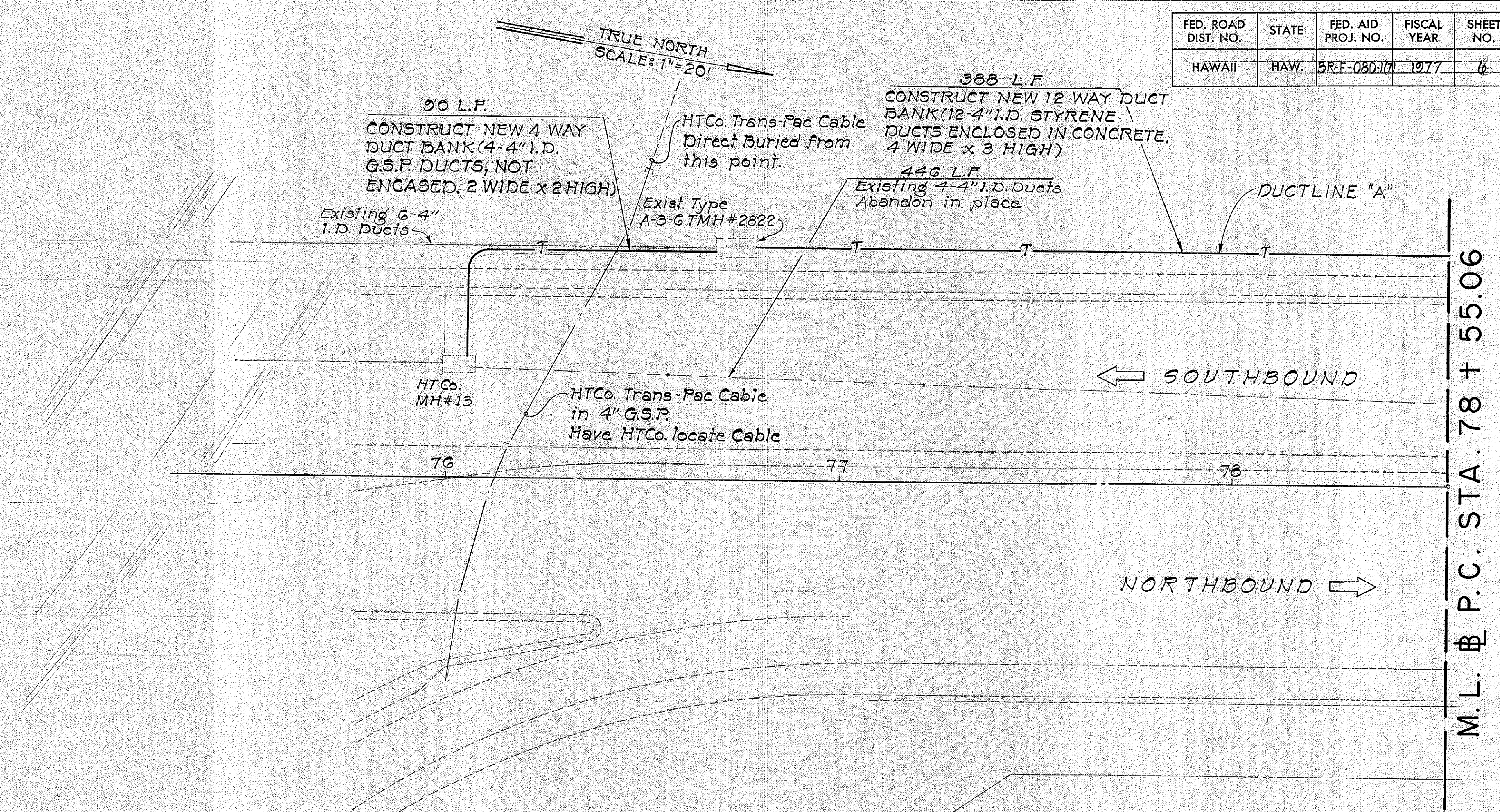


GENERAL SEWER NOTES

- Existing sewer lines shown on the plans are based on existing records of varying degrees of accuracy. The Contractor shall verify the locations and inverts of existing lines wherever directed by the Engineer. Adjustment to any new or existing sewer system shall be in accordance with the verified information.
- All sewer work shall be performed in accordance with City and County Standard Specifications approved by the Chief Engineer, May 1975, and the latest Department of Public Works Standard Details, Feb. 1973 and the Revised Ordinance of Honolulu, 1969.
- The existing sewer manholes, manhole frames and covers shall be adjusted in accordance with the plans and specifications.



GENERAL NOTES:

- Contractor to call 548-2126 for field locations of Gas Lines a minimum of 48 hours before starting project excavation.
- H.T. & H.E. Ductlines are shown in approximate locations. Profiles may vary slightly from those shown on Sht. Nos. 8 & 13 depending on elevations of existing underground facilities, the elevations of which shall be determined in the field.
- Minimum Cover above Concrete Jacket shall be 1'-6".
- All H.T. Ducts shall be Styrene Plastic, unless noted otherwise on the plans.
- Existing JP 15 shall be temporarily relocated to effect construction Phase II Detouring.
- The Contractor shall exercise extra caution during excavation for the ductlines that cross an existing direct burial Military Cable that runs at Sta. 79+45±.
- Styrene Ductlines shall be encased in plain concrete jacket.
- P.V.C. (Polyvinyl Chloride) Class 80 and Galvanized Ductlines shall not be jacketed.
- All underground utility construction shown hereon, shall be constructed during Construction Phase as indicated on the plans.
- The Contractor is to exercise extreme caution during construction. Before starting any Construction the Contractor is to give H.E.Co. 5 working days advance notice for stake out of existing underground energized facilities.
- The Contractor shall exercise extreme caution while excavating near H.T.Co. Trans-Pac Cable. Contractor to give H.T.Co. 3 working days advance notice for stake out of H.T.Co. Trans-Pac Cable location.

LEGEND

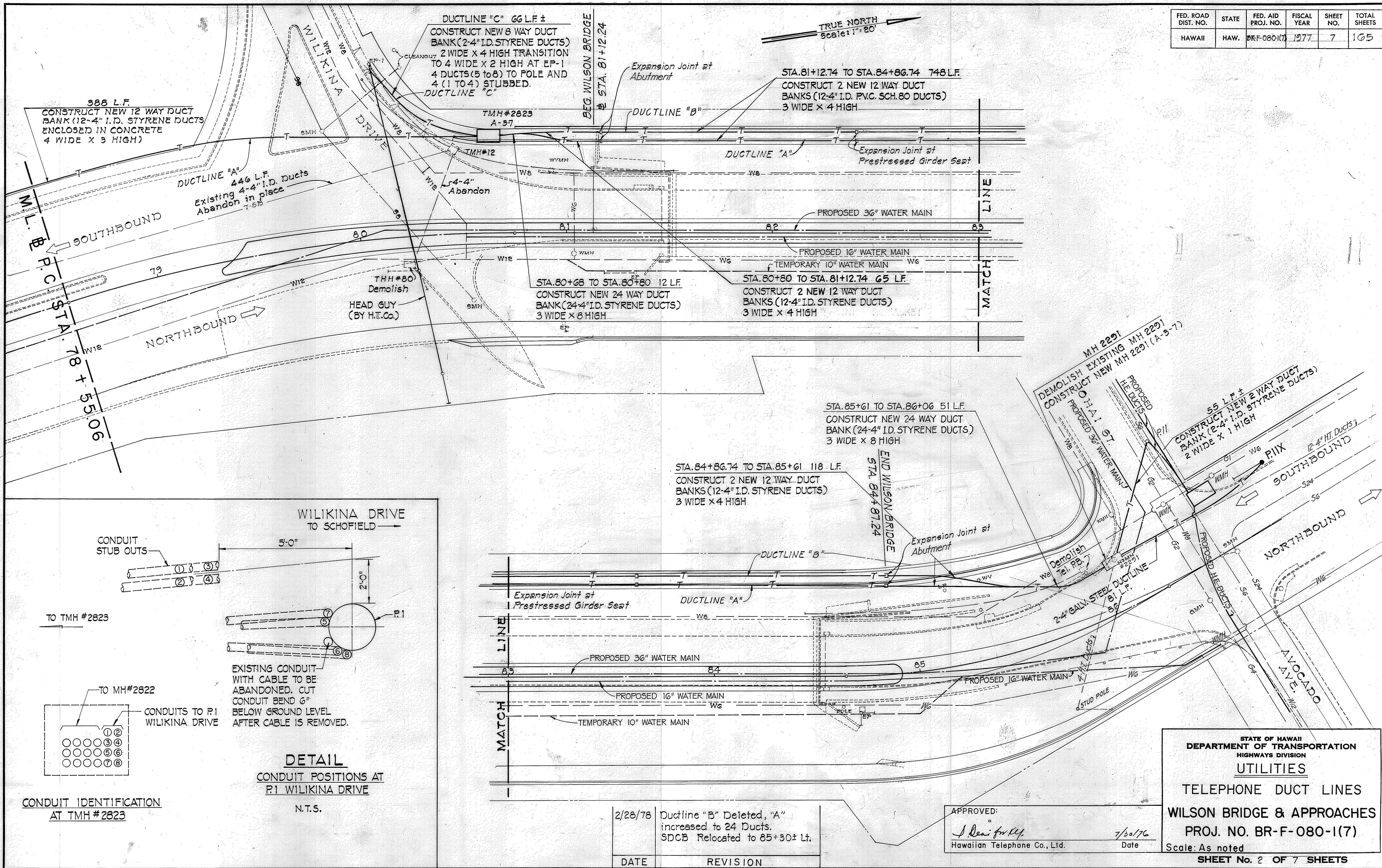
- Existing Utility Pole
- New Temporary or Permanent Utility Pole (By H.E.Co. or H.T.Co.)
- New Anchor Lead as indicated (By H.E.Co. or H.T.Co.)
- Existing Manhole or Handhole
- New Manhole or Handhole
- T— New Telephone Ductline
- E— New Electric Ductline
- Existing Ductline to remain unless indicated otherwise

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

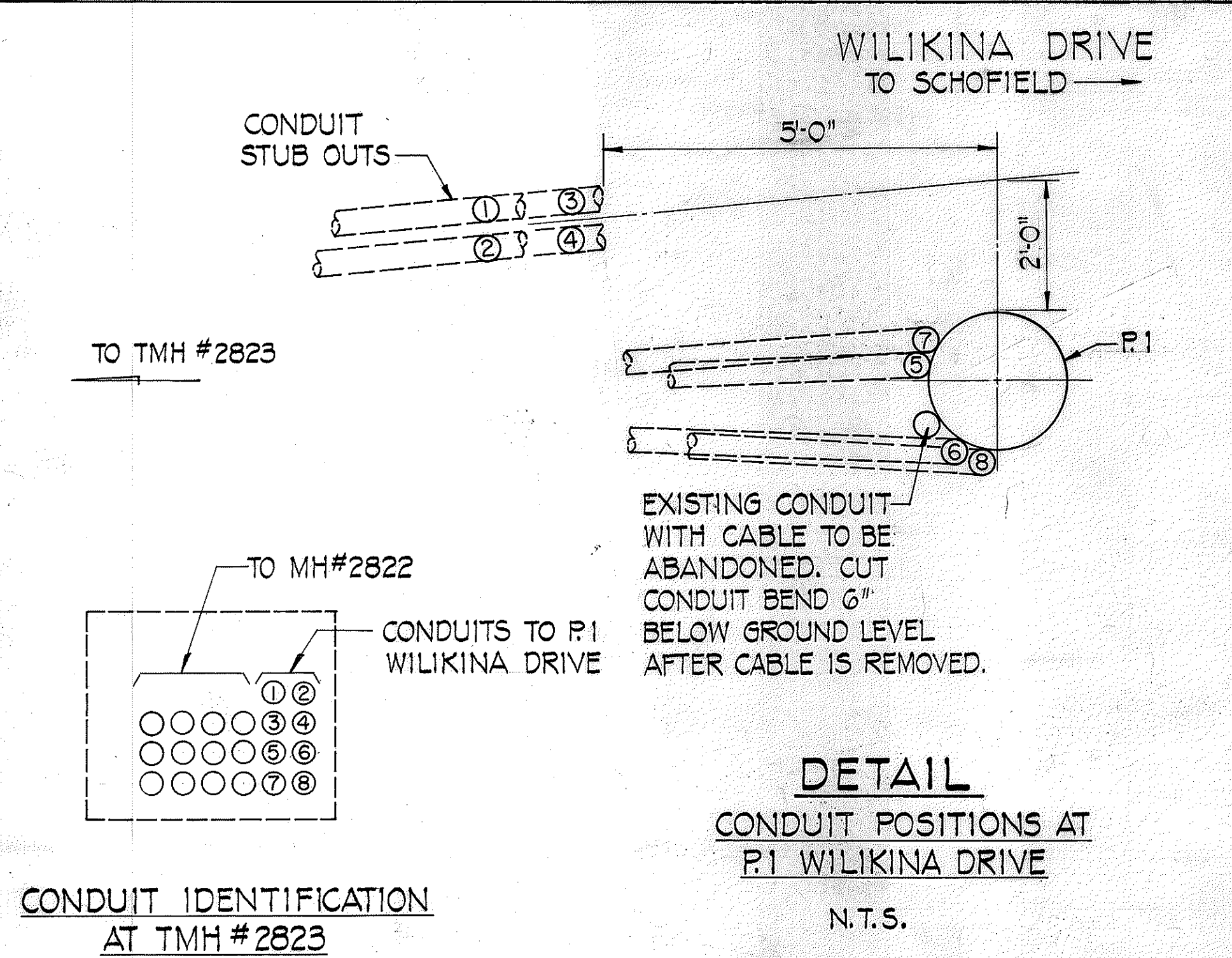
APPROVED:	
<i>J. Dea for H.T.</i>	7/20/76
HAWAIIAN TELEPHONE CO.	DATE
<i>J. Karimata</i>	7/21/76
HAWAIIAN ELECTRIC CO. INC.	DATE
CHIEF, DIVISION OF SEWERS	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
UTILITIES
UTILITIES GENERAL NOTES
AND TELEPHONE DUCT LINE
WILSON BRIDGE & APPROACHES
PROJ. NO. BR-F-080-1(7)
Scale: As noted
SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-F-080-1(7)	1977	7	105



DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
NOTED BY	DATE
APPROVED BY	DATE

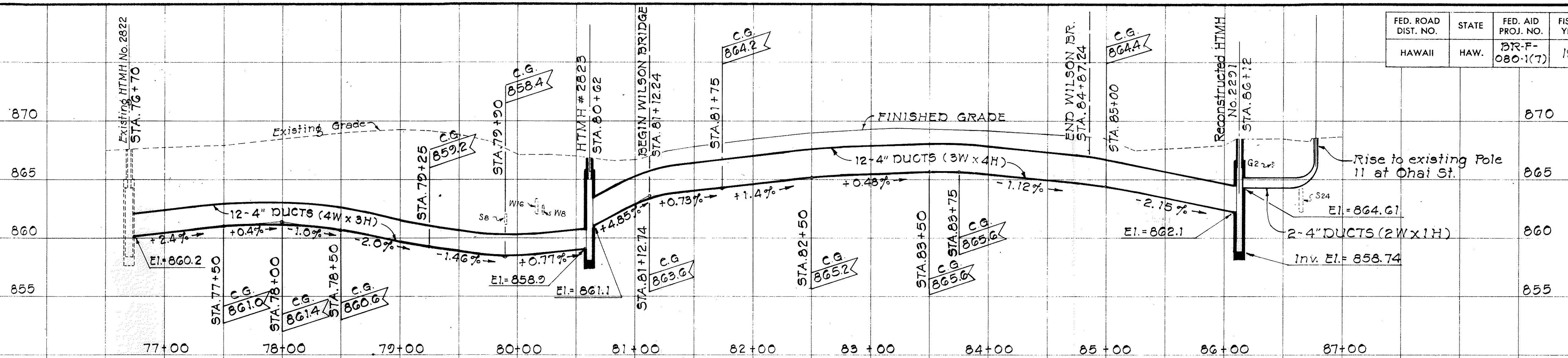


DATE	REVISION
2/28/78	Ductline "B" Deleted, "A" increased to 24 Ducts. SDCB Relocated to 85+30± Lt.

