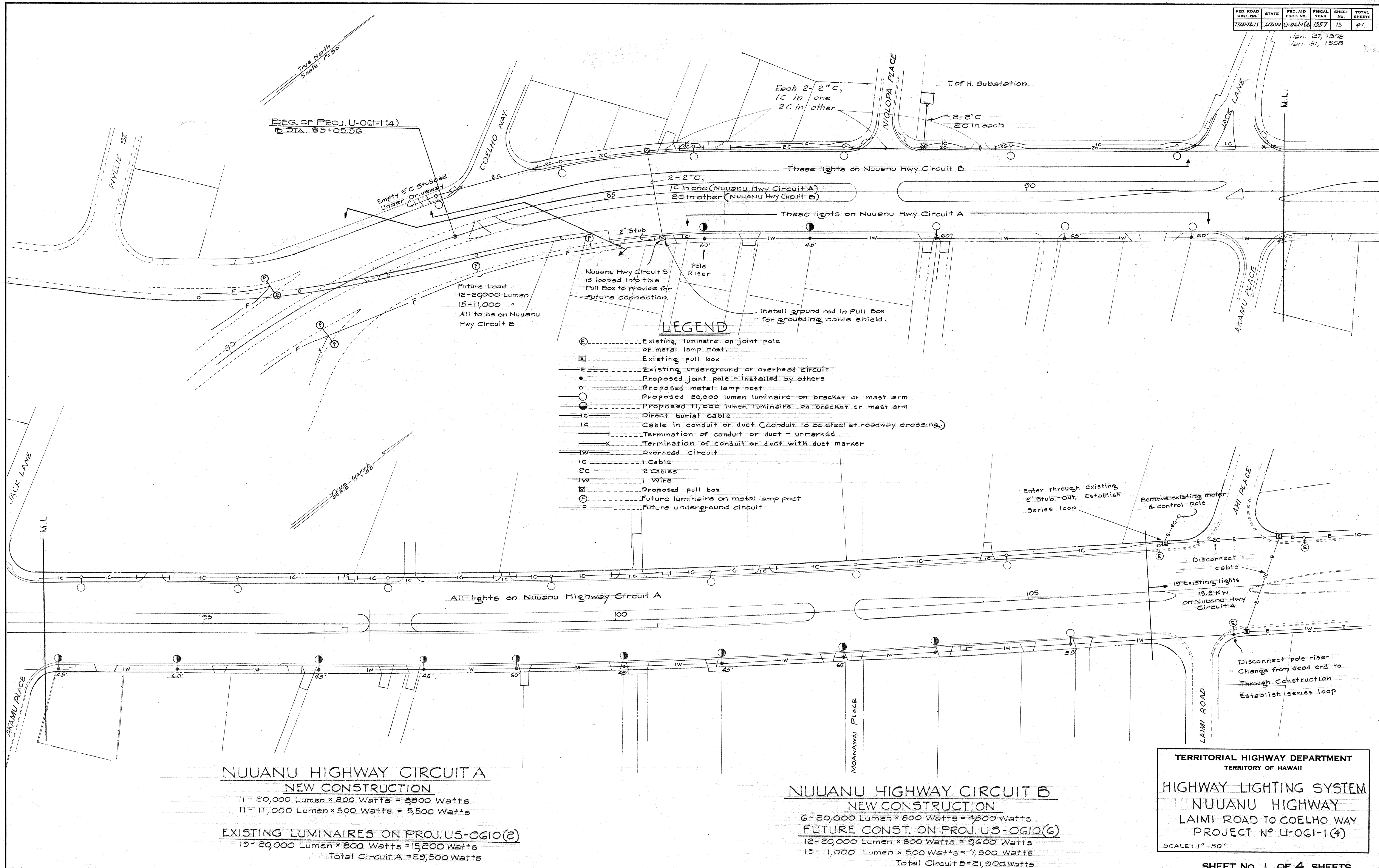
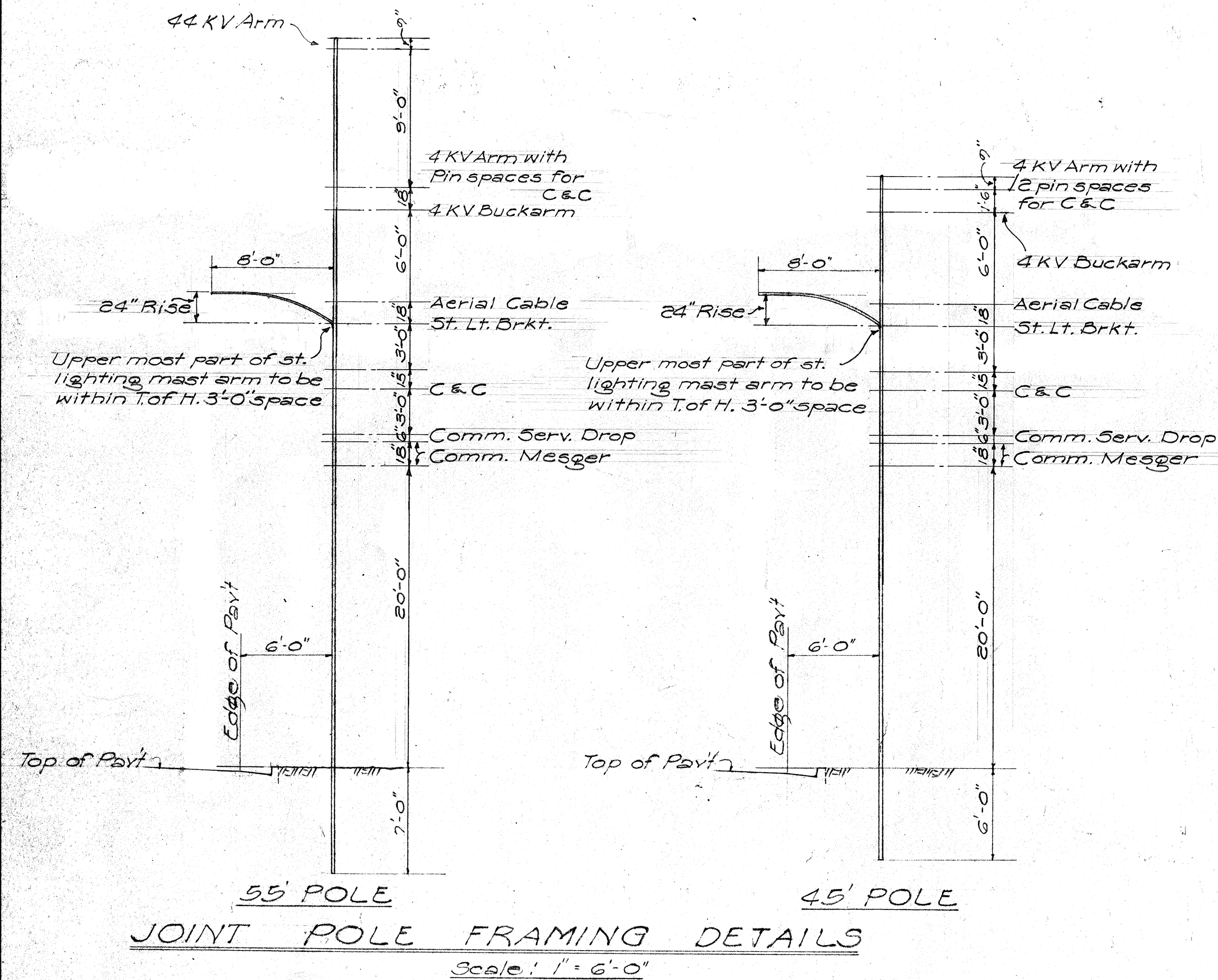


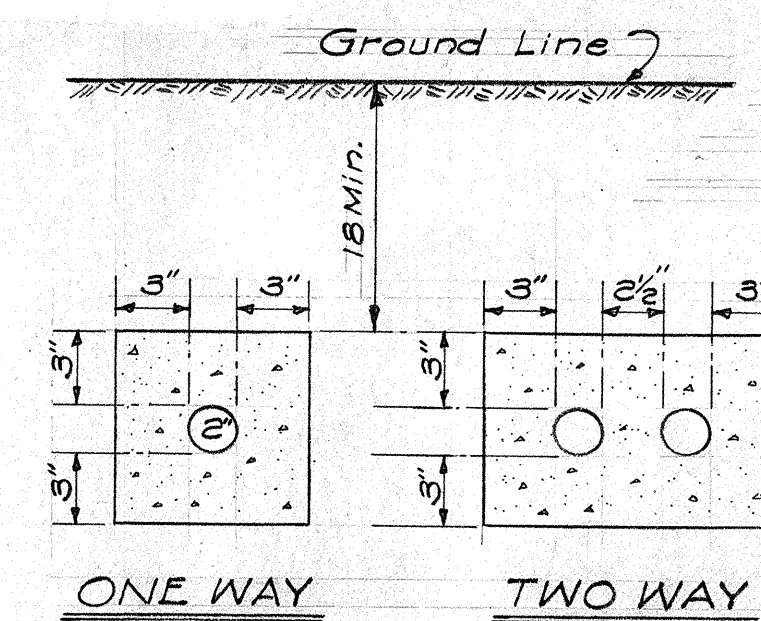
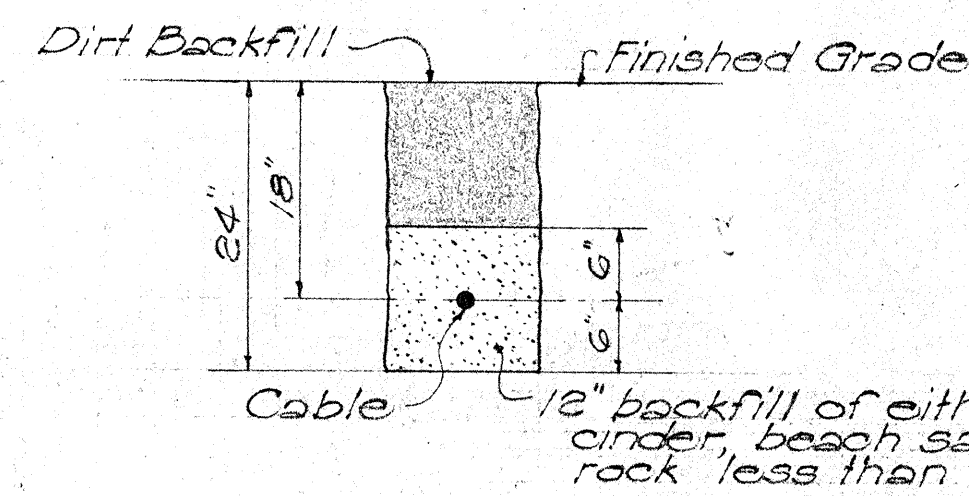
Jan. 27, 1958
Jan. 31, 1958



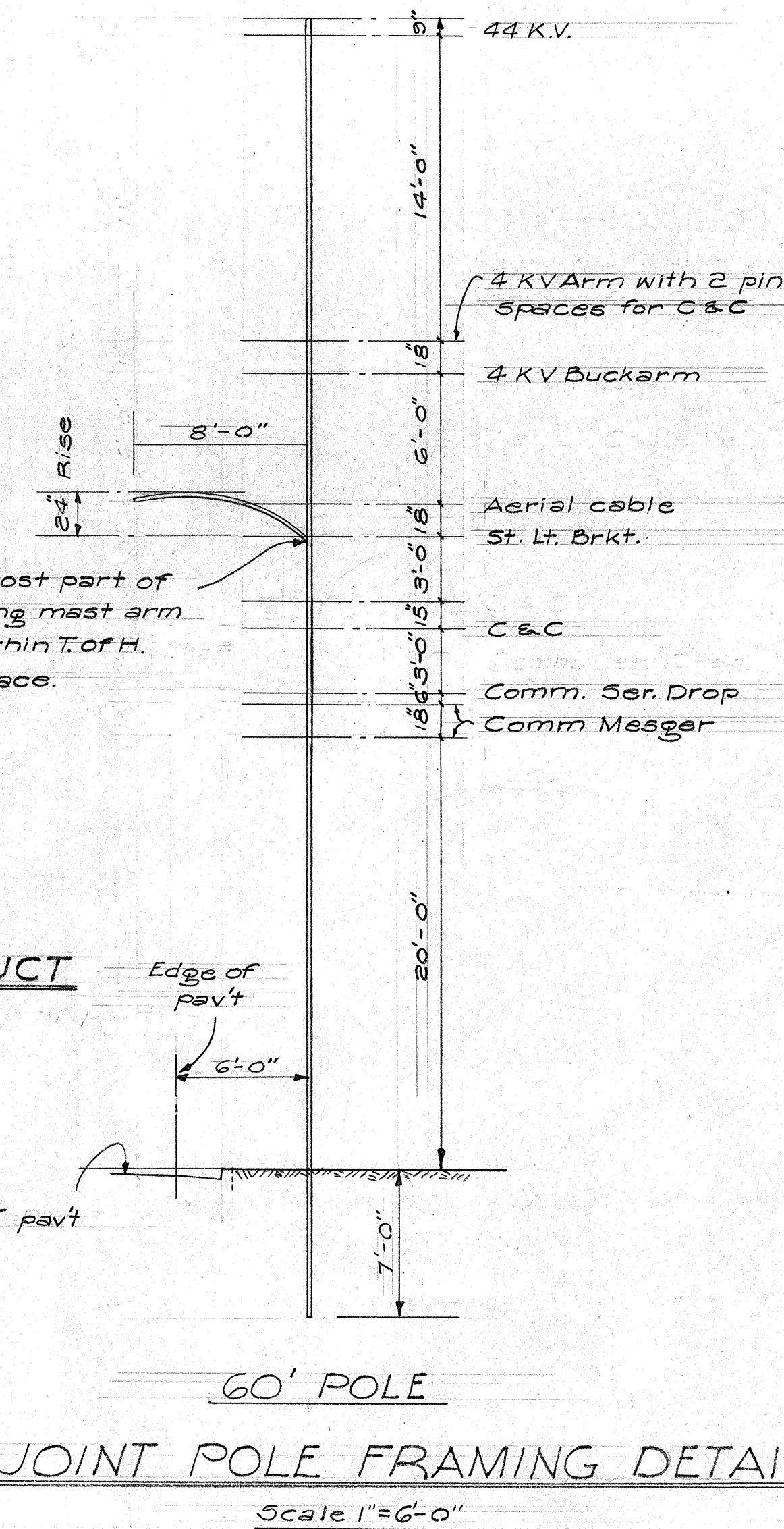
5891.13



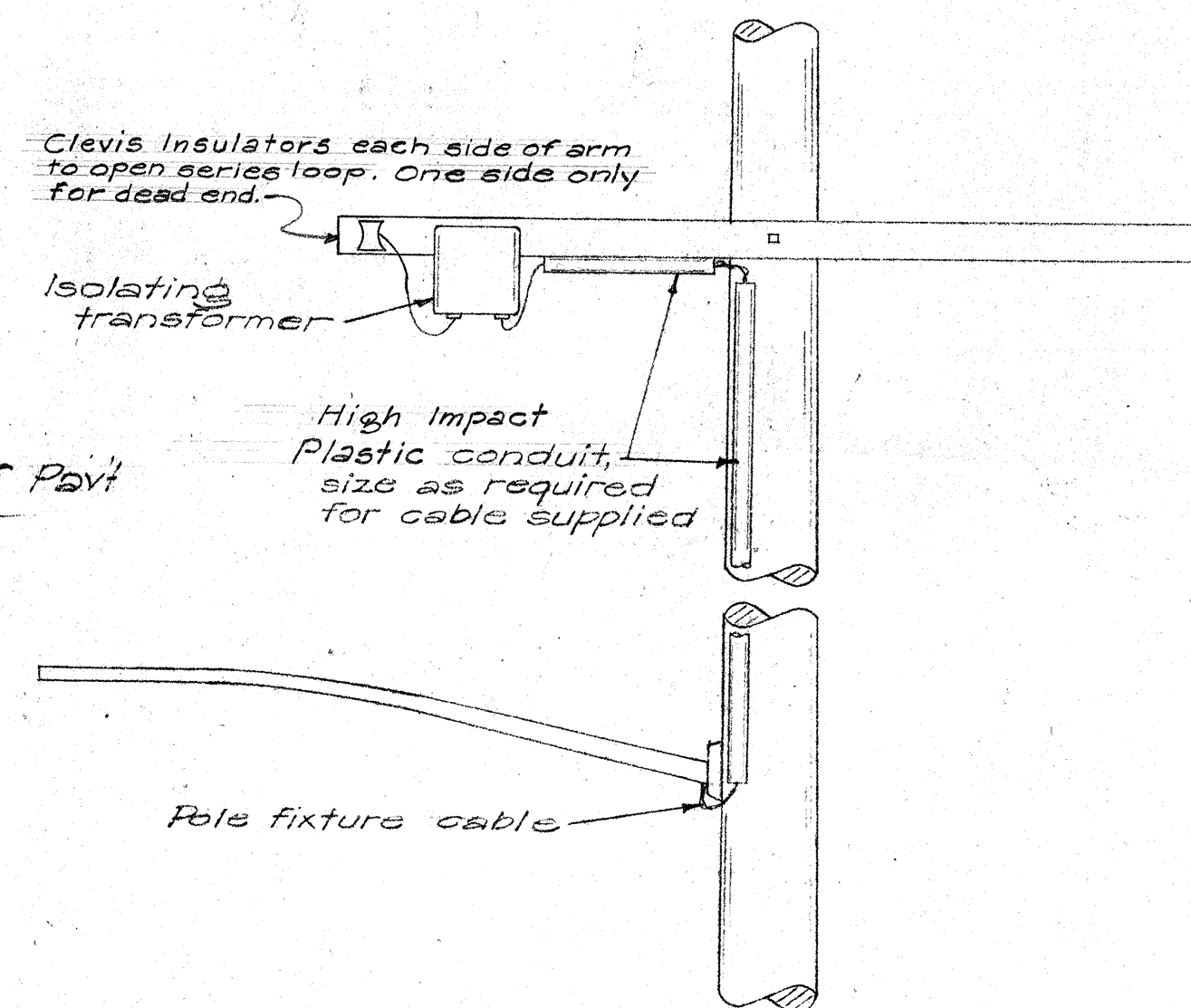
DETAIL OF BACKFILL FOR DIRECTLY BURIED CABLES
Scale: 3/4" = 1'-0"



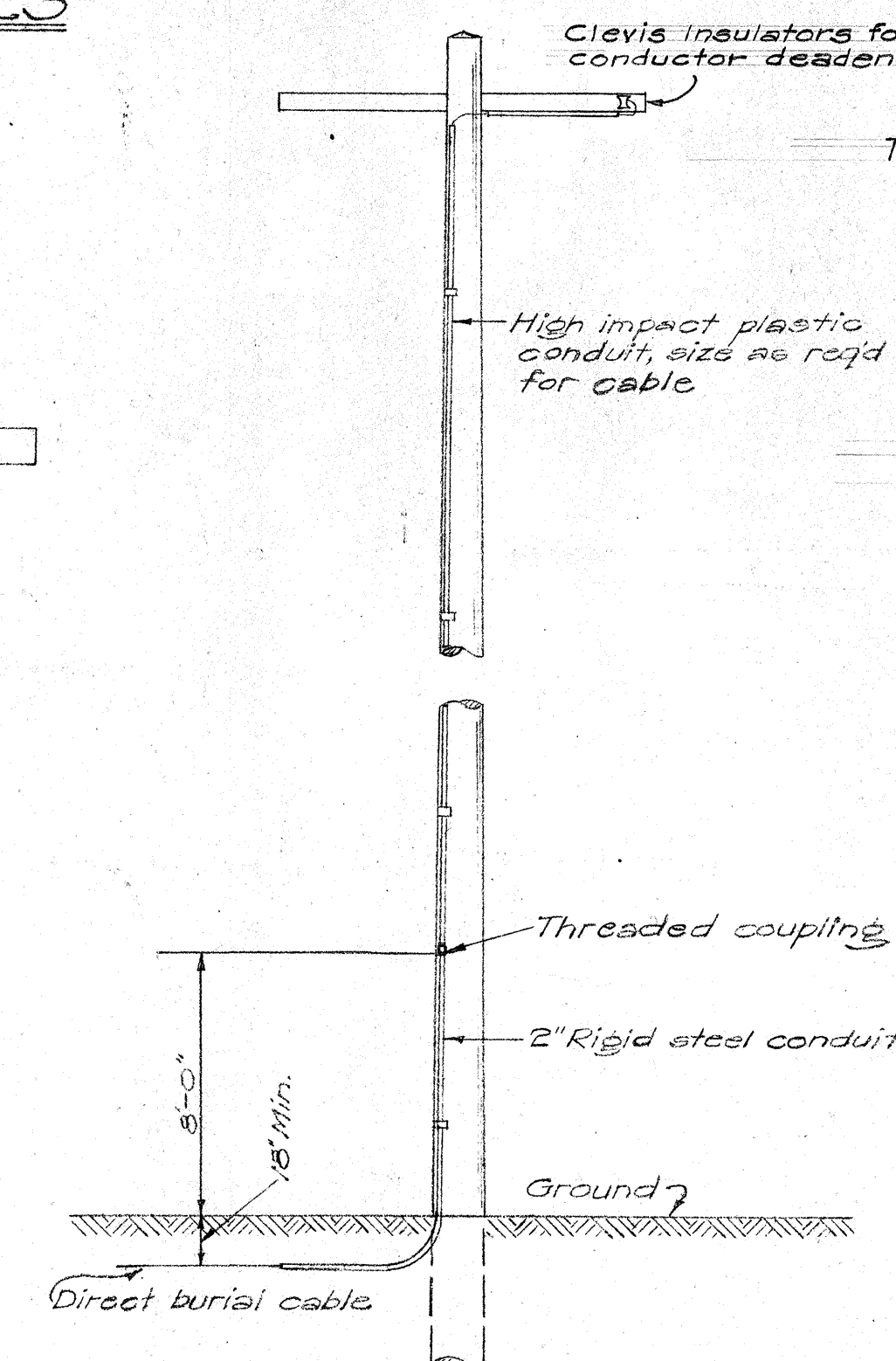
CONC. ENCASED DUCT
Scale: 1 1/2" = 1'-0"



