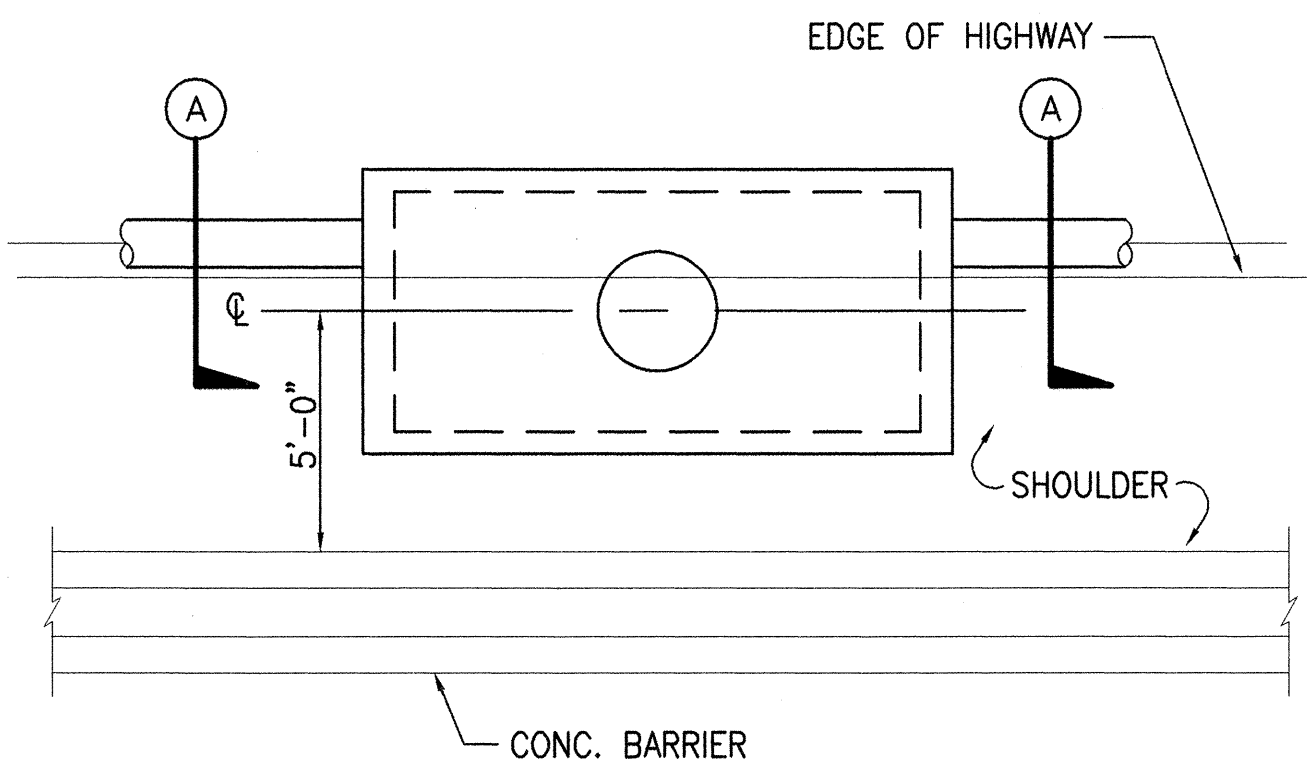
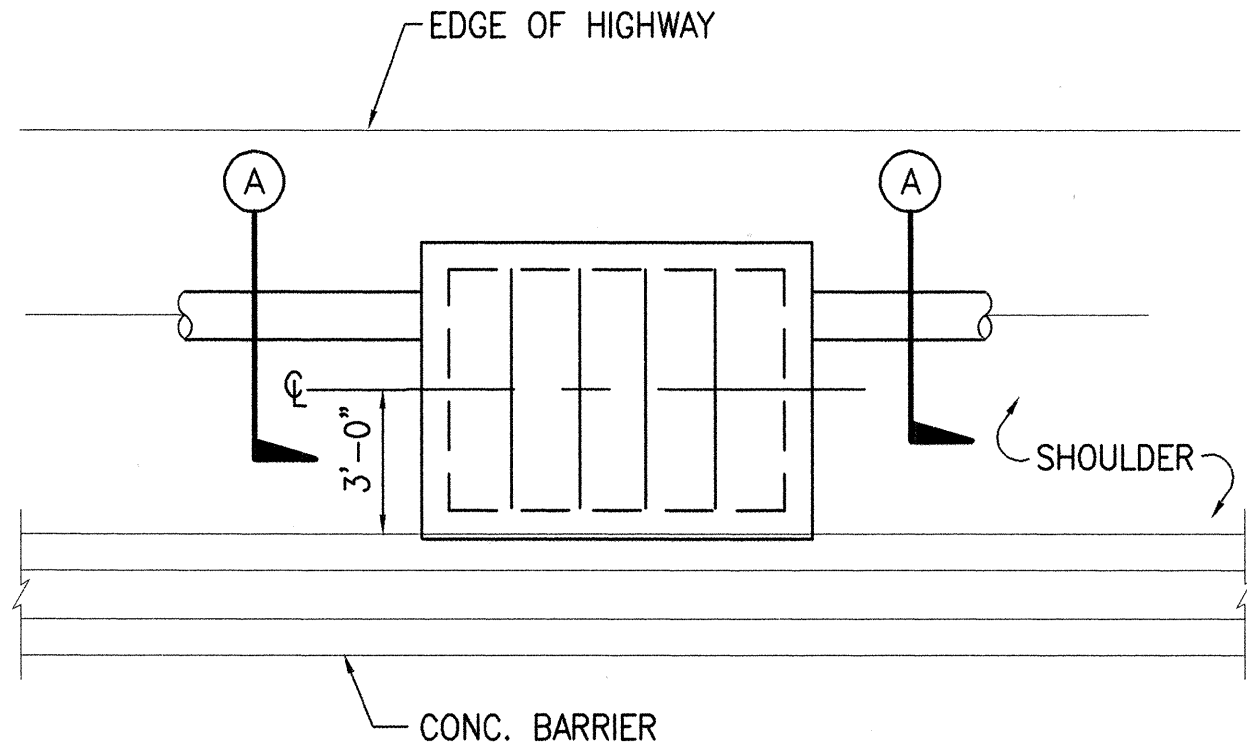


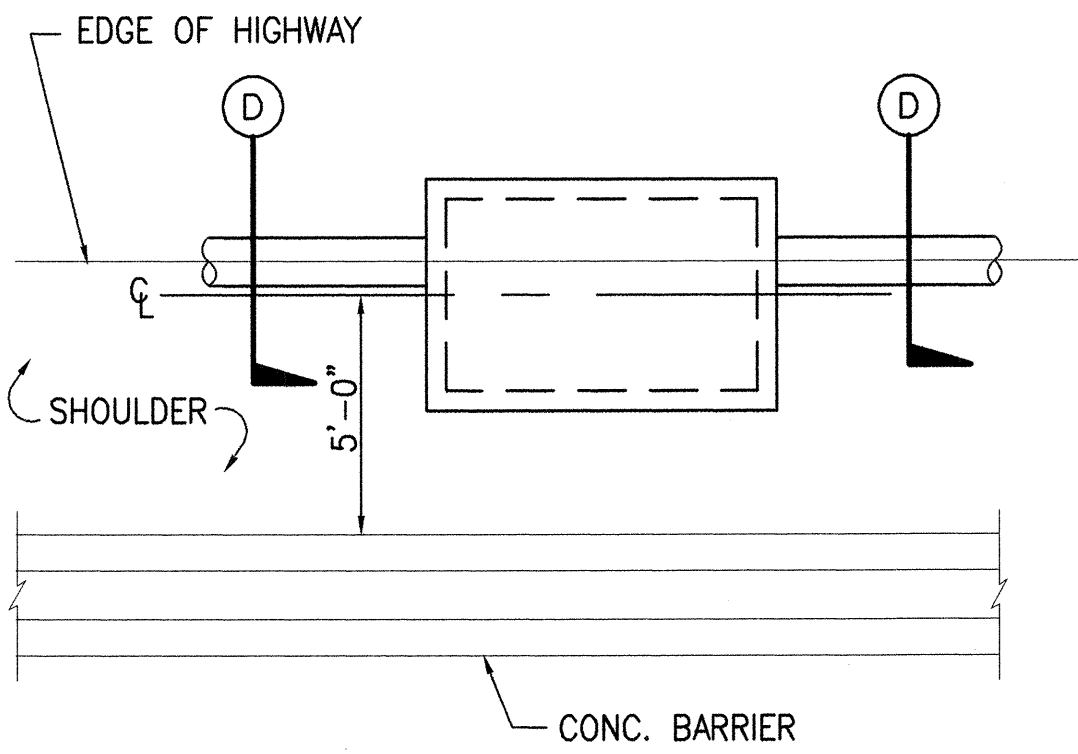
| FED. ROAD DIST. NO. | STATE | PROJ. NO.     | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|---------------|-------------|-----------|--------------|
| OAHU                | HAW.  | STP-083-1(45) | 2000        | ADD. 31   | 39           |



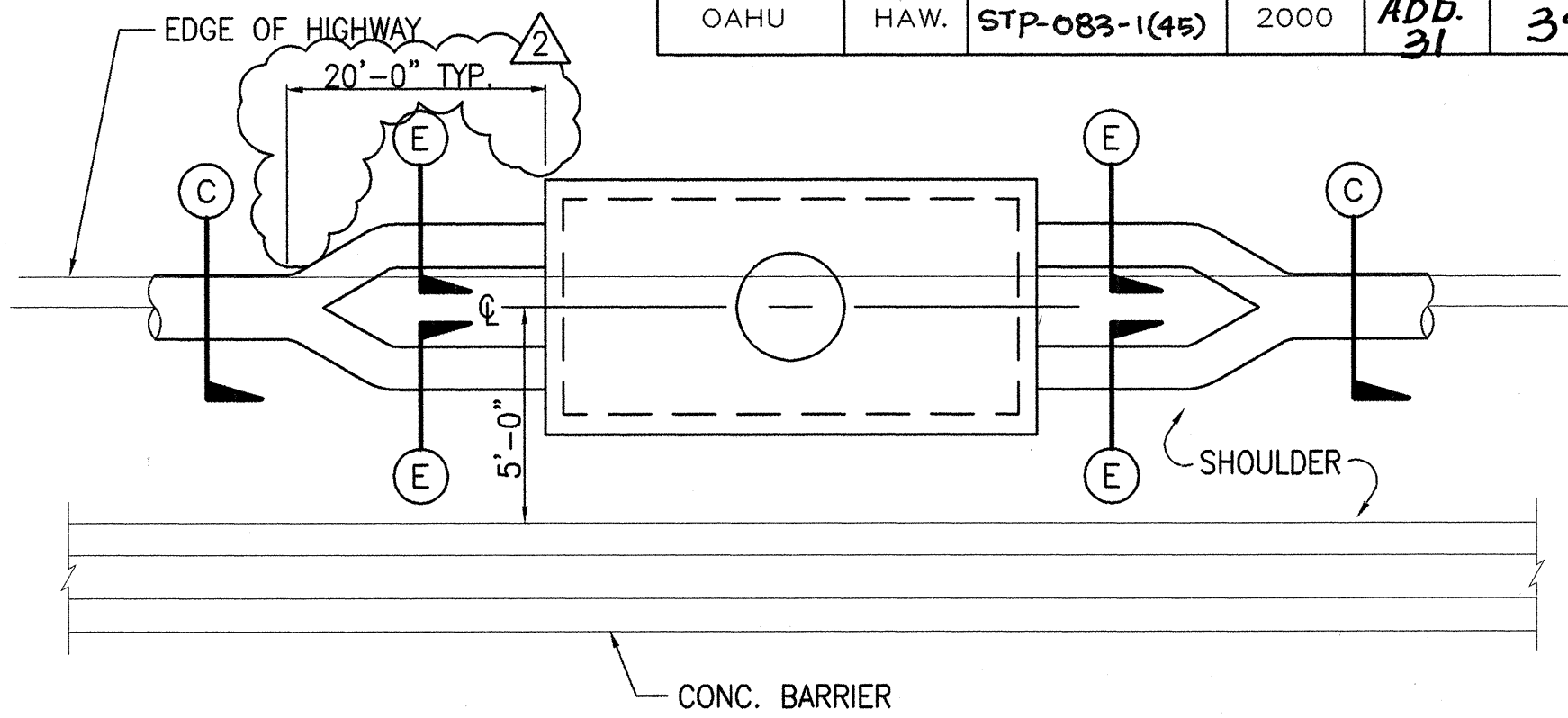
1  
E-9  
**TYP. ELECTRIC MANHOLE DETAIL PLAN**  
SCALE: 1/4" = 1'-0"



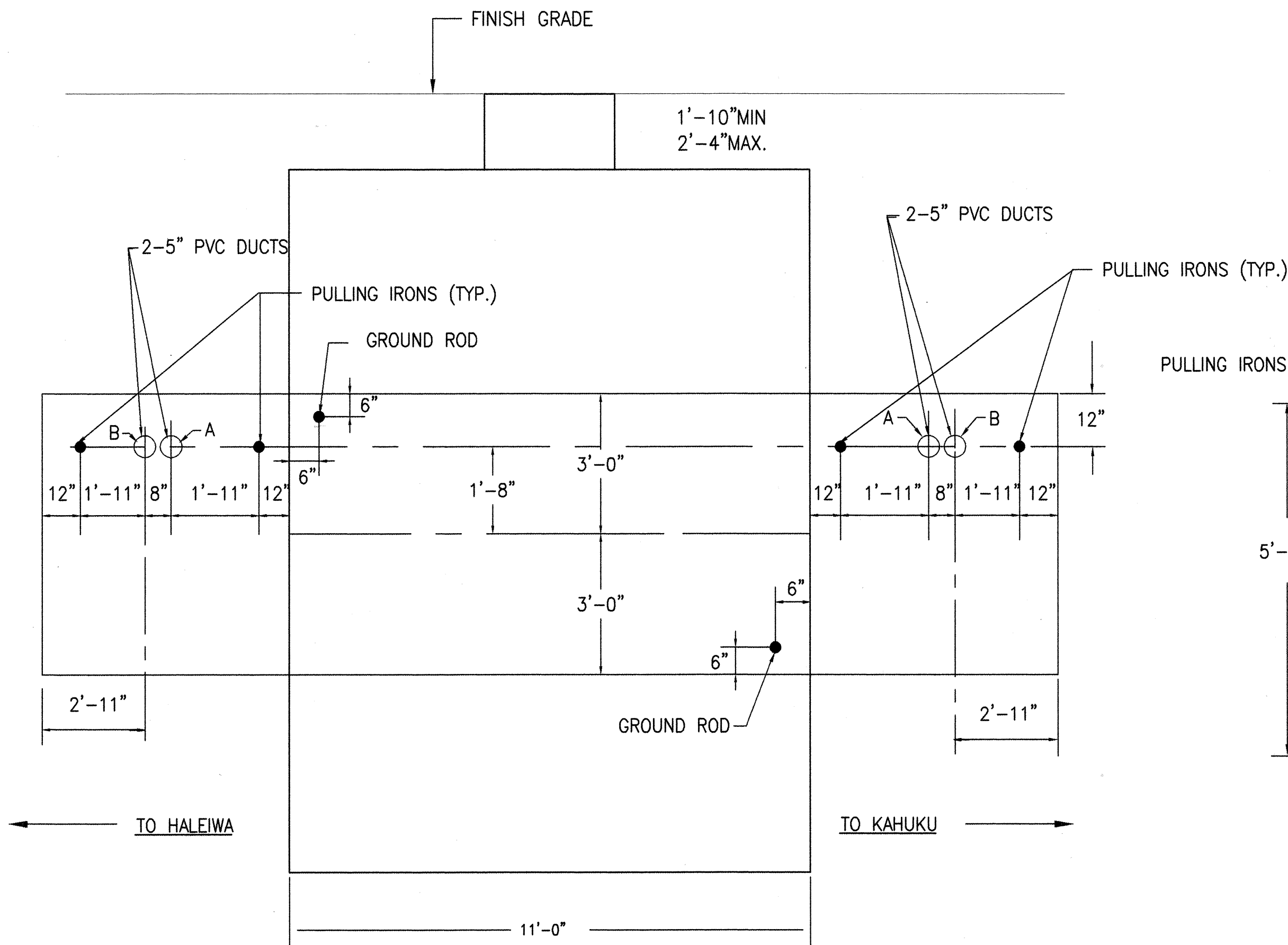
2  
E-9  
**TYP. ELECTRIC HANDHOLE DETAIL PLAN**  
SCALE: 1/4" = 1'-0"