APPROVED:
[Signature]
 Hawaiian Telephone Co., Ltd.
 Date 7/30/76

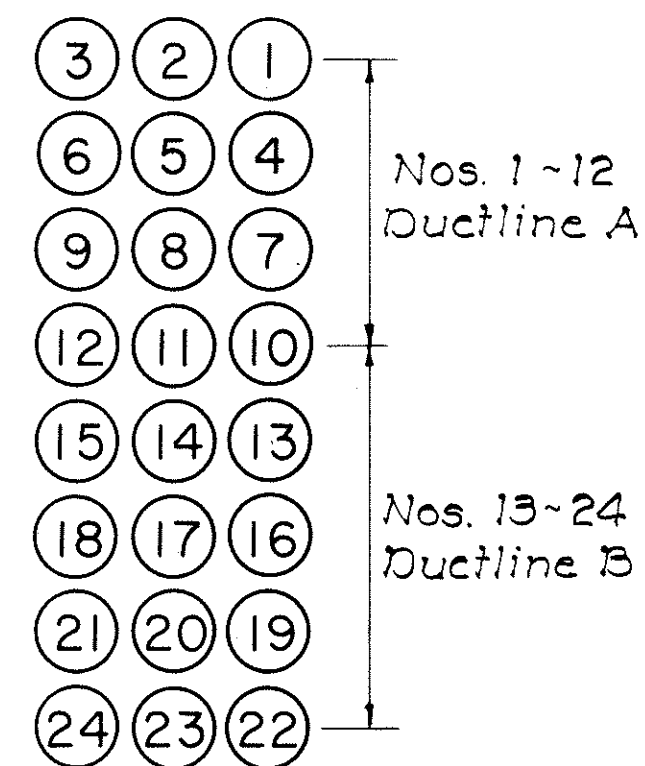
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
UTILITIES
 TELEPHONE DUCT LINES
WILSON BRIDGE & APPROACHES
 PROJ. NO. BR-F-080-1(7)
 Scale: As noted
SHEET No. 2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-F-080-1(7)	1977	8	105

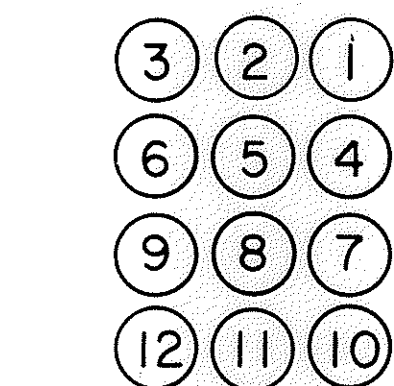


PROFILE ALONG ϕ H.T. CO. DUCTLINE "A"

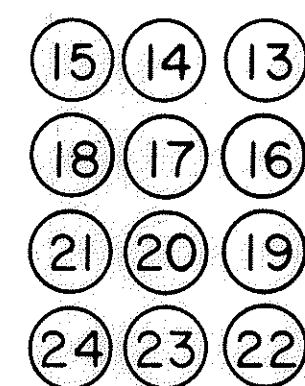
Scale: Hor. 1" = 50'
Vert. 1" = 5'



SECTION "B-B"

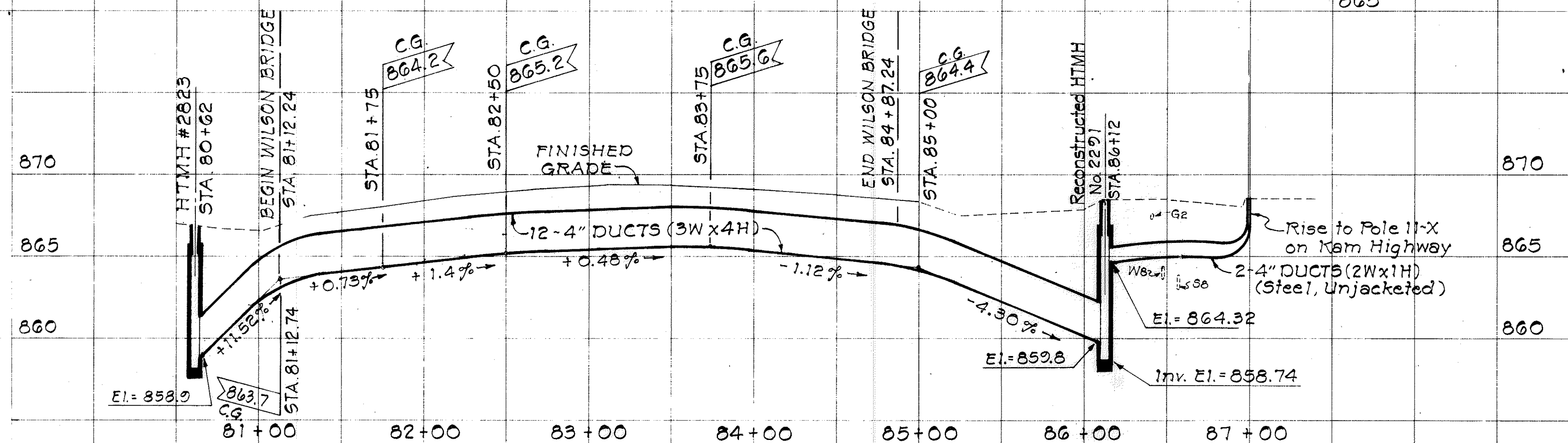


DUCTLINE A



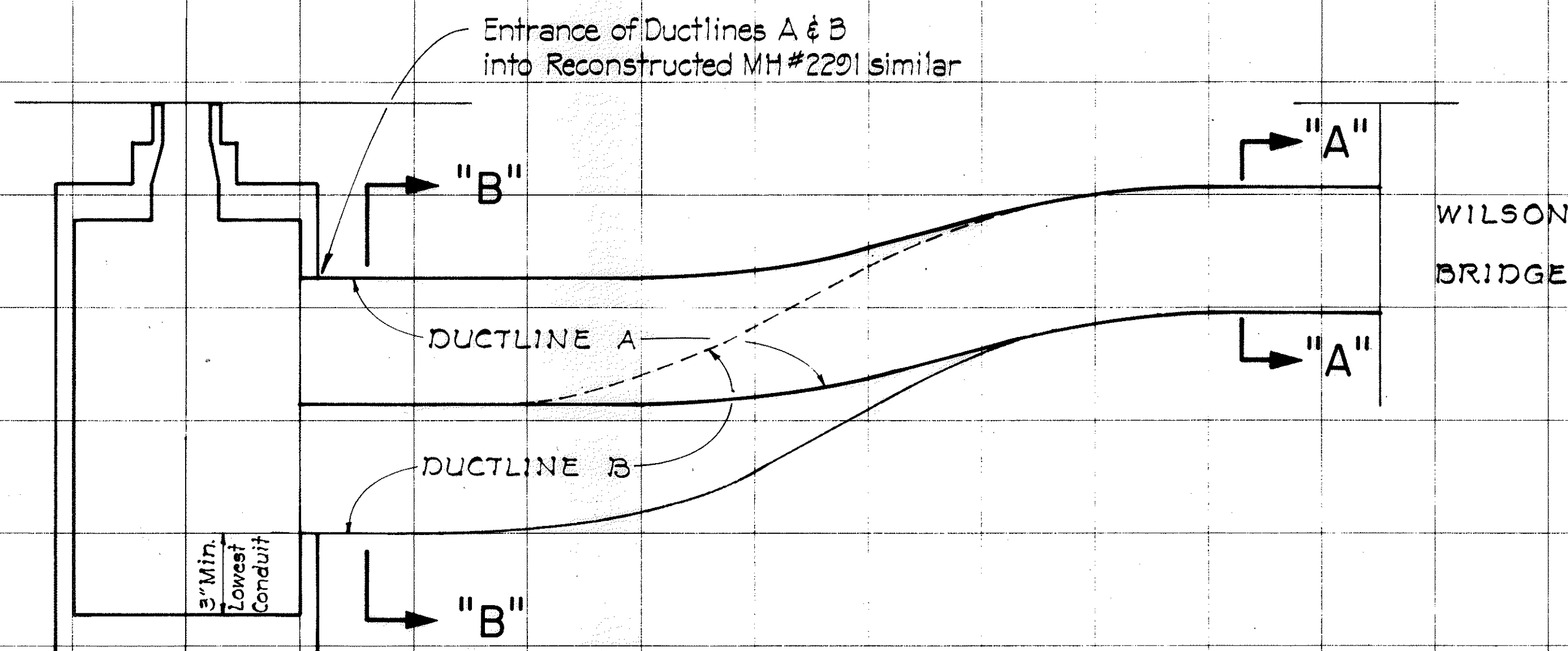
DUCTLINE B

SECTION "A-A"



PROFILE ALONG ϕ H.T. CO. DUCTLINE "B"

Scale: Hor. 1" = 50'
Vert. 1" = 5'



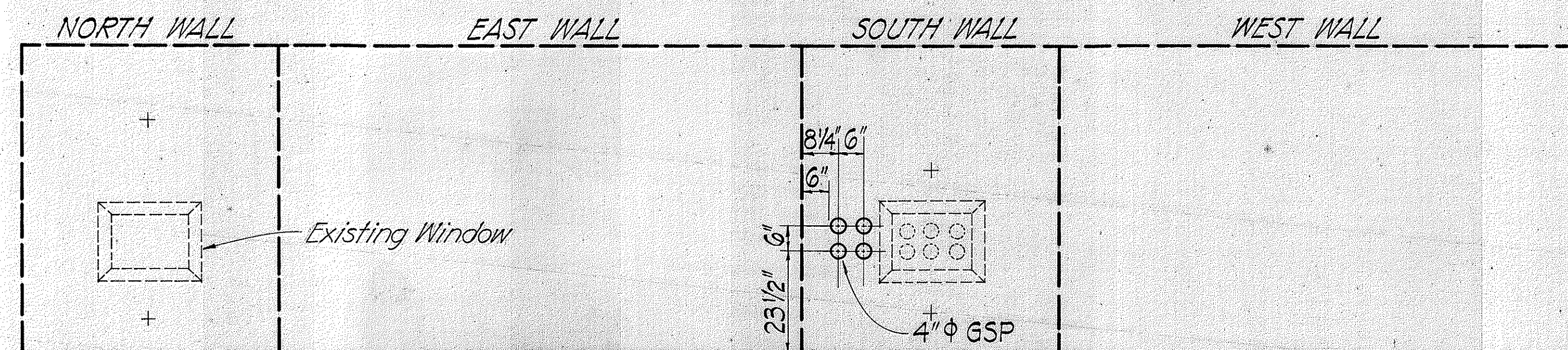
NEW MANHOLE #2823
Not to Scale

APPROVED: _____
HAWAIIAN TELEPHONE CO. DATE

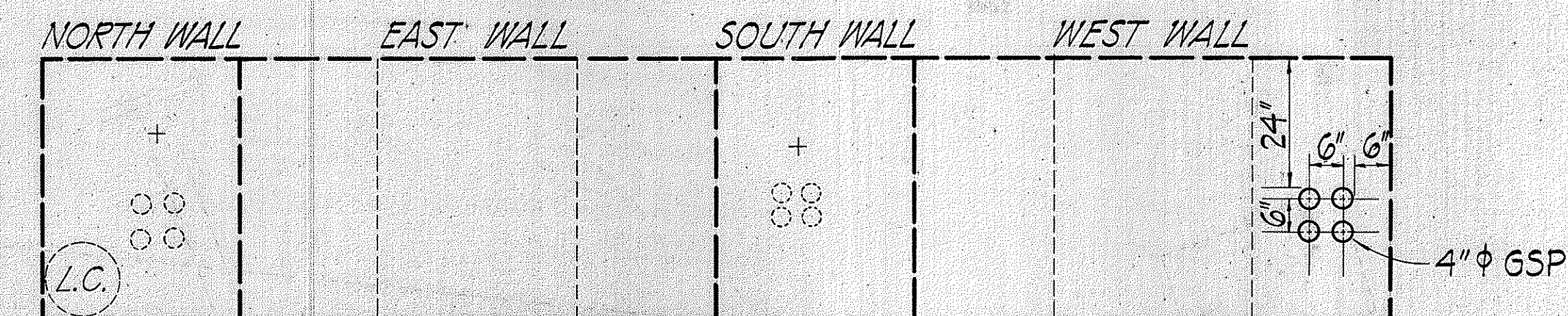
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
UTILITIES
TELEPHONE DUCT LINES
WILSON BRIDGE & APPROACHES
PROJECT NO. BR-F-080-1(7)

Scale: As noted
SHEET No. 3 OF 7 SHEETS

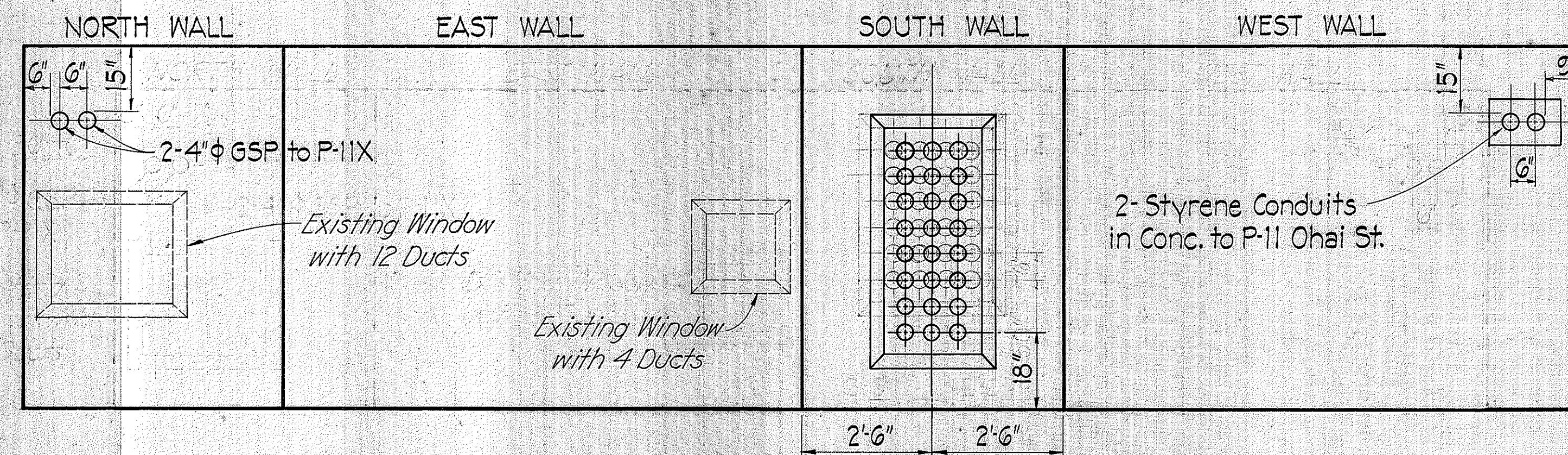
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-F-080-1(7)	1977	9	165