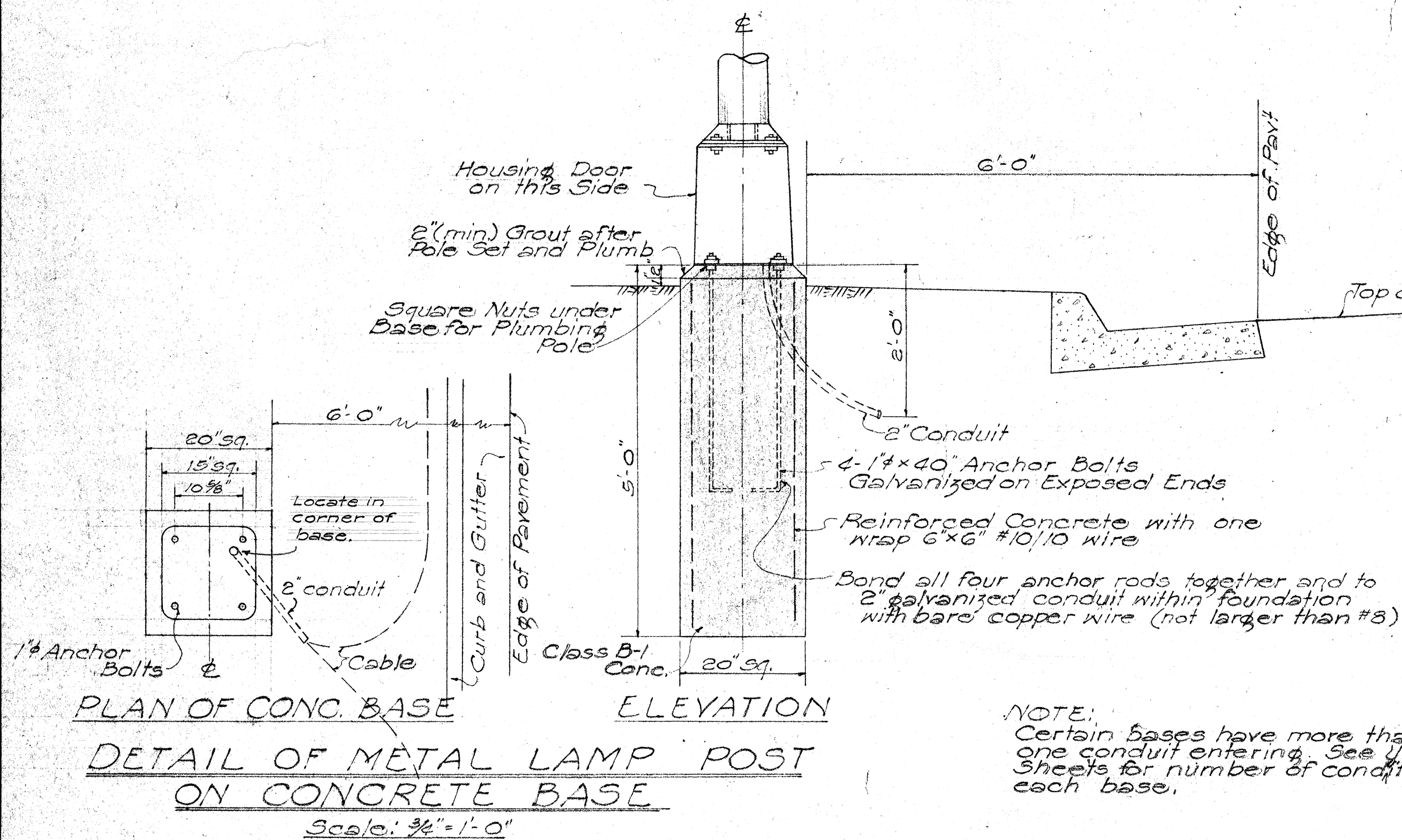
JOINT POLE FRAMING DETAIL
Scale: 1" = 6'-0"



POLE TOP ARRANGEMENT
Not to scale

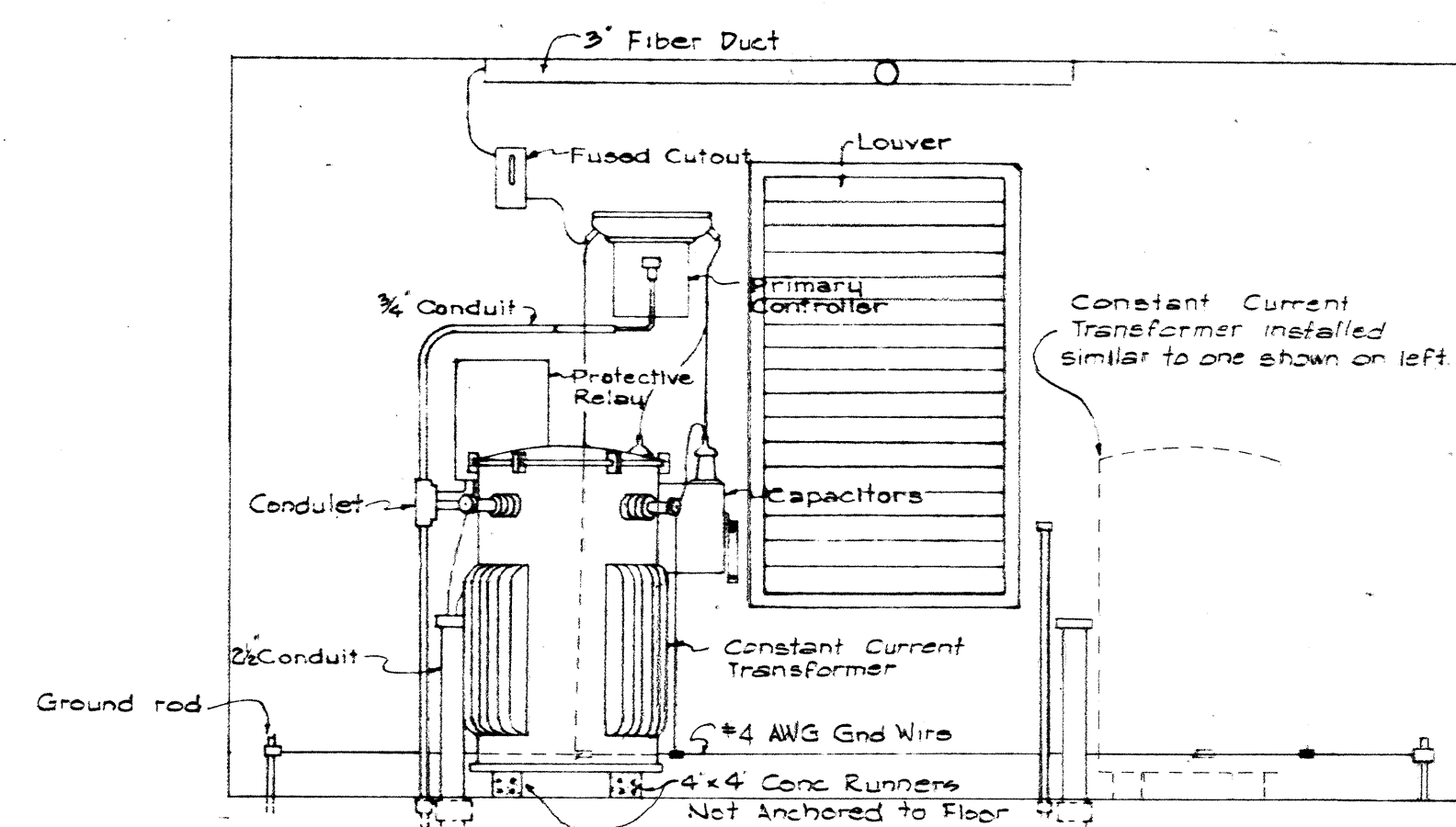


HIGHWAY LIGHTING POLE RISER
Not to scale

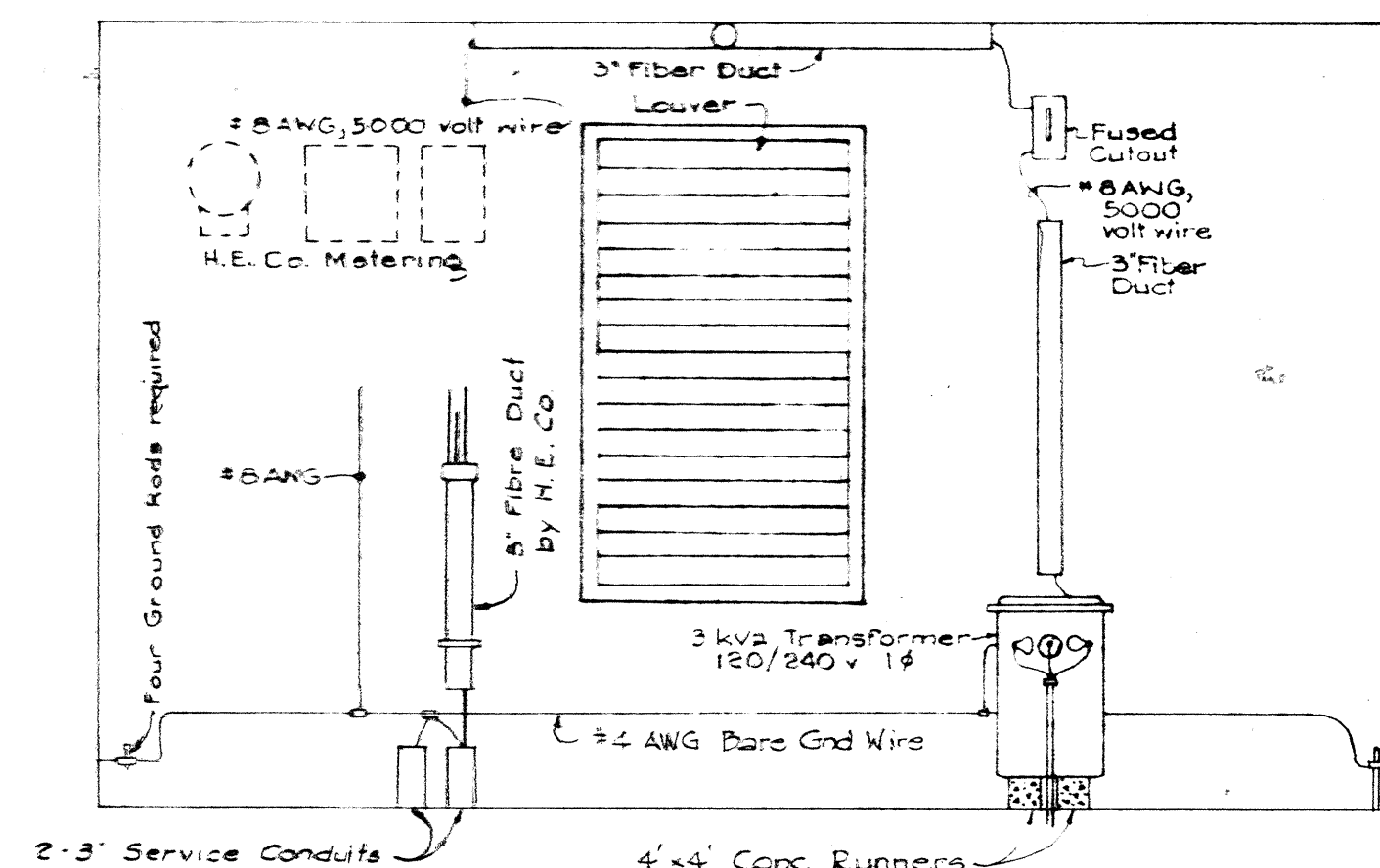


NOTE:
Certain bases have more than one conduit entering. See Utilities Sheets for number of conduits in each base.

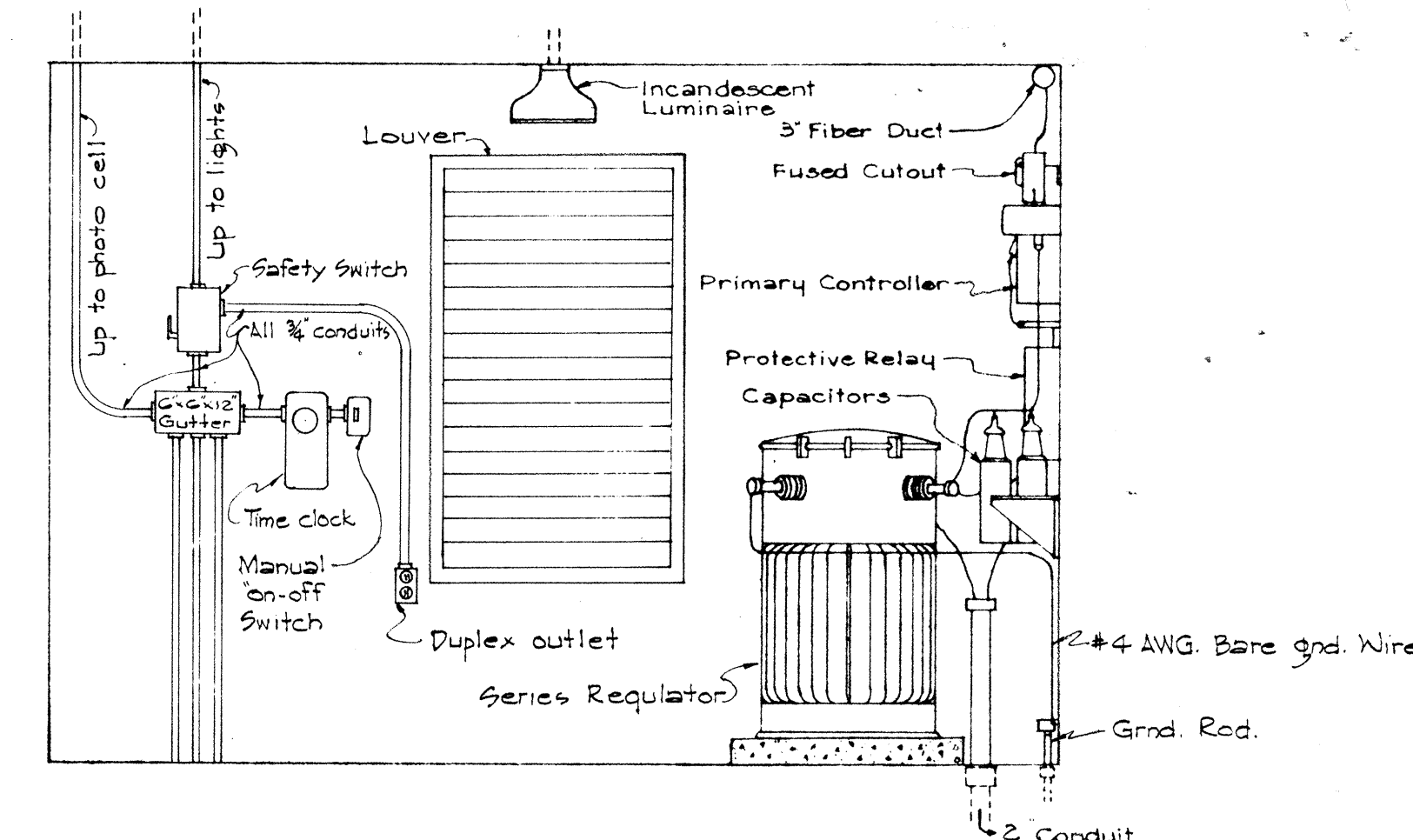
NOTE:
All taps from 2400 volt bus to equipment to be #8 AWG, 6000-7000 volt wire.



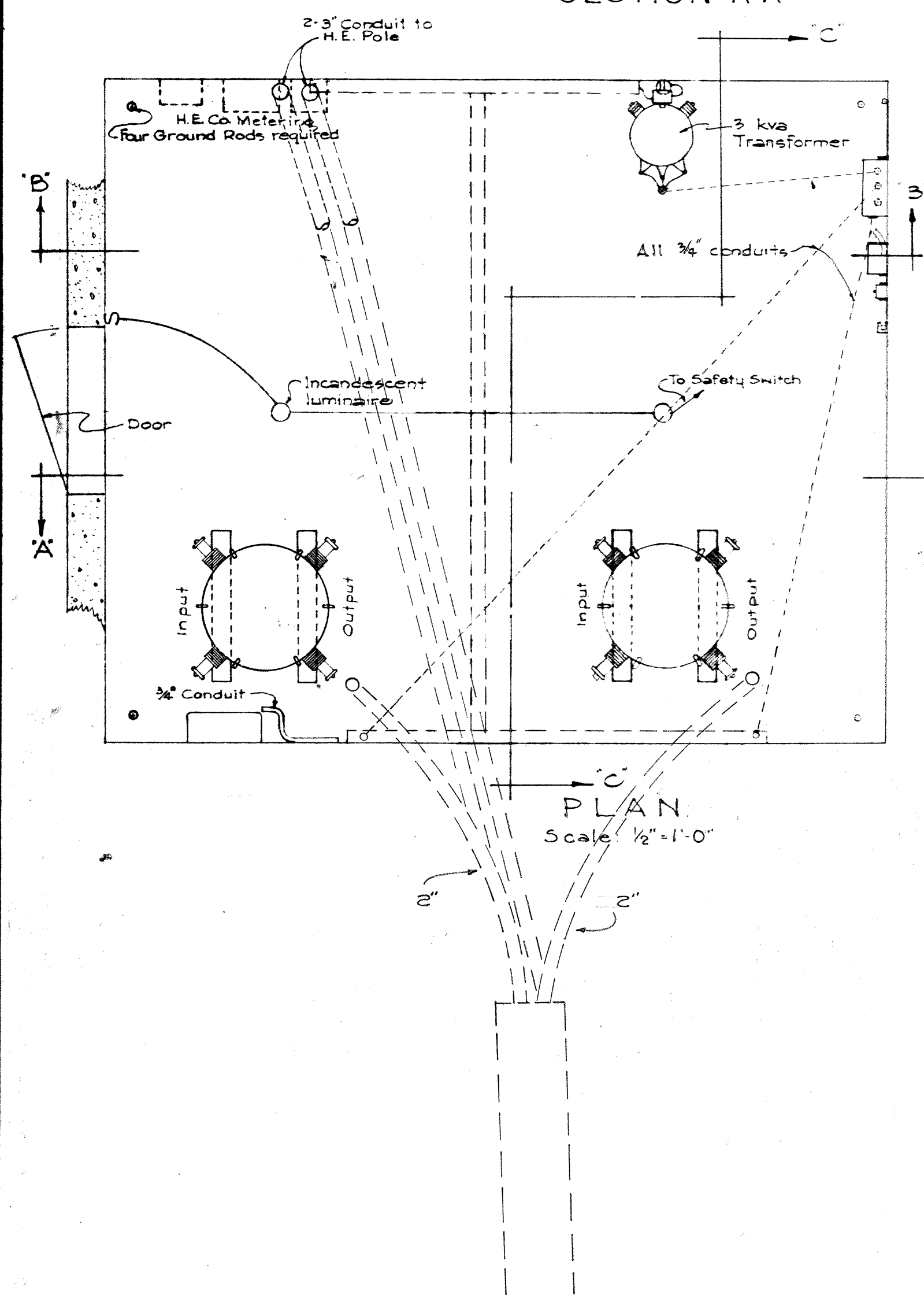
SECTION 'A-A'