3  
E-9  
**TYP. CABLE TV MANHOLE DETAIL PLAN**  
SCALE: 1/4" = 1'-0"

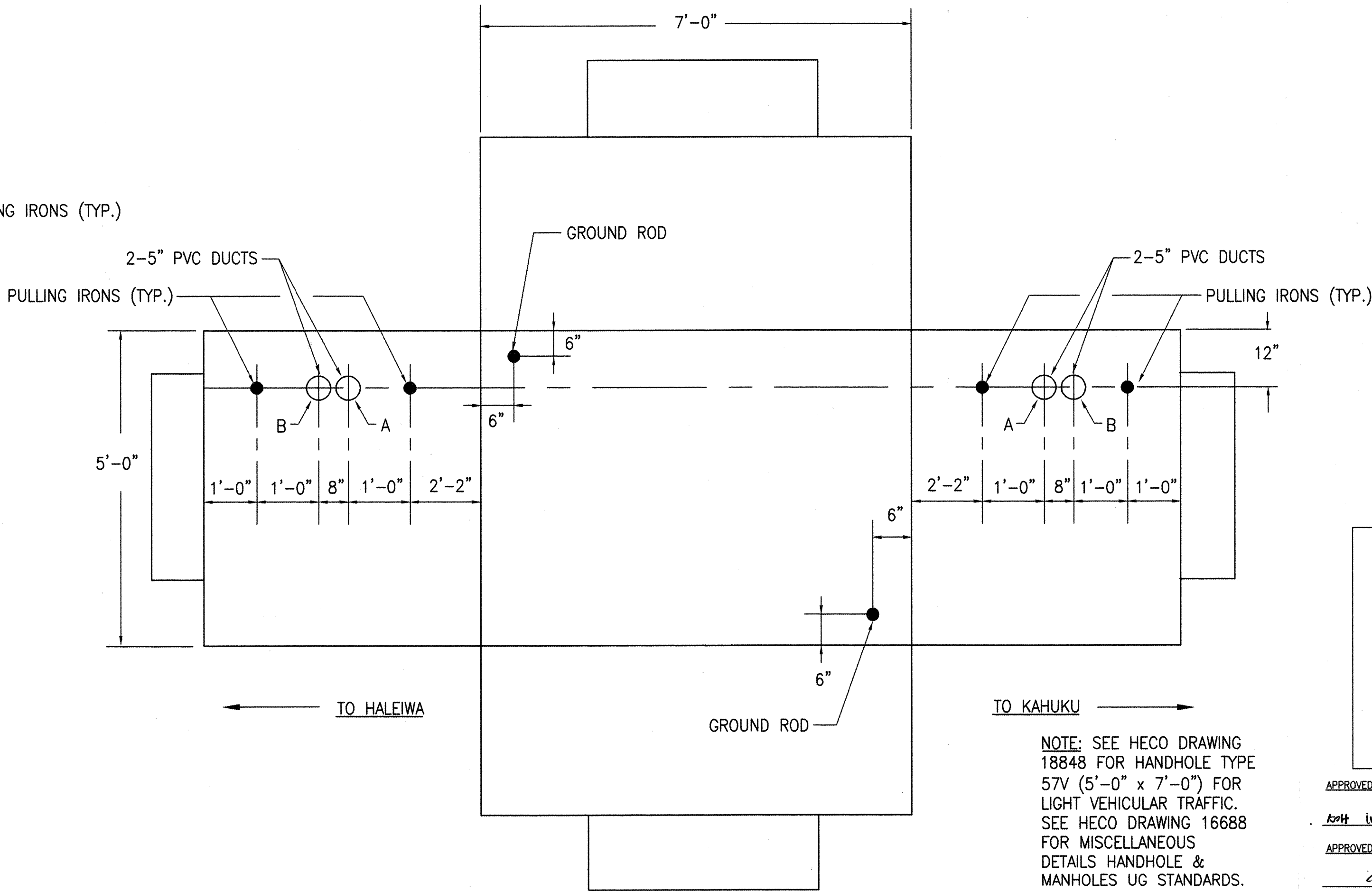


4  
E-9  
**TYP. TELEPHONE MANHOLE DETAIL PLAN**  
SCALE: 1/4" = 1'-0"



NOTE: SEE HECO DRAWING 18775 FOR MANHOLE TYPE 1 (6'-0" X 11'-0") MANHOLE DETAILS. UNDERGROUND STANDARDS.

5  
E-9  
**HECO MANHOLE DEVELOPMENT PLAN**  
NOT TO SCALE



NOTE: SEE HECO DRAWING 18848 FOR HANDHOLE TYPE 57V (5'-0" X 7'-0") FOR LIGHT VEHICULAR TRAFFIC. SEE HECO DRAWING 16688 FOR MISCELLANEOUS DETAILS HANDHOLE & MANHOLES UG STANDARDS.

6  
E-9  
**TYP HECO 5'x7' HH DEVELOPMENT PLAN**  
NOT TO SCALE

**DRAWING REVIEW**  
Reviewed for HECO's Facilities Only  
Date 4/3/00 By [Signature]  
Engineering Department  
Hawaiian Electric Company, Inc.  
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials, and any other liability associated with this project.

APPROVED: [Signature] 4-3-00  
HAWAIIAN TELEPHONE COMPANY  
DATE  
APPROVED: [Signature] 4-3-00  
OCEANIC CABLEVISION  
DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**TELEPHONE, CABLE  
ELECTRIC MANHOLE DETAILS**  
KAMEHAMEHA HIGHWAY  
WAIMEA BAY  
EMERGENCY ROCKFALL REMEDIATION

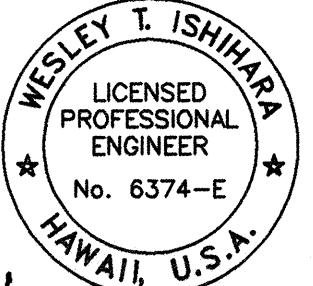
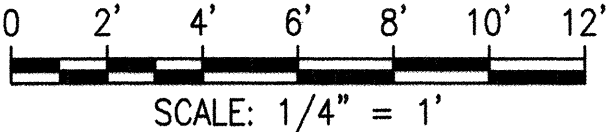
Scale: As Shown Date: April 2000  
SHEET No. E-9 OF SHEETS

"AS-BUILT"