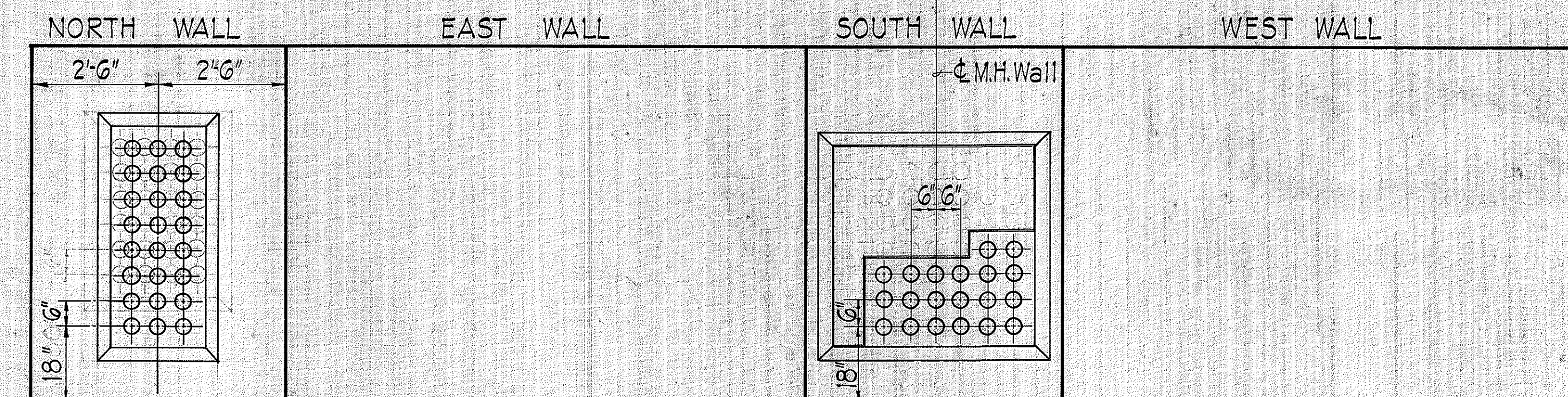
ELEVATION-EXISTING H.T. Co. MANHOLE #2822
AT STA. 76+70 Lt.
Scale: 1/2"=1'-0"



ELEVATION-EXISTING H.T. Co. MANHOLE #13
AT STA. 76+00 Lt.
Scale: 1/2"=1'-0"



ELEVATION -RECONSTRUCTED H.T. Co. MANHOLE #2291
TYPE A-3-7 AT STA. 86+12 Lt.
Scale: 1/2"=1'-0"



ELEVATION-NEW H.T. Co. MANHOLE #2823 AT STA. 80+62 Lt.
KAMEHAMEHA & WILIKINA DR.
Scale: 1/2"=1'-0"

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

2/28/78 Duct Windows Revised
South Wall MH #2291
North Wall MH #2823

DATE REVISION

APPROVED:
L. Des for K.H.
Hawaiian Telephone Co., Ltd. Date 1/30/76

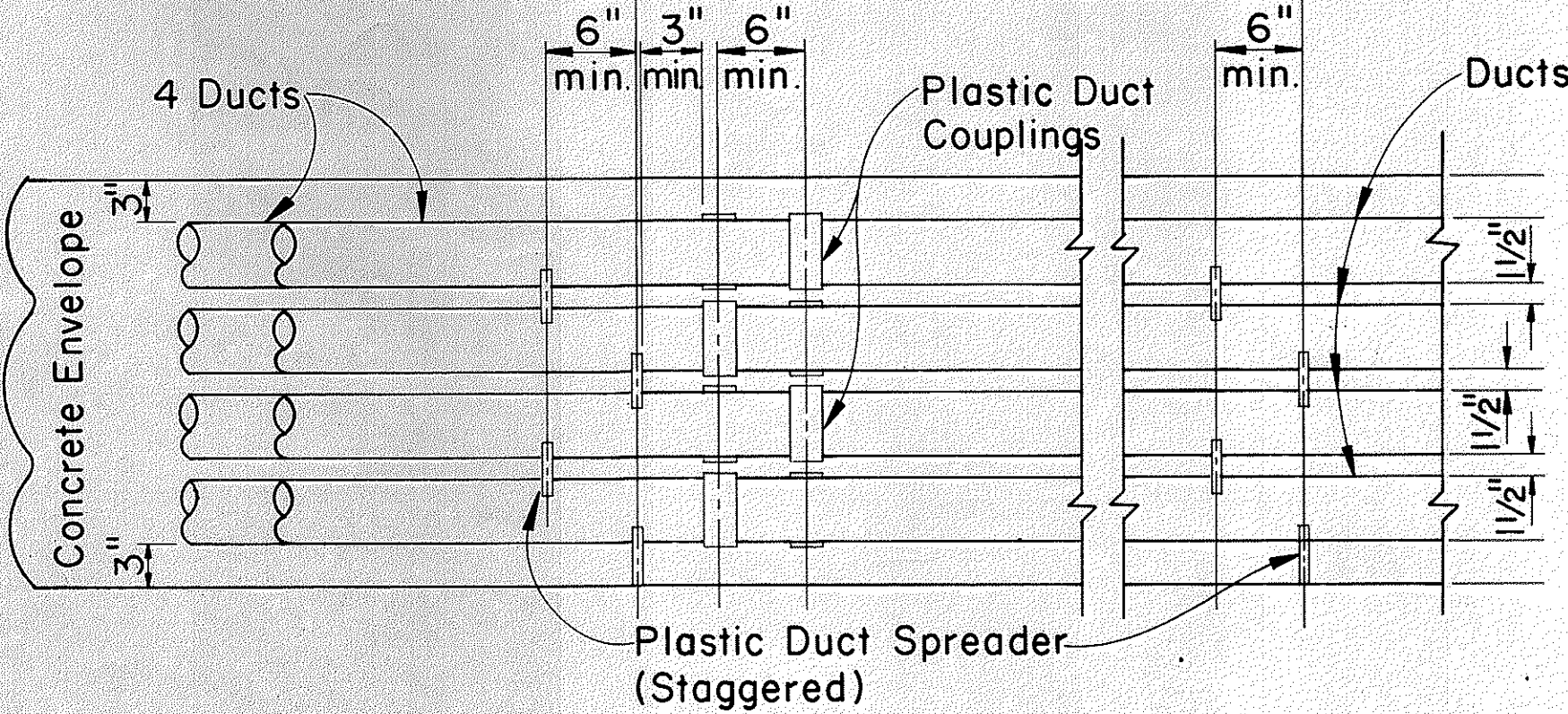
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
UTILITIES

H.T.Co. MANHOLE WALL DETAILS
WILSON BRIDGE & APPROACHES
PROJ. NO. BR-F-080-1(7)
Scale: As noted

SHEET No. 4 OF 7 SHEETS

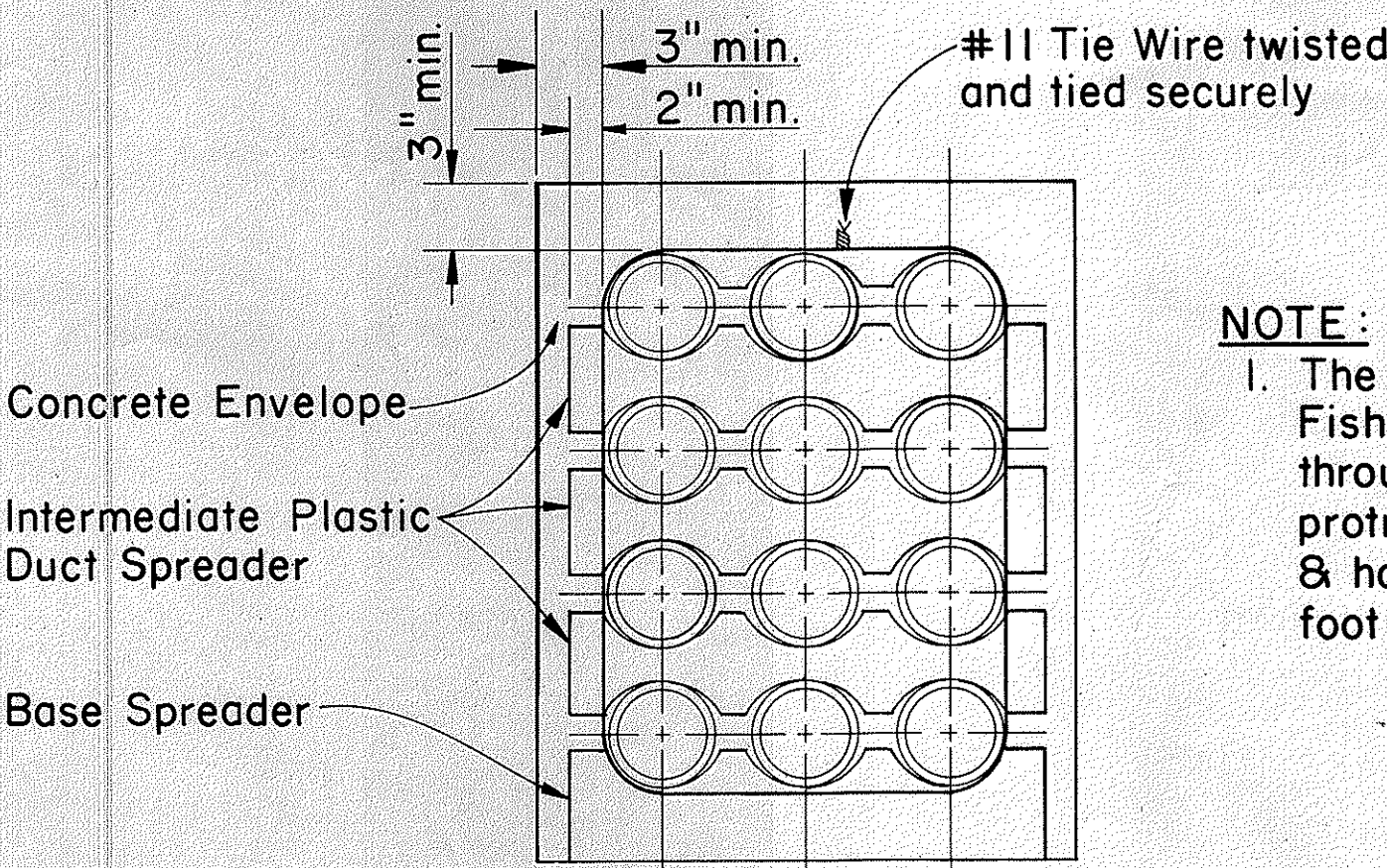
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PRF-080-1(7)	1977	10	105

Duct Spreader Spacing for
Transite Korduct 10" O.C.
Duct Spreader Spacing for
Styrene Ducts 6" O.C.



TYPICAL DUCT ENVELOPE ELEVATION ARRANGEMENT OF COUPLING & PLASTIC SPACERS

Scale: 1" = 1'-0"



NOTE:
1. The Contractor shall place #12 Fish Wire in designated duct throughout its entire length with protrusions of 2 feet in manholes & handholes at each end and 1 foot in pullboxes.

SECTION SHOWING SPACERS

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

Denotes H.T. Co.
 $\left(\frac{T}{20F-4}\right)$
Denotes Number of ducts bottom layer
Denotes 4 inch ducts
Denotes Total Number Of Ducts

SYMBOL IDENTIFICATION

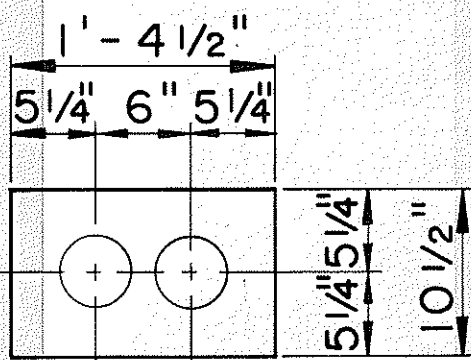
APPROVED:
A. H. Smith
Hawaiian Telephone Co., Ltd. Date: 7/20/76

H.T. Co., Ltd. Drawing No. 34028

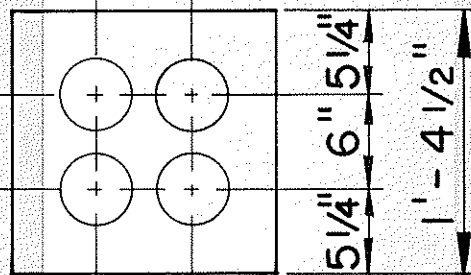
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DUCT FORMATIONS

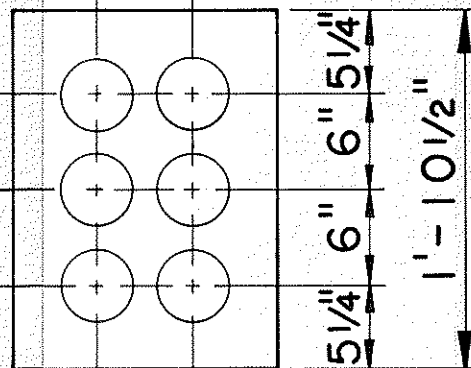
Scale: As Shown Date:
SHEET No. 5 OF 7 SHEETS



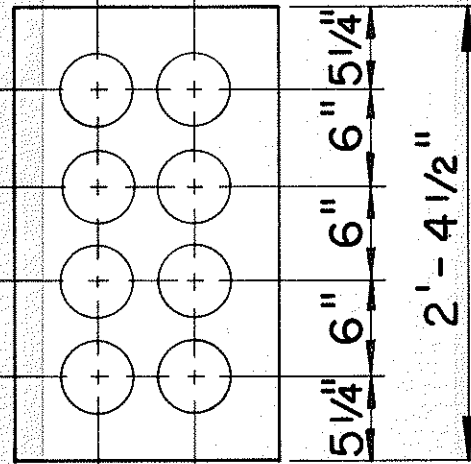
2 DUCTS
 $\left(\frac{T}{2F-2}\right)$



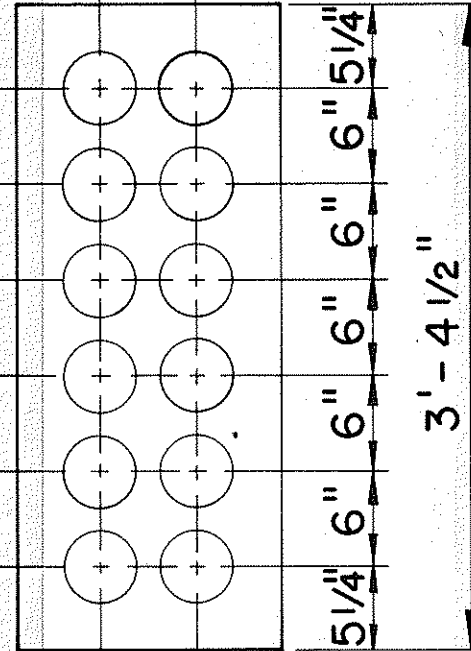
2 WIDE X 2 HIGH
 $\left(\frac{T}{4F-2}\right)$



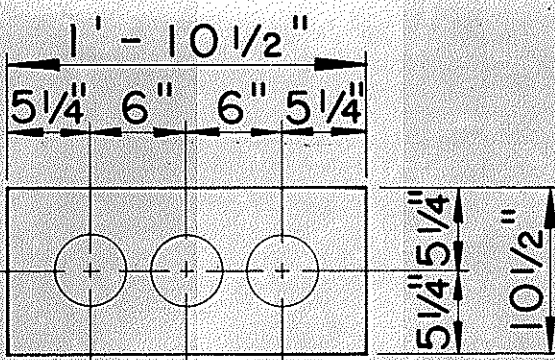
2 WIDE X 3 HIGH
 $\left(\frac{T}{6F-2}\right)$



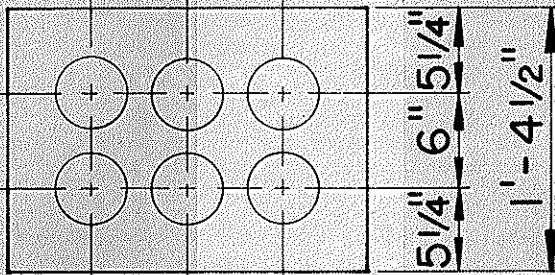
2 WIDE X 4 HIGH
 $\left(\frac{T}{8F-2}\right)$



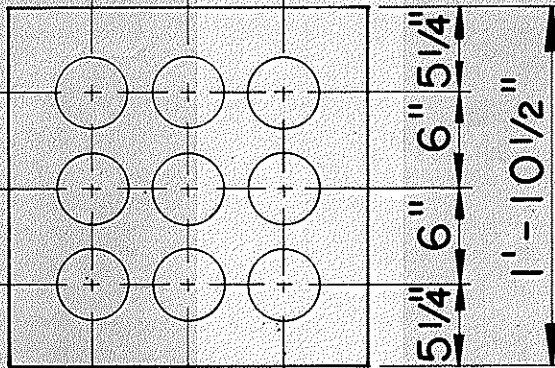
2 WIDE X 6 HIGH
 $\left(\frac{T}{12F-2}\right)$