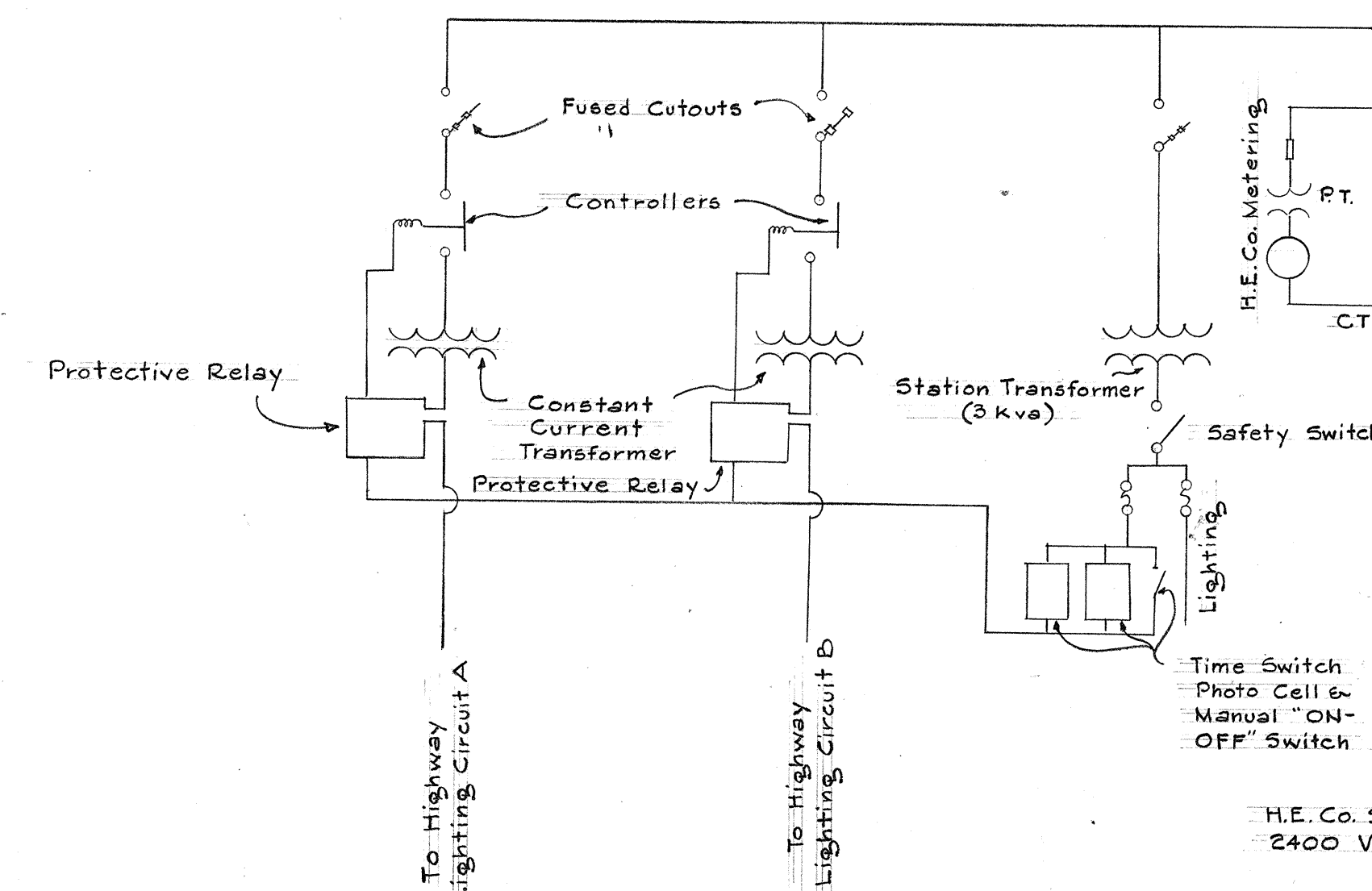
SECTION 'B-B'



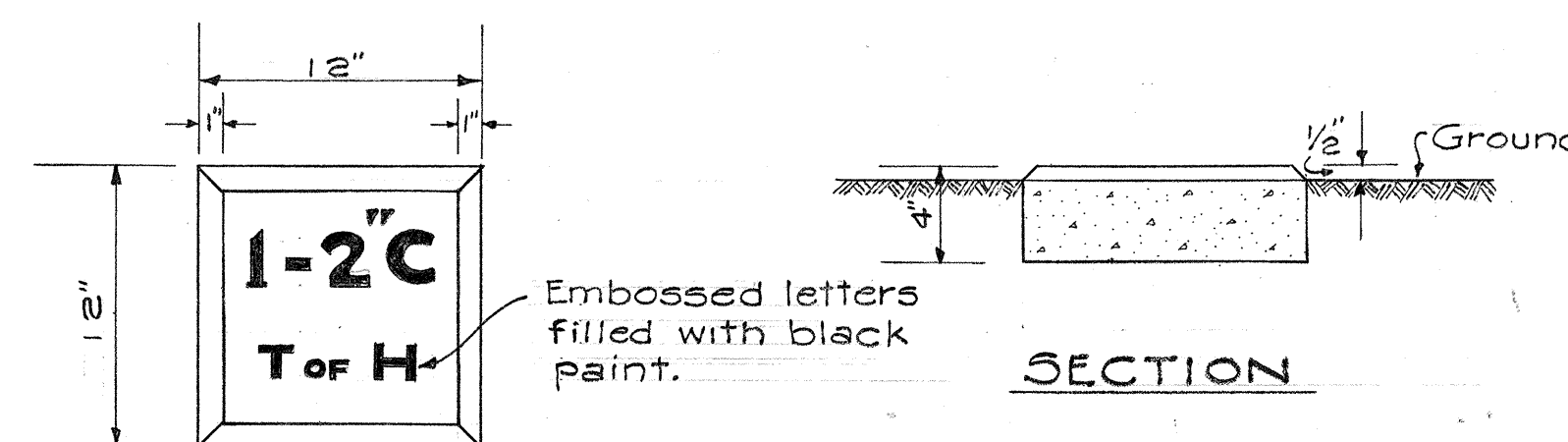
SECTION 'C-C'



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



WIRING DIAGRAM
Not to Scale



PLAN

CONDUIT MARKER DETAIL

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

DUCT WITH 2-2" C TO
T OF H PULL BOX.
2-3" C TO H.E. Co. HANDHOLE.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
HIGHWAY LIGHTING SYSTEM
NUUANU AVENUE
LAIME ROAD TO COELHO WAY
PROJECT No. U-061-1(4)

Scale: As Noted

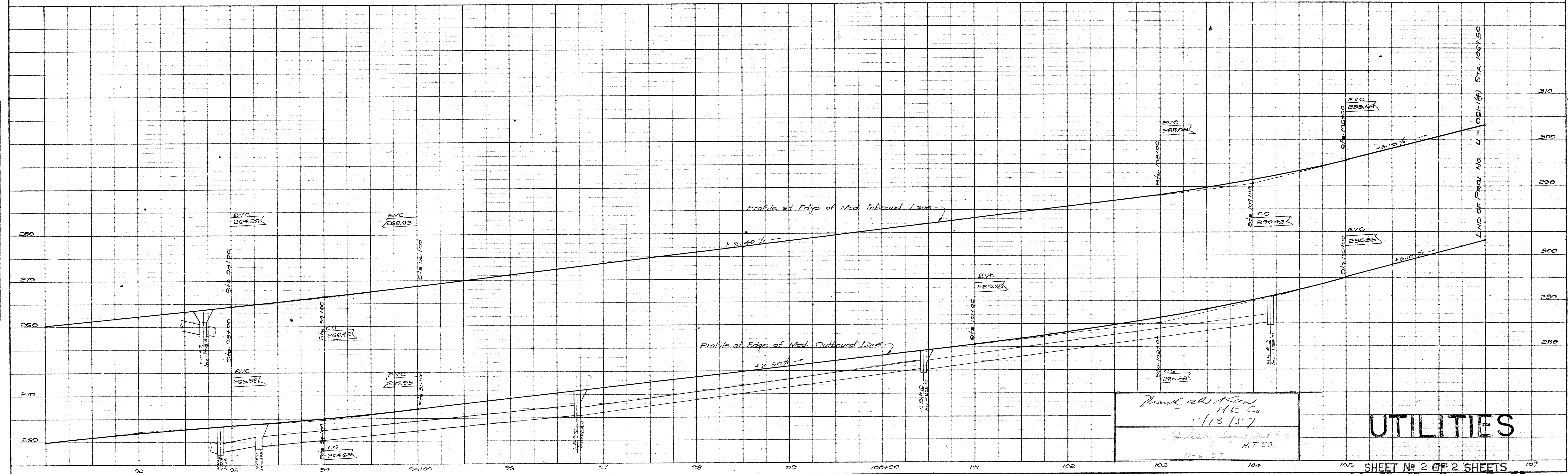
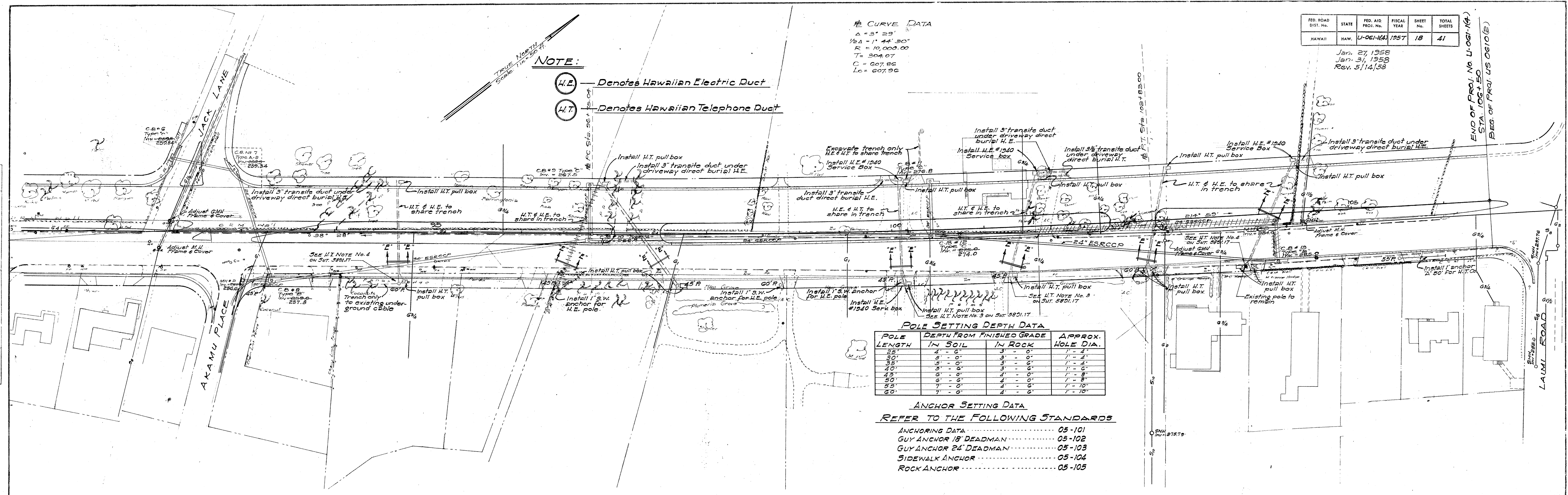
SHEET No 4 OF 4 SHEETS

5891.16

DATE
DRAWN BY
CHECKED BY
NOTE BOOK
No.