ADD. 31

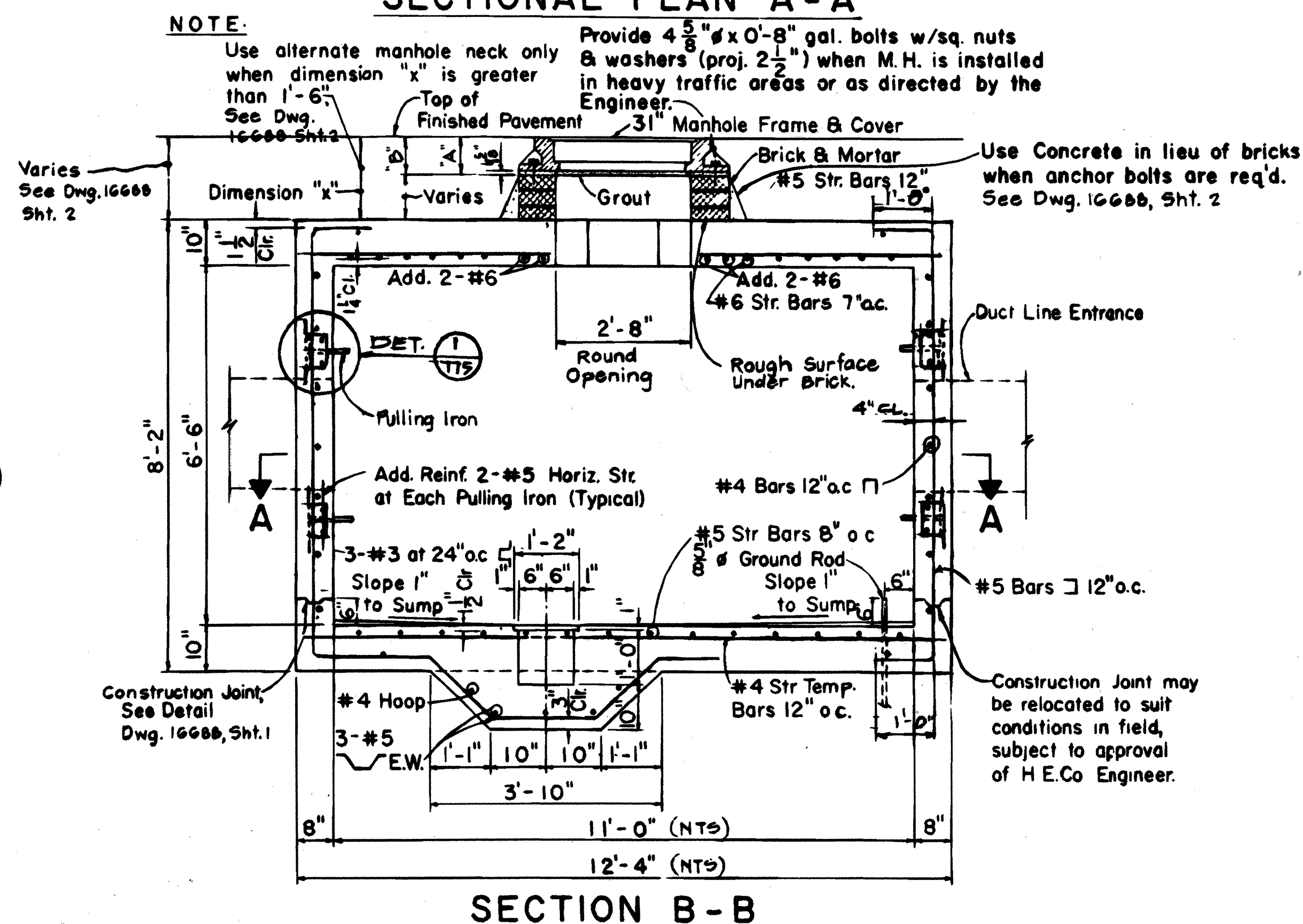
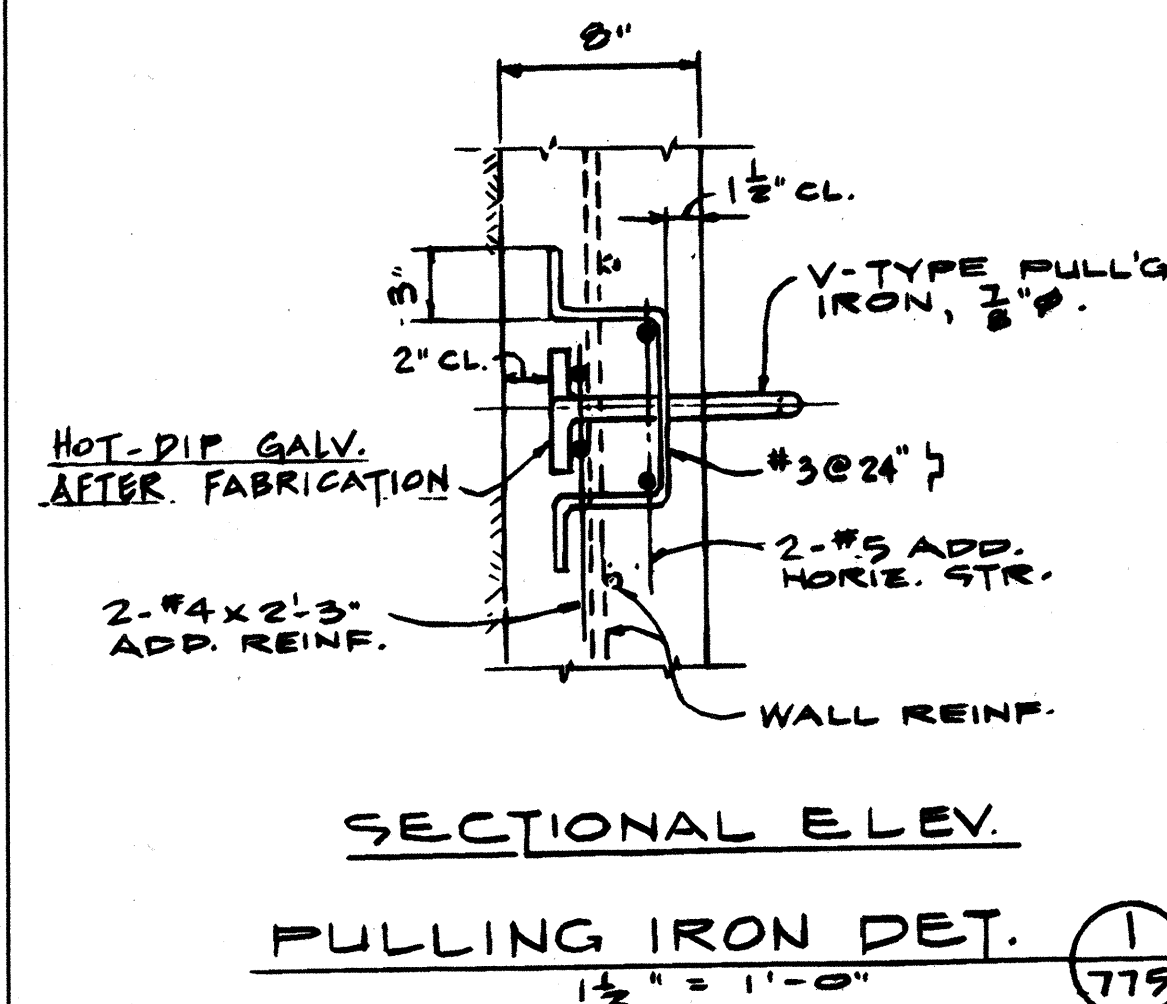
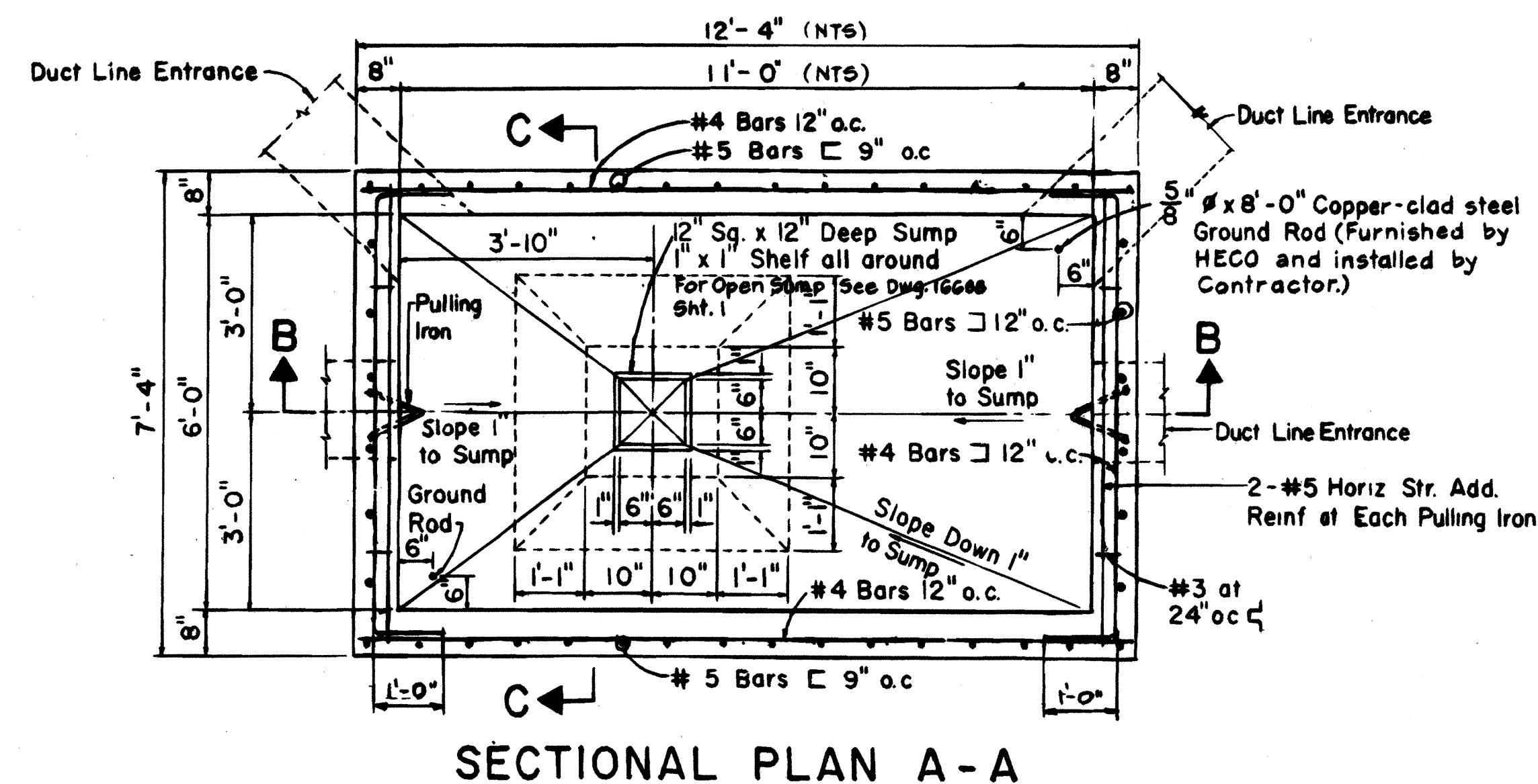
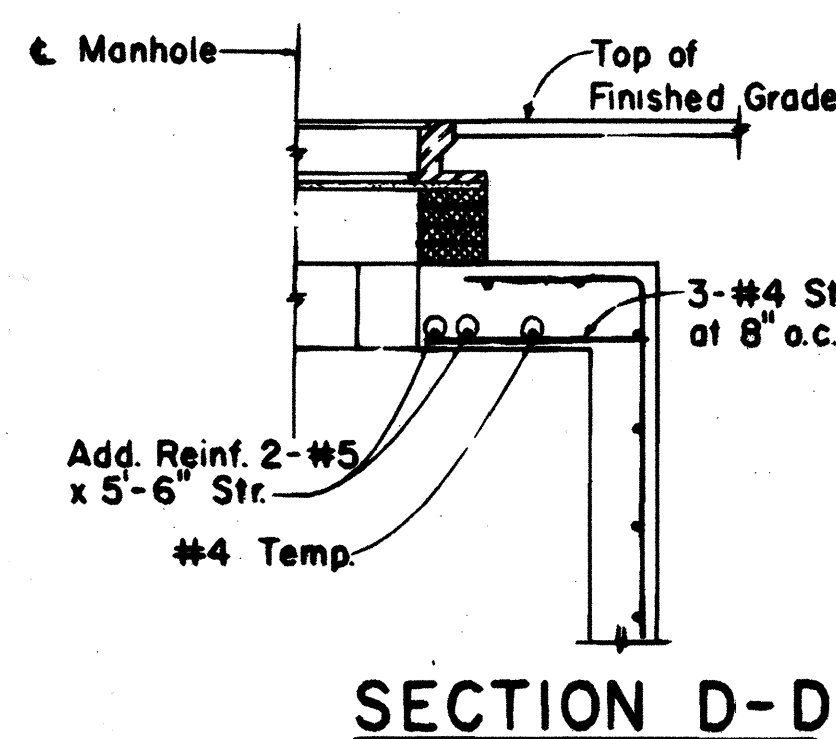
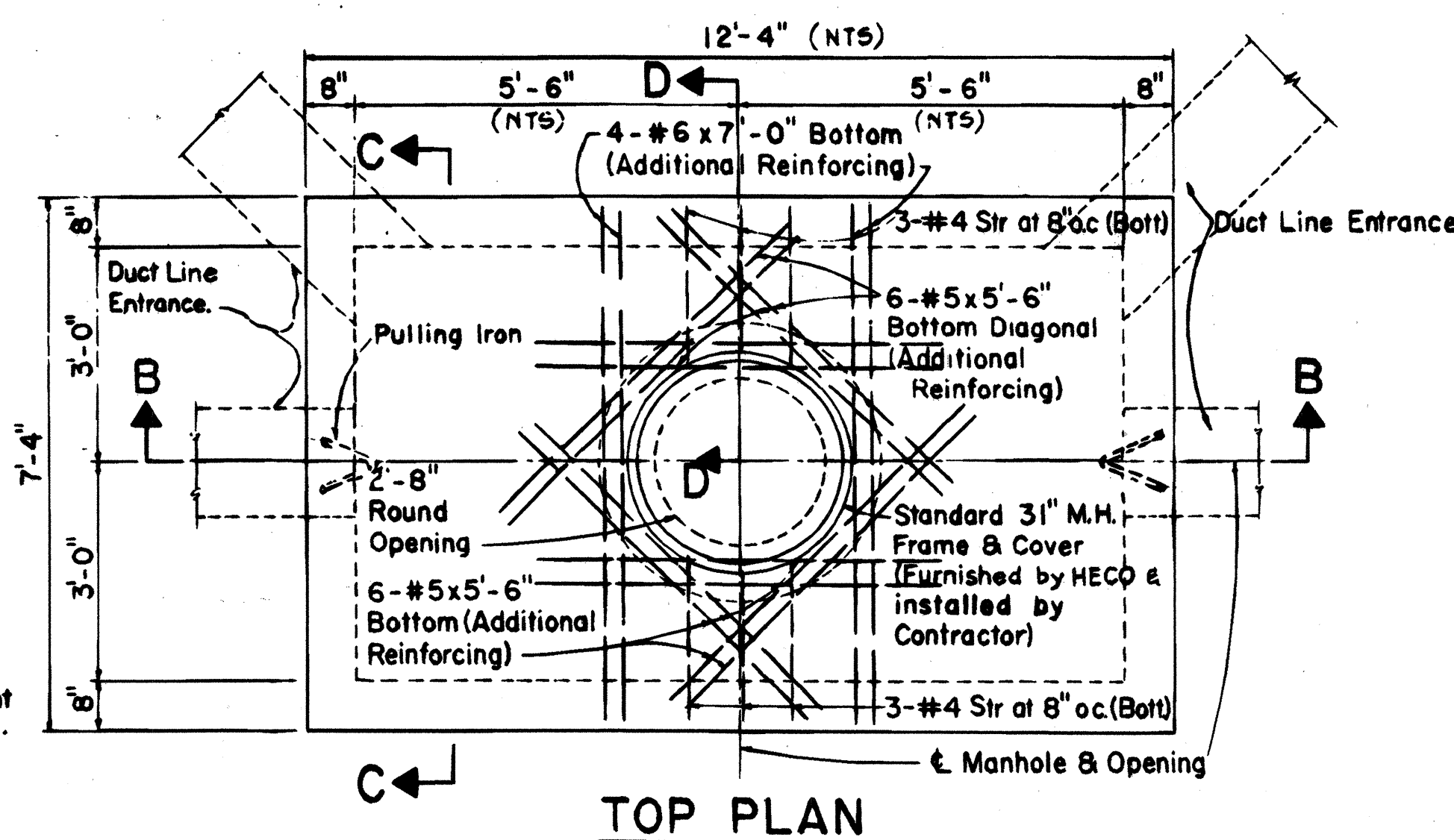
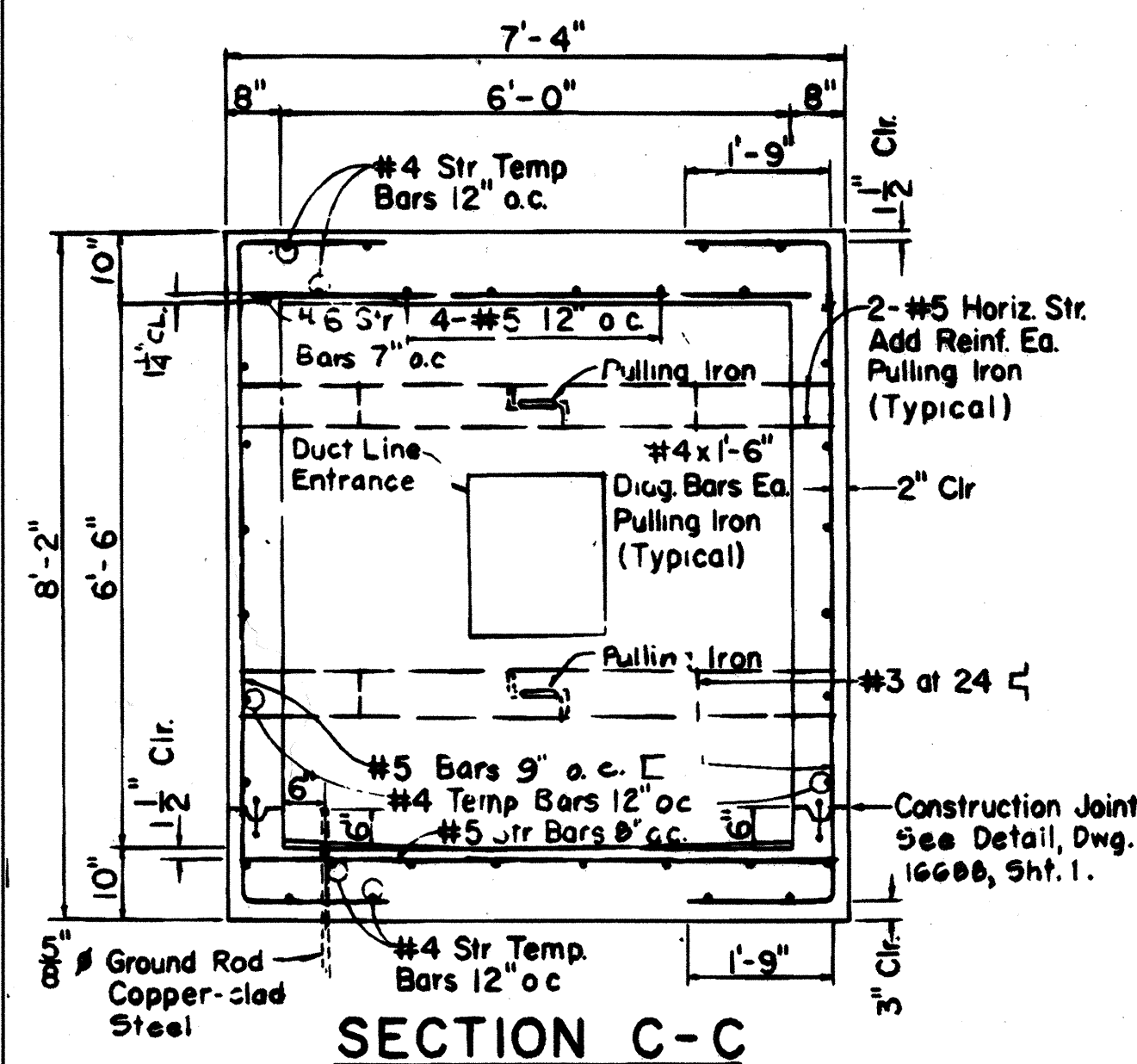
|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| No.               |      |

| DATE   | REVISION   |
|--------|------------|
| 4-7-00 | ADDENDUM 2 |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.



**NOTES:**

1. Refer to Drawing 16600 (Sheet 1 of 2 and 2 of 2) for General Notes and Miscellaneous Details.
2. For Number, Size and Exact Location of Duct Entrances and Pulling Irons, Refer to Project Drawings.
3. For Details of Duct Line Entrances, Pulling Iron and Construction Joint, See Dwg. 16600, Sheet 1 of 2.
4. For Dimension "A" & "B" See Dwg. 16600, Sheet 2 of 2.

**CAUTION**

NOT FOR USE IN AREAS WHERE THE WATER TABLE IS ABOVE THE FLOOR ELEVATION OF THE MANHOLE. FOR THESE AREAS, CONSULT THE STRUCTURAL DIVISION.

**REFERENCE DRAWINGS**

011327 & 011328: Standard HECO 31" Manhole Frame & Cover.  
16600 (2 Sheets) Misc. Details for Manholes & Handholes.

**QUANTITY OF MATERIALS, (M.H. ONLY)**

\* Concrete = 11.52 Cu.Yds.  
Reinf. Steel = 1444.61 lbs.  
Misc. Steel (Pulling Irons, ea.) = 10.90 lbs.

**ADDITIONAL QUANTITY OF MATERIALS FOR ALTERNATE NECK (Dim. "X" = 2'-0")**

Concrete = 0.50 Cu.Yds.  
Reinf. Steel = 40.0 lbs.

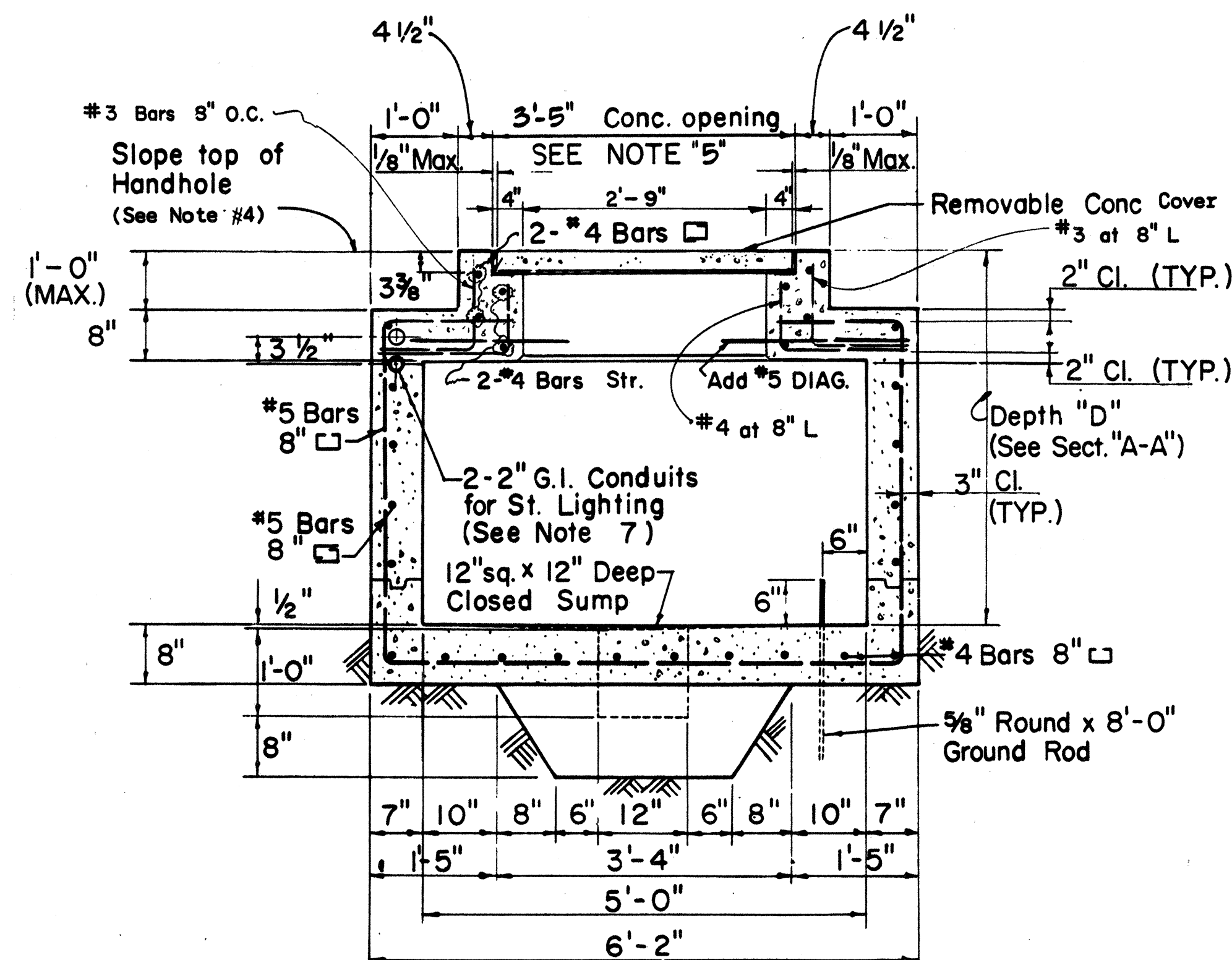
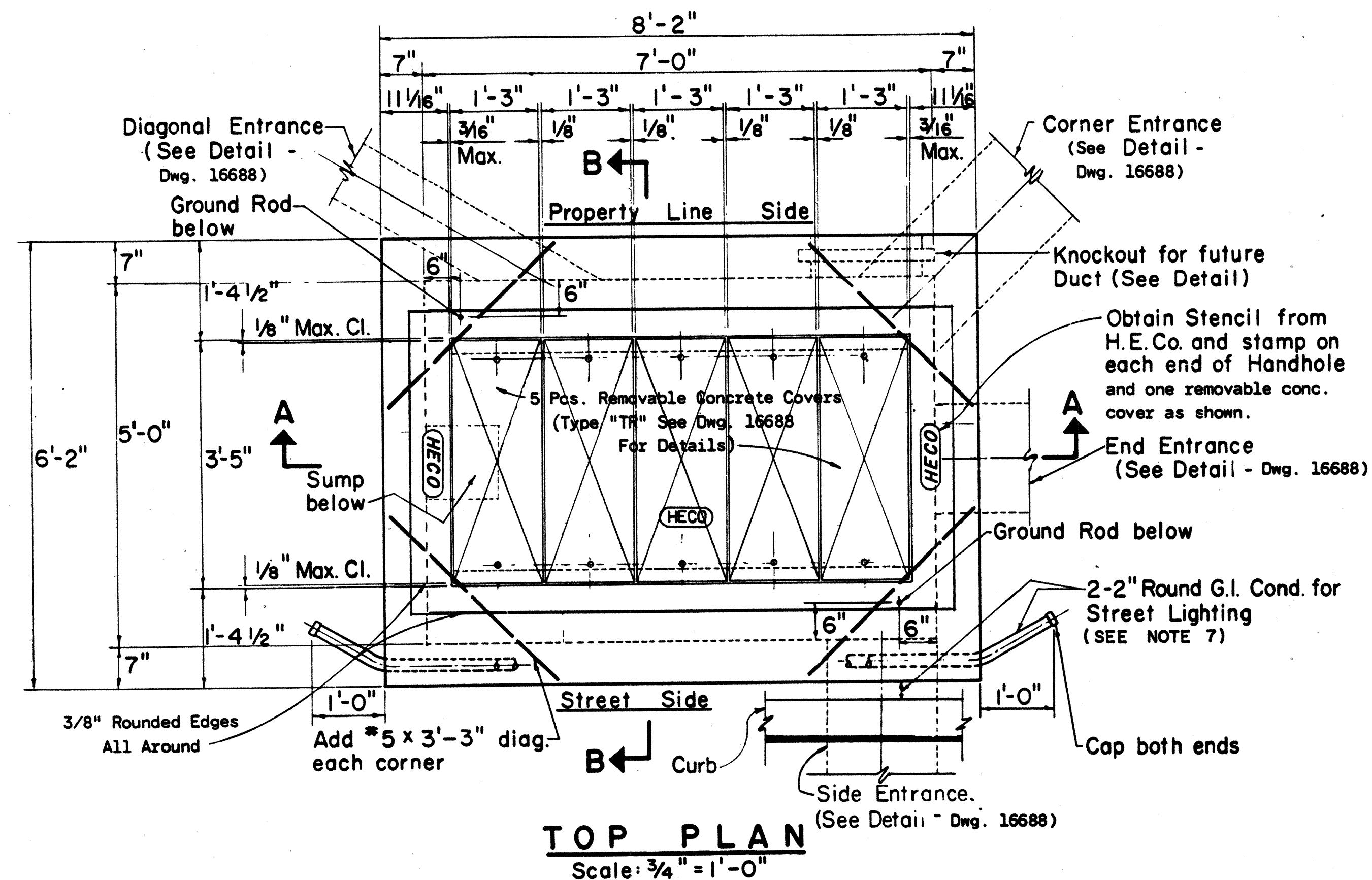
\* NOTE: Conc. for M.H. necks when used in lieu of bricks (for dim "X" < 1'-6") for anchor bolt installation is not included in above totals.