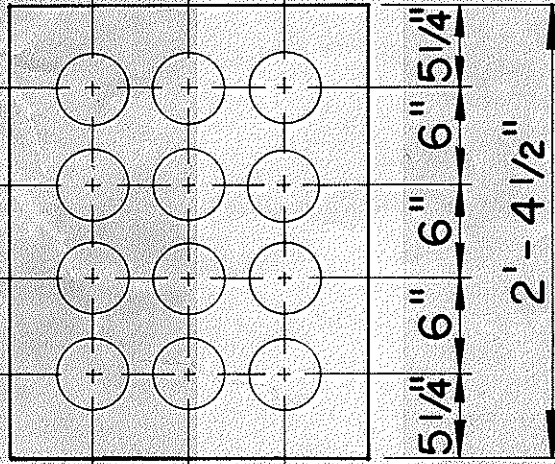
3 DUCTS
 $\left(\frac{T}{3F-3}\right)$



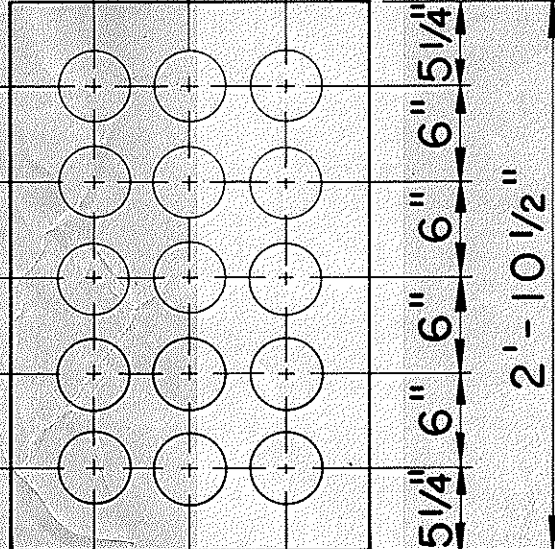
3 WIDE X 2 HIGH
 $\left(\frac{T}{6F-3}\right)$



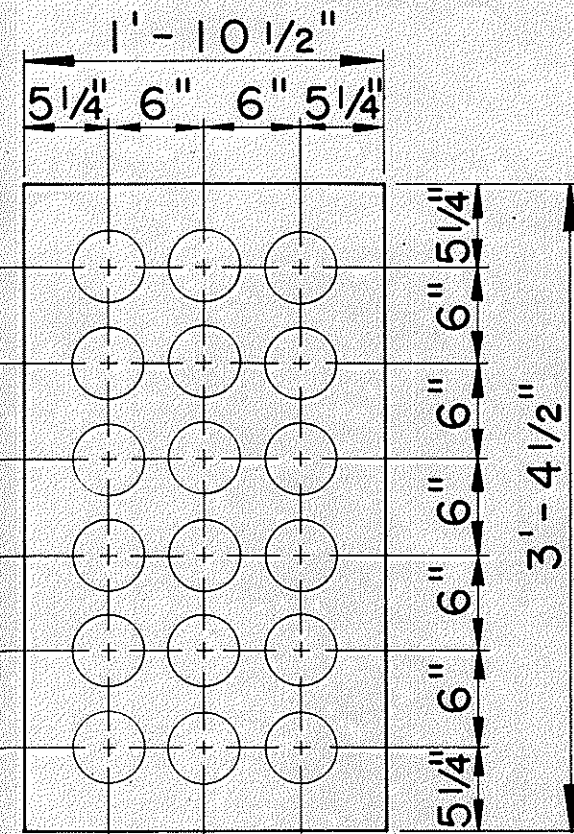
3 WIDE X 3 HIGH
 $\left(\frac{T}{9F-3}\right)$



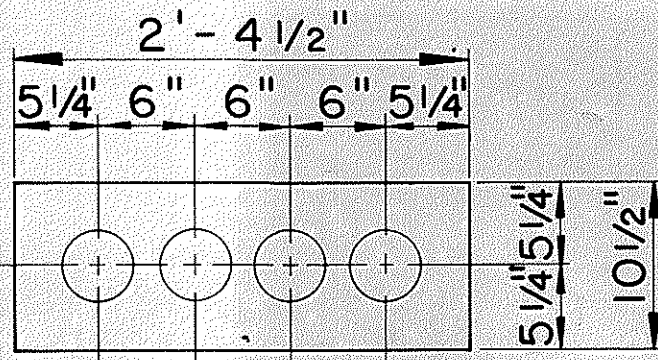
3 WIDE X 4 HIGH
 $\left(\frac{T}{12F-3}\right)$



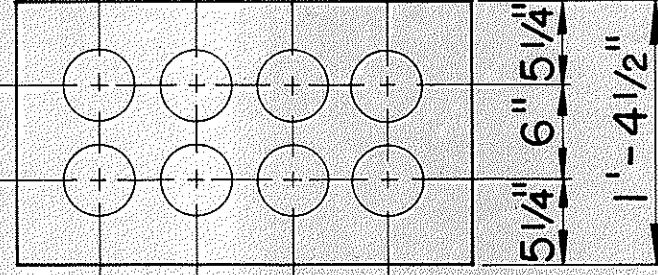
3 WIDE X 5 HIGH
 $\left(\frac{T}{15F-3}\right)$



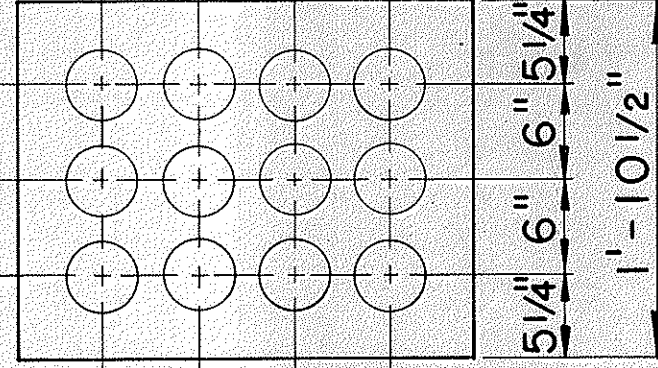
3 WIDE X 6 HIGH
 $\left(\frac{T}{18F-3}\right)$



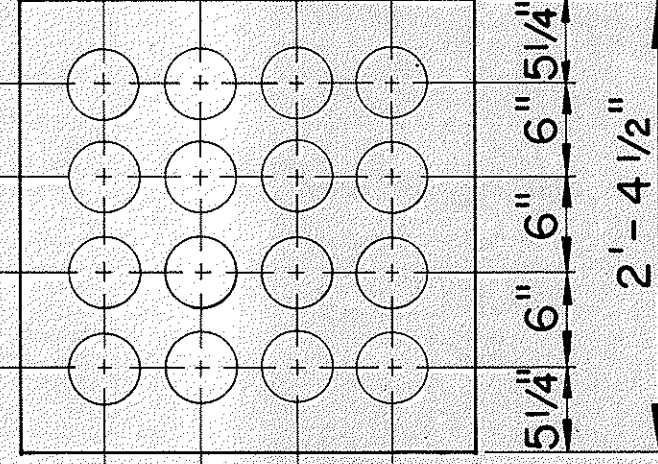
4 DUCTS
 $\left(\frac{T}{4F-4}\right)$



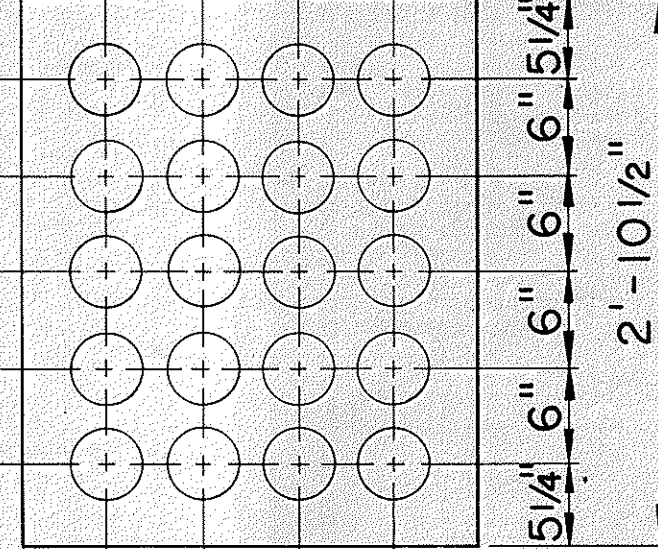
4 WIDE X 2 HIGH
 $\left(\frac{T}{8F-4}\right)$



