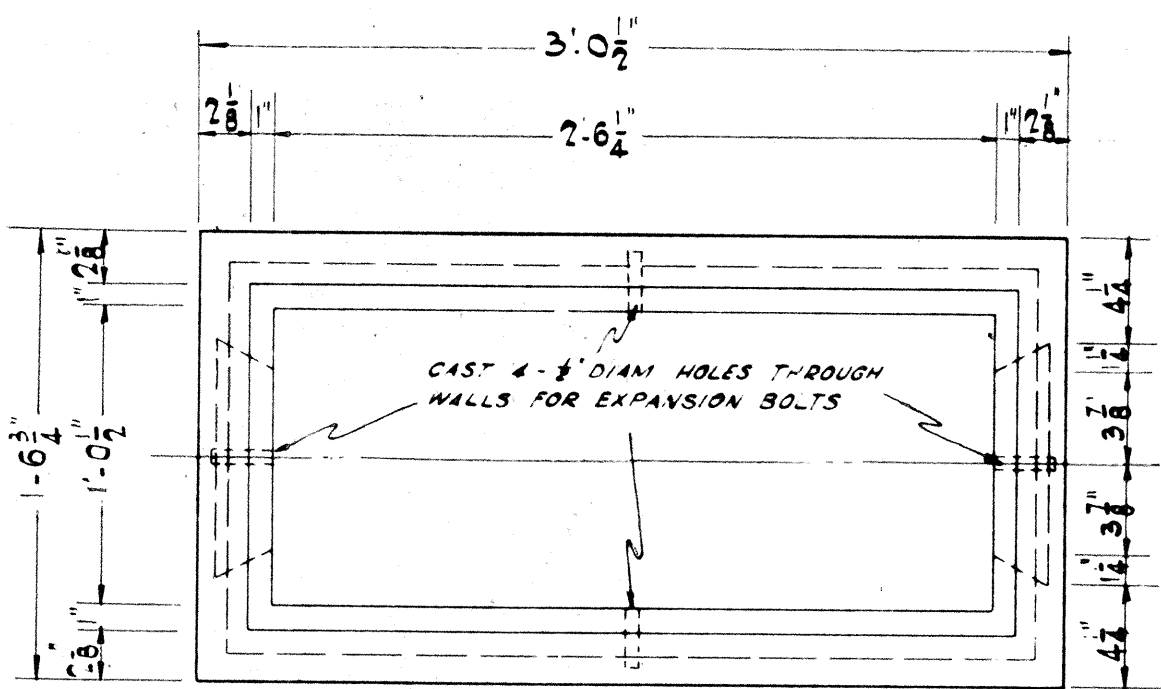
NOTE: Exact location of pullboxes to be determined in the field