| NO. | DATE    | REVISIONS                               | BY  | CHK'D | APP'D |
|-----|---------|-----------------------------------------|-----|-------|-------|
| 3   | 7-26-99 | ADDED HIGH WATER TABLE CAUTION NOTE     | CT  | MM    | FK    |
| 2   | 8-27-91 | CHANGED WALL REINFORCING DELETED NOTE 5 | See | See   | See   |
| 1   | 9-12-77 | ADDED NOTE 5                            | See | See   | See   |
| 0   | 1-19-76 | REDRAWN                                 | See | See   | See   |

**MANHOLE TYPE NO. 1  
(6'-0" x 11'-0")  
UNDERGROUND STANDARDS**

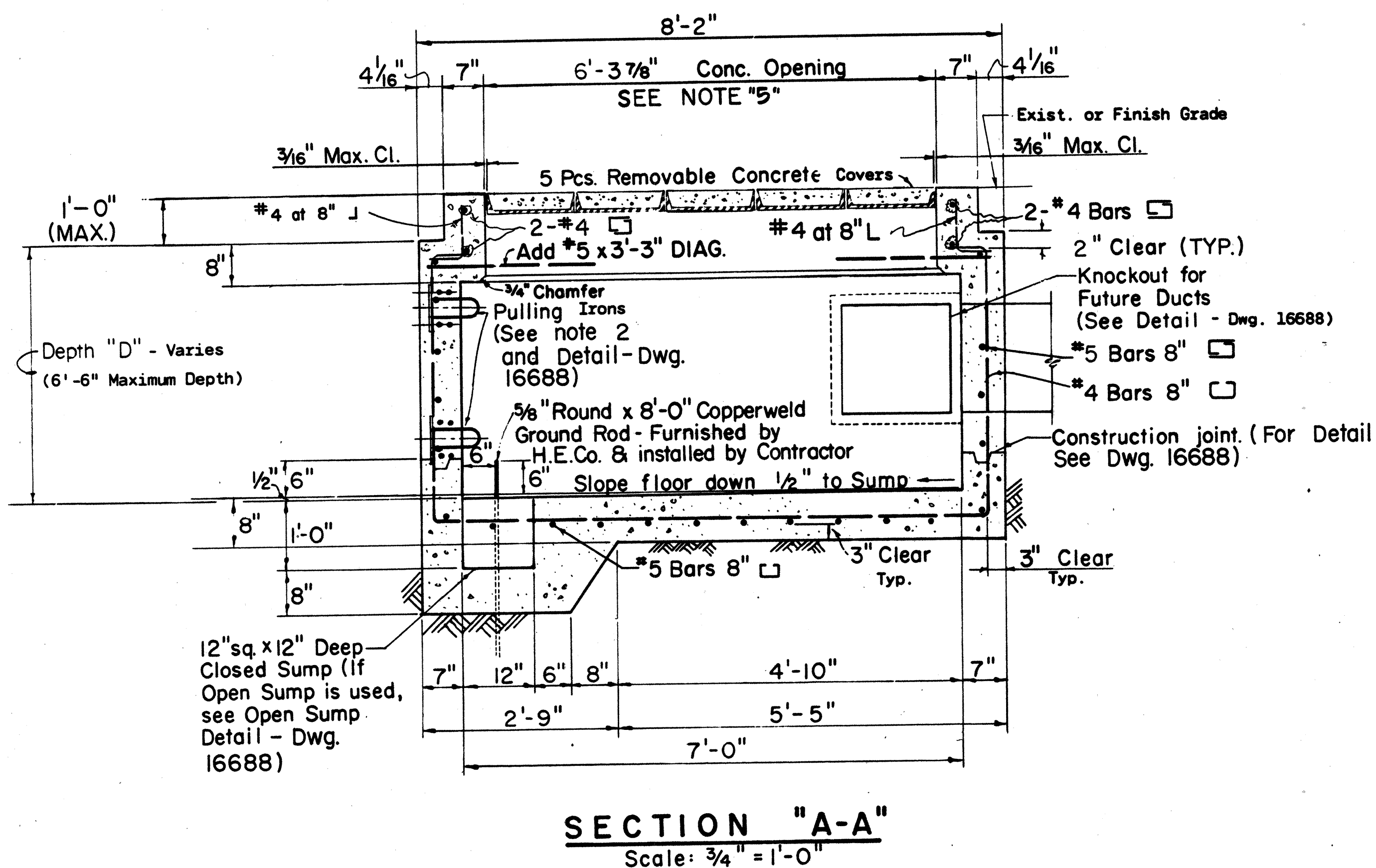
|                                                                           |                    |         |            |
|---------------------------------------------------------------------------|--------------------|---------|------------|
| DESIGNED                                                                  | DRWN               | DATE    | SCALE      |
| CHECKED                                                                   | ELEC. MECH. STRUC. | 1-12-76 | 1" = 1'-0" |
| APPROVAL                                                                  |                    |         |            |
| ENGINEERING DEPARTMENT<br>HAWAIIAN ELECTRIC CO., INC.<br>HONOLULU, HAWAII |                    |         |            |
| DRAWING NUMBER                                                            |                    |         | REV        |
| 32                                                                        |                    |         | 18775      |
| 3                                                                         |                    |         |            |





# NOTES:

- FOR GENERAL NOTES AND MISCELLANEOUS HANDHOLE DETAILS, SEE DWG. 16688 (2 SHEETS).
- FOR DUCT ENTRANCES, DEPTH AND LOCATIONS OF PULLING IRONS, SEE HANDHOLE DEVELOPMENT OF PROJECT CONCERNED.
- SEE PROJECT DRAWINGS FOR LOCATION OF HANDHOLE CONCERNED.
- TOP OF HANDHOLE SHALL MATCH NEW AND/OR EXISTING GRADES UNLESS OTHERWISE SHOWN OR NOTED ON PLANS OF PROJECT CONCERNED.
- MAXIMUM CLEARANCE BETWEEN REMOVABLE COVERS AND CONCRETE OPENING AT THE SUPPORTS MUST BE KEPT. CONCRETE CONTRACTOR SHALL MEASURE COVER SLAB STEEL FRAME AFTER FABRICATION TO OBTAIN PROPER CLEARANCES. ANY VARIATION IN CLEARANCES SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT CONTRACTOR'S EXPENSE.
- DEPTH OF HANDHOLES SHALL BE MEASURED FROM THE LOWEST POINT OF TOP OF SIDEWALK.
- 2-2" G.I. CONDUITS FOR STREET LIGHTING TO BE INSTALLED ONLY WHEN OUTSIDE FACE OF HANDHOLE IS LESS THAN 3" FROM CURBING.



**CAUTION**  
FOR USE IN AREAS SUBJECT TO  
LIGHT VEHICULAR TRAFFIC  
LIMITED TO VEHICLES UNDER A  
GROSS VEHICLE WEIGHT (GVW) = 16,000 LBS.  
EQUIVALENT MAX. WHEEL LOAD = 5,000 LBS.  
NOT FOR USE IN AREAS WHERE THE WATER TABLE  
IS ABOVE THE FLOOR ELEVATION OF THE HANDHOLE.  
FOR THESE AREAS, CONSULT THE STRUCTURAL DIVISION.

## REINFORCED CONCRETE QUANTITIES

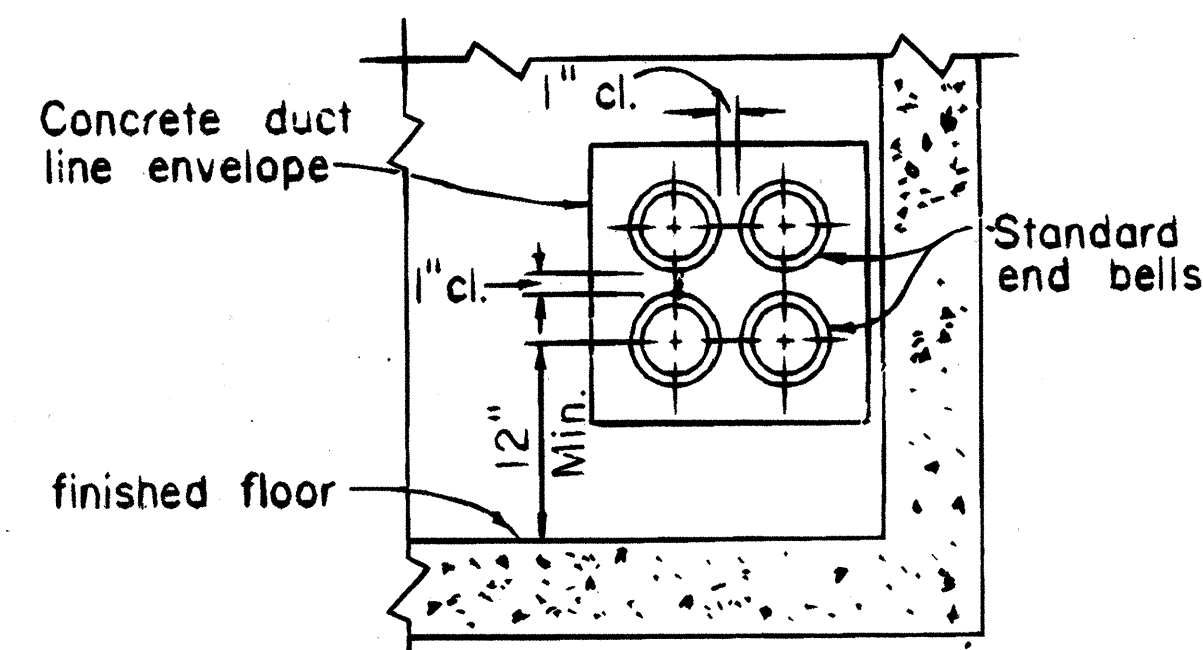
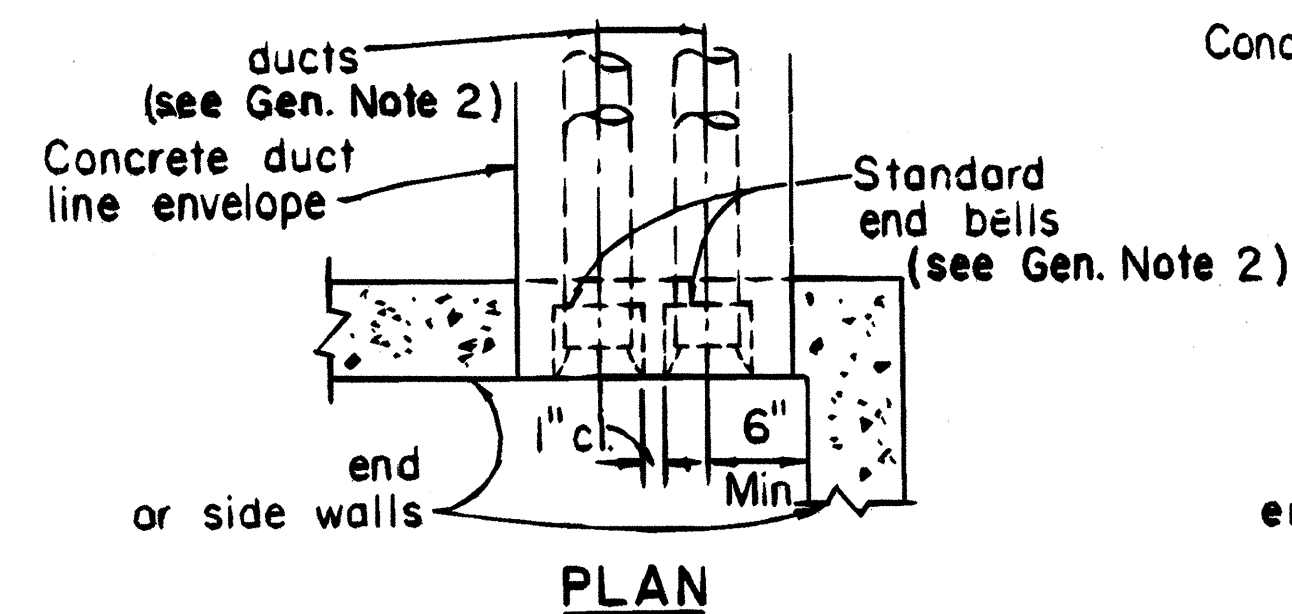
|                                             |                 |
|---------------------------------------------|-----------------|
| QUANTITY OF MATERIALS FOR DEPTH "D" = 6'-6" |                 |
| Total Concrete                              | = 5.85 Cu. Yds. |
| Total Reinf. Steel                          | = 765 Lbs.      |
| Total Misc. Steel                           | = 577 Lbs.      |
| WEIGHT PER REMOVABLE CONCRETE SLAB          |                 |
| Concrete                                    | = 142 Lbs.      |
| Reinf. Steel                                | = 6 Lbs.        |
| Misc. Steel                                 | = 116 Lbs.      |
| TOTAL                                       | = 264 Lbs.      |
| MATERIALS FOR 6" DEPTH OF 7" THICK WALL     |                 |
| Concrete                                    | = 0.31 Cu. Yds. |
| Reinf. Steel                                | = 28 Lbs.       |

|                                                                                                      |               |                                                        |       |       |                                                                                  |
|------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------|-------|-------|----------------------------------------------------------------------------------|
| 11                                                                                                   | 7-26-99       | ADDED WATER TABLE CAUTION NOTE                         | C81   | mm    | SK                                                                               |
| 10                                                                                                   | 1-19-81       | REV. H.H. NECK TO ACCOMMODATE FUTURE COMPOSITE COVERS. | R9    | GO    | PM                                                                               |
| 9                                                                                                    | 6-27-77       | REDRAWN & CHANGED PULLING EYE INSERTS TO PULLING IRONS | Q     | SH    | MS                                                                               |
| NO.                                                                                                  | DATE          | REVISIONS                                              | BY    | CHK'D | APP'D                                                                            |
| HANDHOLE TYPE 57V (5'-0" X 7'-0")<br>FOR LIGHT VEHICULAR TRAFFIC<br>UNDERGROUND TYPICAL CONSTRUCTION |               |                                                        |       |       |                                                                                  |
| DESIGNED                                                                                             | R94           | GOV                                                    | DRAWN | Q     | DATE 6-27-77 SCALE AS NOTED                                                      |
| CHECKED                                                                                              | ELC           | MEGR                                                   | ELC   | MEGR  | ENGINEERING DESIGN DEPARTMENT<br>HAWAIIAN ELECTRIC CO., INC.<br>HONOLULU, HAWAII |
| APPROVAL                                                                                             | J. J. Thomas  |                                                        |       |       | DRAWING NUMBER<br>18848                                                          |
|                                                                                                      | H. K. Stewart |                                                        |       |       | REV.<br>11                                                                       |