4 WIDE X 3 HIGH
 $\left(\frac{T}{12F-4}\right)$



4 WIDE X 4 HIGH
 $\left(\frac{T}{16F-4}\right)$



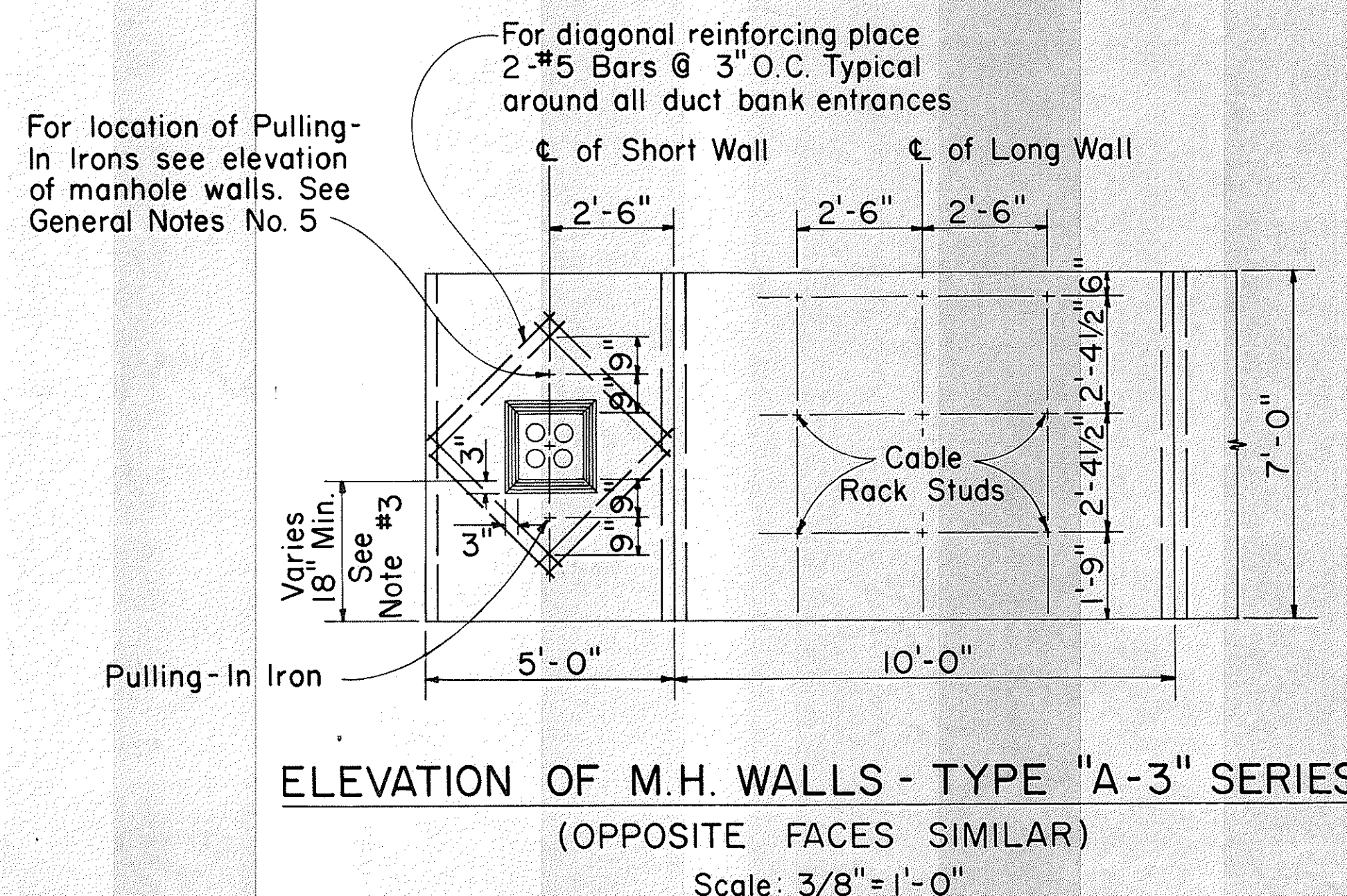
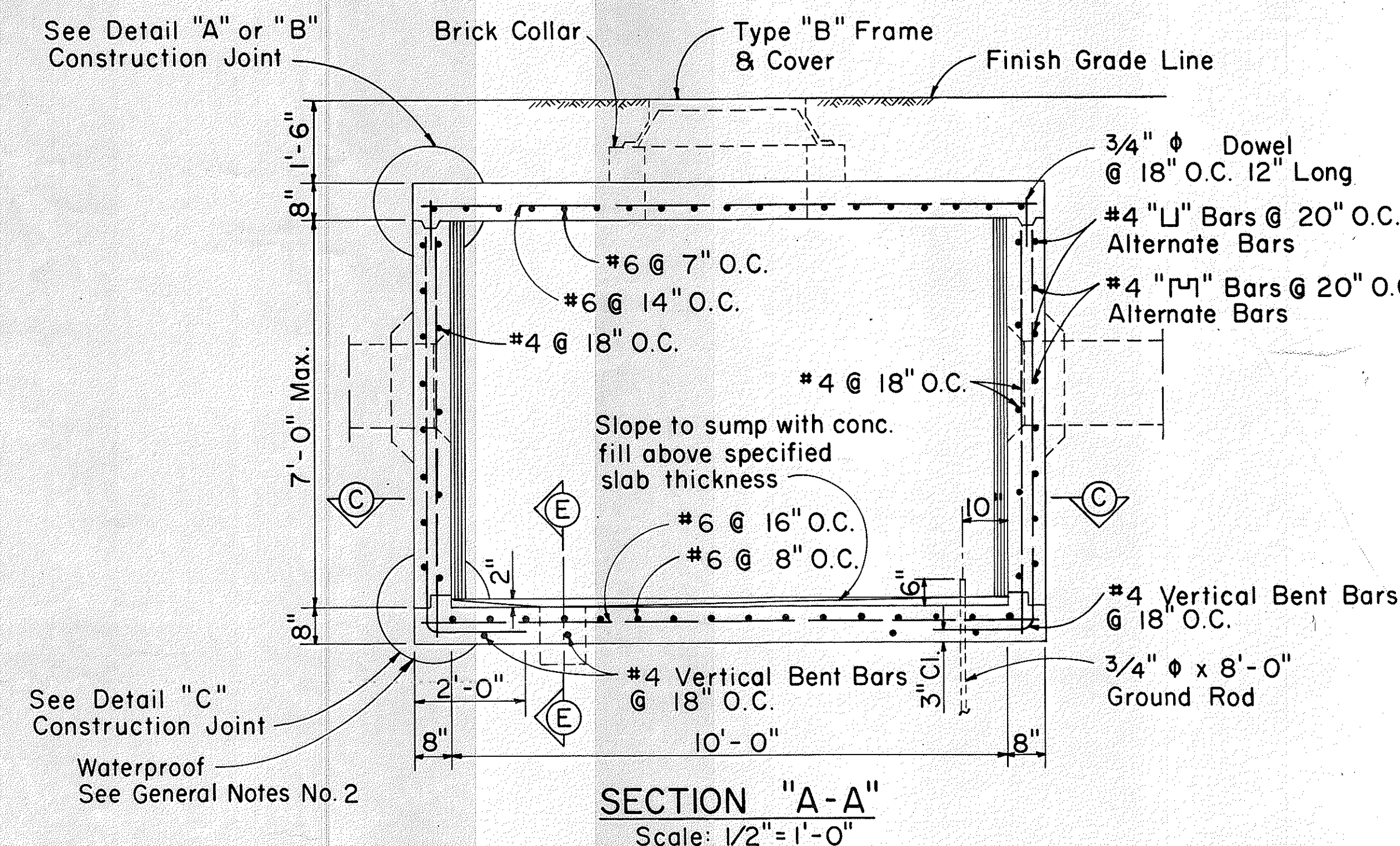
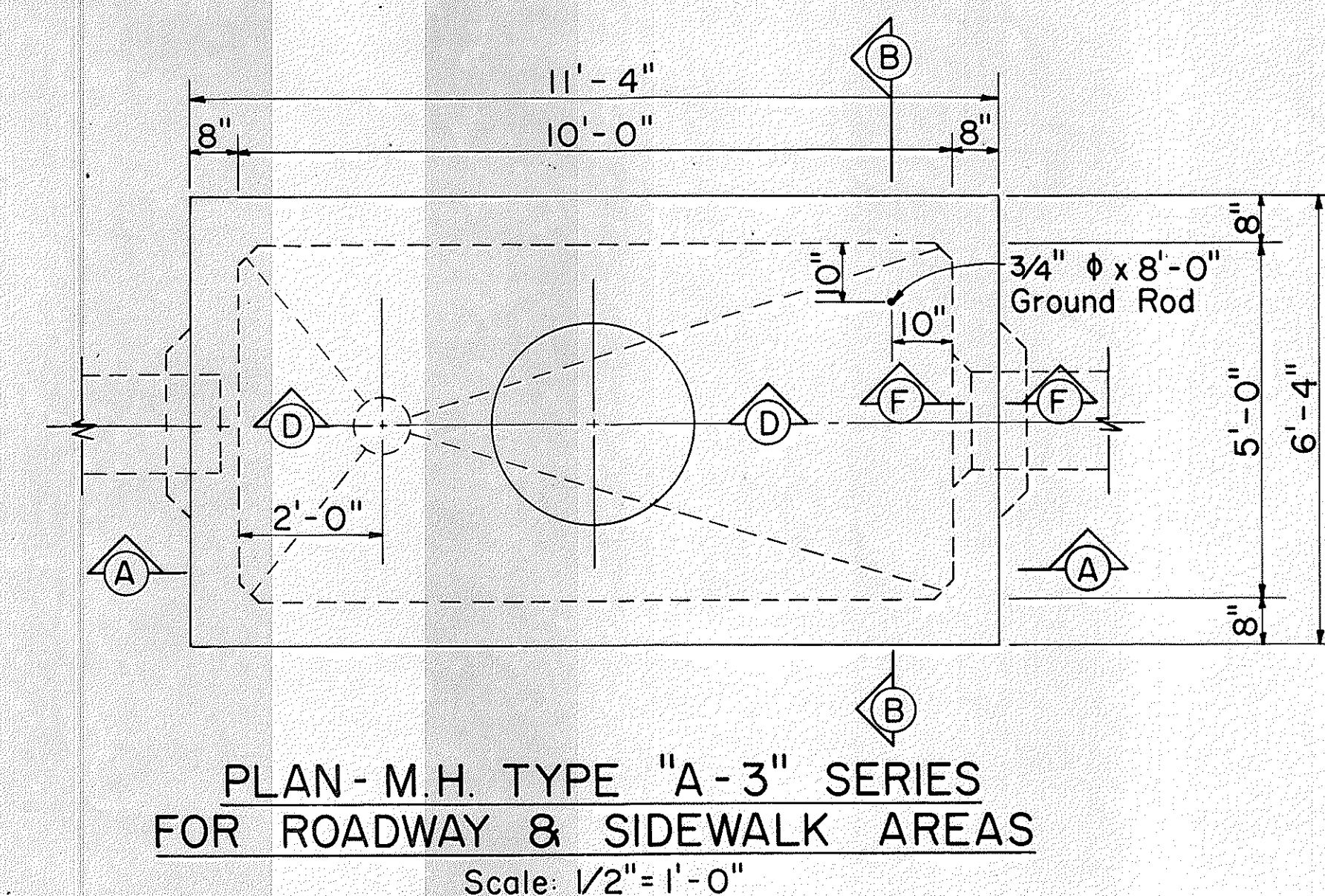
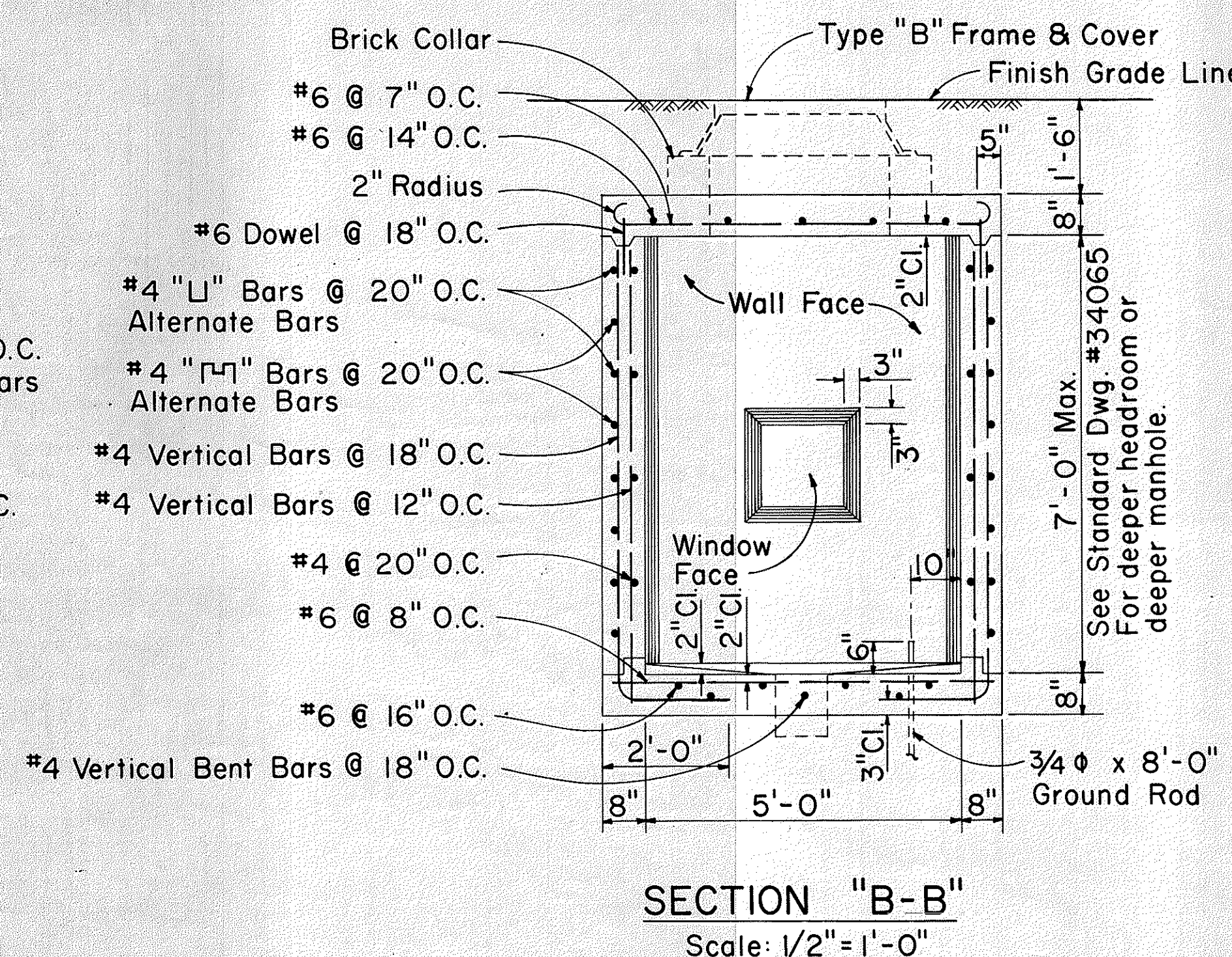
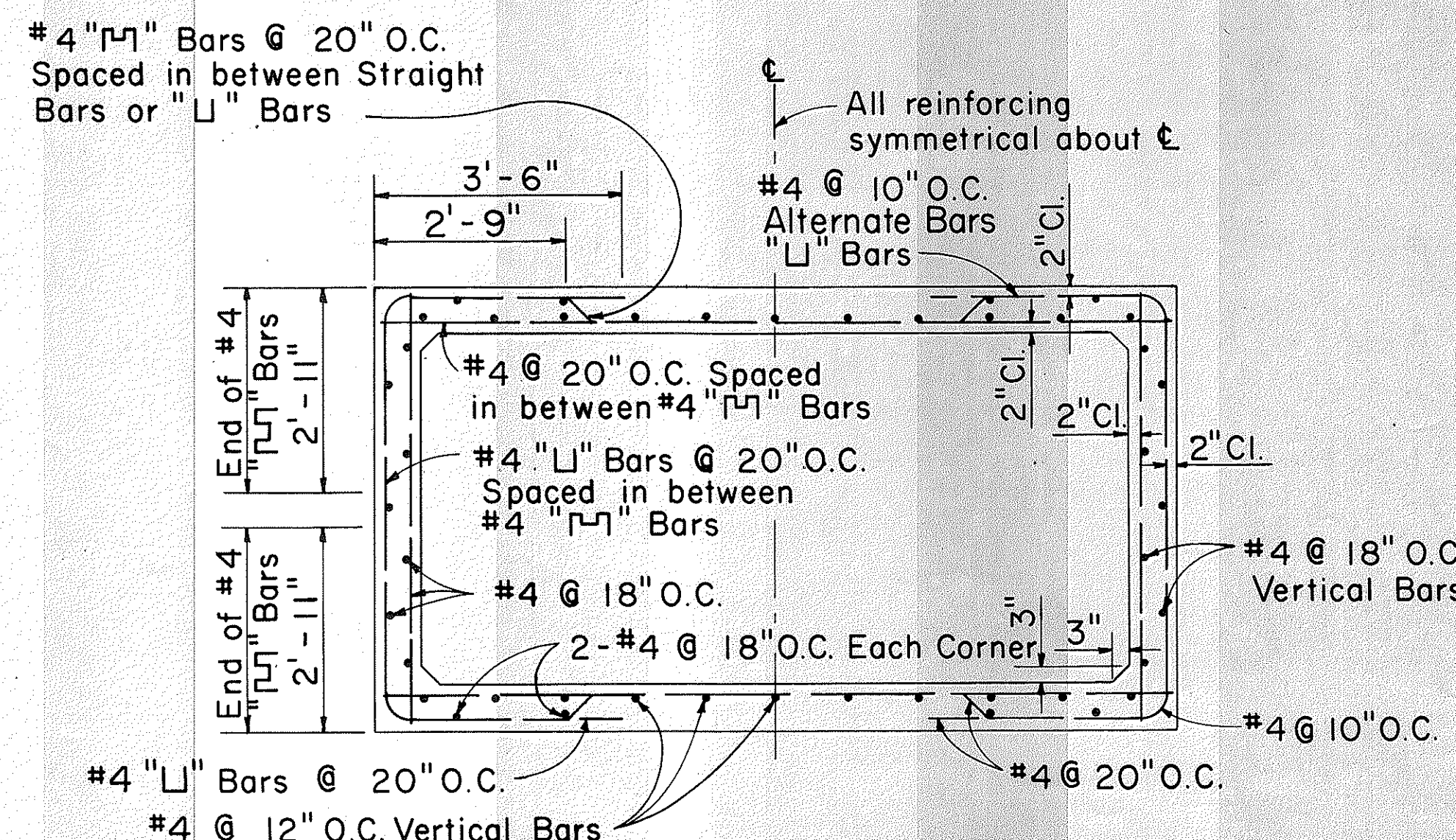
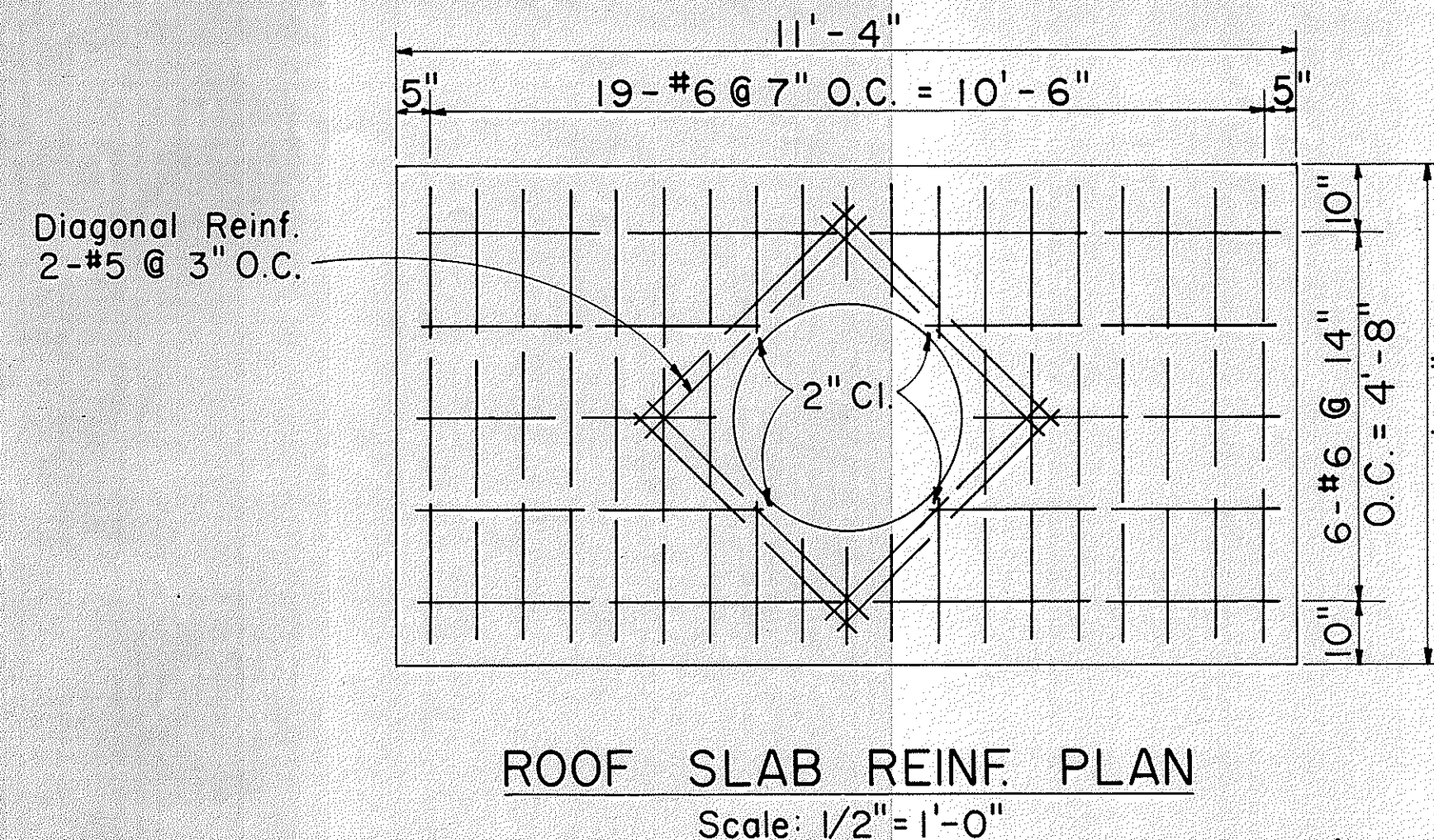
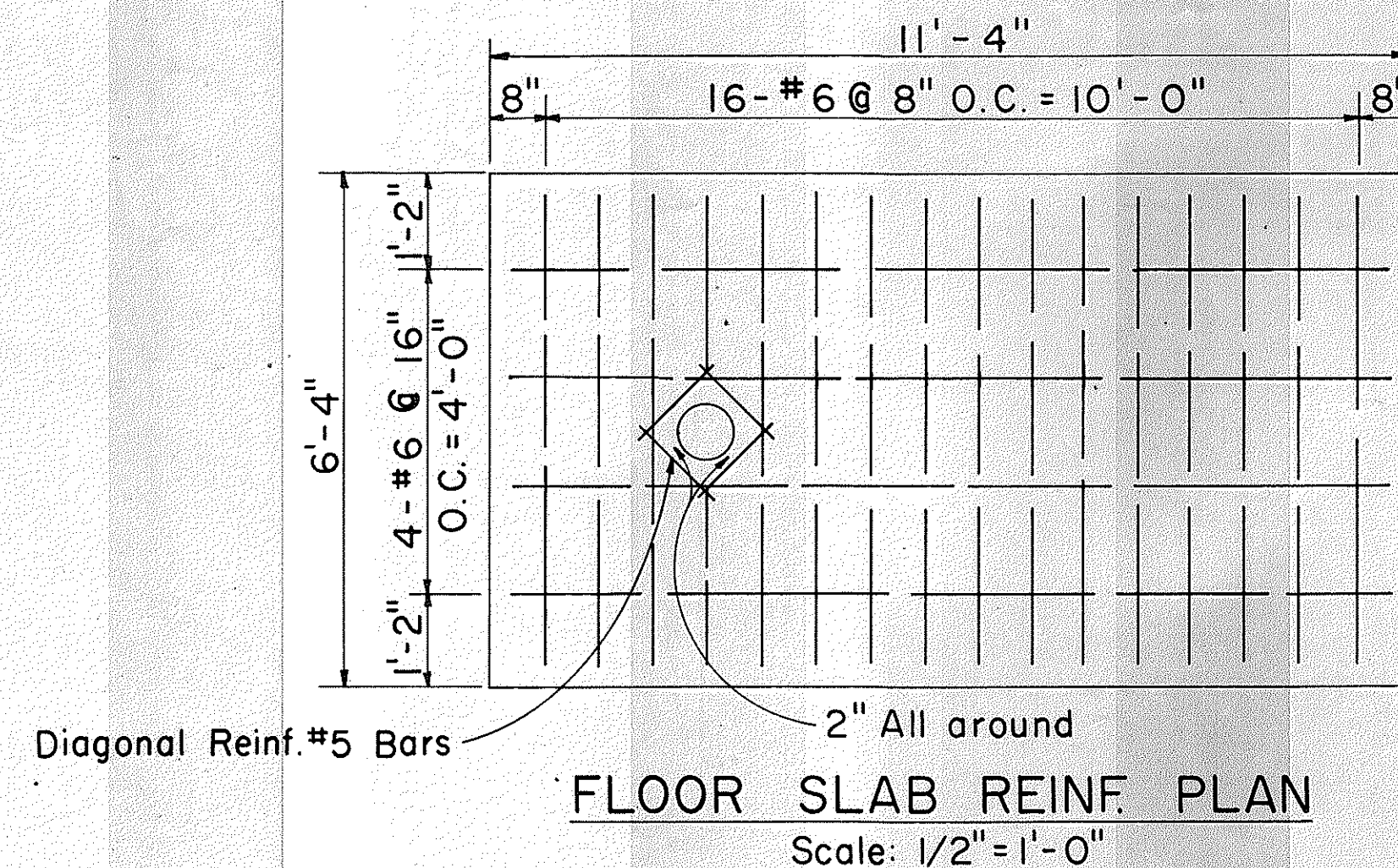
4 WIDE X 5 HIGH
 $\left(\frac{T}{20F-4}\right)$