PLAN
SURVEYED
NOTED
NOTE BOOK
BY
DATE
CHECKED
AT
OF WAY CHECKED

PROFILE
SURVEYED
NOTED
NOTE BOOK
BY
DATE
CHECKED
AT
STRUCTURE NOTATIONS CH. 102



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-061-141	1957	18	41

Jan. 27, 1958
Jan. 31, 1958
Rev. 5/14/58

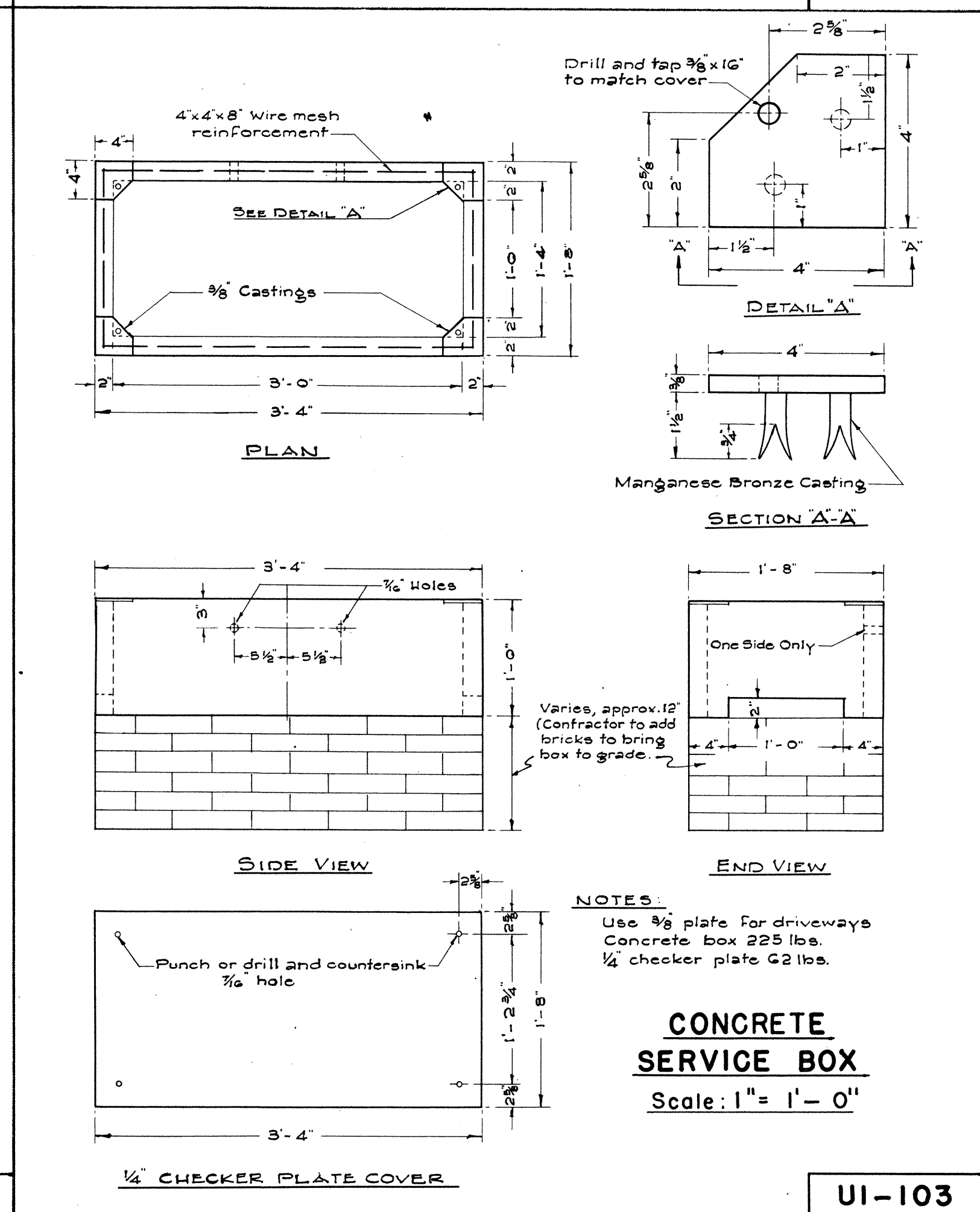
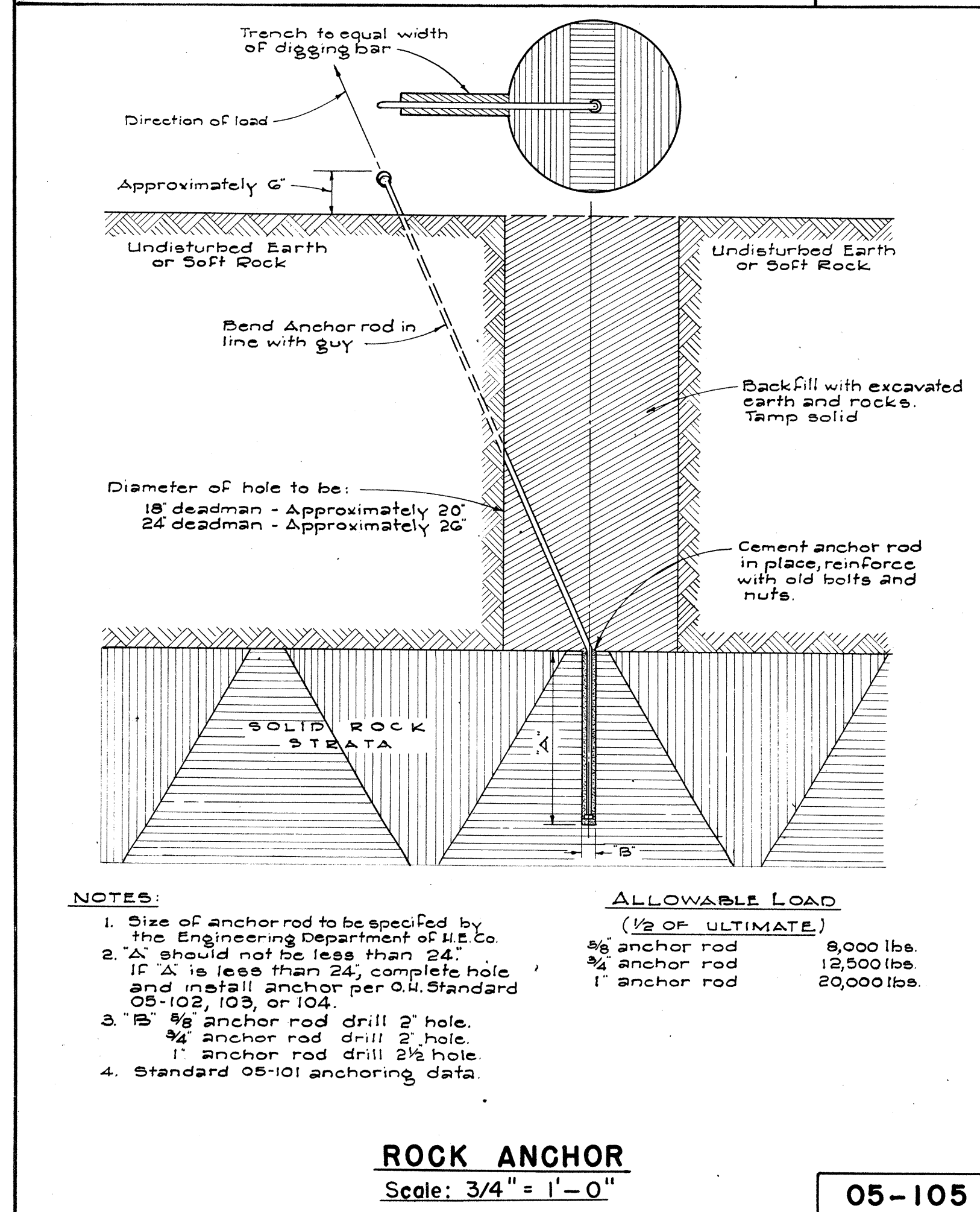
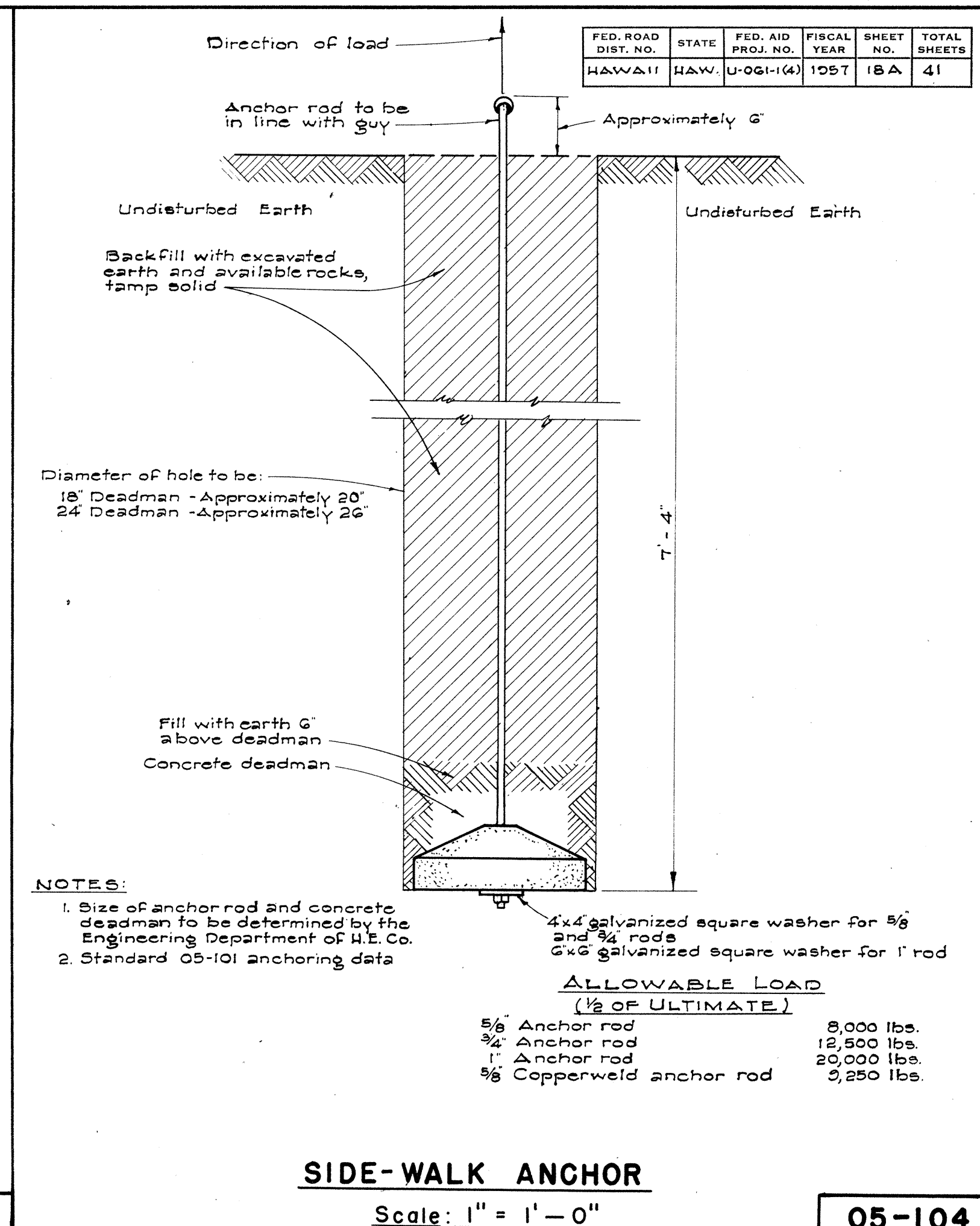
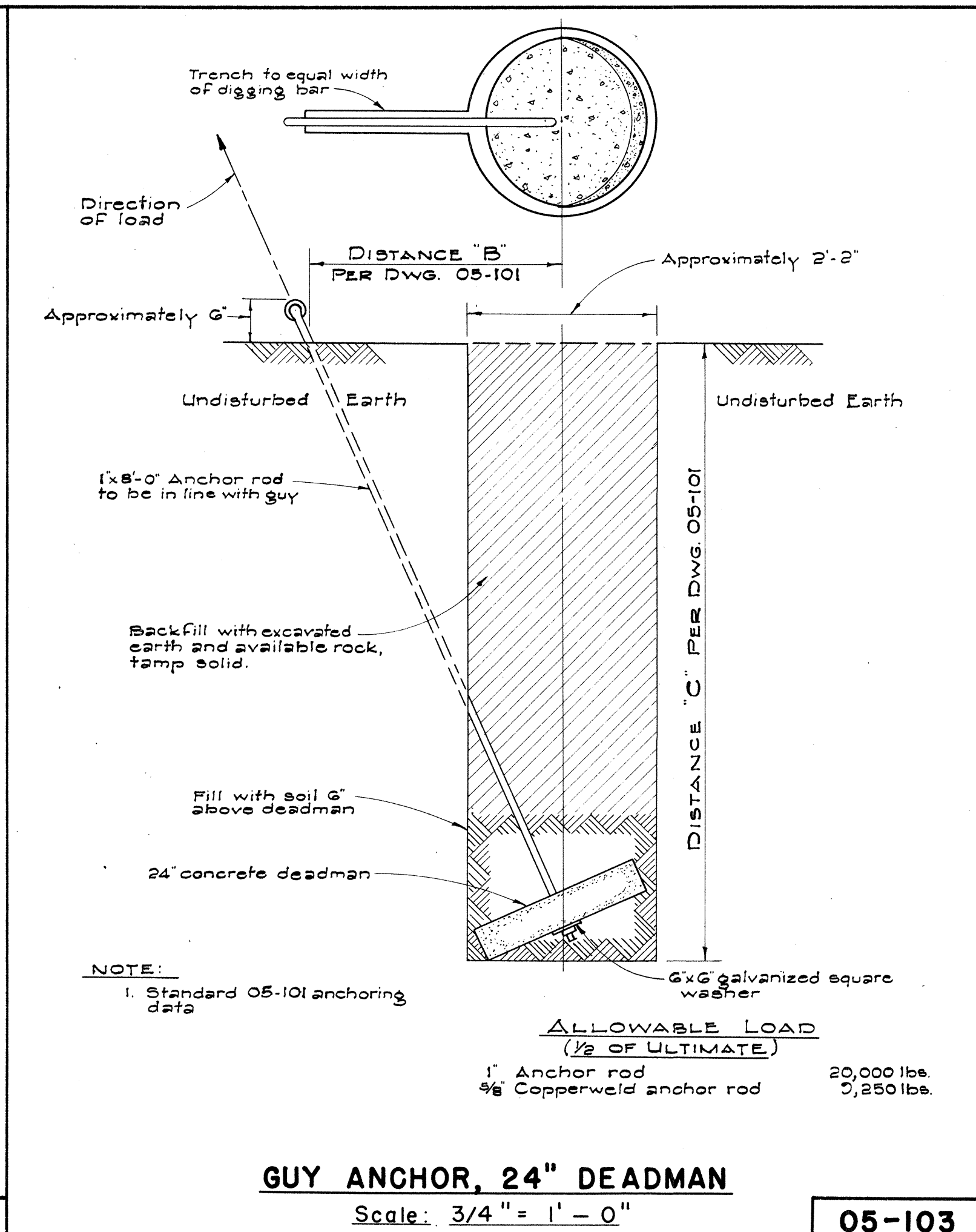
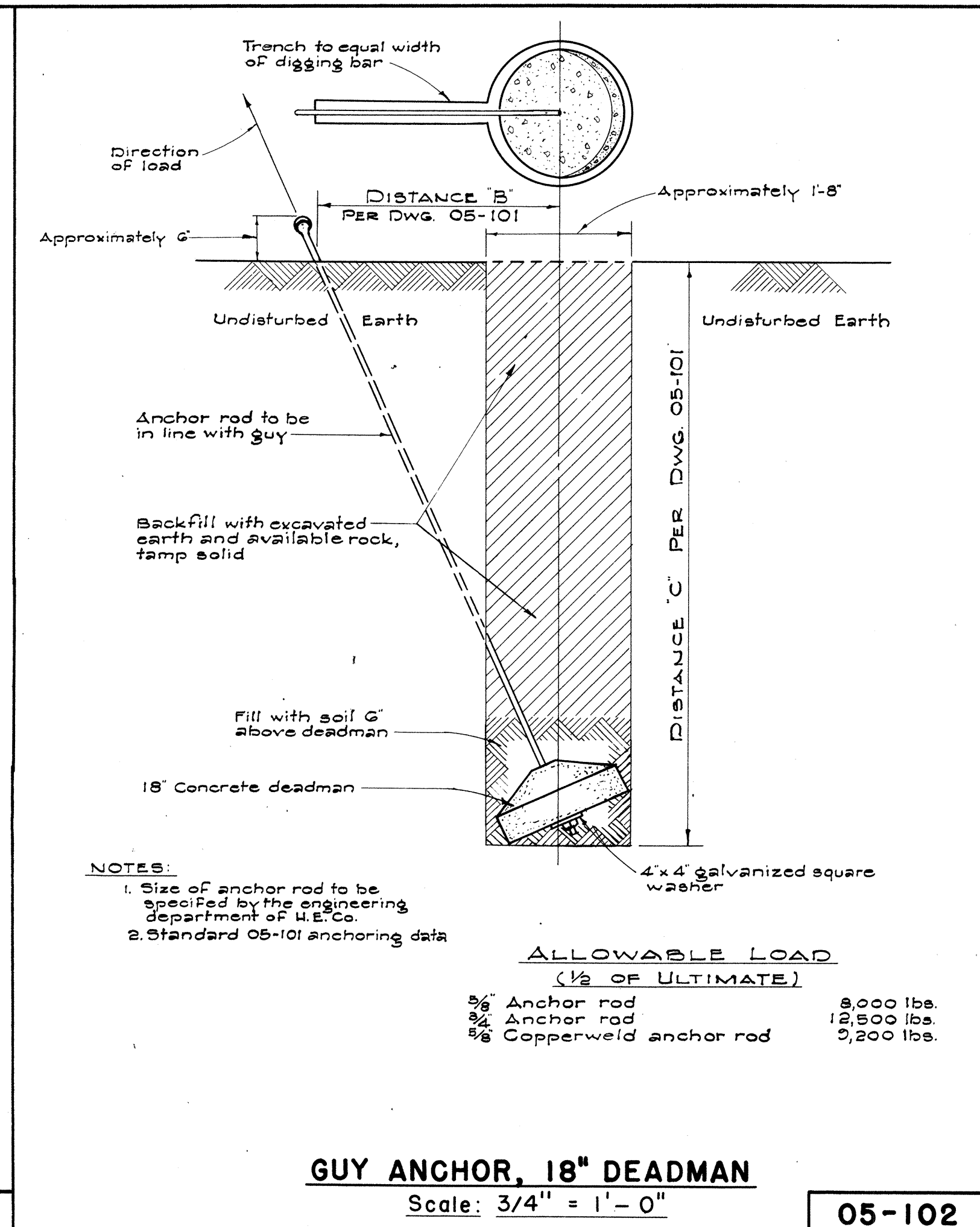
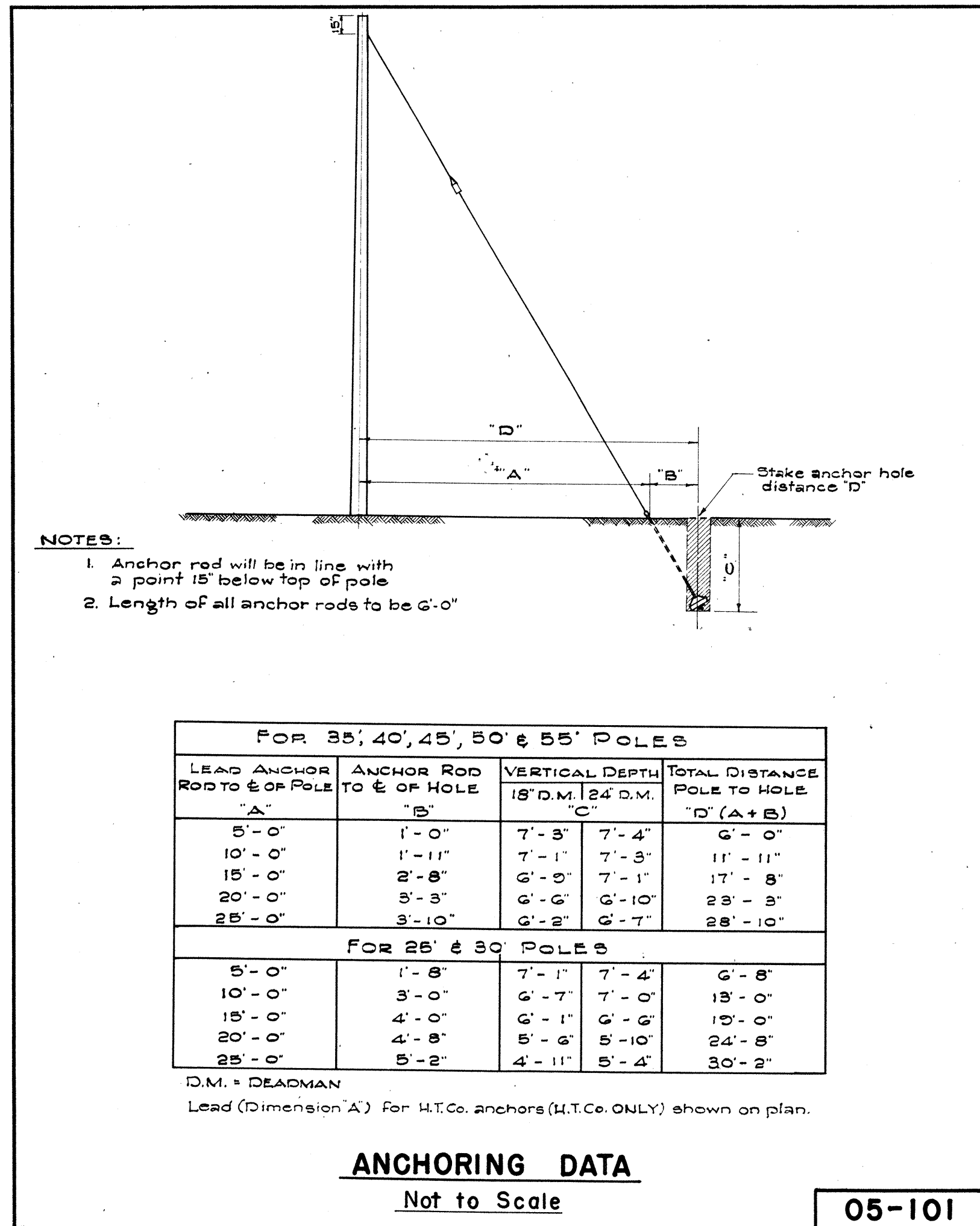
END OF PROJ. No. U-061-141
STA. 106+50
BEG. OF PROJ. US 0610(2)

Thank you to
H.E. Co.
11/13/57
H.T. Co.
11-6-57

UTILITIES

SHEET No 2 OF 2 SHEETS

5891.18



SOUTHERN PINE & DOUGLAS FIR 8lb. CREOSOTED TREATMENT										
LENGTH IN FEET	CLASS	APPROXIMATE MINIMUM DIMENSIONS — INCHES				AVERAGE WEIGHT IN POUNDS		POLE SETTING DEPTH		BREAKING LOAD 2'-0" BELOW TOP OF POLE (LBS.)
		AT TOP		6'0" FROM BUTT				DEPTH IN SOIL	DEPTH IN ROCK	
		DIA.	CIR.	DIA.	CIR.	S. P.	D. F.			
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:

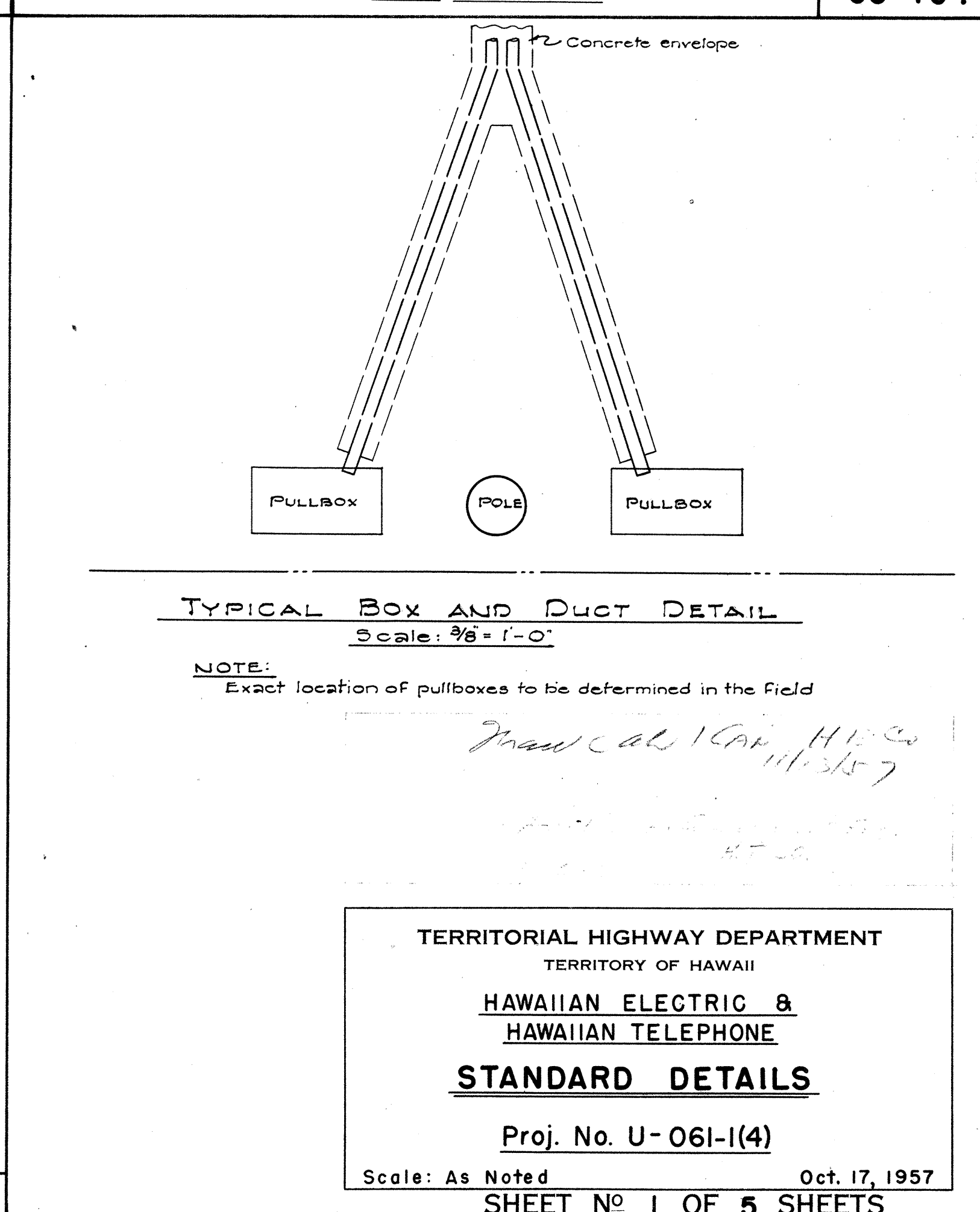
THE ULTIMATE FIBER STRESS FOR CREOSOTED SOUTHERN YELLOW PINE & DOUGLAS FIR IS 7,400 lbs. PER SQUARE INCH.

REFERENCES:

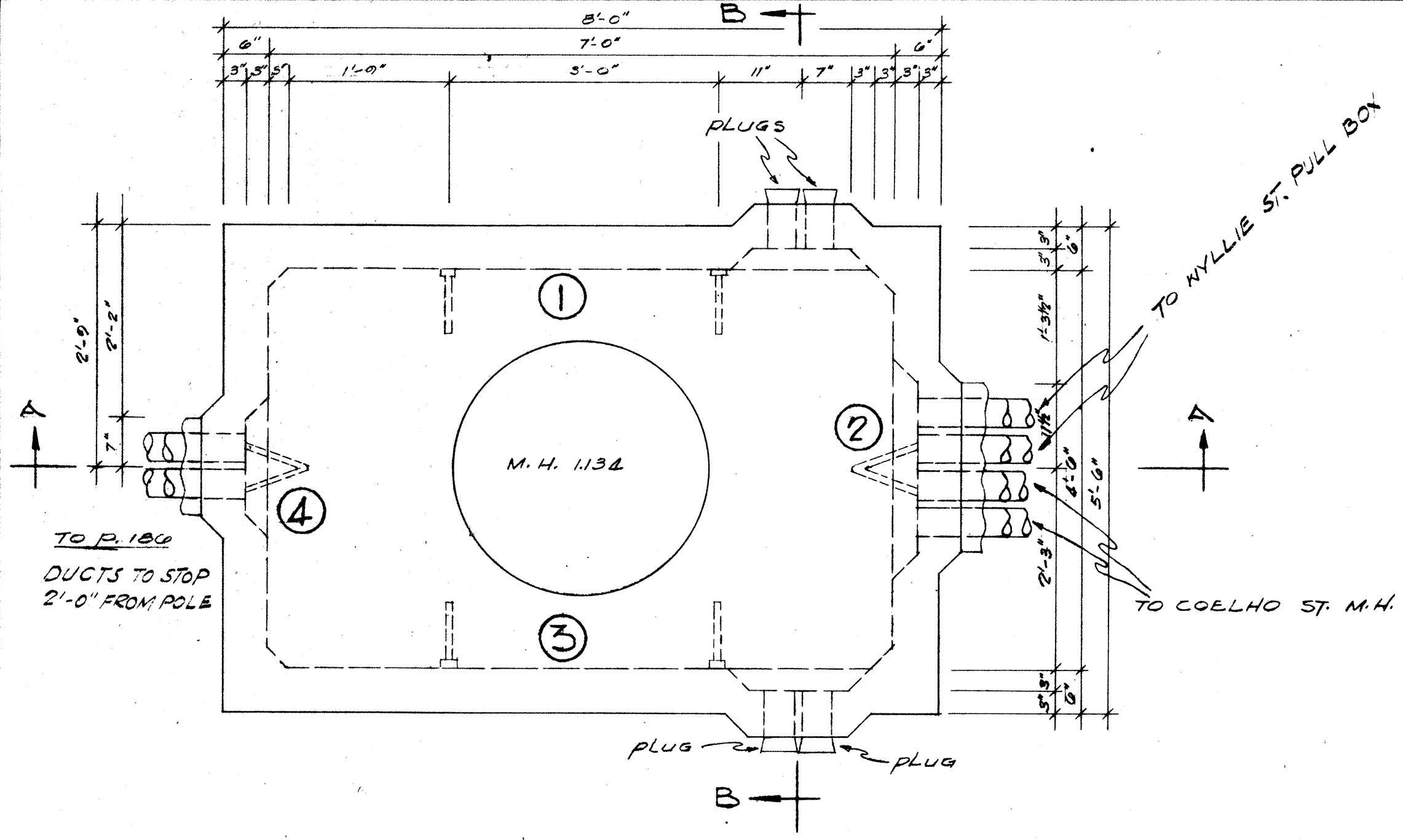
AMERICAN STANDARDS ASSOCIATION 05.4-1941, 05.6-1945
STANDARD HANDBOOK FOR ELECTRICAL ENGINEERS, EIGHTH EDITION
H.E.CO. SPECIFICATIONS FOR POLES.