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII
HAWAIIAN ELECTRIC & HAWAIIAN TELEPHONE
STANDARD DETAILS

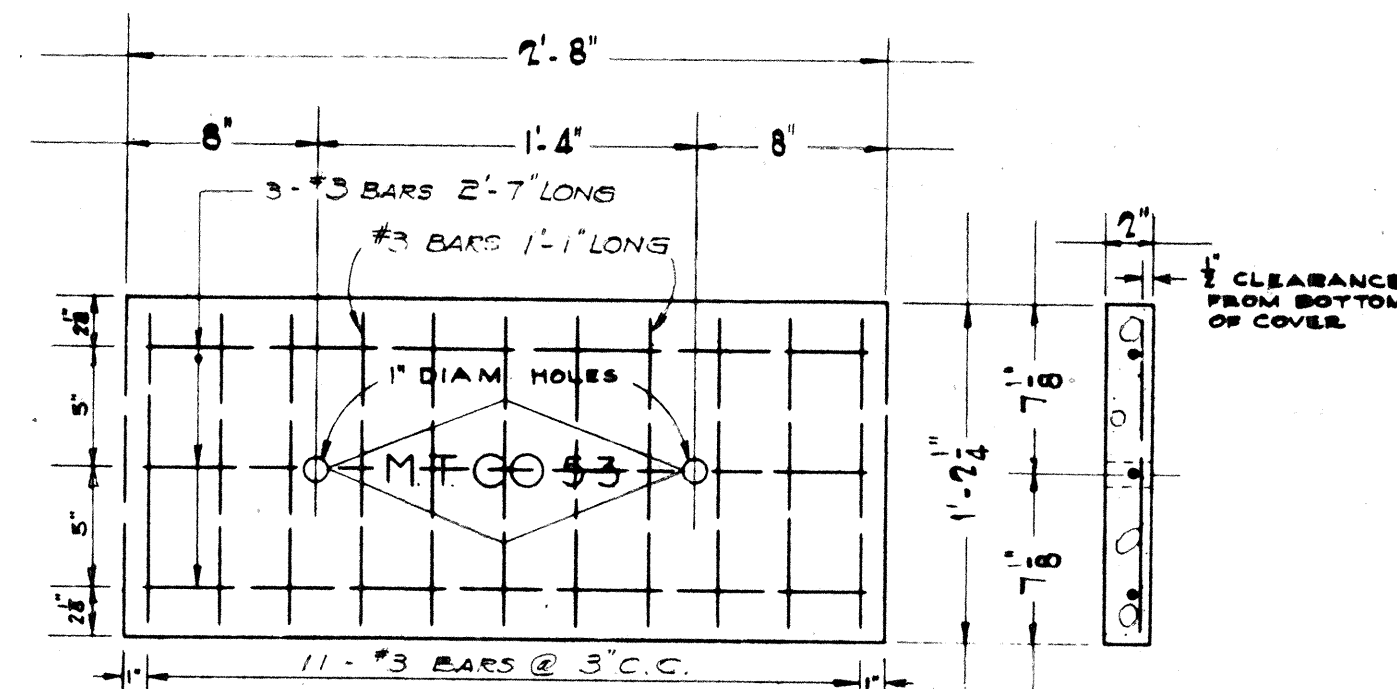
PROJ. NO. F-090-1(7)
Scale: As Noted
SHEET NO. OF SHEETS

Oct. 17, 1957

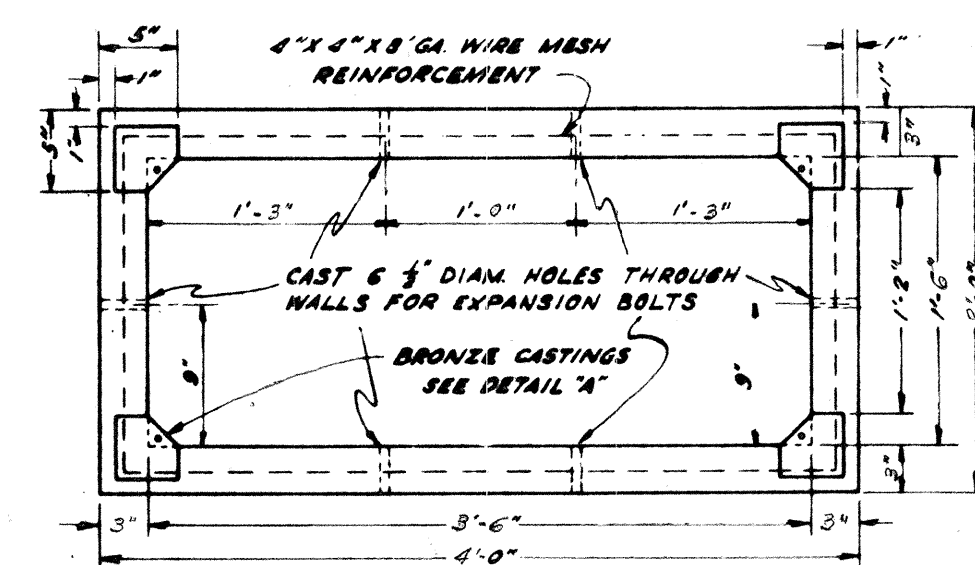
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-090-1(7)	1962	80	127