STANDARD DUCT FORMATIONS

Scale: 1" = 1'-0"

ORIGINAL	DATE
PLAN	
DESIGNED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PRF-080-1(1)	1977	11	105



GENERAL NOTES:

- Design Data:
fs = 20,000 psi; fc = 3,000 psi; fc = 1,350 psi; n = 10
w = Equivalent Fluid Pressure: 30#/ft²
- All Construction Joints shall be waterproofed with two applications of Thoro Seal or equal.
- For Duct Window location see Plan Profile Sheets for Elevations.
- Duct Window to suit - See Plan & Profile & Standard Detail Sheets for Location & Details.
- For Details "A", "B", "C" Sections "D-D", "E-E", "F-F" and other miscellaneous Manhole Construction Details see Supplement Sheet to Type "A-1", "A-2" and "A-3" Telephone Manholes.

Manhole Classification
Width & Length Designation "3" = 5.0' x 10.0'
Manhole Headroom

TYPE "A-3"-6.0'
6.5'
7.0'

APPROVED:

J. H. Co., Ltd. *7/20/76*
Hawaiian Telephone Co., Ltd. Date

H.T. Co., Ltd. Drawing No. 34064

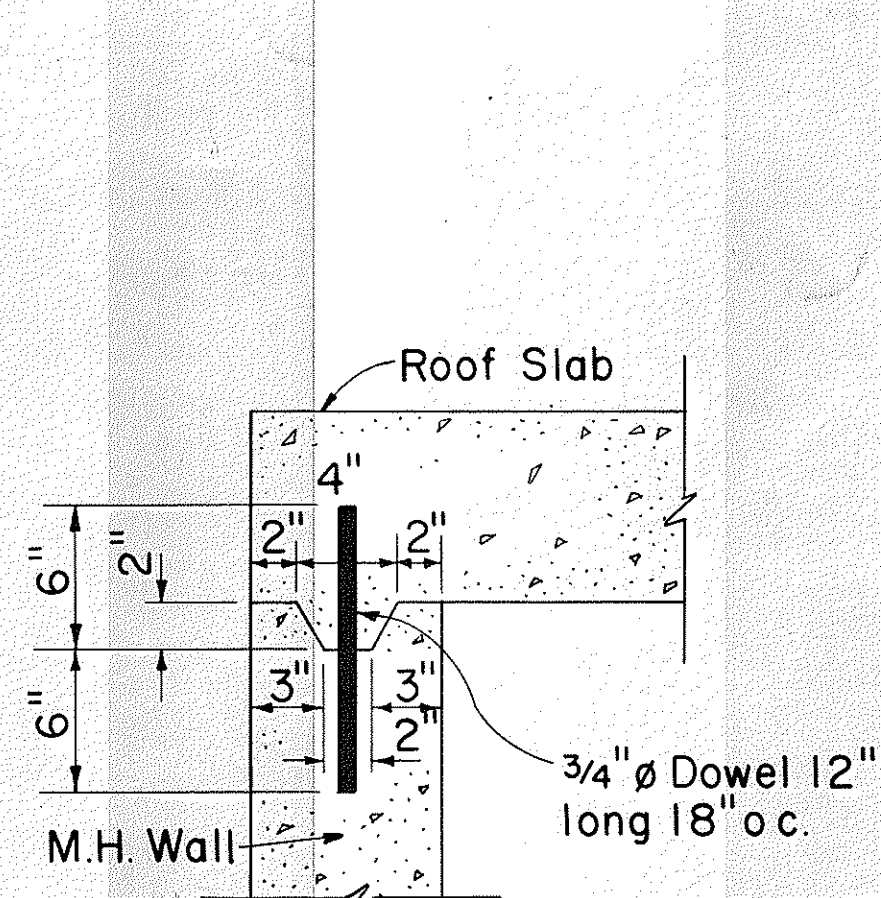
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TYPE "A-3" MANHOLES
FOR 6.0' TO 7.0'
HEADROOM**

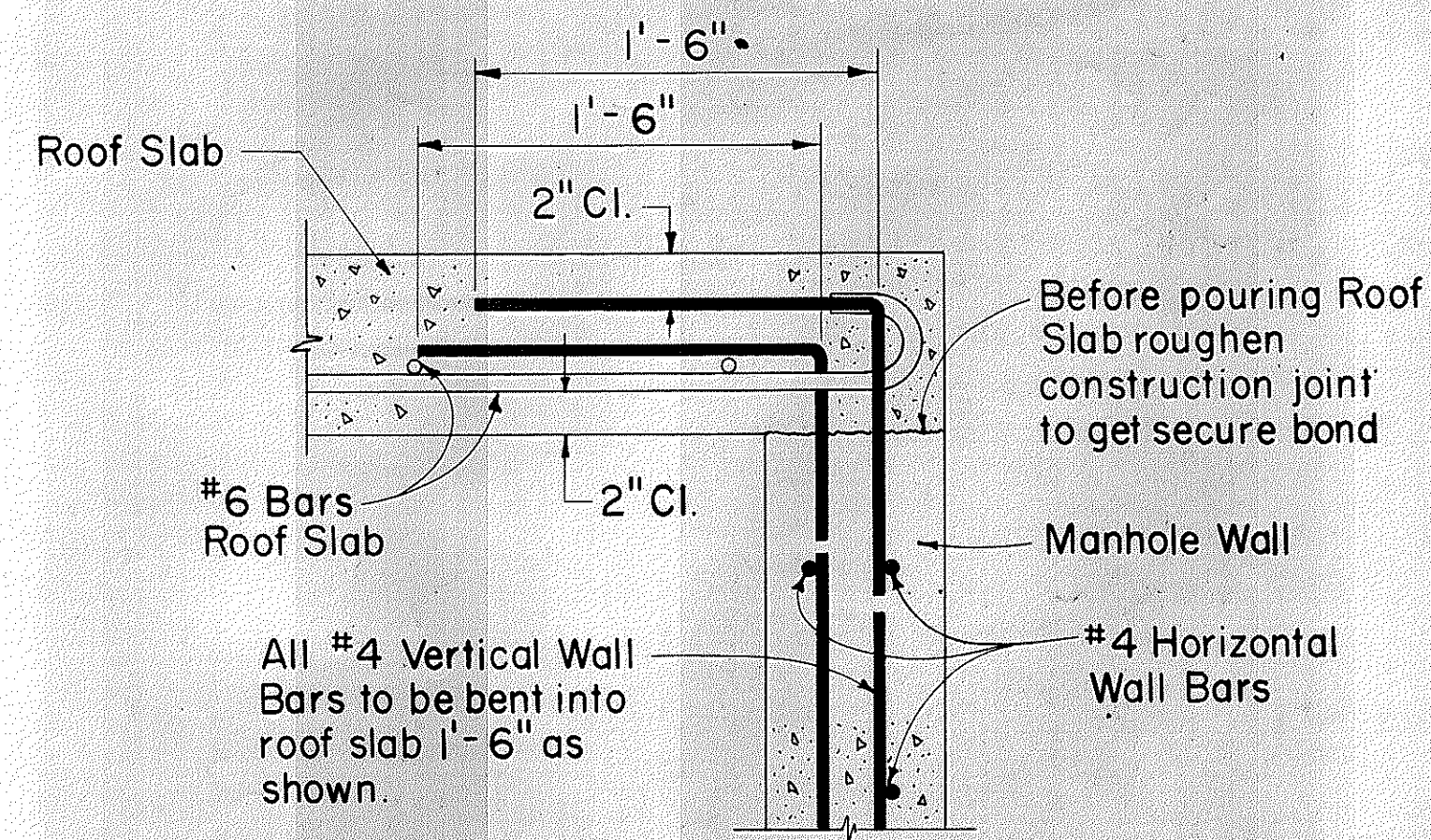
Scale: As Noted Date:

SHEET No. 6 OF 7 SHEETS

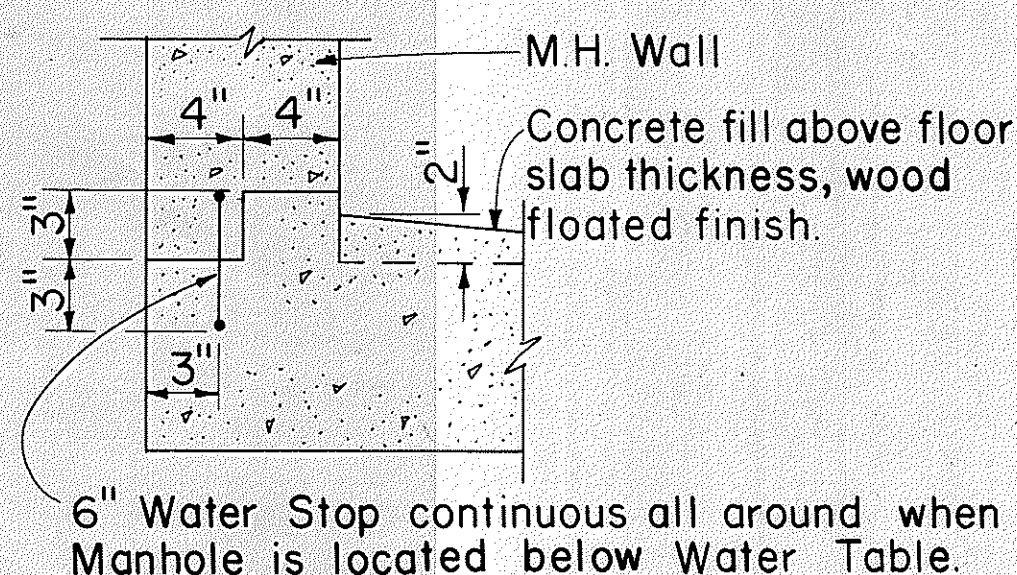
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	PRF-0801(7)	1977	12	165



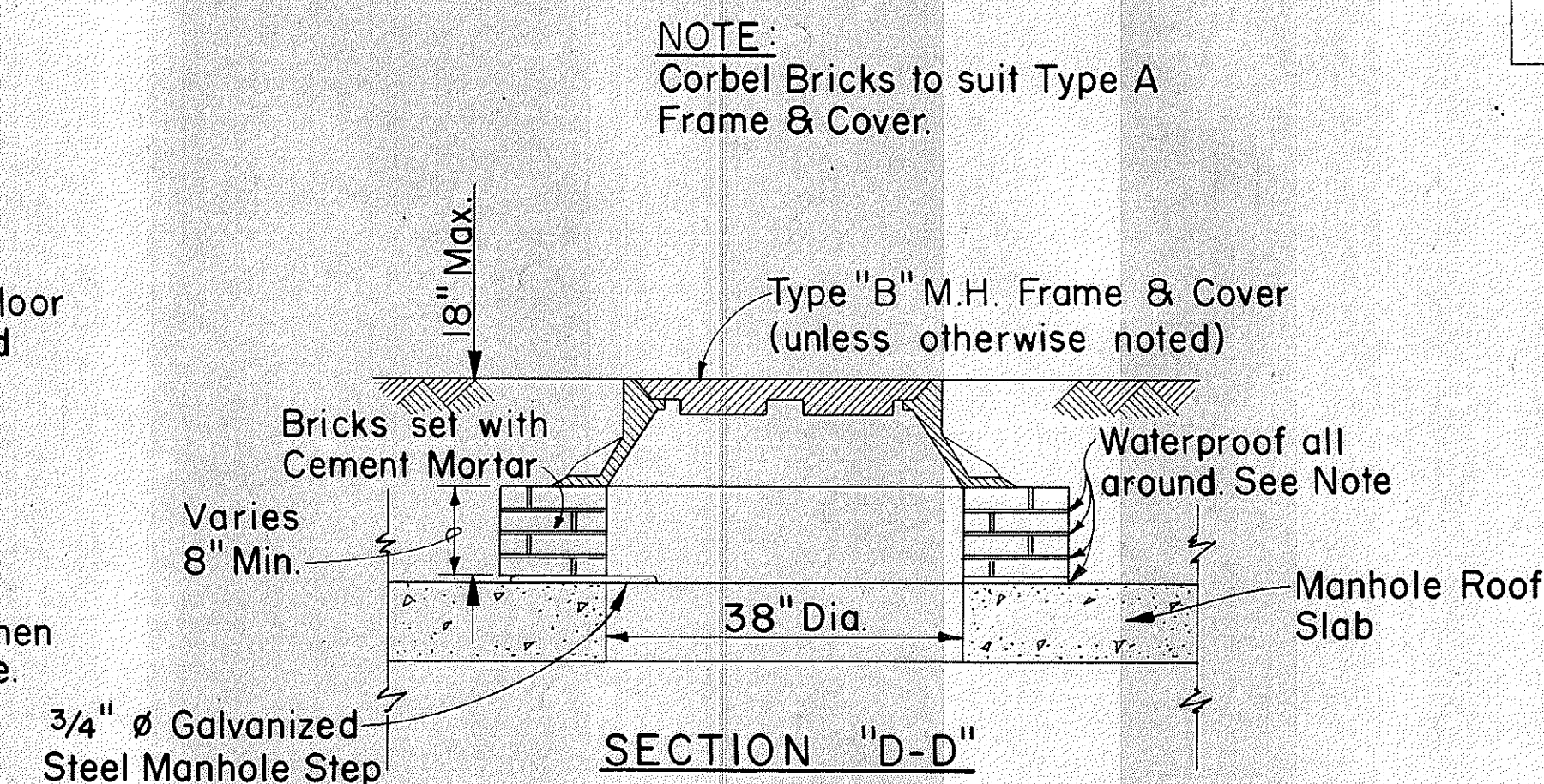
DETAIL "A"
TOP CONSTRUCTION JOINT
Scale: 1 1/2" = 1'-0"
(Optional for cast-in-place construction)
(Required for precast construction)