WOOD POLE DATA

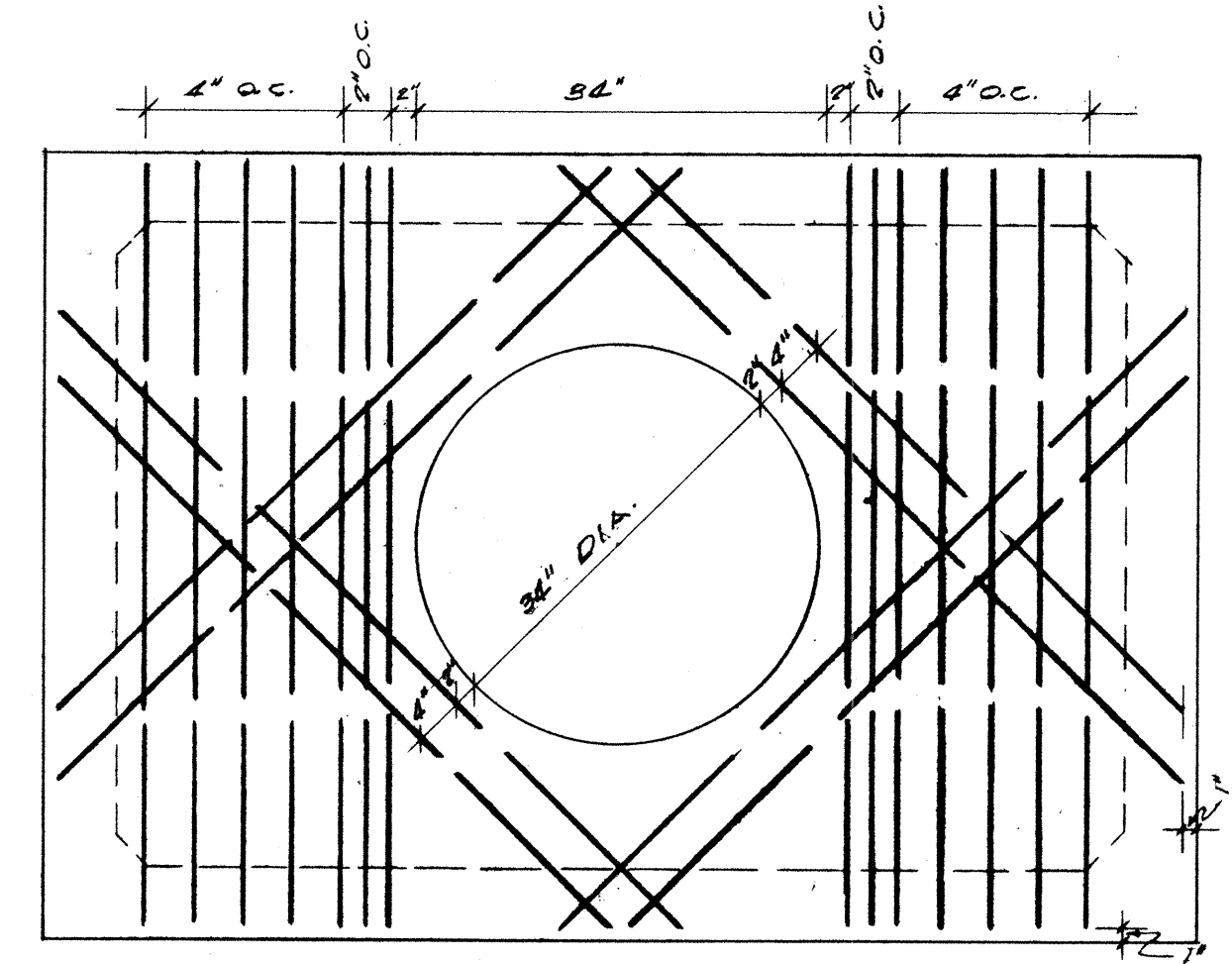
05-501



PER. NO.	DATE	SCALE	PER. NO.	DATE	SCALE	PER. NO.	DATE	SCALE	PER. NO.	DATE	SCALE	TOTAL SHEETS
1			2			3			4			41

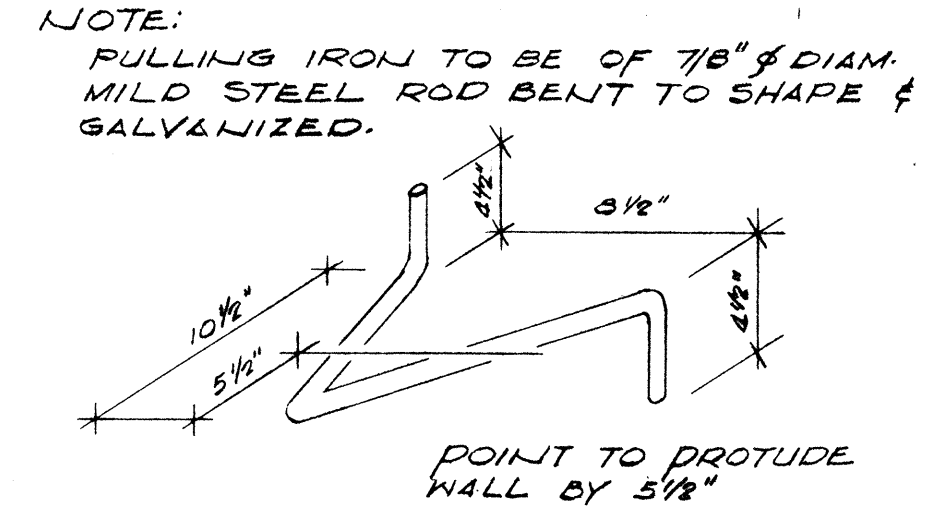


PLAN VIEW
SCALE - 3/4" = 1'-0"

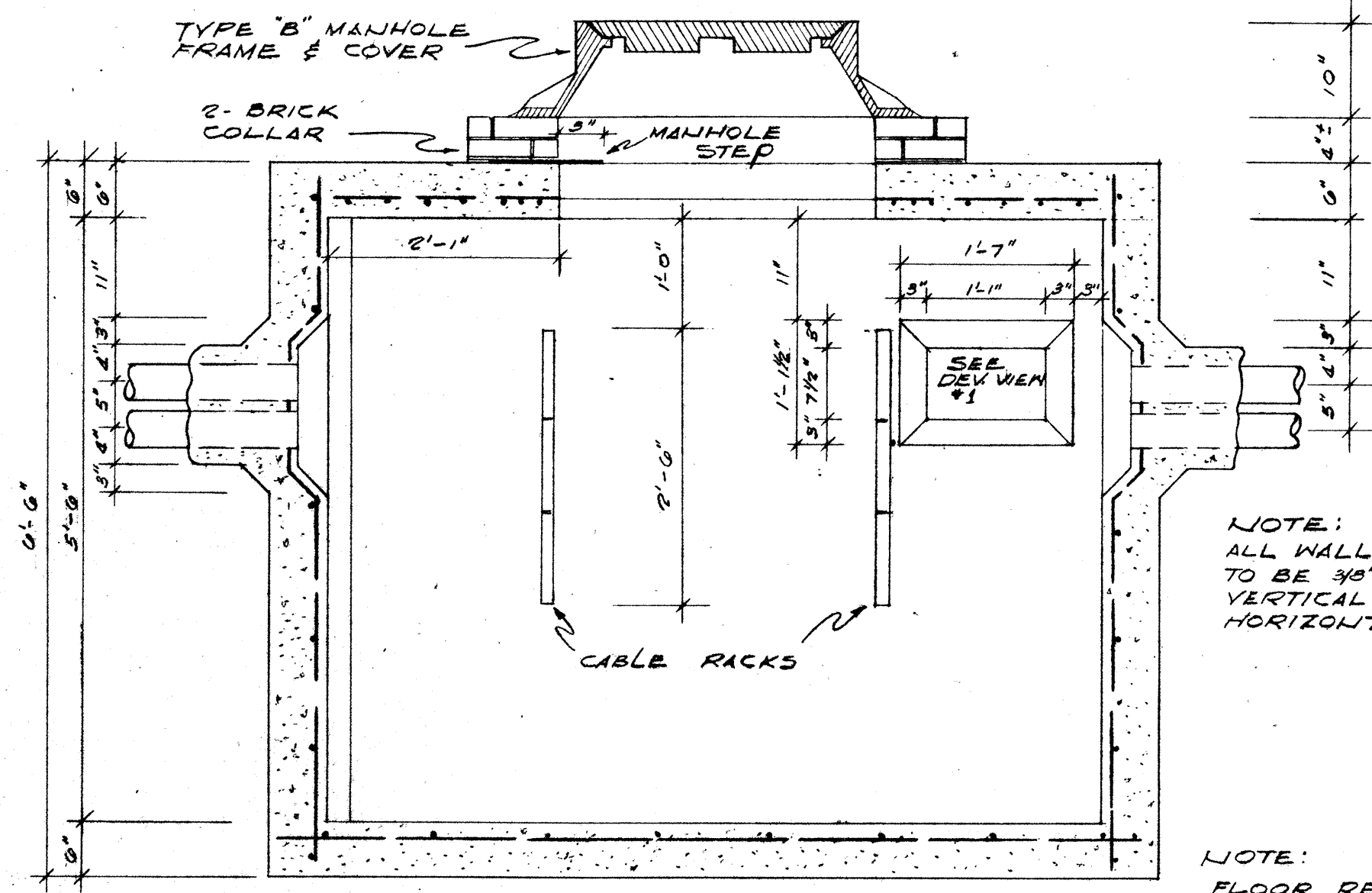


ROOF SLAB
SCALE - 3/4" = 1'-0"

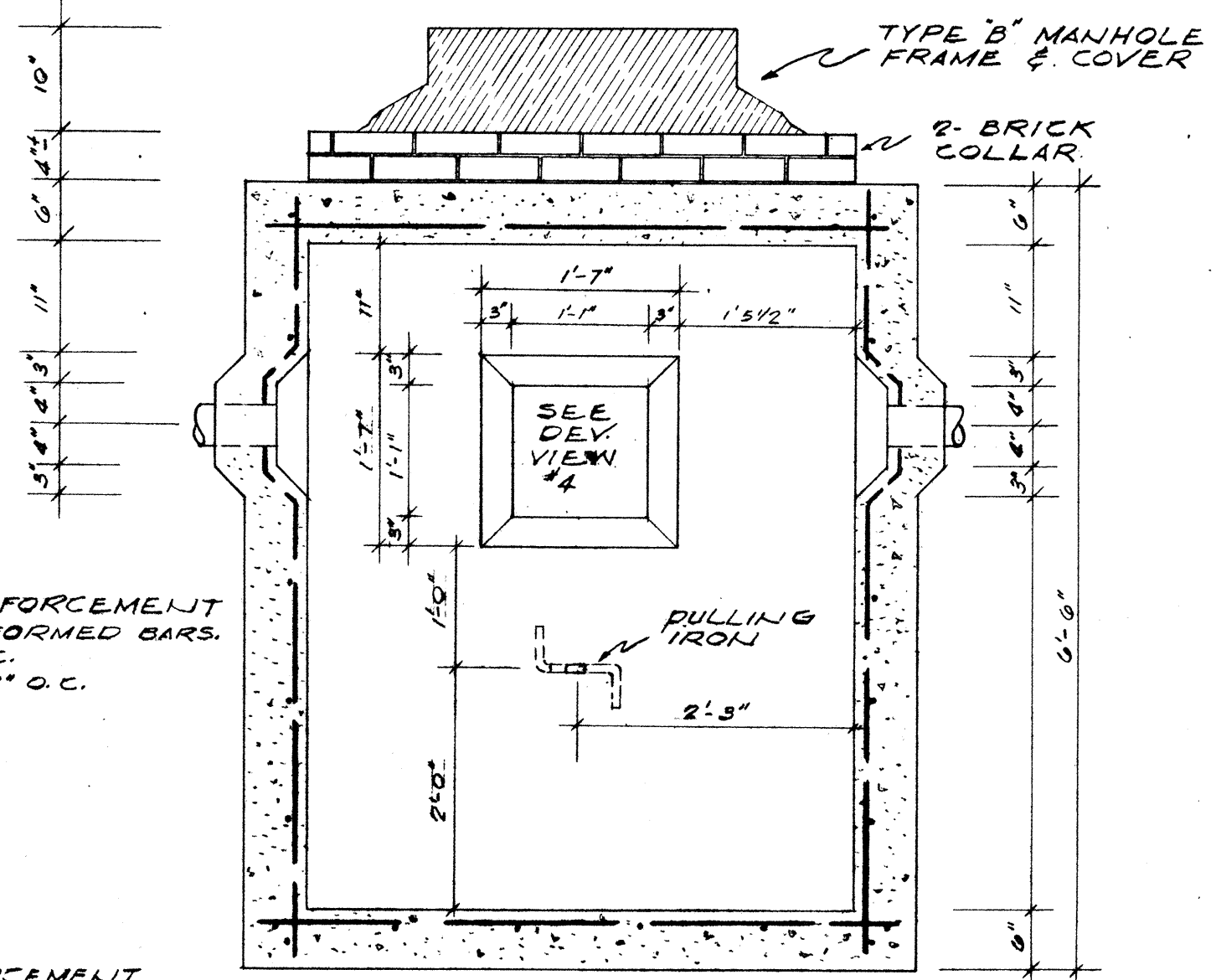
NOTE:
ROOF REINFORCEMENT
1/2" x 6' DEFORMED BARS.



PULLING IRON DETAIL
SCALE - 1/2" = 1'-0"



SECTION A-A
SCALE - 3/4" = 1'-0"

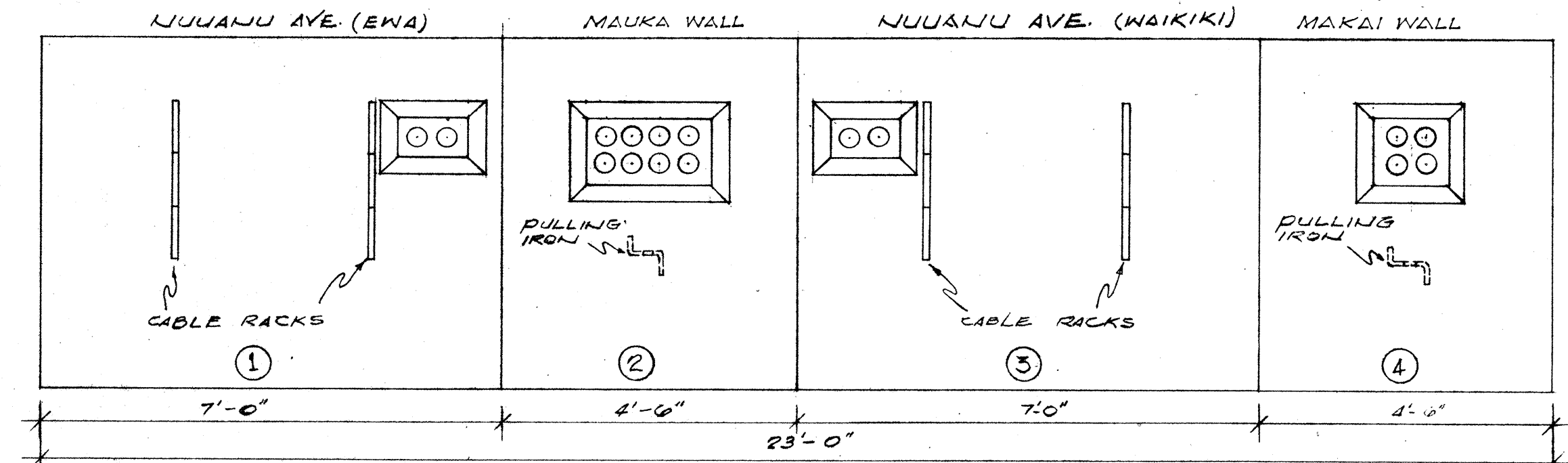


SECTION B-B
SCALE - 3/4" = 1'-0"

NOTE:
ALL WALL REINFORCEMENT
TO BE 3/8" x 6' DEFORMED BARS.
VERTICAL: 8" O.C.
HORIZONTAL: 12" O.C.

NOTE:
FLOOR REINFORCEMENT
TO BE 3/8" x 6' DEFORMED
BARS 12" O.C.

NOTE:
MANHOLE CONCRETE TO BE
CLASS B-1
CONTRACTOR SHALL FURNISH BRICKS
AT MANHOLE FRAME & COVER
(INCIDENTAL TO CLASS B-1 CONC.)



DEVELOPED VIEW OF WALLS
SCALE - 1/2" = 1'-0"

DETAIL OF MANHOLE No. 1134

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

HAWAIIAN TELEPHONE

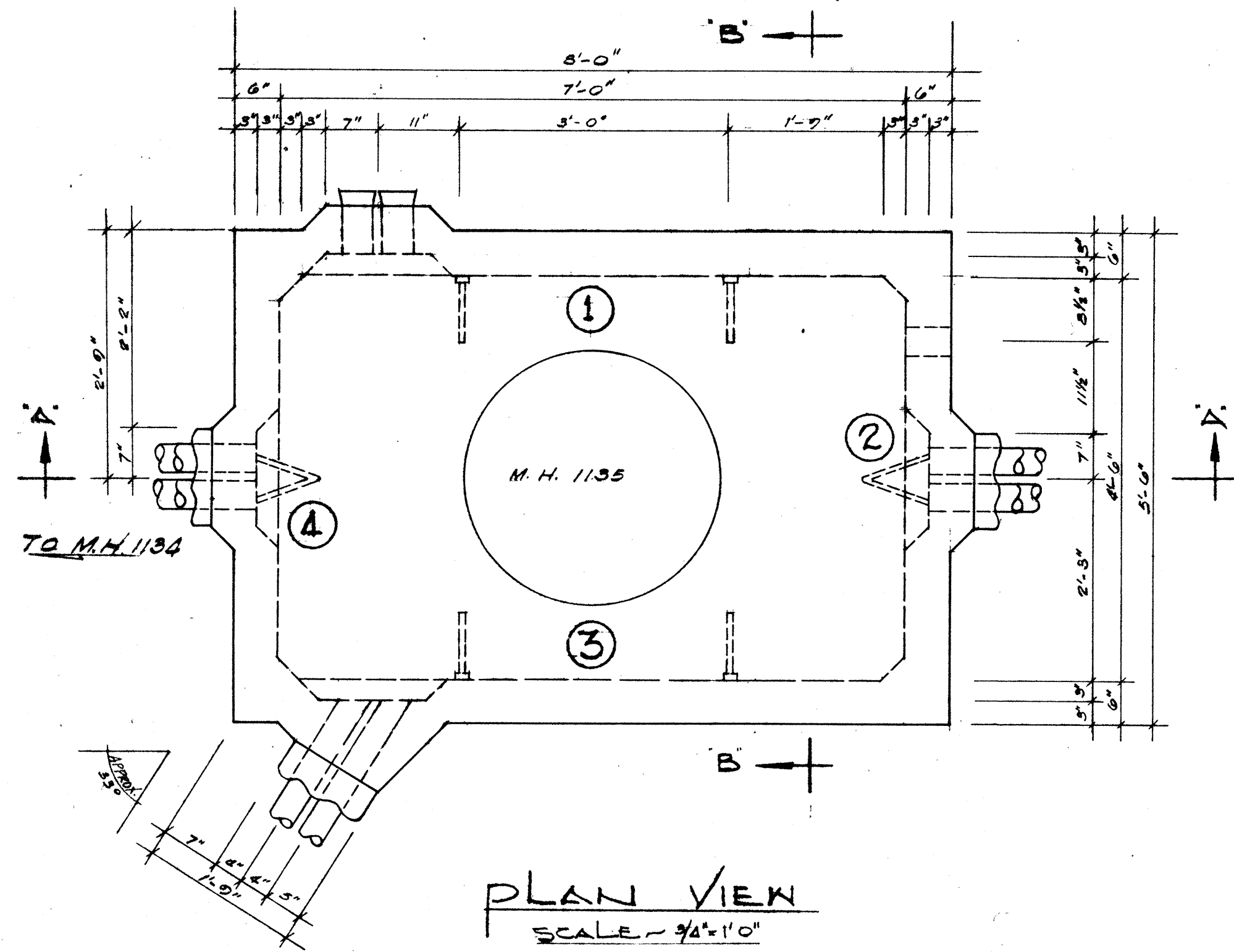
MANHOLE DETAILS

Proj. No. U-061-I(4)