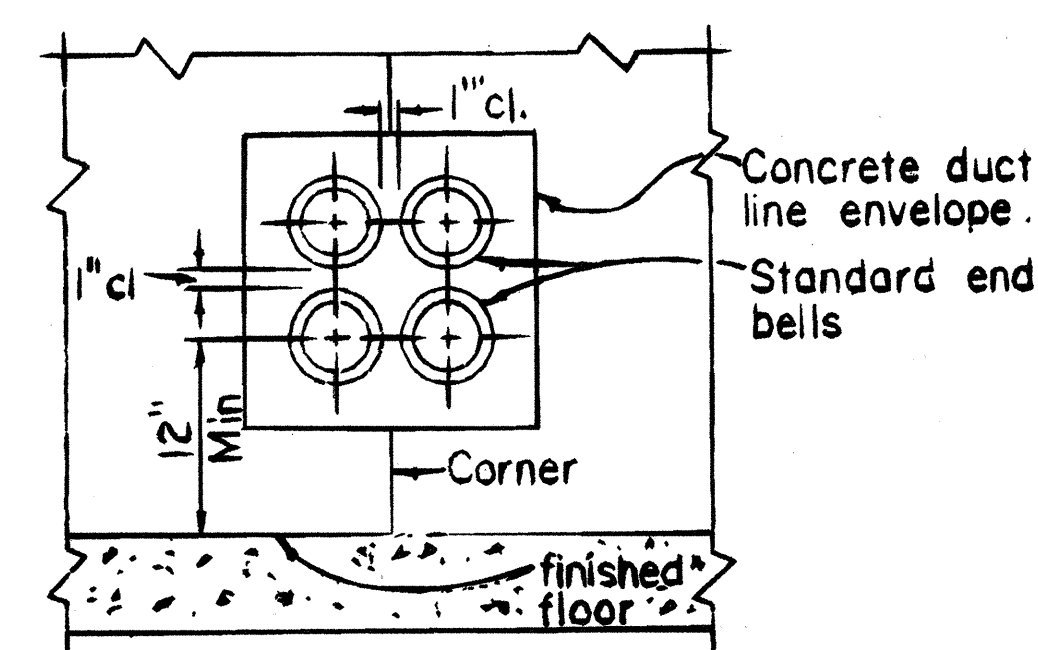
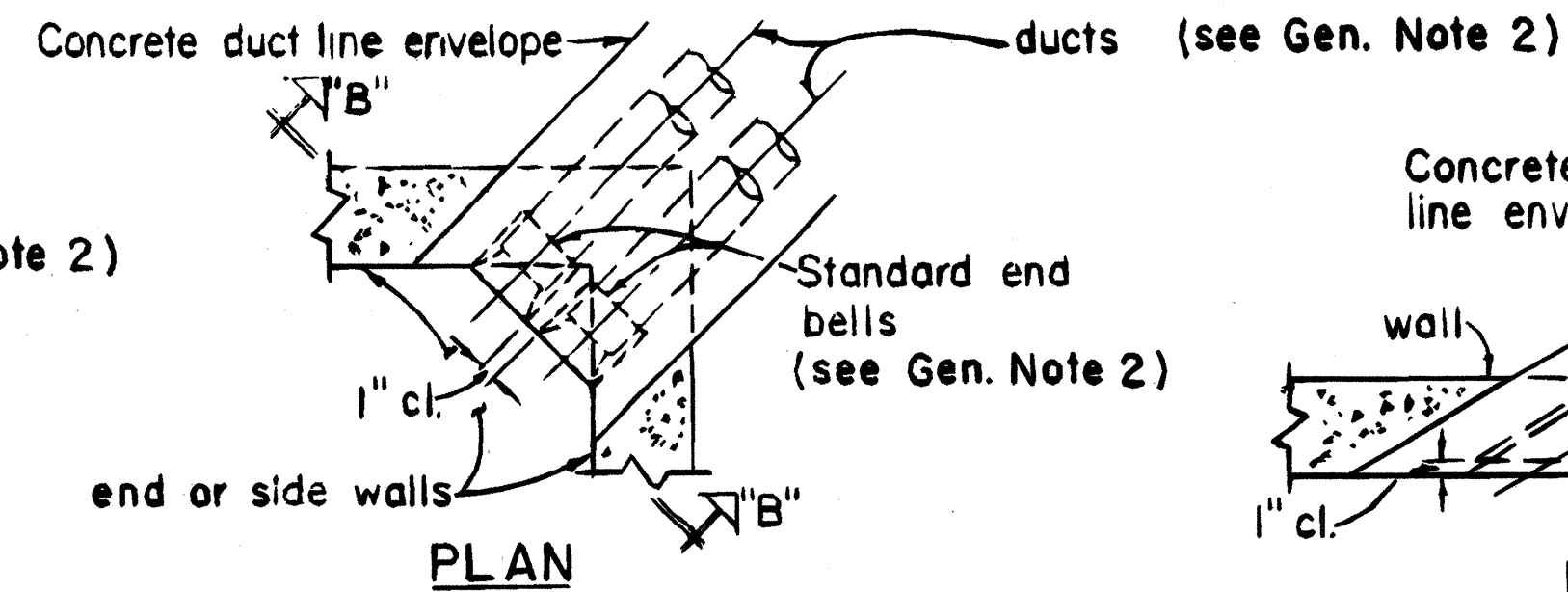


### GENERAL NOTES

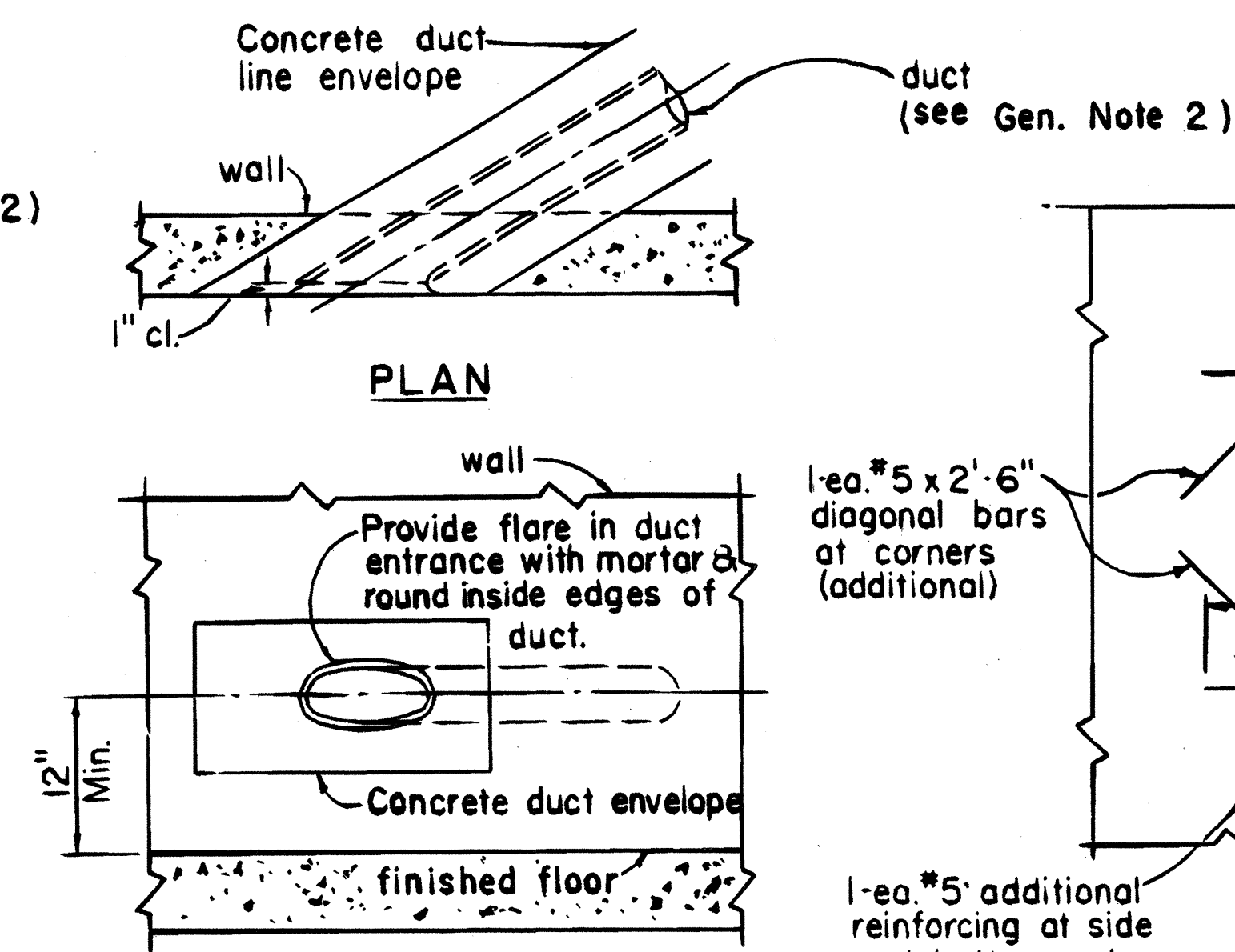
1. THE GENERAL CONDITIONS OF SPECIFICATIONS CS-7202 SHALL GOVERN THROUGHOUT THE ENTIRE WORK.
2. FOR CONSTRUCTION OF UNDERGROUND FACILITIES & DUCT LINES REFER TO SPECIFICATION CS-7001 AND CS-7003.
5. ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE HAWAIIAN ELECTRIC CO., INC., DIVISION OF ENGINEERING, CITY & COUNTY OF HONOLULU AND/OR DIVISION OF HIGHWAYS, STATE OF HAWAII, WHICHEVER GOVERNMENT AGENCY HAS AUTHORITY OVER THE WORK.
4. DUCTS: FOR NUMBER, SIZE AND EXACT LOCATION OF DUCT ENTRANCES, REFER TO PROJECT DRAWINGS.
5. PULLING IRONS: FOR NUMBER & LOCATIONS, REFER TO PROJECT DRAWINGS.
- ALL PULLING IRONS AND ASSOCIATED HARDWARE SHALL BE MADE FROM NON-MAGNETIC STAINLESS STEEL OR OTHER NON-CORROSIVE MATERIAL, APPROVED BY HAWAIIAN ELECTRIC CO., INC. ALL PULLING OF STAINLESS STEEL ITEMS SHALL BE PERFORMED USING AN E316 ROD. THE INSTALLED WORKING LOAD CAPACITIES OF THE PULLING EYES SHALL BE AT LEAST 10,000 POUNDS, WITH A FACTOR OF SAFETY OF 2 AGAINST FAILURE, EXCEPT THAT FOR THE 3"x6" OPEN BOTTOM HANDHOLES THE WORKING LOAD CAPACITIES SHALL BE AT LEAST 2,000 POUNDS WITH A FACTOR OF SAFETY OF 2.
6. HANDHOLE COVERS (REMOVABLE CONC. COVERS) MAXIMUM CLEARANCES BETWEEN REMOVABLE CONCRETE COVERS AND CONCRETE OPENINGS AT THE SUPPORTS MUST BE KEPT. CONCRETE CONTRACTOR SHALL MEASURE CONC. COVER STEEL FRAME AFTER FABRICATION TO OBTAIN PROPER CLEARANCES. ALL COVERS AFTER BEING INSTALLED SHALL BE SEATED FIRMLY AND EVENLY AND FREE FROM ROCKING. ANY VARIATION IN CLEARANCE AND UNEVENNESS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
7. CONCRETE POURING: NOTIFY THE HAWAIIAN ELECTRIC CO., INC. CONTRACTING & INSPECTION DIVISION, PHONE 548-4427 OR 548-4420 24 HOURS BEFORE POURING CONCRETE. ALL CONCRETE POURING SHALL BE DONE IN THE PRESENCE OF AN H.E.C.O., INC., ENGINEER OR INSPECTOR.
8. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA.



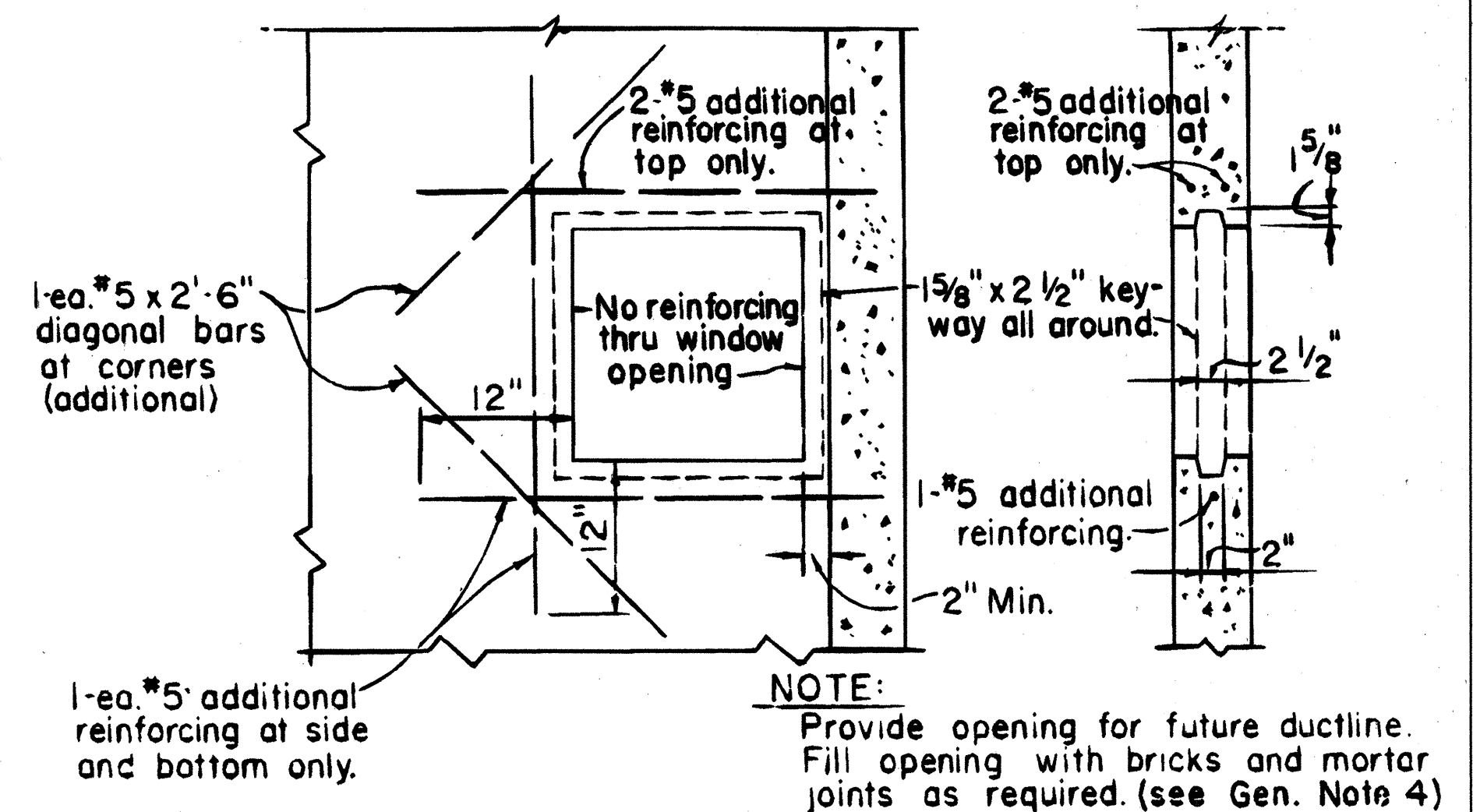
ELEVATION  
END OR SIDE ENTRANCE  
Scale: 1" = 1' - 0"