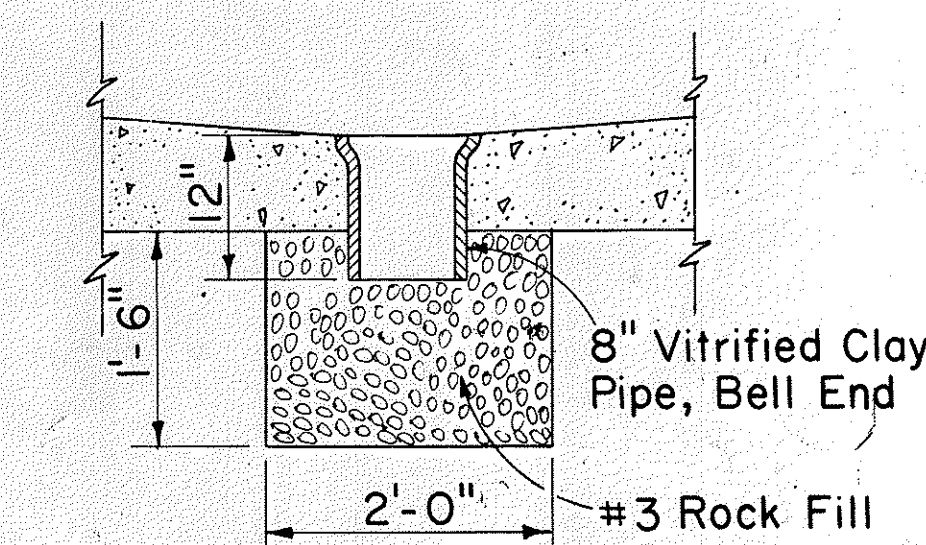
DETAIL "B"
(USED FOR CAST-IN-PLACE CONSTRUCTION)
Scale: 1 1/2" = 1'-0"



BOTTOM DETAIL "C" CONSTRUCTION JOINT
 Scale: $1\frac{1}{2}" = 1'-0"$



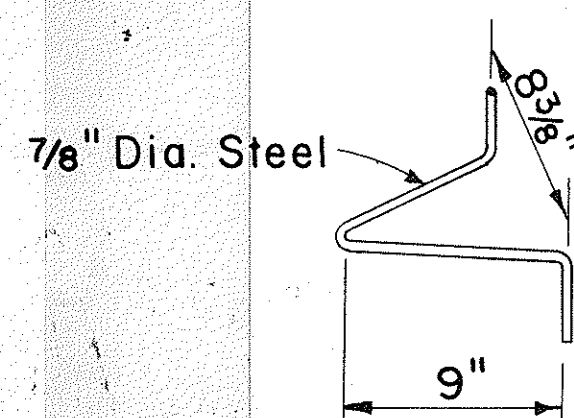
SECTION "D-D"
M.H. COVER DETAIL
Scale: 3/4" = 1'-0"



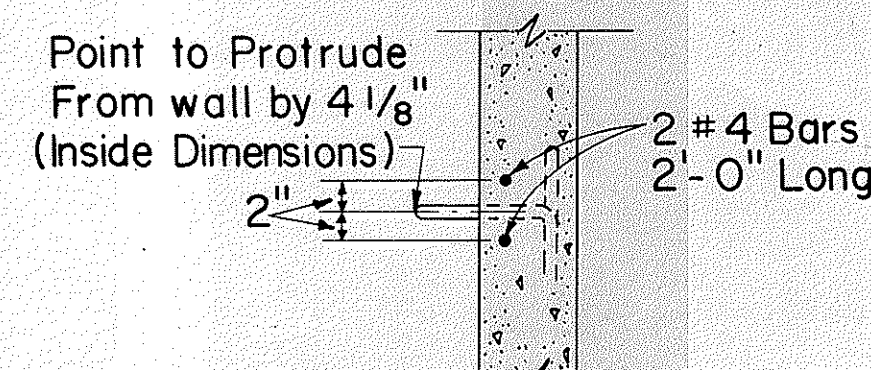
SECTION "E-E"
M.H. SUMP DETAIL

Note: Scale: 3/4" = 1'-0"

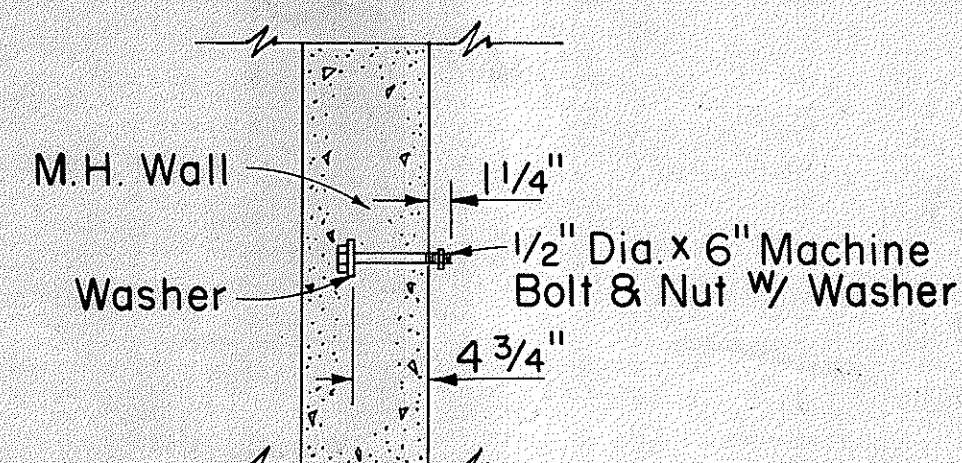
See Section "E₁-E₁" Below



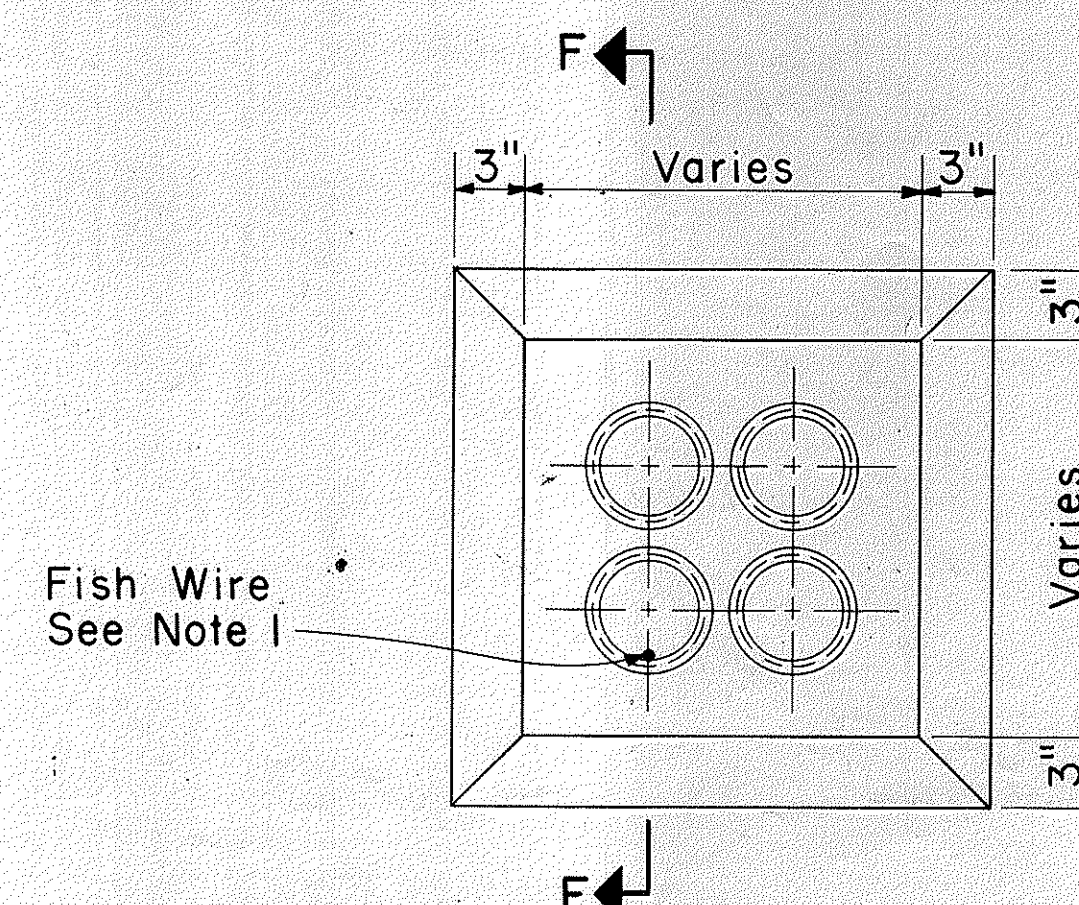
PULLING-IN IRON



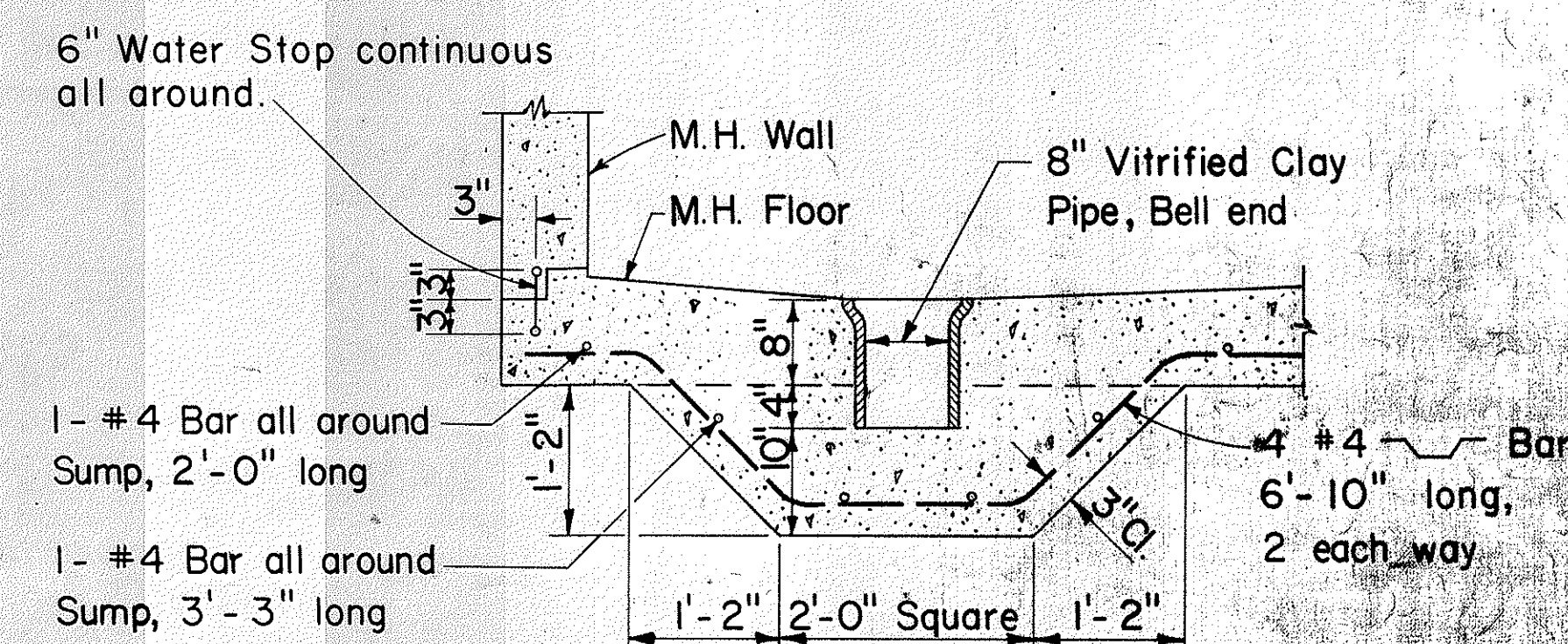
SECTIONAL VIEW OF
PULLING-IN IRON
Scale: $3/4" = 1'-0"$



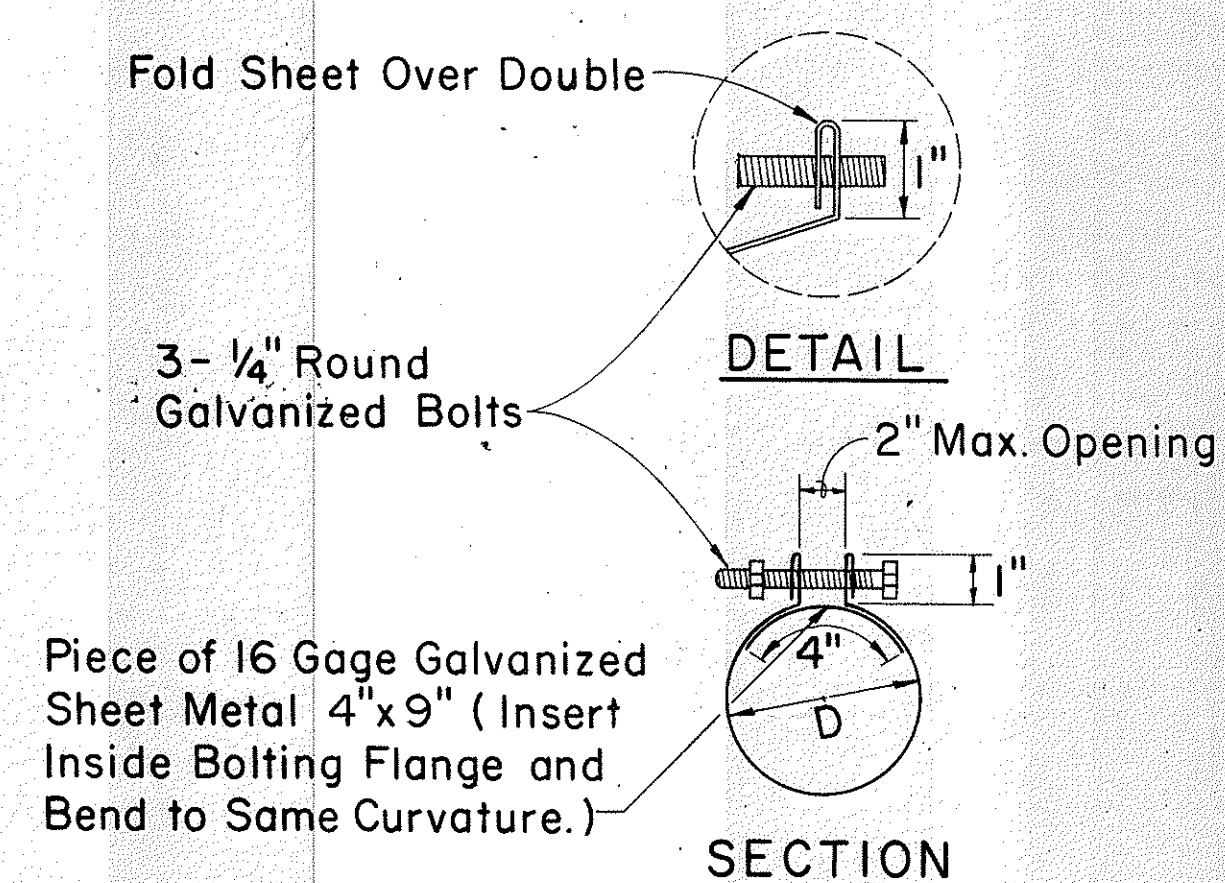
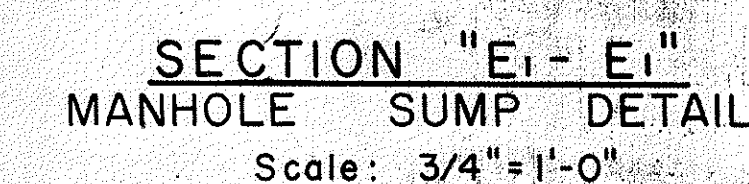
CABLE RACK STUD
BOLT DETAIL
Scale: 1" = 1'-0"