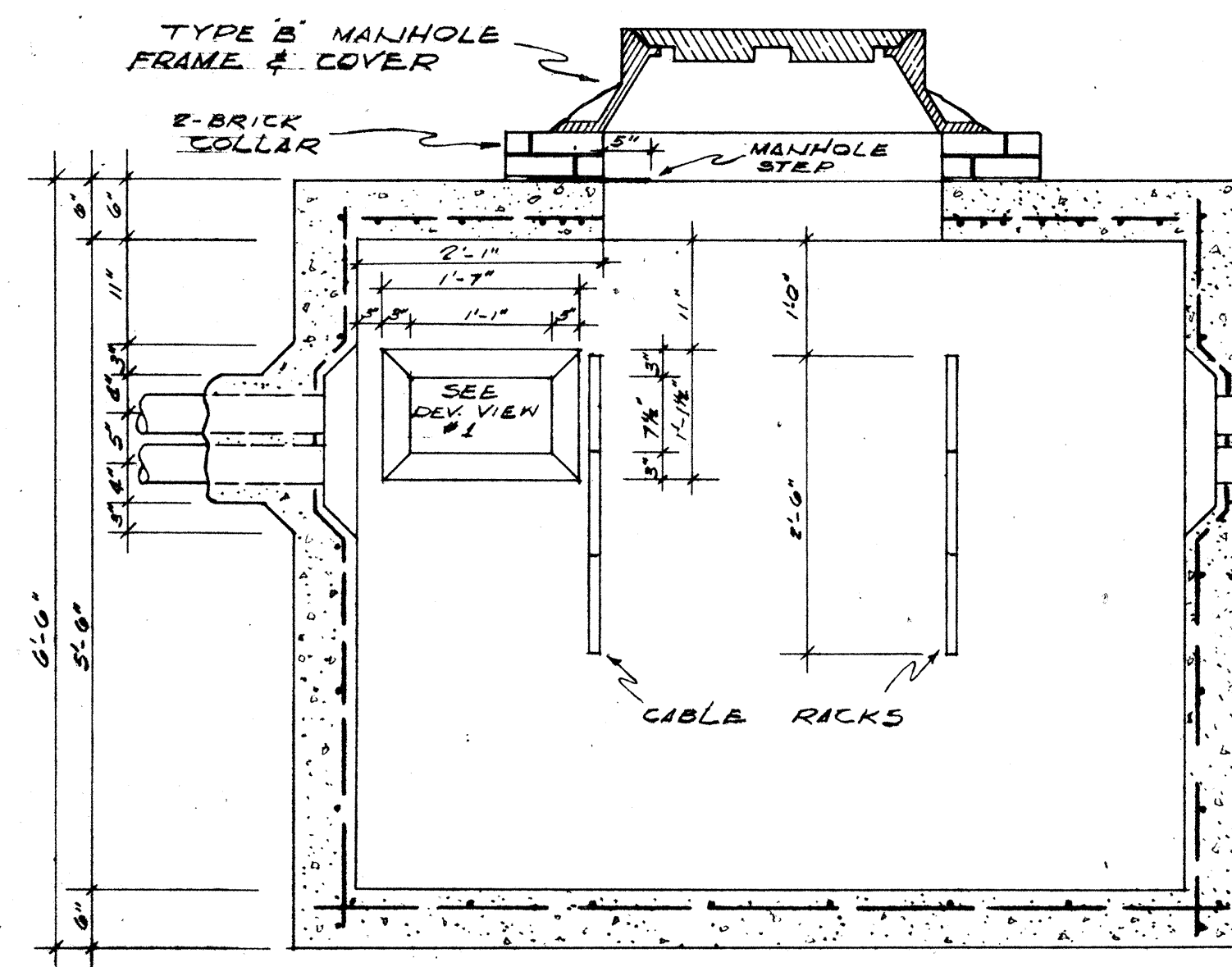
Scale: As Noted

Oct. 17, 1957

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-061-1(4)	1957	18 C	41

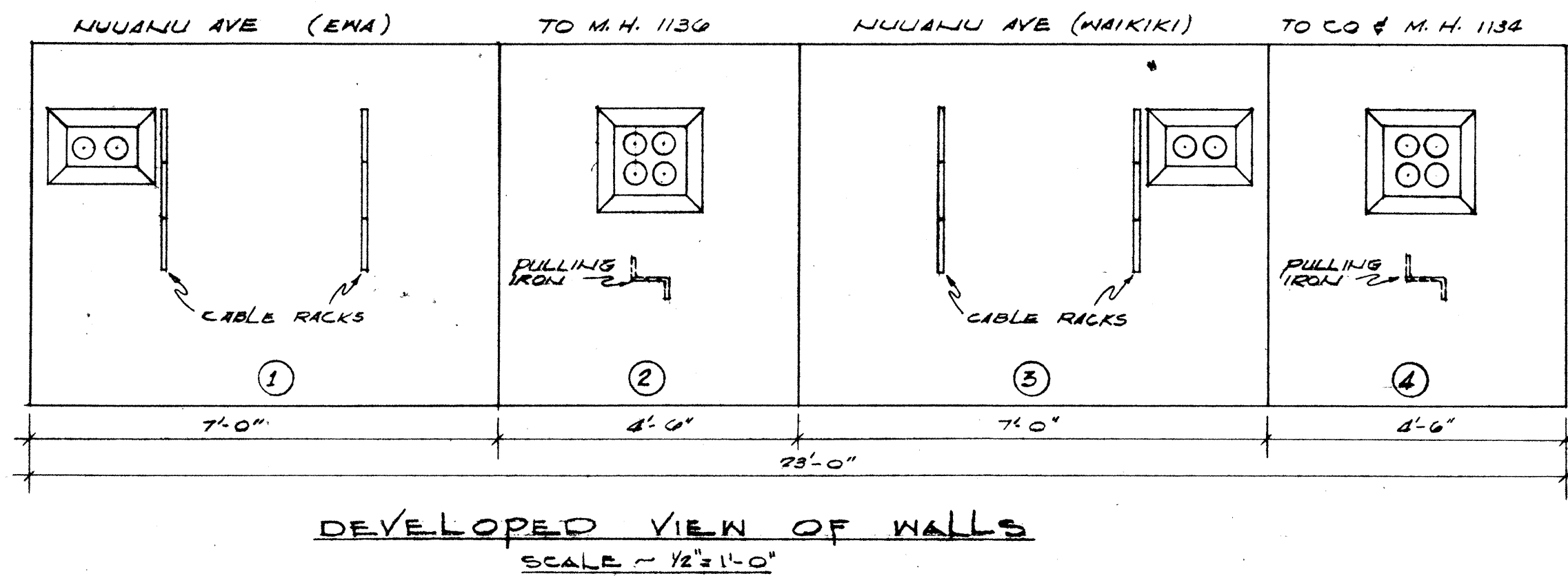
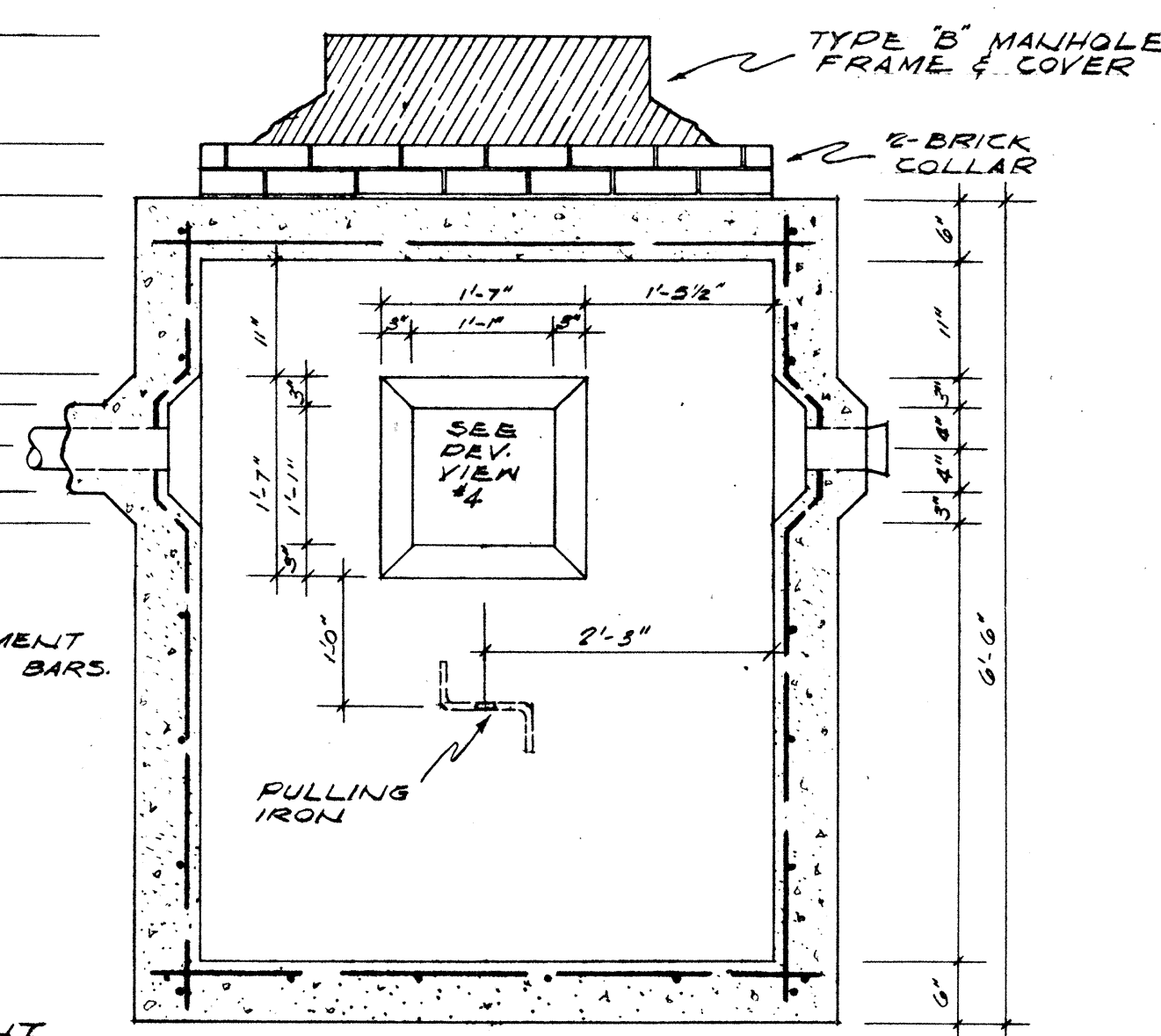


NOTE:
FOR ROOF SLAB & PULLING IRON
DETAILS, SEE SHEET NO. 1



NOTE:
ALL WALL REINFORCEMENT
TO BE 3/8" & DEFORMED BARS.
VERTICAL: 8" O.C.
HORIZONTAL: 12" O.C.

NOTE:
FLOOR REINFORCEMENT
TO BE 3/8" & DEFORMED
BARS 12" O.C.



NOTE:
MANHOLE CONCRETE TO BE
CLASS B-1
CONTRACTOR SHALL FURNISH BRICKS
AT MANHOLE FRAME & COVER
(INCIDENTAL TO CLASS B-1 CONC.)

DETAIL OF MANHOLE No. 1135

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

HAWAIIAN TELEPHONE

MANHOLE DETAILS

Proj. No. U-061-1(4)

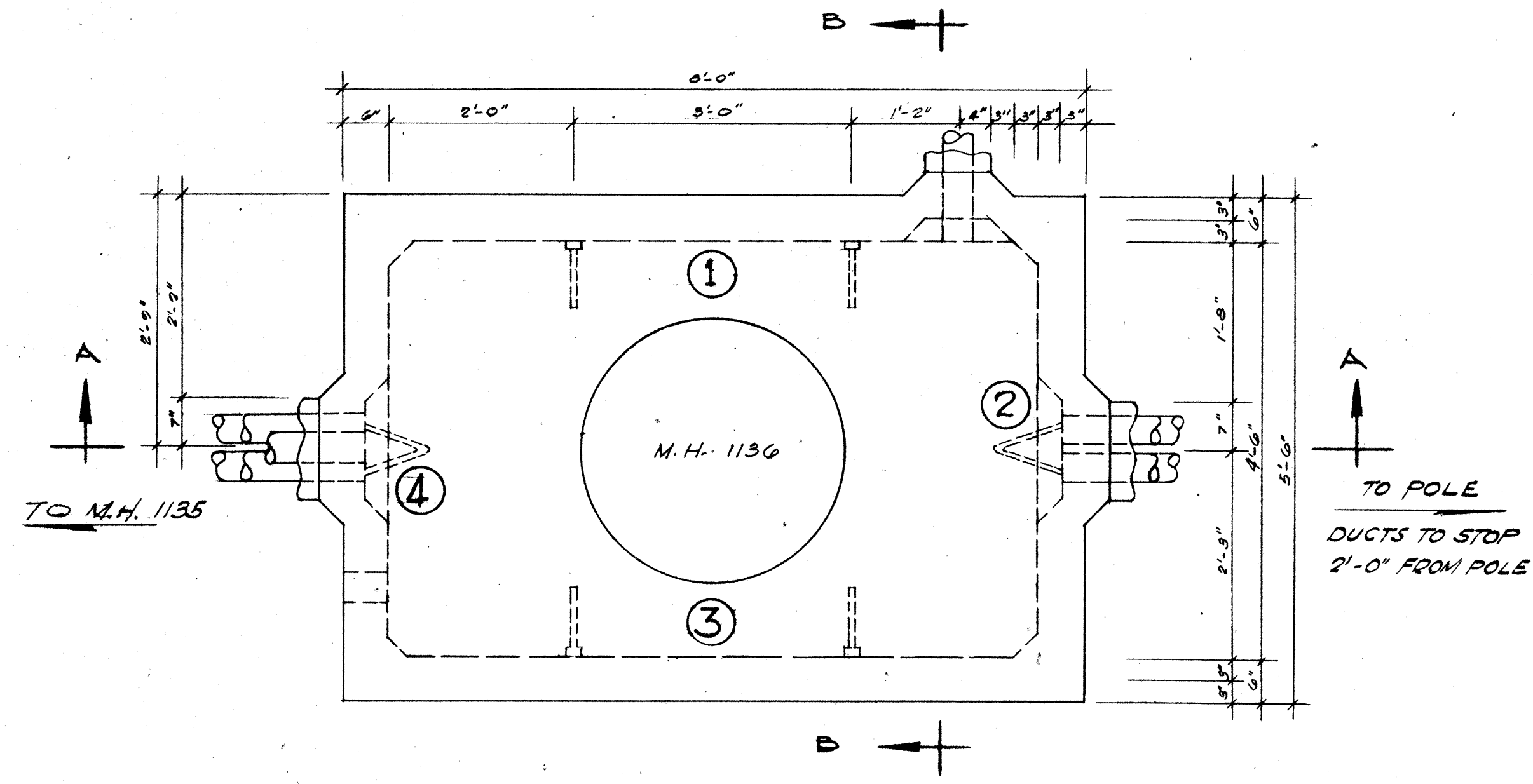
Scale: As Noted

Oct. 17, 1957

SHEET No. 3 OF 5 SHEETS

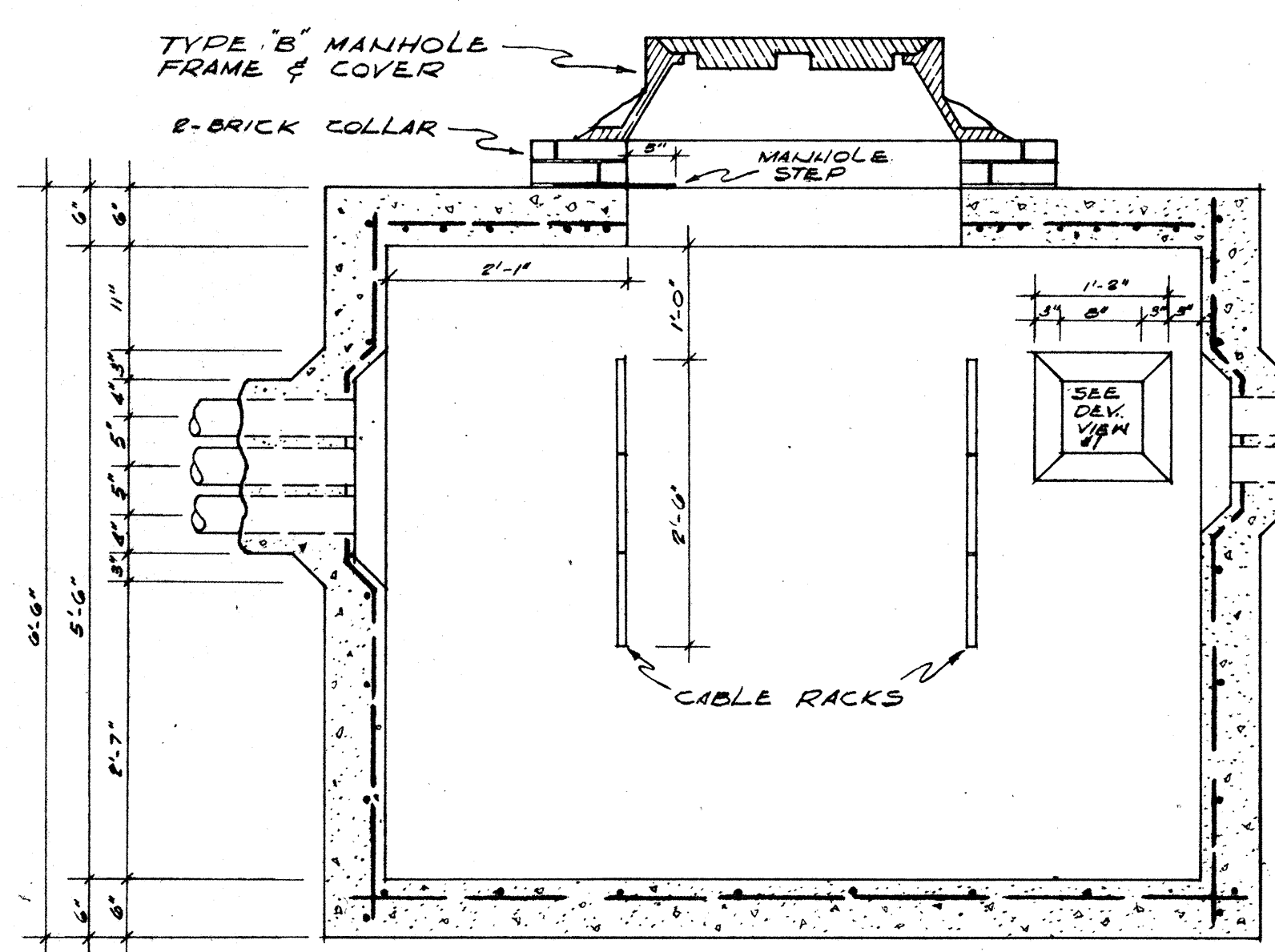
5891.18C

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-061-1(4)	1957	180	4-1



NOTE:
FOR ROOF SLAB & PULLING IRON
DETAILS, SEE SHEET NO. 1

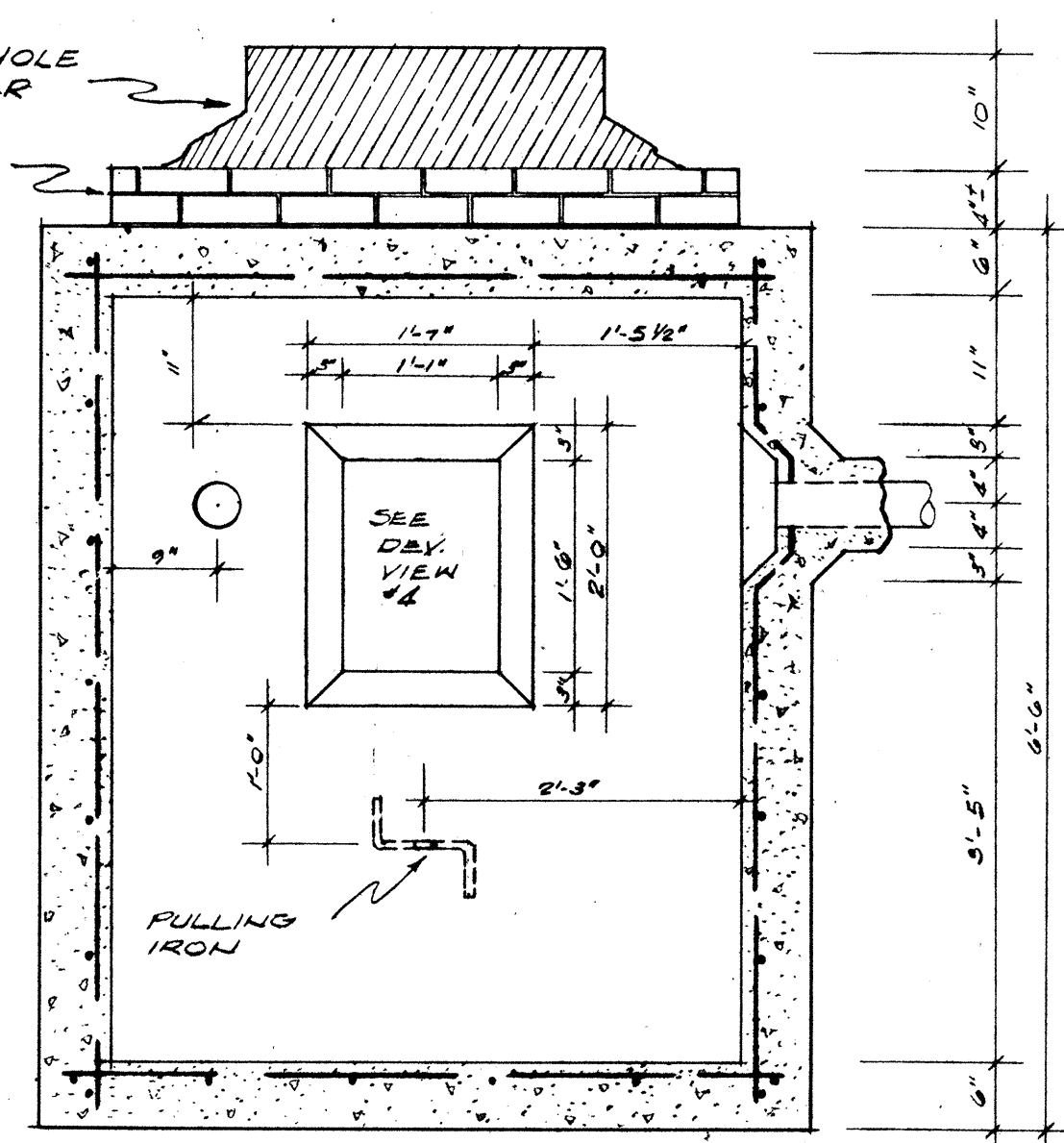
PLAN VIEW
SCALE - 3/8" = 1'-0"