ELEVATION "B-B"  
CORNER ENTRANCE  
Scale: 1" = 1'-0"



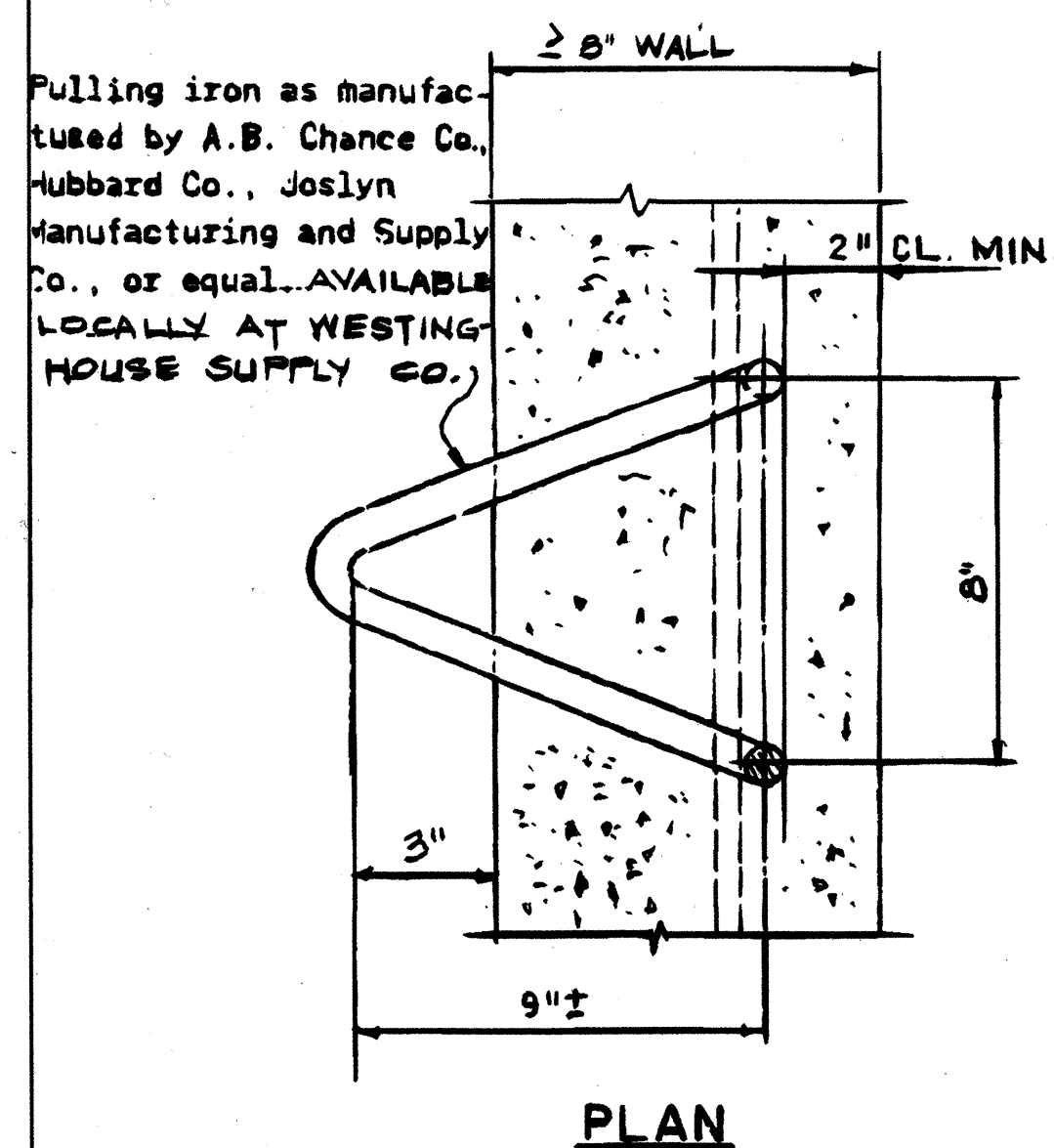
ELEVATION  
DIAGONAL ENTRANCE  
Scale: 1" = 1'-0"



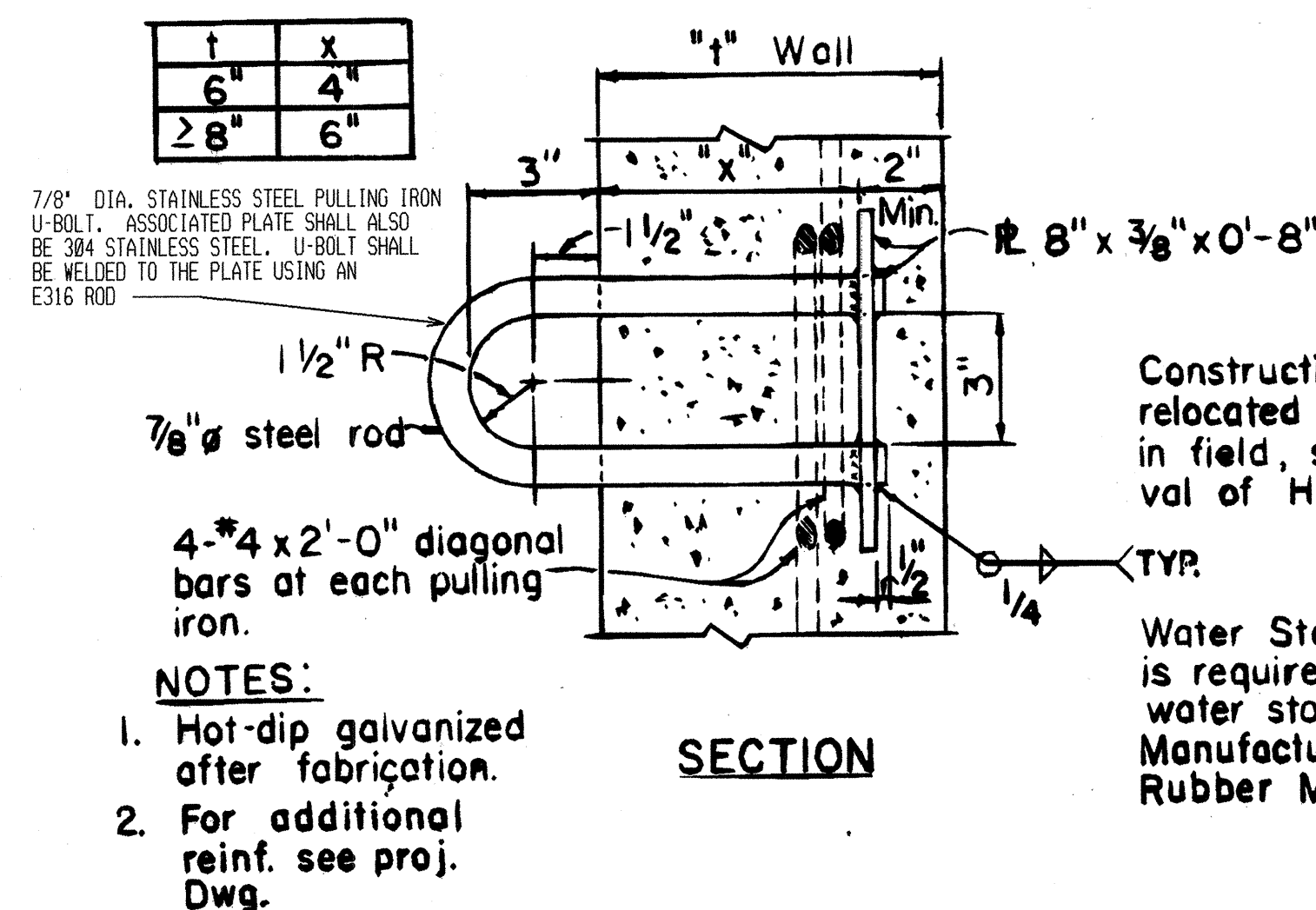
ELEVATIONSECTION

KNOCKOUT FOR FUTURE DUCT LINE

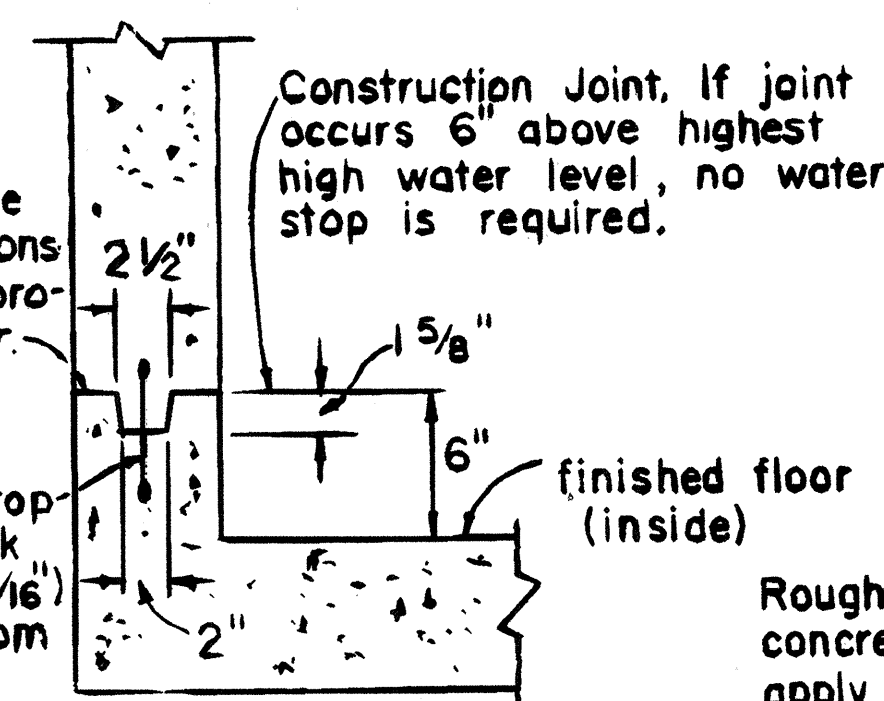
Scale: 1" = 1' - 0"