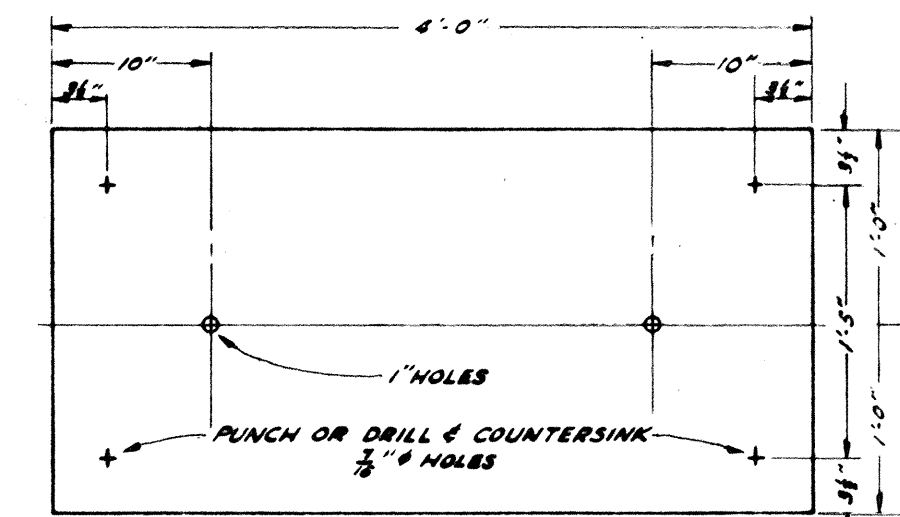
PLAN
SCALE 3/8" = 1"



PLAN OF COVER
SCALE 3/8" = 1"

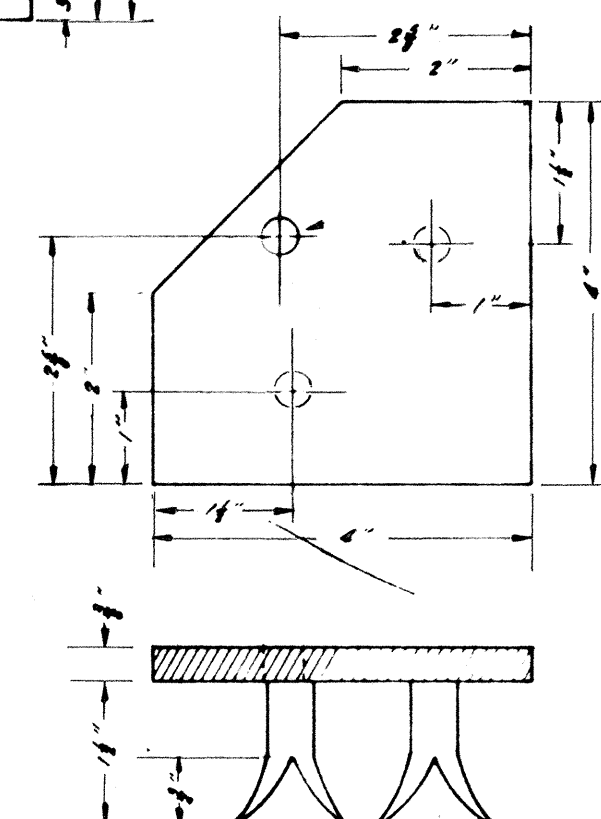


TOP VIEW



1" CHECKERED PLATE COVER
FOR DRIVEWAYS

NOTE:
CHECKERED PLATE COVER SHALL BE 1/4" THICK AT SIDEWALK AREAS AND 3/8" THICK AT DRIVEWAYS.