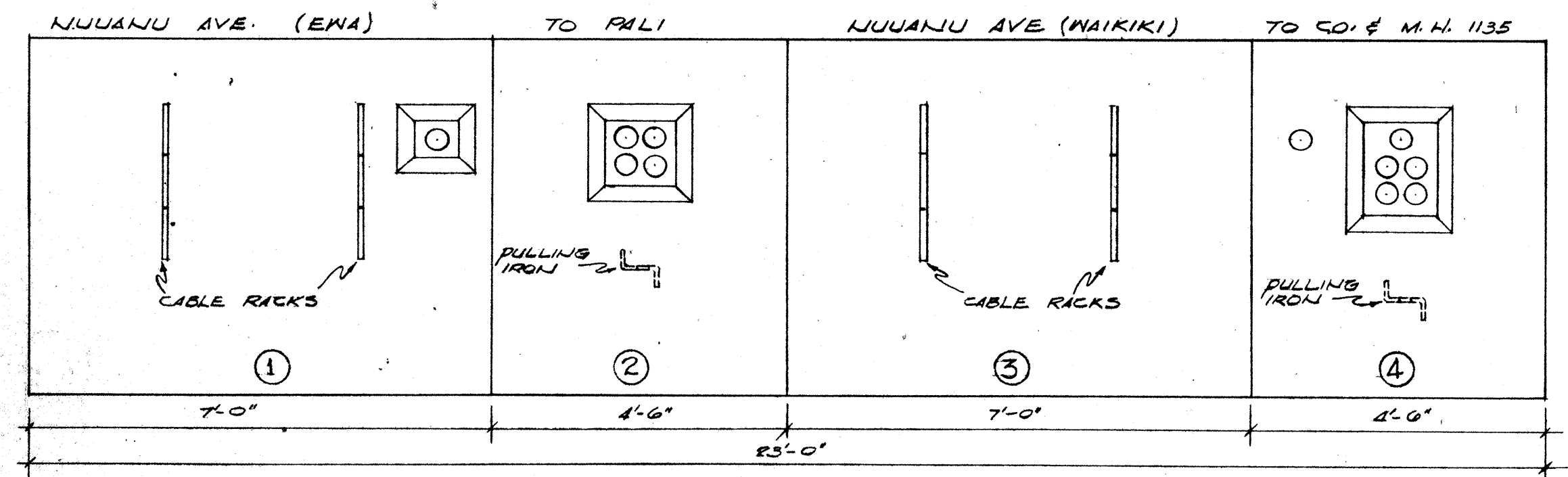
NOTE:
ALL WALL REINFORCEMENT
TO BE 3/8" ϕ DEFORMED BARS
VERTICAL: 8" O.C.
HORIZONTAL: 12" O.C.

NOTE:
FLOOR REINFORCEMENT
TO BE 3/8" ϕ DEFORMED
BARS 12" O. C.

SECTION 'A-A'
SCALE - 3/8" = 1'-0"



SECTION 'B-B'
SCALE - 3/8" = 1'-0"



DEVELOPED VIEW OF WALLS
SCALE - 1/2" = 1'-0"

NOTE:
MANHOLE CONCRETE TO BE
CLASS B-1
CONTRACTOR SHALL FURNISH BRICKS
AT MANHOLE FRAME & COVER
(INCIDENTAL TO CLASS B-1 CONC.)

DETAIL OF MANHOLE No. 1136

J. H. H. Co.
11-6-57
H.T. CO.

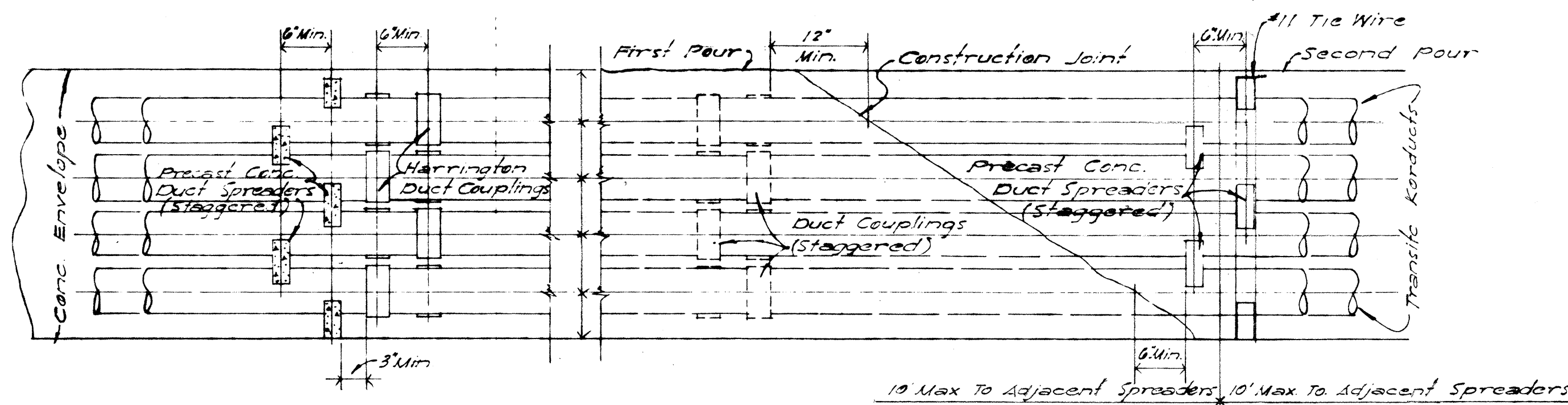
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

HAWAIIAN TELEPHONE

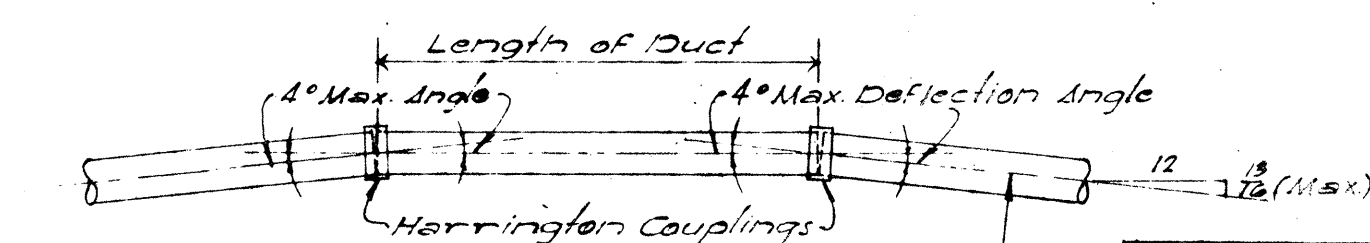
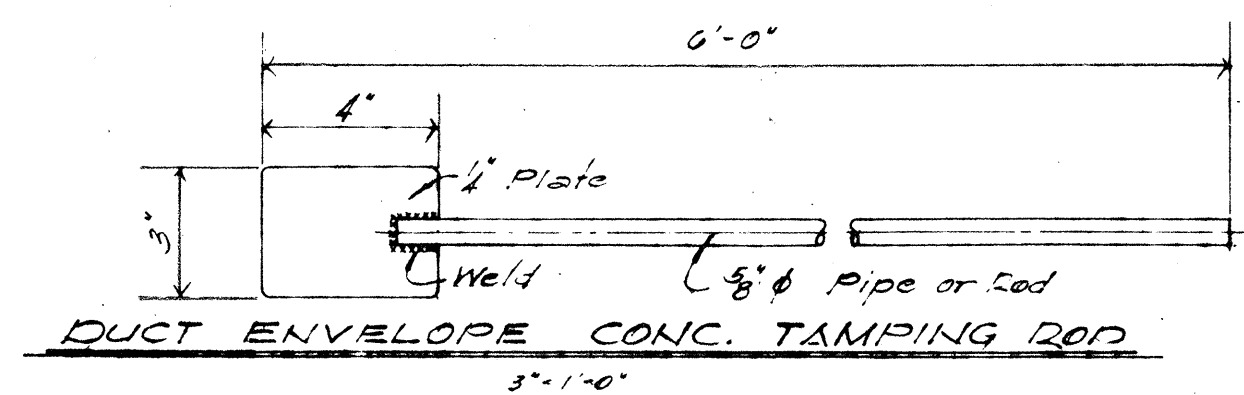
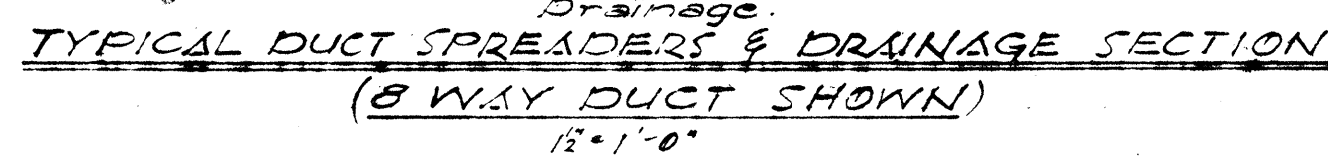
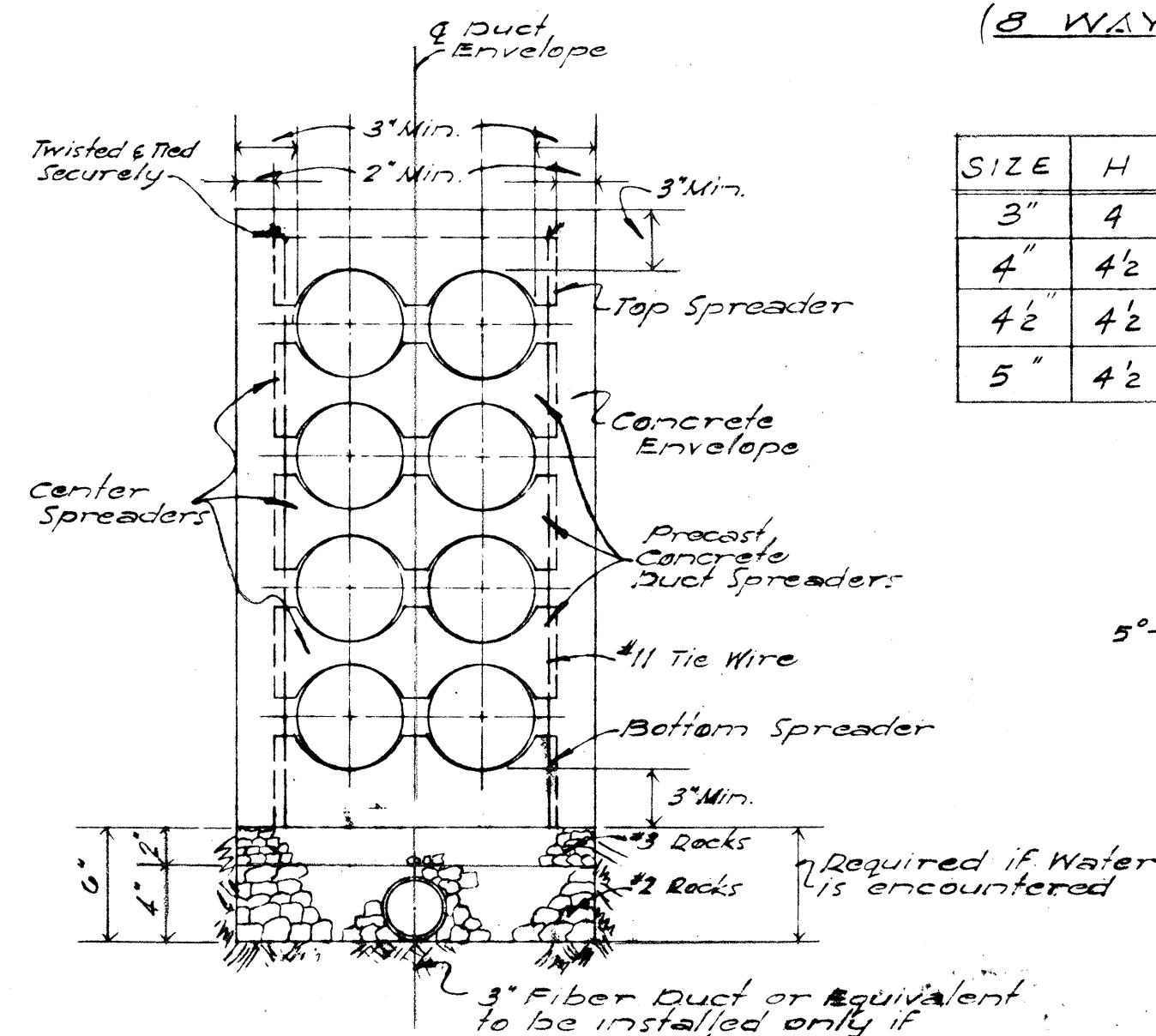
MANHOLE DETAILS

Proj. No. U-061-1(4)