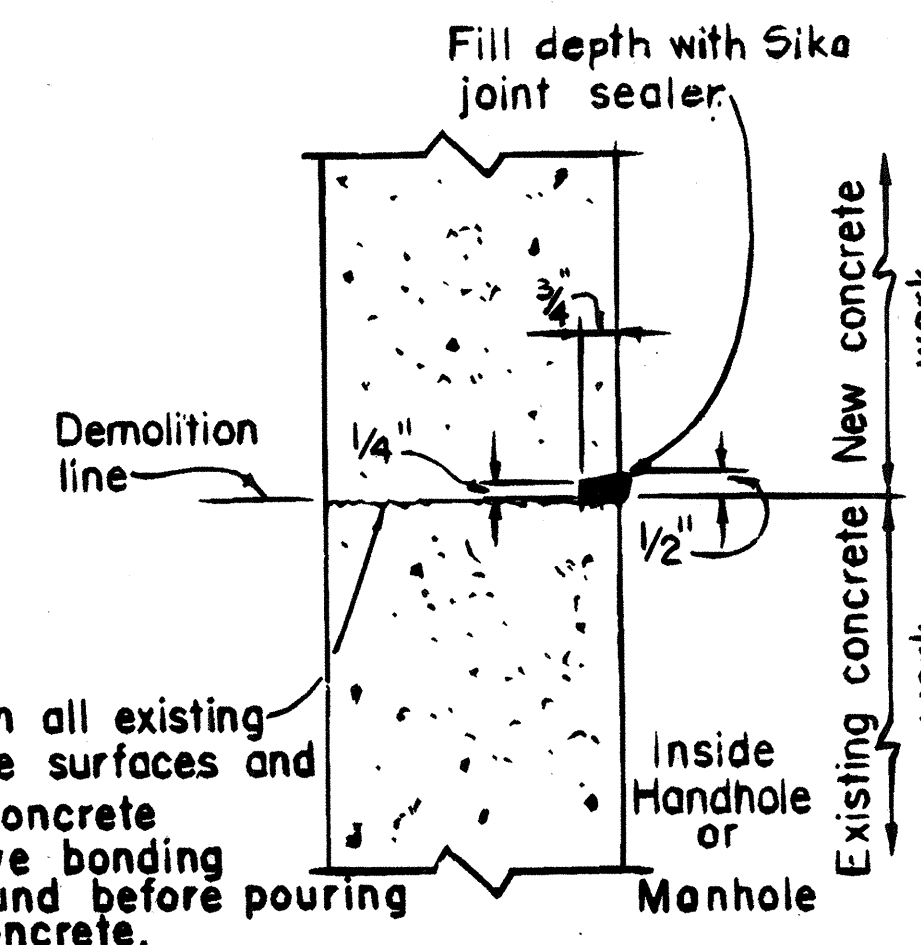
PULLING IRON FOR ≥ 8" WALL



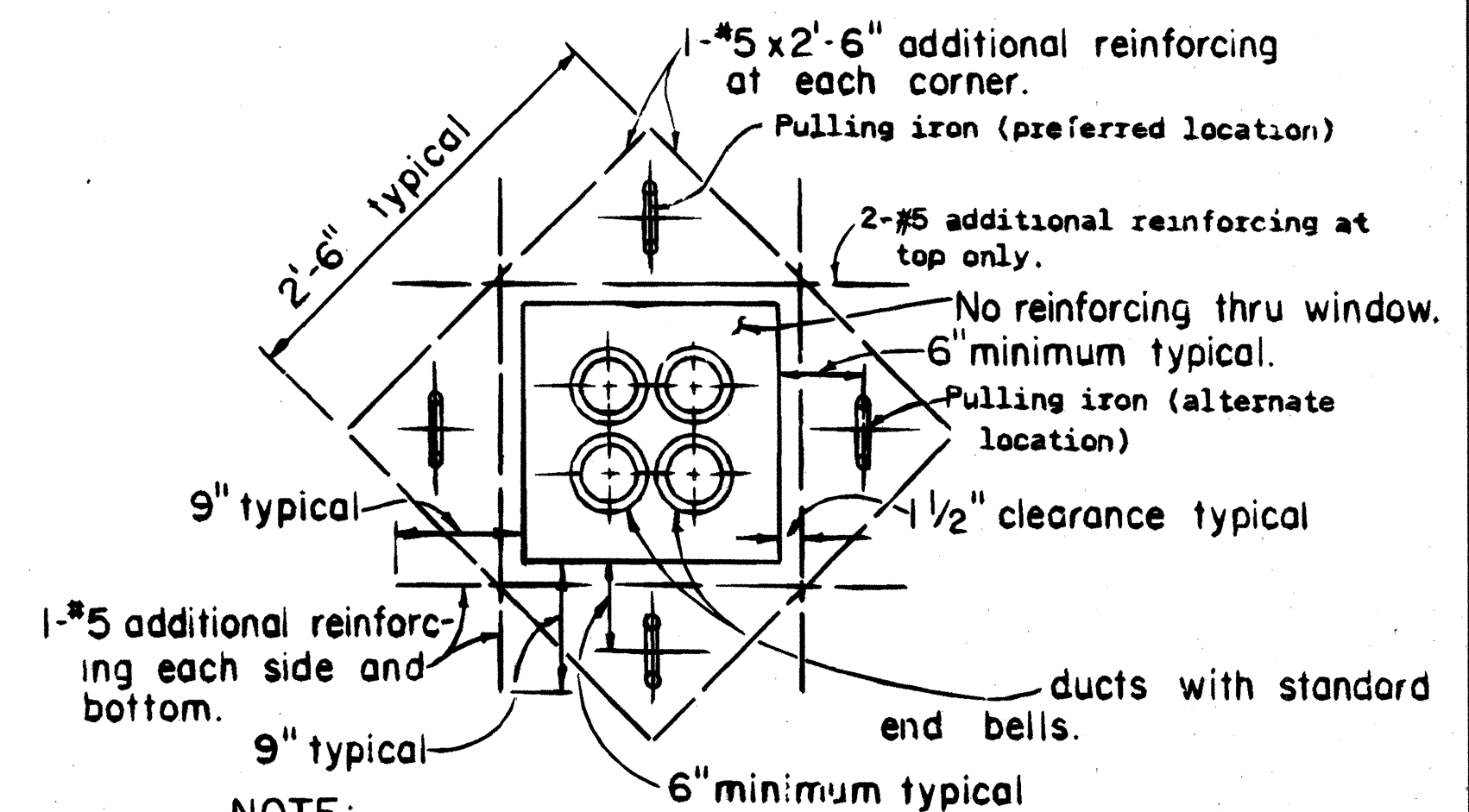
PULLING IRON FOR 6" & 8" WALL



**TYPICAL CONSTRUCTION JOINT**  
Scale:  $1\frac{1}{2}" = 1' - 0"$

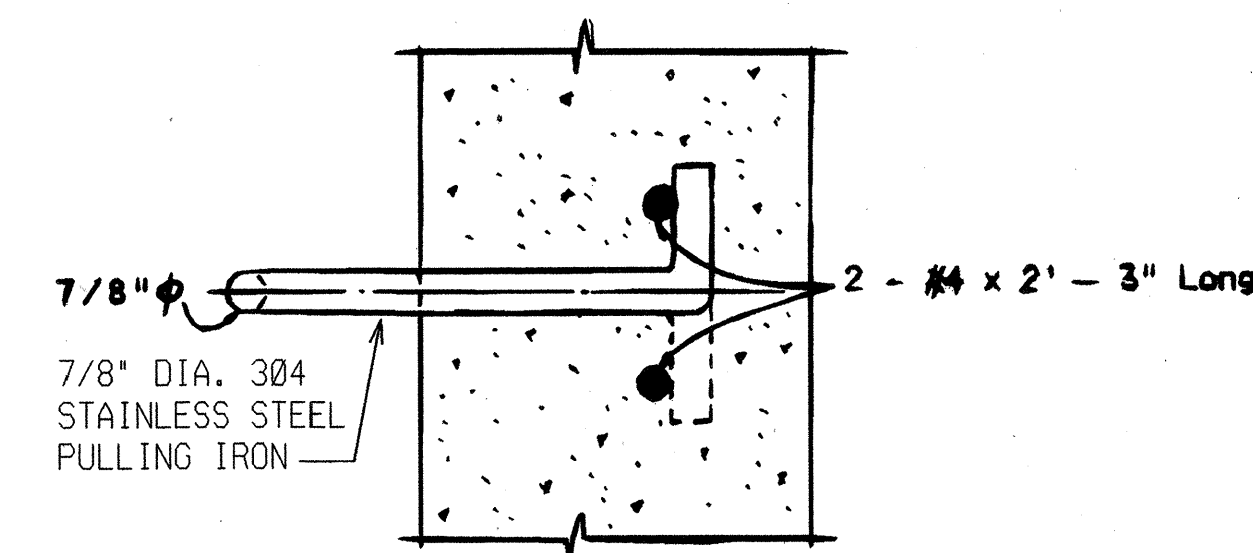


SECTION  
TYPICAL COLD JOINT  
Scale: 3" = 1'-0"



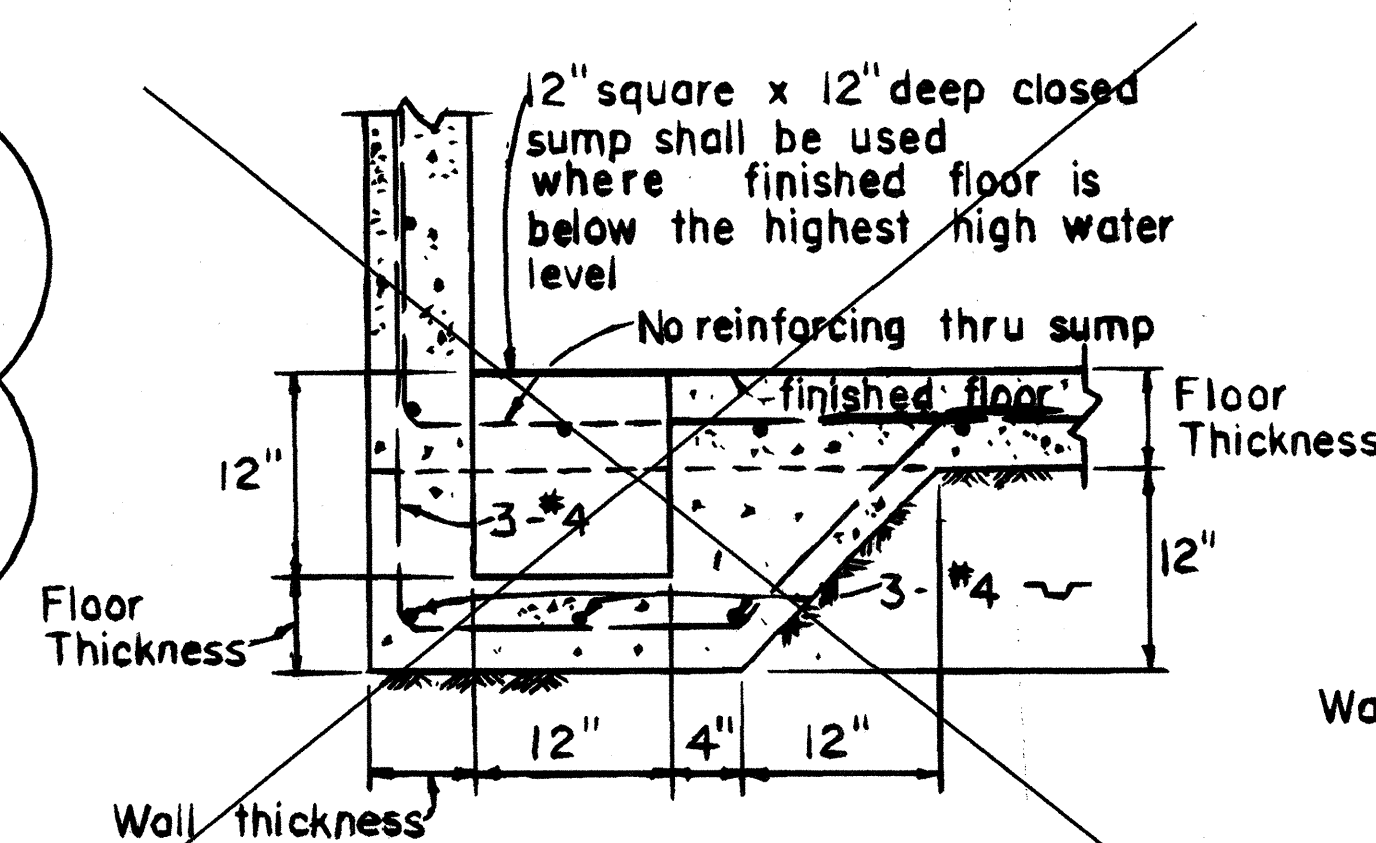
NOTE

Generally 2 pulling irons are required and located on opposite wall of each duct window unless otherwise shown or noted. H.E.Co. Engineer shall determine number required.

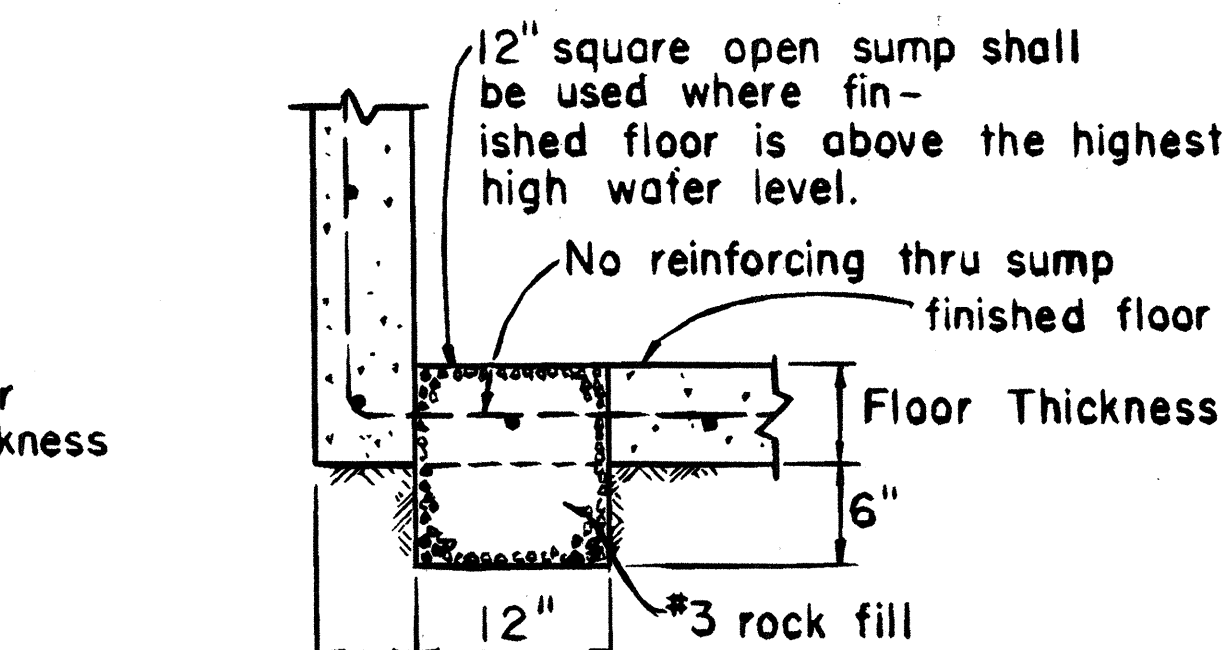


CAUTION

NOT FOR USE IN AREAS WHERE THE WATER  
TABLE IS ABOVE THE FLOOR ELEVATION OF  
THE HANDHOLE/MANHOLE. FOR THESE AREAS,  
CONSULT THE STRUCTURAL DIVISION.



SECTION  
CLOSED SUMP  
Scale: 1" = 1'-0"



SECTION  
OPEN SUMP

|     |         |                                                                                                                                                                                            |     |       |           |
|-----|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------|-----------|
| 5   | 7-26-99 | ADD HIGH WATER TABLE CAUTION NOTE                                                                                                                                                          | CT  | MM    | FK        |
| 4   | 2-11-96 | SPECIFIED & INDICATED THAT ALL PULLING IRONS & RELATED HARDWARE SHALL BE 304 NM MAGNETIC STAINLESS STEEL                                                                                   | CT  | WJA   | FK        |
| 3   | 9-11-81 | REVISED PULL IRON FOR 6" WALL DETAIL                                                                                                                                                       | GKN |       | TN        |
| 2   | 4-22-77 | REVISED "BRASS PULLING EYE INSERT" AND ADDED "PULLING IRON FOR 6" WALL, REVISED "PULLING IRON" TITLE TO "PULLING IRON FOR 6" & 8" WALL" AND REMOVE PULLING EYE INSERT FROM GENERAL NOTE 5. | GKN | GO    | ST<br>HKS |
| 1   | 1-21-76 | REVISED TYP. COLD JOINT DETAIL                                                                                                                                                             | SA  | RY    | HKS       |
| 0   | 6-20-76 | REDRAWN                                                                                                                                                                                    | SA  | RY    | ST<br>HKS |
| NO. | DATE    | REVISIONS                                                                                                                                                                                  | BY  | CHK'D | APP'D     |

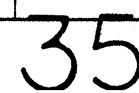
## MISCELLANEOUS DETAILS

### HANDHOLES & MANHOLES

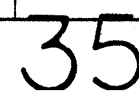
#### UNDERGROUND STANDARDS

|                 |  |       |  |       |  |     |  |        |  |                             |  |         |  |       |  |          |  |
|-----------------|--|-------|--|-------|--|-----|--|--------|--|-----------------------------|--|---------|--|-------|--|----------|--|
| DESIGNED        |  | BY    |  | DRAWN |  | RG  |  | SA     |  | DATE                        |  | 5-12-75 |  | SCALE |  | AS NOTED |  |
| CHECKED         |  | ELEC. |  | MECH. |  | RGY |  | STRUC. |  | ENGINEERING DEPARTMENT      |  |         |  |       |  |          |  |
| APPROVAL        |  |       |  |       |  |     |  |        |  | HAWAIIAN ELECTRIC CO., INC. |  |         |  |       |  |          |  |
| S. I. TANNO     |  |       |  |       |  |     |  |        |  | HONOLULU, HAWAII            |  |         |  |       |  |          |  |
| H.K. STEWART JR |  |       |  |       |  |     |  |        |  | DRAWING NUMBER              |  |         |  | REV   |  |          |  |