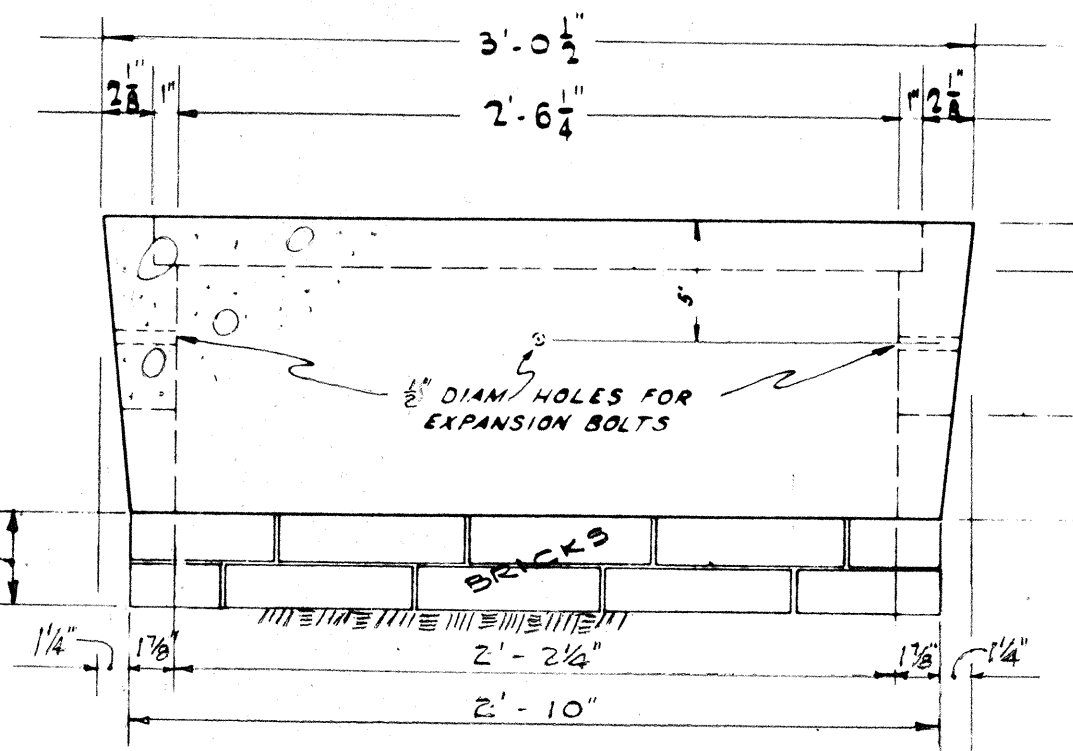
DETAIL "A"
MANGANESE BRONZE CASTING CORNER PLATES
SCALE: 6" = 1'-0"

NOTE:

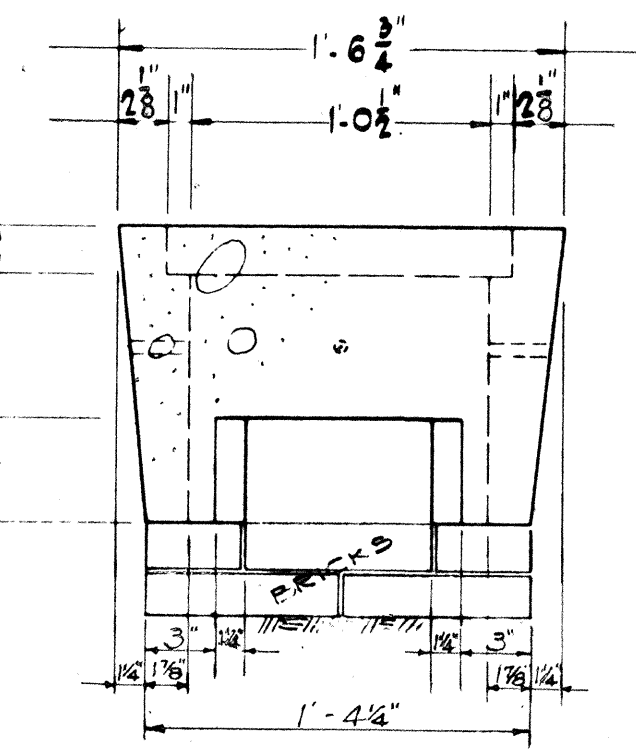
1. THE PULL BOXES SHOWN ON THIS SHEET ARE TO BE USED BY BOTH THE HAWAIIAN TELEPHONE CO. AND THE HAWAIIAN ELECTRIC CO.
2. PULL BOXES TO BE FURNISHED BY THE UTILITY COMPANIES.
3. CONTRACTOR TO FURNISH BRICKS AND CONSTRUCT WALLS (INCIDENTAL TO ITEM OF "INSTALLING PRECAST CONCRETE PULL BOXES").
4. BRICKS TO BE PLACED UNDER BOX TO BRING TOP OF BOX TO GRADE.