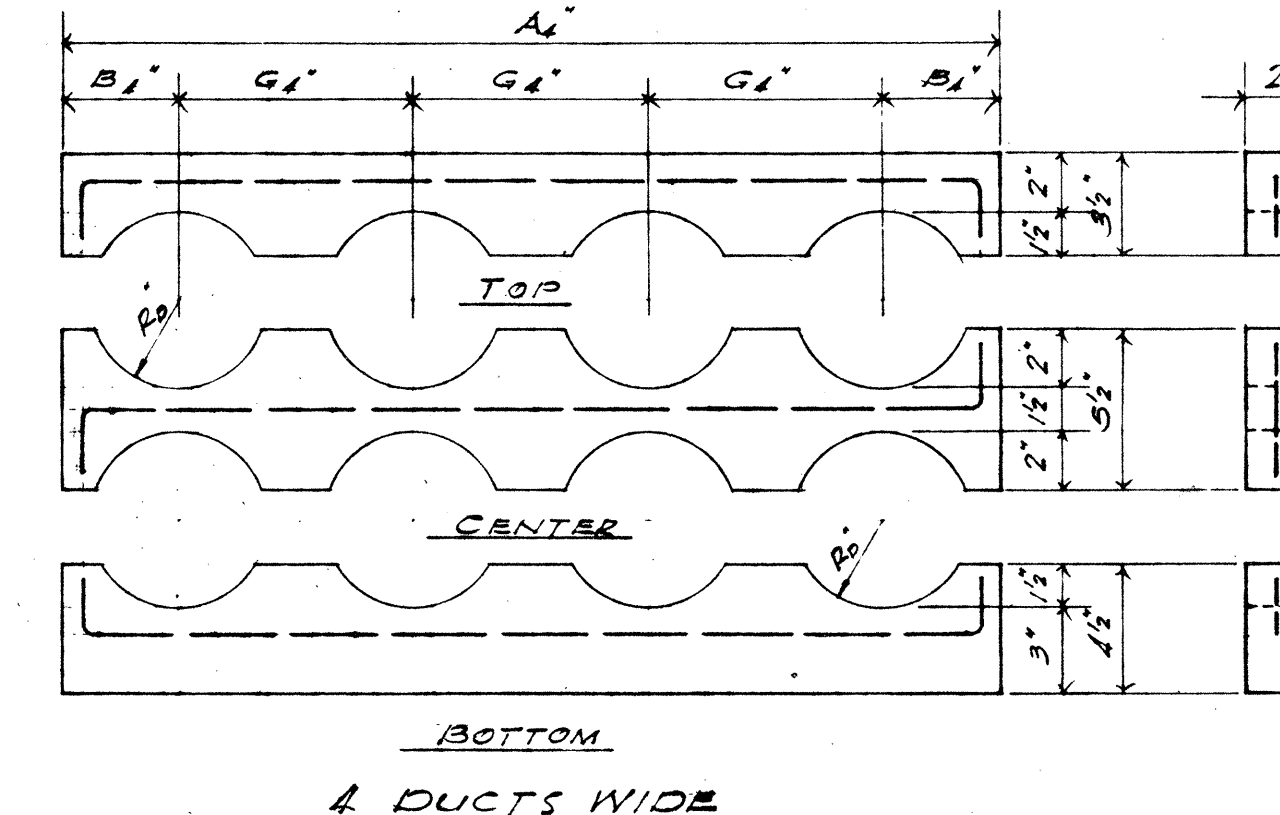
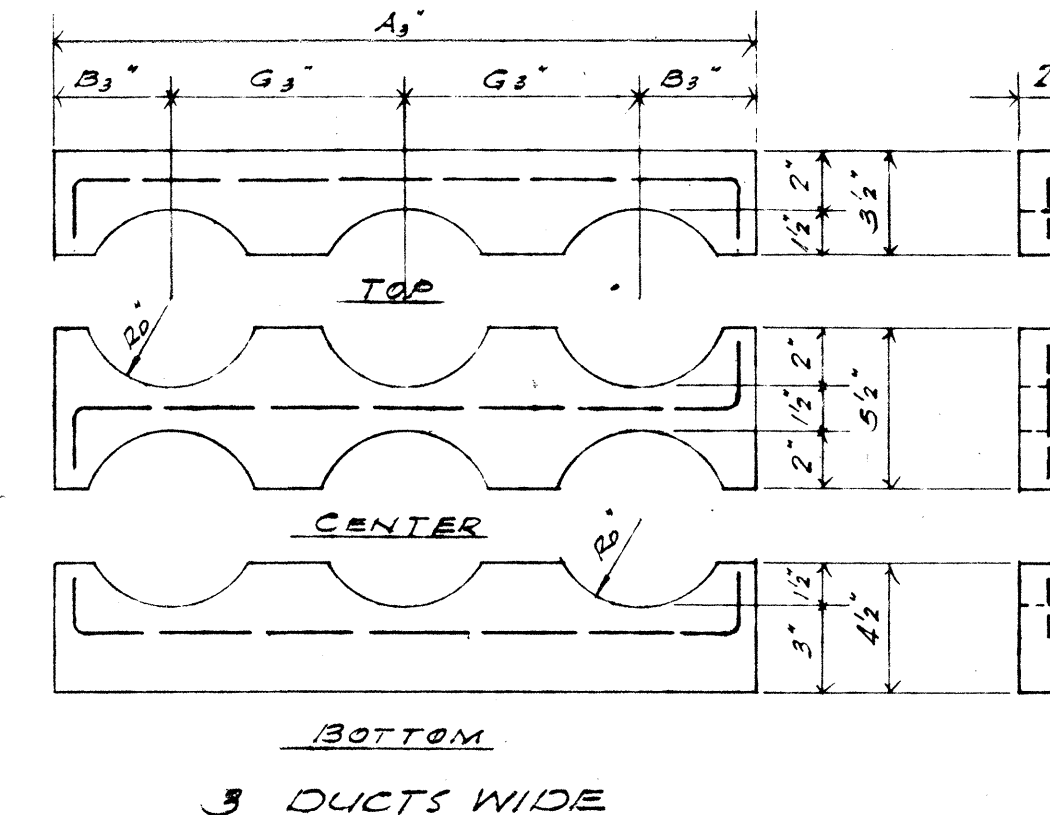
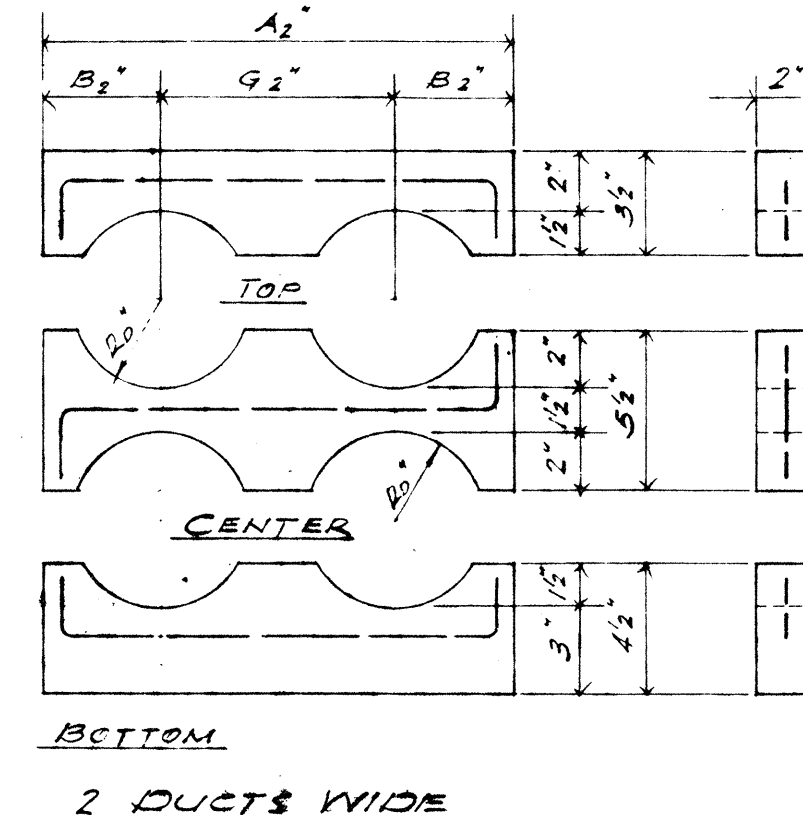
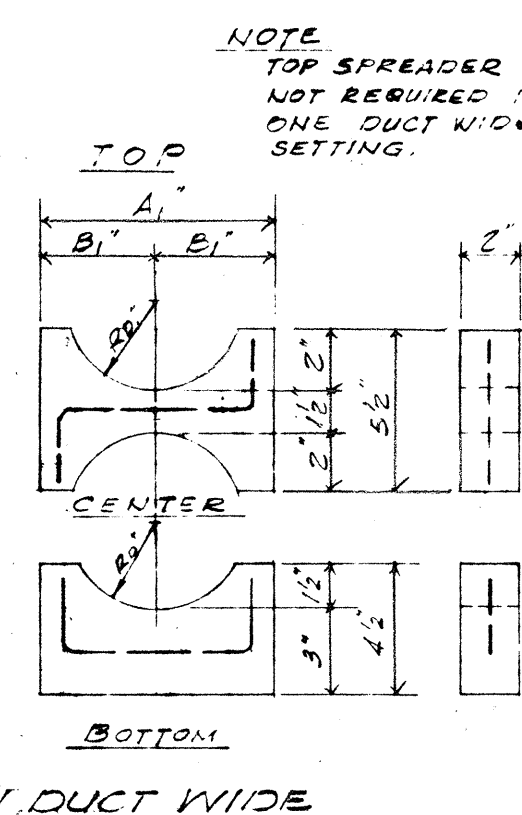
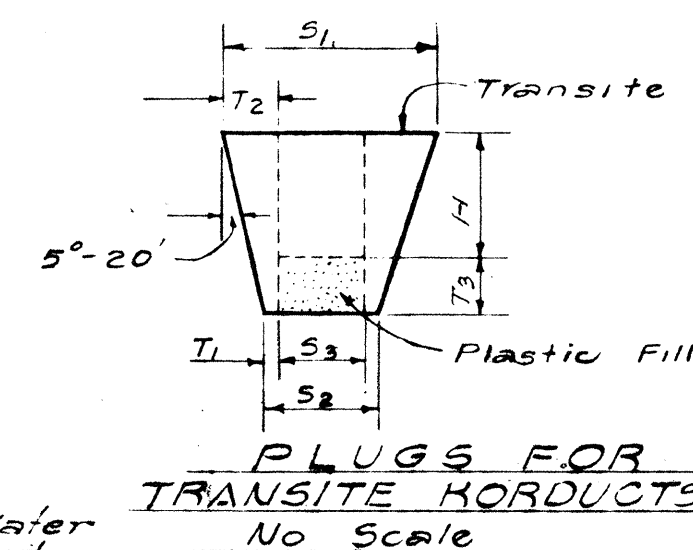
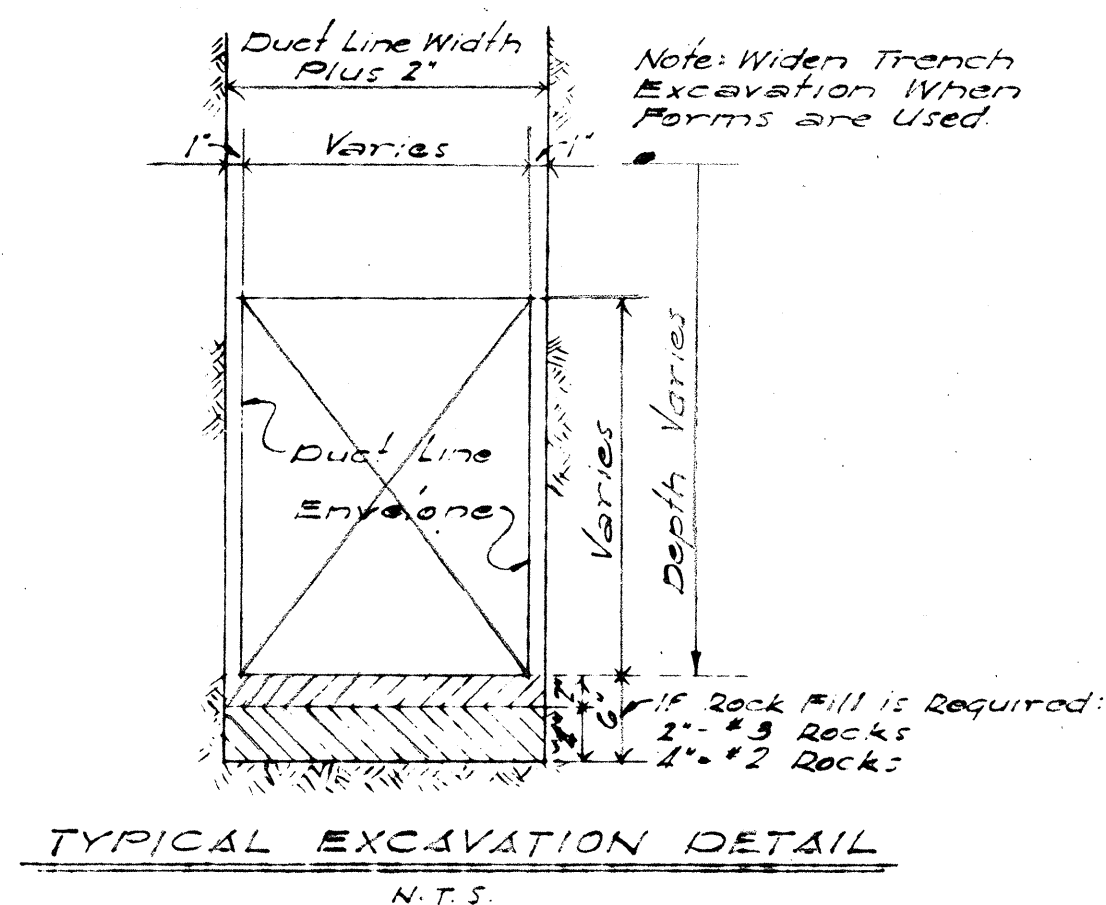
Scale: As Noted Oct. 17, 1957



SIZE	H	S ₁	S ₂	S ₃	T ₁	T ₂	T ₃
3"	4	3 $\frac{3}{8}$	2 $\frac{5}{8}$	2	$\frac{5}{16}$	$\frac{11}{16}$	$\frac{3}{4}$
4"	4 1/2	4 $\frac{27}{64}$	3 $\frac{37}{64}$	2 3/4	$\frac{13}{32}$	$\frac{27}{32}$	$\frac{3}{4}$
4 1/2"	4 1/2	4 $\frac{29}{64}$	4 $\frac{5}{64}$	3	$\frac{3}{8}$	$\frac{31}{32}$	$\frac{3}{4}$
5"	4 1/2	5 $\frac{27}{64}$	4 $\frac{37}{64}$	3 1/2	$\frac{3}{8}$	$\frac{31}{32}$	$\frac{3}{4}$



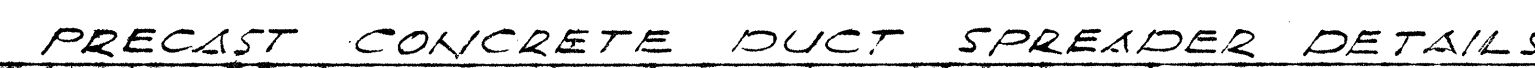
MIN. RAD. PE. RAD. LG. OF DUTY	MIN. RAD. PE. RAD. LG. OF DUTY
1'-0"	14'-4"
1'-0"	21'-0"
2'-0"	28'-8"
2'-0"	35'-10"
3'-0"	42'-11"
3'-6"	50'-1"
4'-0"	57'-3"
4'-6"	64'-5"
5'-0"	71'-7"
5'-6"	78'-9"
6'-0"	85'-11"
6'-6"	93'-1"
7'-0"	100'-3"
7'-6"	107'-5"
8'-0"	114'-7"
8'-6"	121'-9"
9'-0"	128'-10"
9'-6"	136'-0"
10'-0"	143'-2"



SIZE	D ₁ "	D ₂ "	F"	X"	E"	R
3"	3 $\frac{5}{8}$	4 $\frac{1}{2}$	1 $\frac{11}{32}$	1 $\frac{9}{32}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$
4"	4 $\frac{15}{32}$	5 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	2
4 $\frac{1}{2}$ "	4 $\frac{57}{64}$	6 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	2
5"	5 $\frac{27}{32}$	7	1 $\frac{7}{8}$	1 $\frac{7}{8}$	1 $\frac{1}{2}$	2

SIZE	D_1'	D_2'	C'	P'	T'
3"	$3 \frac{25}{64}$	$3 \frac{25}{64}$	$1 \frac{1}{8}$	$\frac{7}{8}$	$\frac{16}{64}$
4"	$4 \frac{25}{64}$	$4 \frac{25}{64}$	$1 \frac{1}{2}$	1	$\frac{17}{64}$
4½"	$4 \frac{47}{64}$	$5 \frac{1}{8}$	$1 \frac{1}{2}$	1	$\frac{17}{64}$
5"	$5 \frac{29}{64}$	$5 \frac{29}{64}$	$1 \frac{3}{4}$	$1 \frac{1}{8}$	$\frac{19}{64}$

SIZE	D ₁	D ₂	L
3"	3 $\frac{5}{16}$	4 $\frac{1}{16}$	2 $\frac{1}{4}$
4	4 $\frac{5}{16}$	5 $\frac{3}{16}$	2 $\frac{1}{2}$
4 1/2"	4 $\frac{5}{8}$	5 $\frac{5}{8}$	2 $\frac{1}{2}$
5"	5 $\frac{5}{8}$	6 $\frac{3}{16}$	2 $\frac{3}{4}$



2" x 0"															
		1 DUCT WIDE			2 DUCTS WIDE			3 DUCTS WIDE			4 DUCTS WIDE				
SIZE	Rd	A ₁	B ₁	A ₂	B ₂	G ₂	A ₃	B ₃	G ₃	A ₄	B ₄	G ₄			
3"	2	6	3	12	3 1/2	5 1/2	17 1/2	3 1/2	5 1/2	23	3 1/2	5 1/2			
4"	2 1/2	7	3 1/2	14	3 3/4	6	20 1/2	3 3/4	6 1/2	27	3 3/4	6 1/2			
4 1/2"	2 3/4	8	4	15	4	7	22	4	7	29	4	7			
5"	3	8 1/2	4 1/2	16	4 1/4	7 1/2	23 1/2	4 1/4	7 1/2	31	4 1/4	7 1/2			

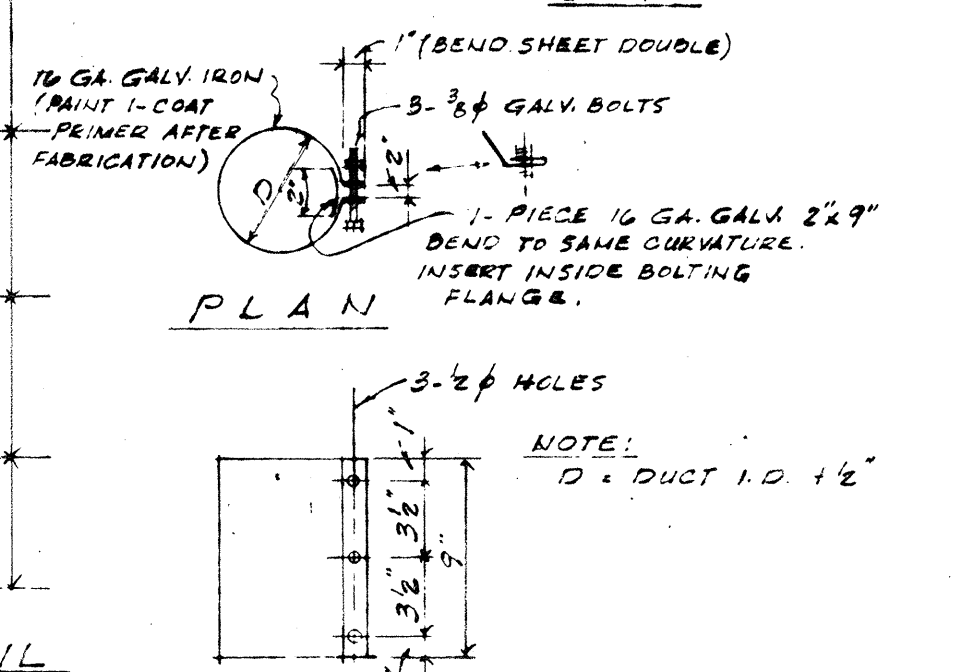
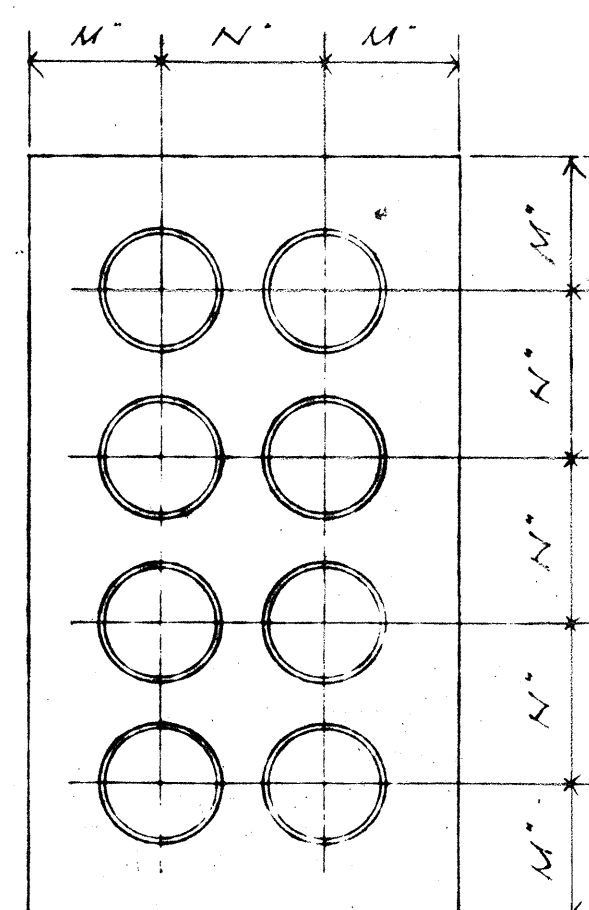
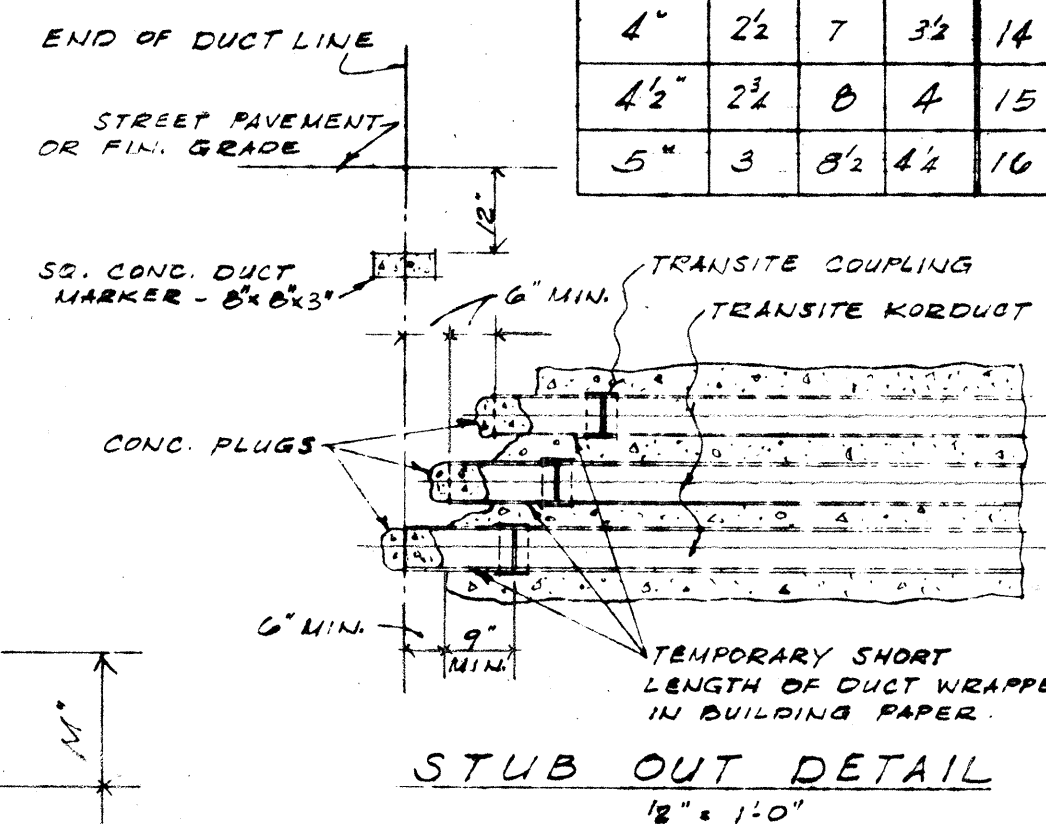
NOTES: DUCT SPREADERS

Reinforcing

1- 4" ϕ Bar each Spreader

Concrete Mix

One Part Cement.
Two Parts Beach Sand.
Two Parts Gravel #4 (Fine).
Measurements by Weight.



**REDUCED PLANS
SCALES REDUCED
ACCORDINGLY**

Muscab K
145 Co
11/13/57
J. Hubert, Sup. of plants
H. T. Co.
11-6-57

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
HAWAIIAN ELECTRIC &
HAWAIIAN TELEPHONE
TRANSITE DUCT DETAILS
Proj. No U-061-1(4)
Nov. 1, 1952

SHEET No.5 OF 5 SHEETS

CONSTRUCTION STANDARDS
TRANSITE KOROUCTS
UNDERGROUND DUCTLINES
Engineering Department
The Hawaiian Electric Company, Ltd.
Honolulu, HI U-1

5 § 91.18 E