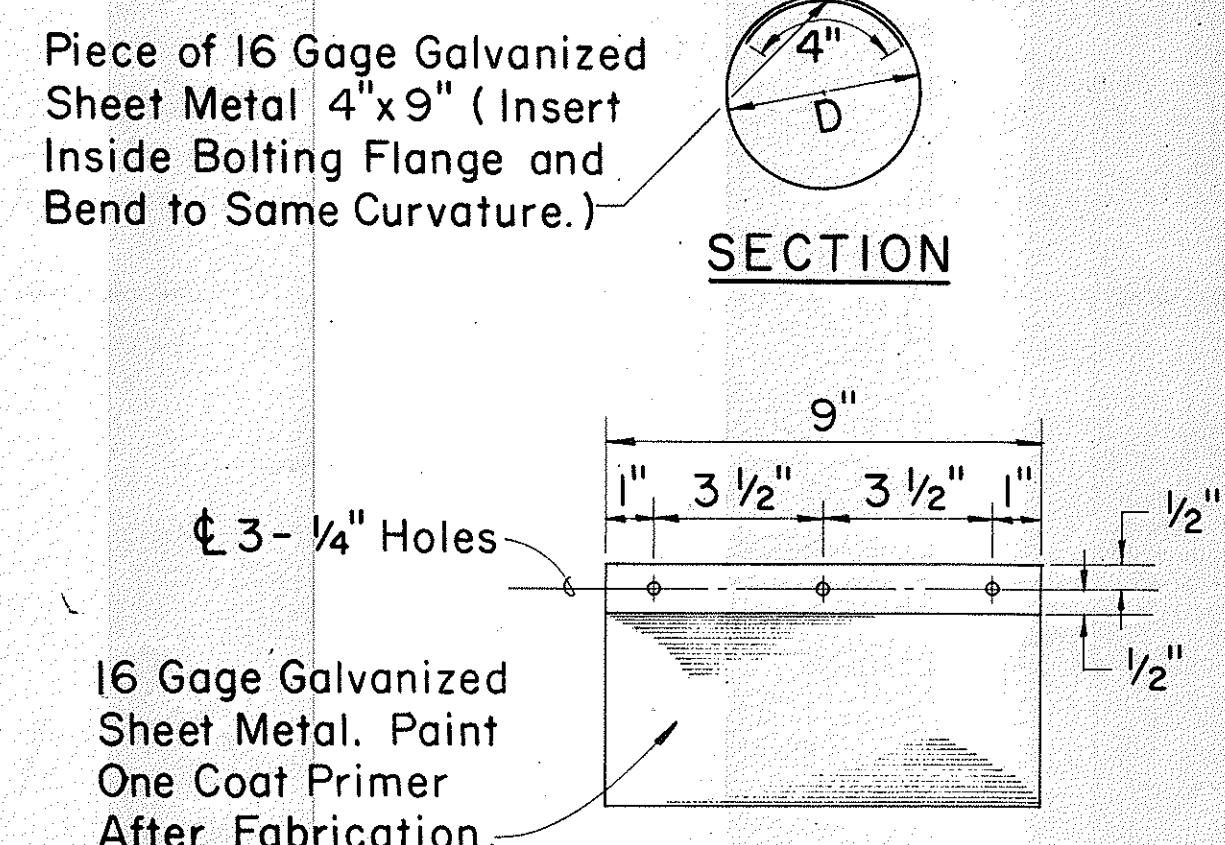
TYPICAL MANHOLE DUCT WINDOW
Scale: 1 1/2" = 1'-0"



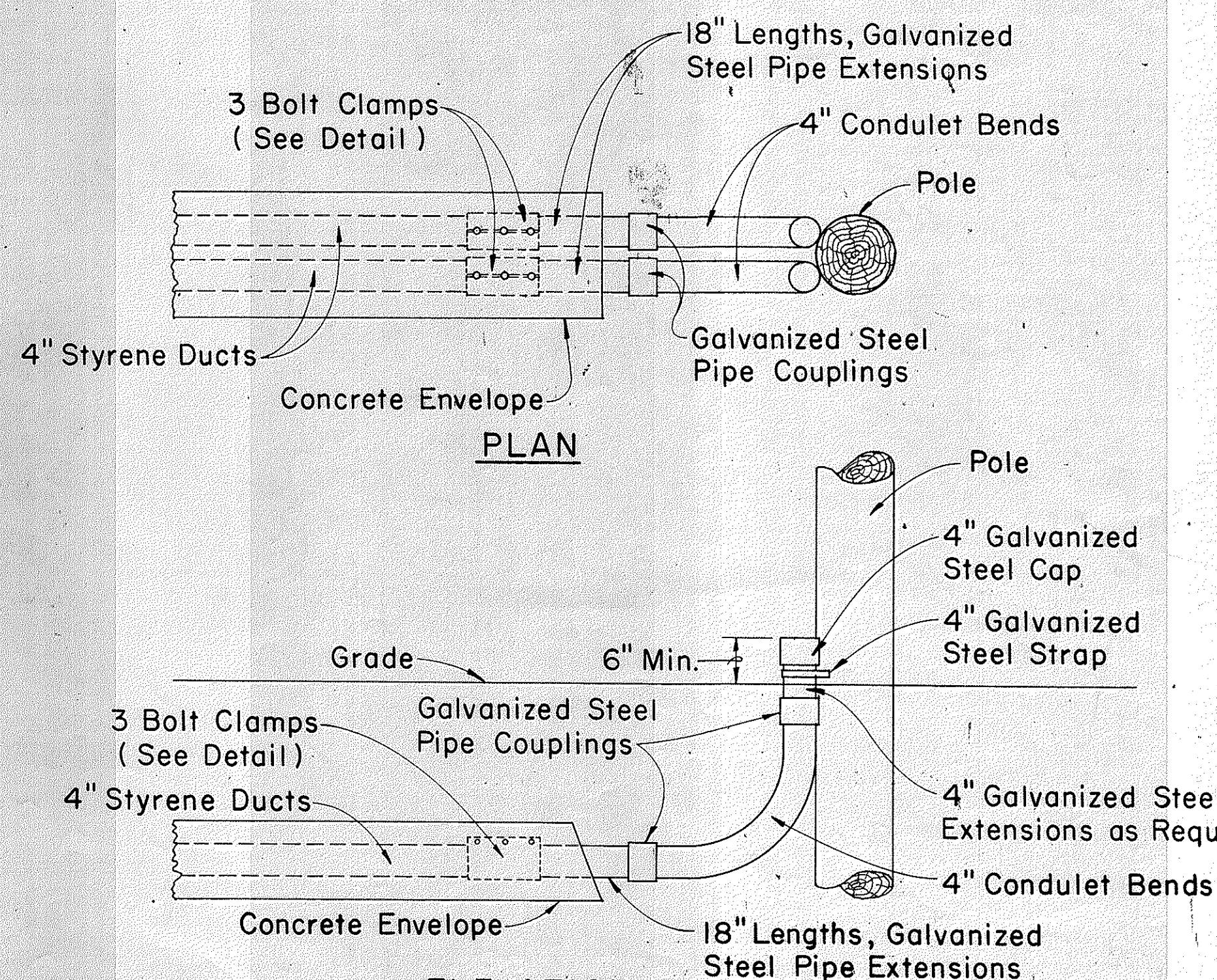
Note : Only for manholes located below water table



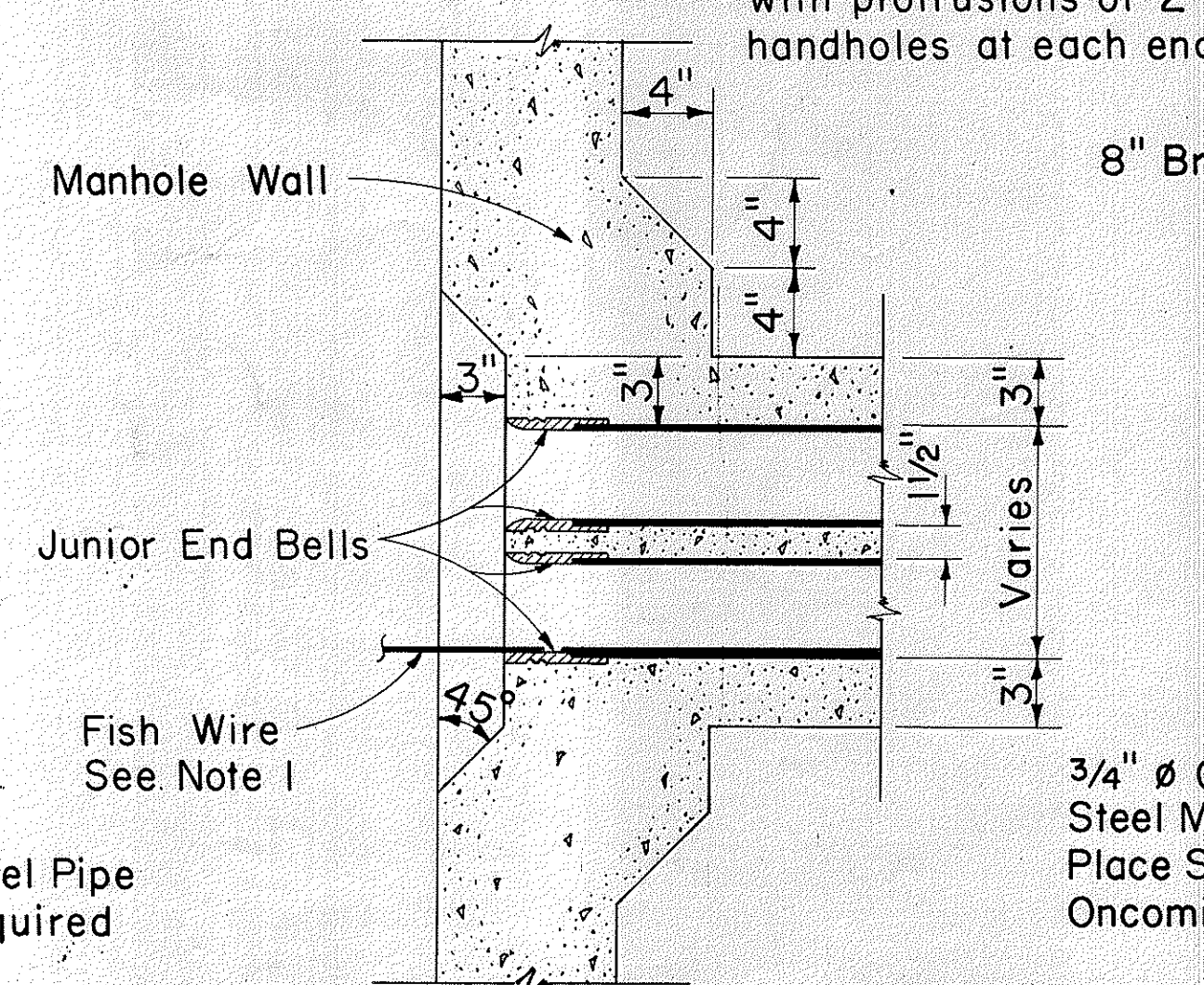
SECTION



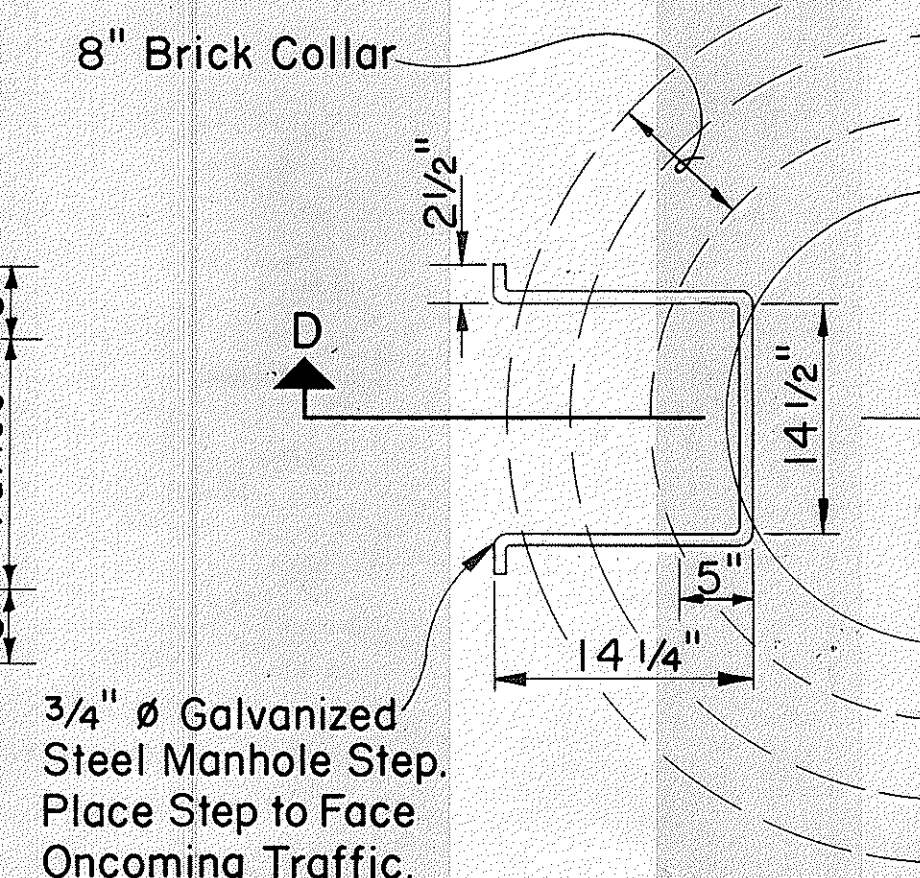
ELEVATION
3 - BOLT CLAMP ADAPTOR DETAIL
Scale: 3" = 1'-0"



TYPICAL INSTALLATION DETAILS
Scale: $\frac{3}{4}" = 1'-0"$



SECTION "F-F"
TYPICAL WINDOW DETAIL & JUNIOR END BELT
Scale: 1/2" = 1'-0"



PART-PLAN
MANHOLE STEP
Scale: 1" = 1'-0"

NOTE

1. The Contractor shall place #12 Fish Wire in designated duct throughout its entire length with protrusions of 2 feet in manholes & handholes at each end and 1 foot in pullboxes.

Supplement Sheet to Type "A-1" (Drawing Nos. 34060 & 34061), Type "A-2" (Drwg. Nos. 34062 & 34063) and Type "A-3" (Drwg. Nos. 34064 & 34065) Telephone M.H.

APPROVED:

S. Davis for Key 7/30/72
Hawaiian Telephone Co., Ltd. Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TYPE "A" MANHOLE
AND MISCELLANEOUS
TELEPHONE DETAILS

Scale: As Noted Date:

SHEET No. 7 OF 7 SHEETS