NOTE
REINFORCING BARS TO BE OF INTERMEDIATE GRADE & FREE OF SCALE AND OIL

VARIES,
(to be determined
in the field)

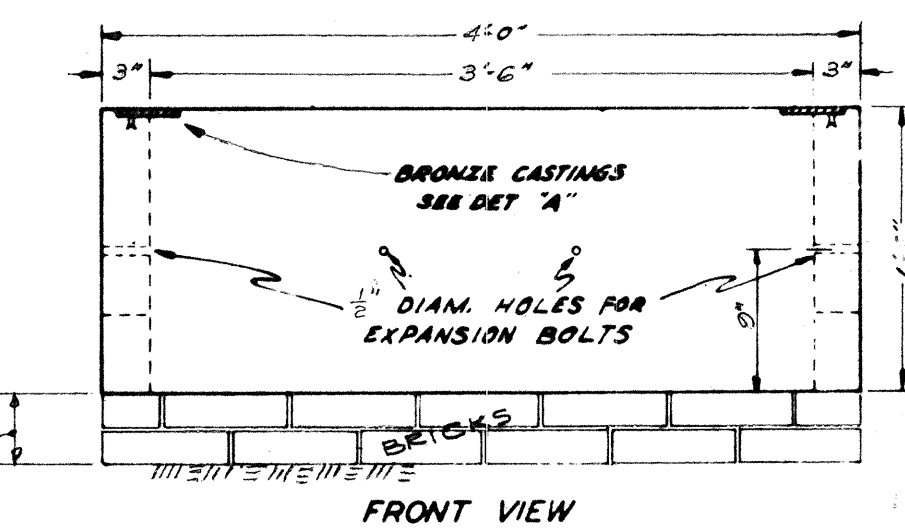


SIDE ELEVATION
SCALE 3/8" = 1"

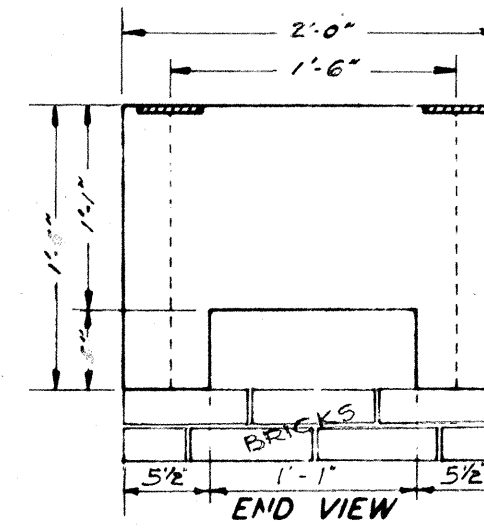


END ELEVATION
SCALE 3/8" = 1"

VARIES,
(to be determined
in the field)



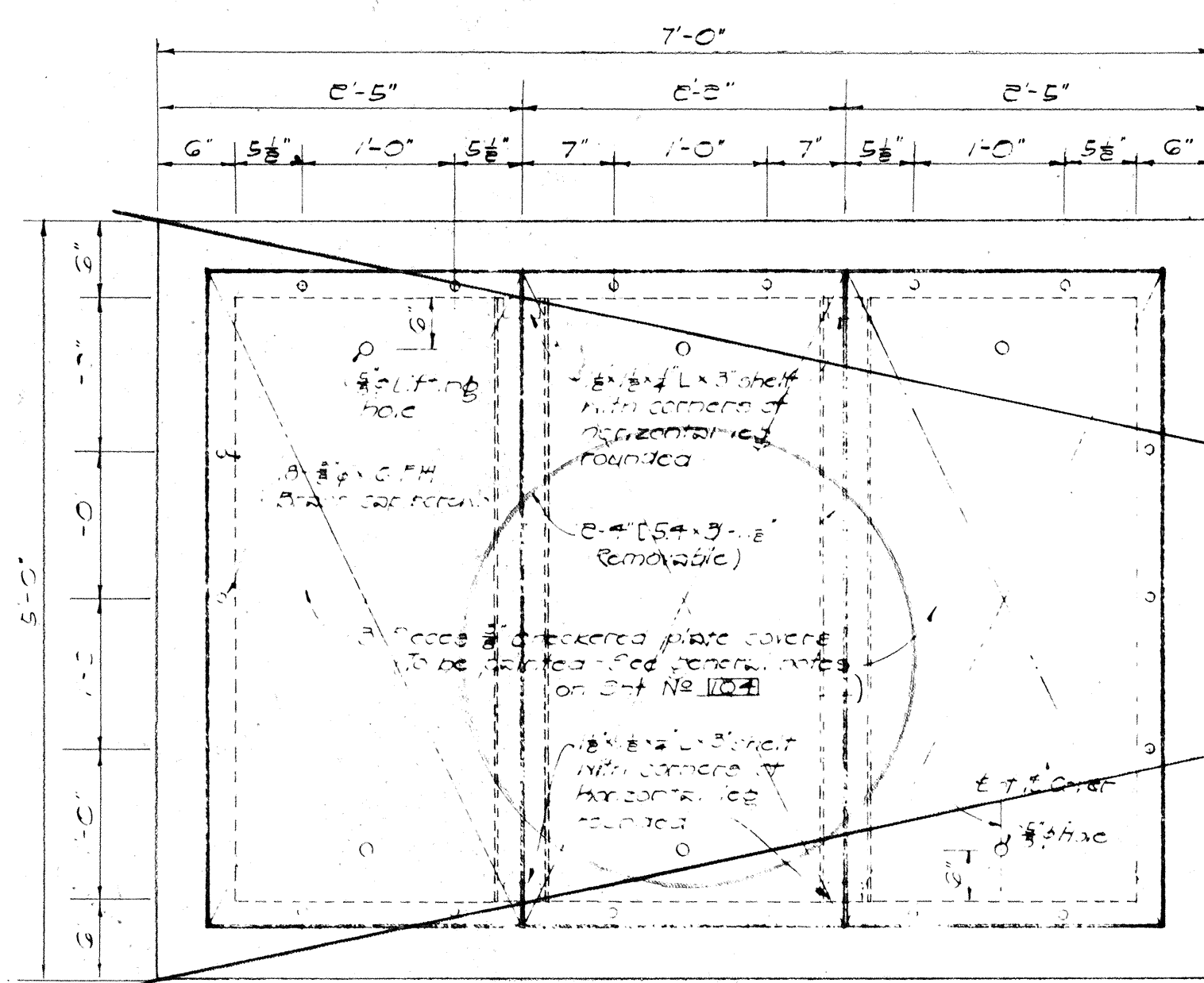
FRONT VIEW



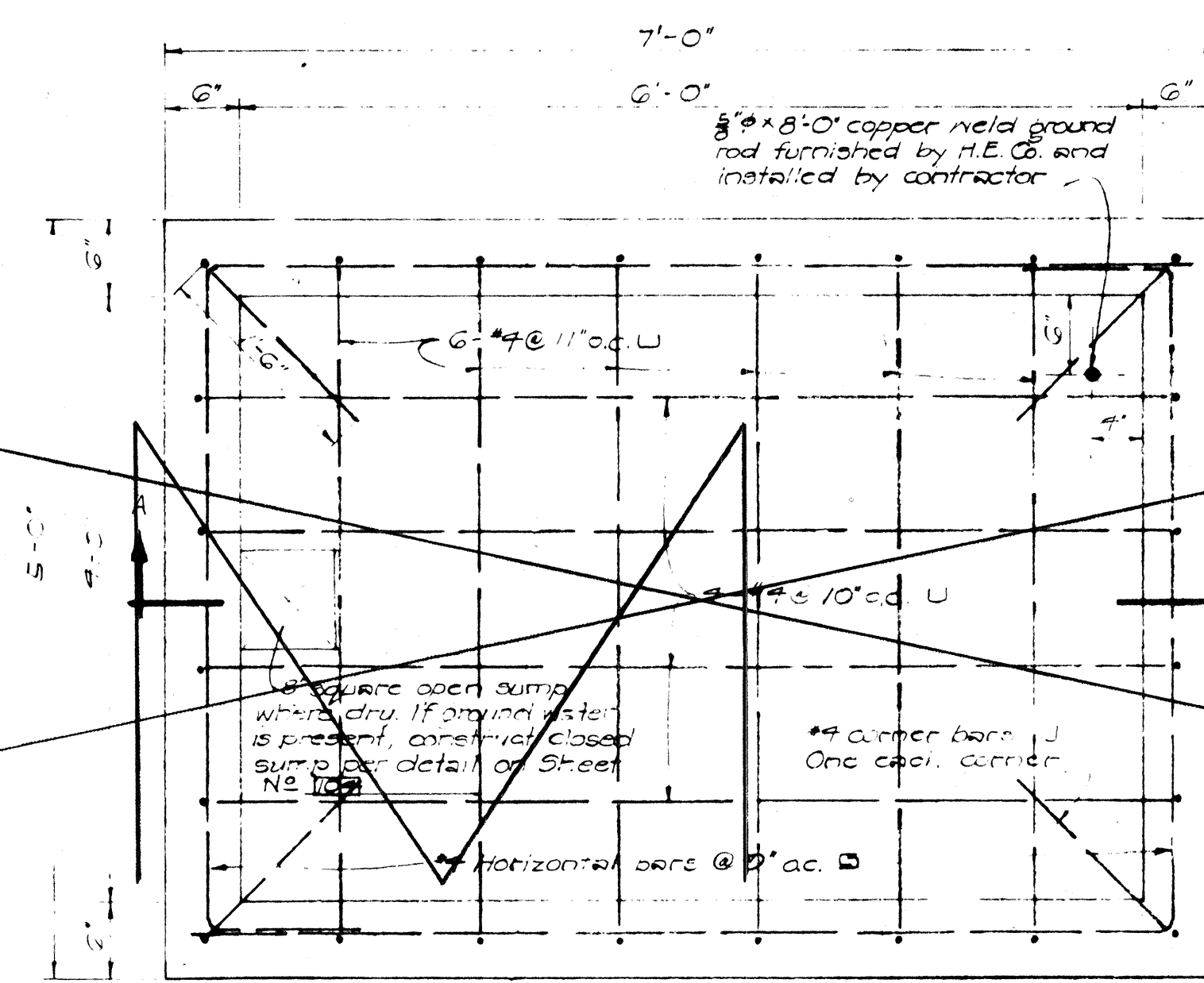
END VIEW

H.E. CO. PULLBOX No. UI-103-L
H.T. CO. PULLBOX No. 516

SCALE: 1" = 1'-0"

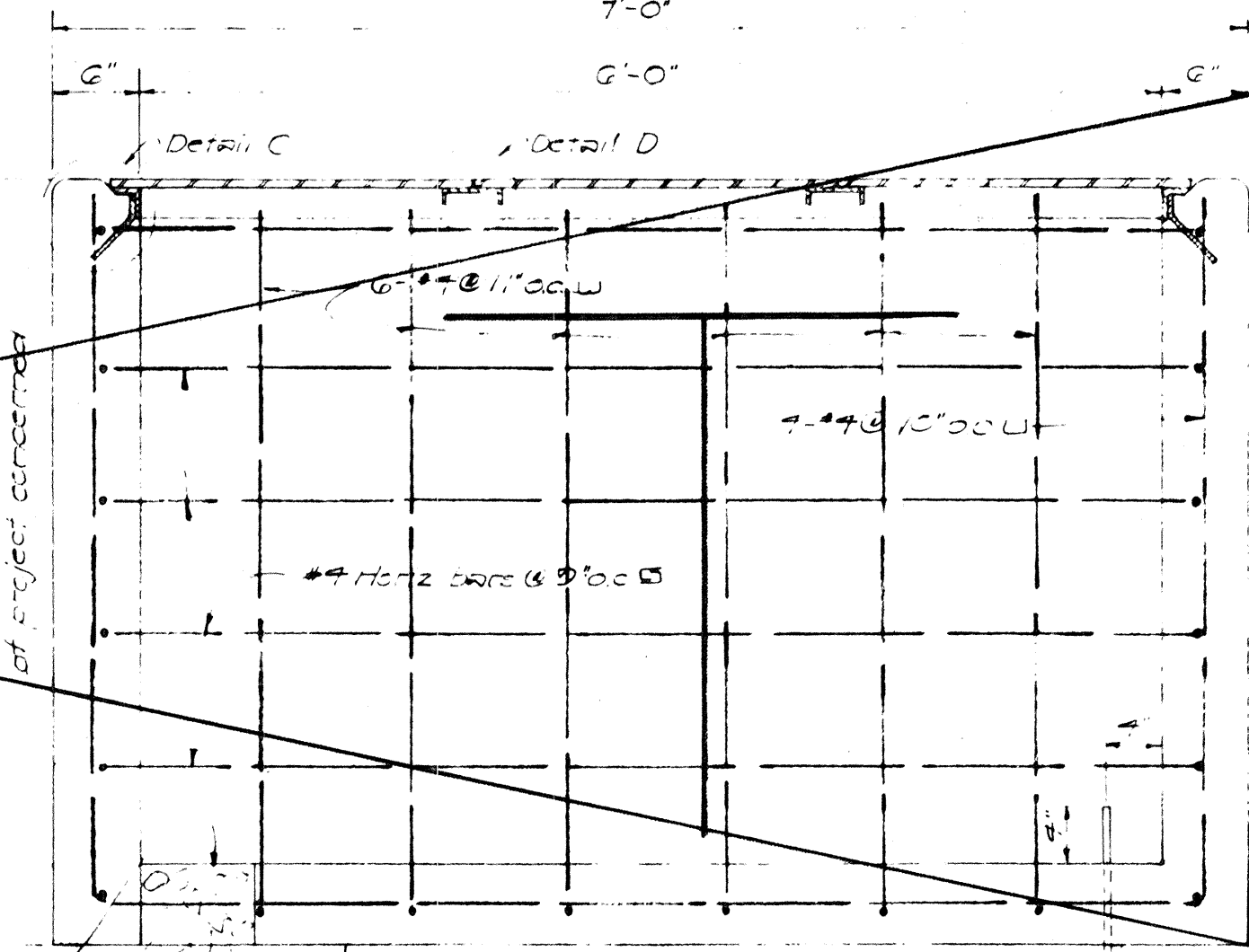


PLAN



SECTIONAL PLAN

NOTE: For Detail C & Detail D
see Sht. No. 1

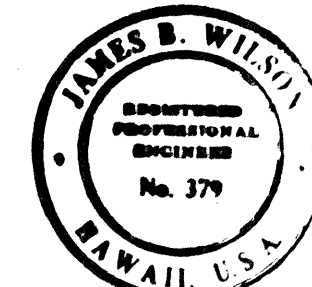


SECTION A-A

H. E. CO. HANDHOLE TYPE #3
(7'-0" x 6'-0" INSIDE)
Scale: 1" = 1'-0"

8" square open sump
where dry. If ground
water is present,
construct closed sump
per detail on Sheet
No. 104

APPROVED:
PRINCP. ELEC. ENGR., H.E. CO., LTD. DATE 1/3/61
DISTR. ENGR., H.E. CO., LTD. DATE 1/3/61
PLANT ENG'G. SUPV., H.T. CO., LTD. DATE 1/3/61



LAW & WILSON • TUDOR • TOWILL
ARCHITECTS • ENGINEERS • SURVEYORS
James B. Wilson
REGISTERED ENGINEER
DATE JUL 3 1957

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII
DETAIL OF HAW'N ELEC. CO.
HANDHOLE, & HAW'N ELEC. CO.
& HAW'N TEL. CO. PULLBOXES.
PROJ. NO. F-090-1(7)
SCALE: AS SHOWN

SHEET NO. OF SHEETS

80