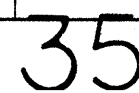




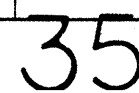
## 35



35



35



35

35

35

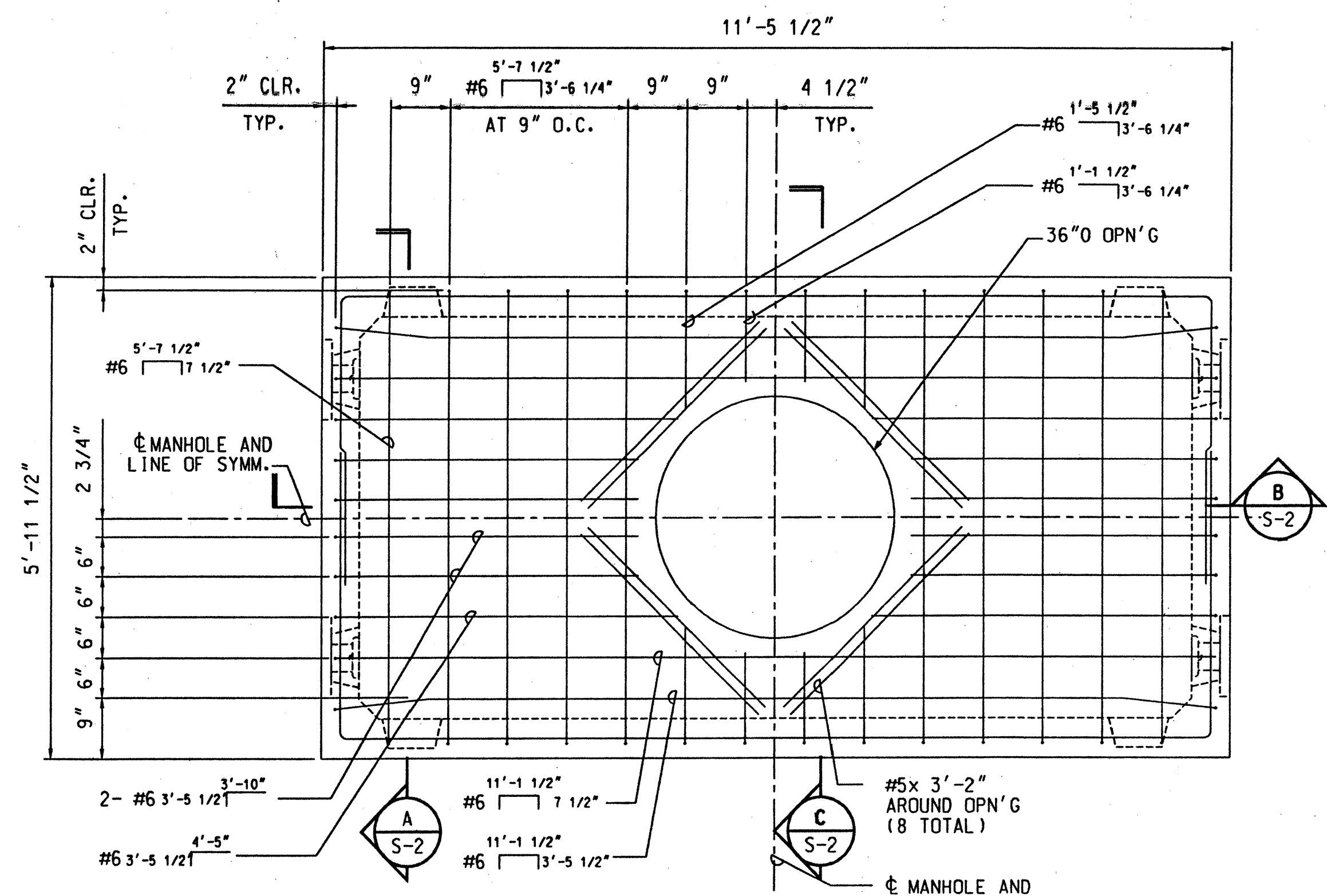
## 35

35

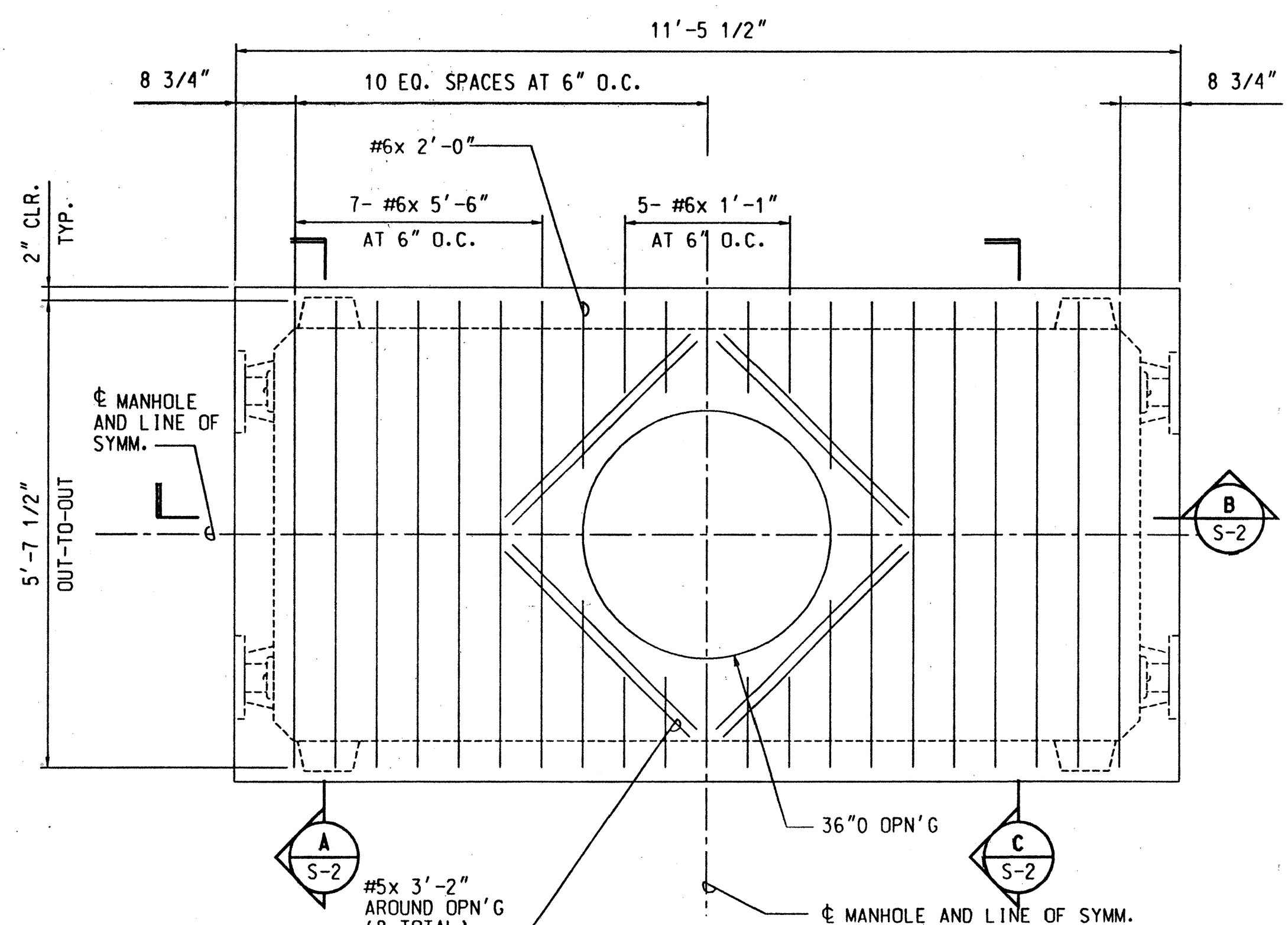




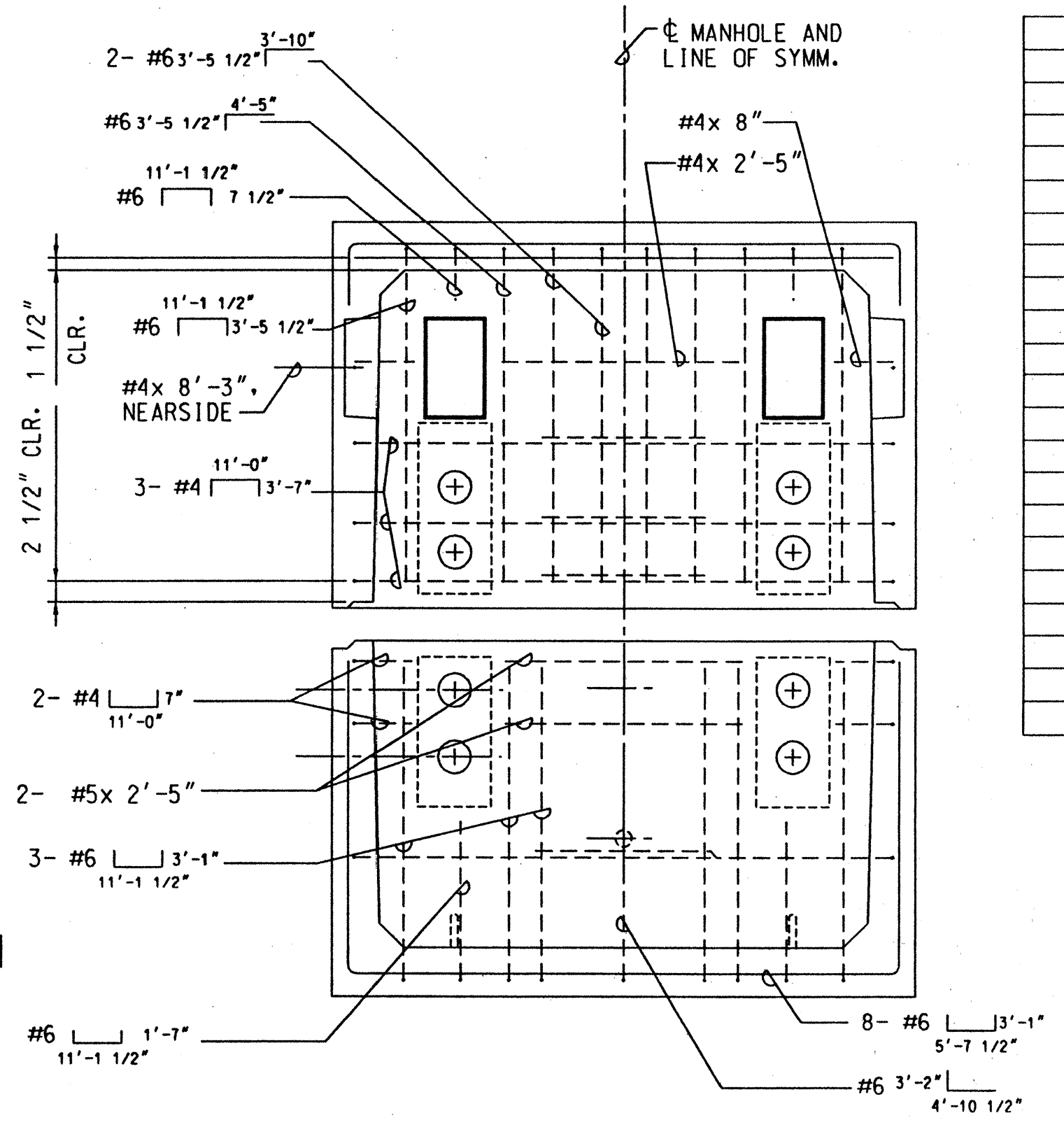




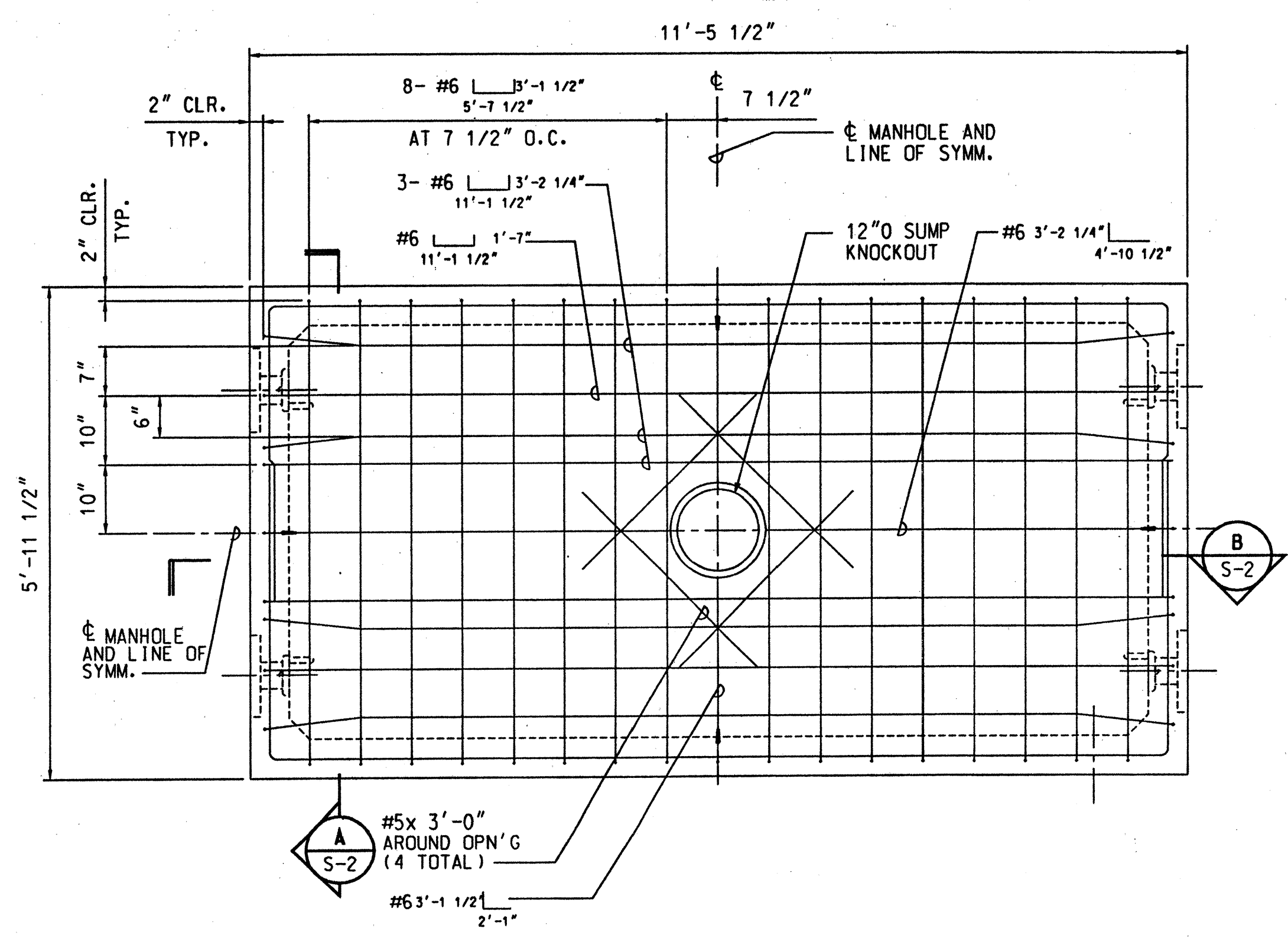
1 TOP SECTION - ROOF SLAB TOP REINFORCING PLAN  
S-2 SCALE: 3/4=1'-0"



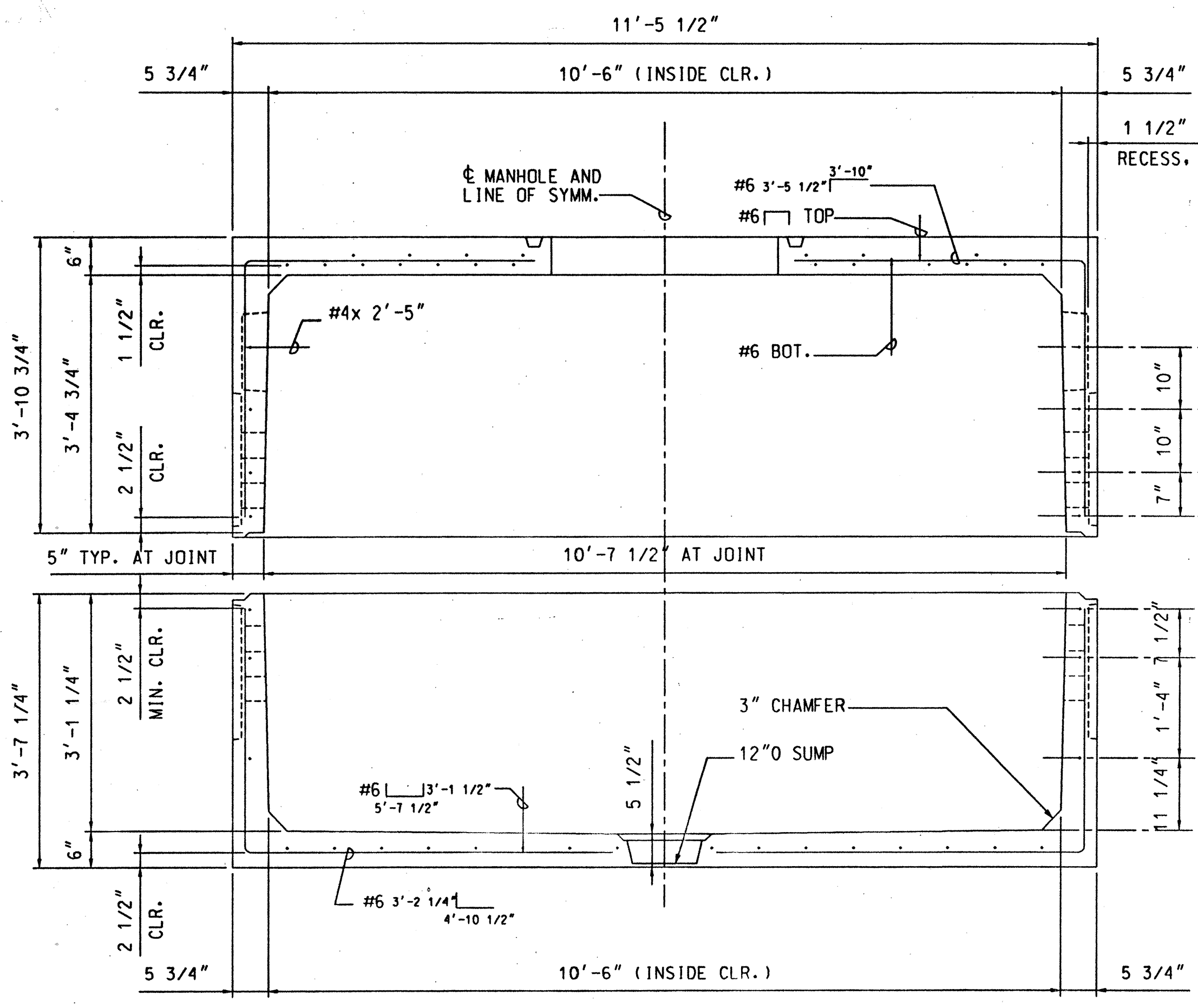
2 TOP SECTION - ROOF SLAB BOTTOM REINFORCING PLAN  
S-2 SCALE: 3/4=1'-0"



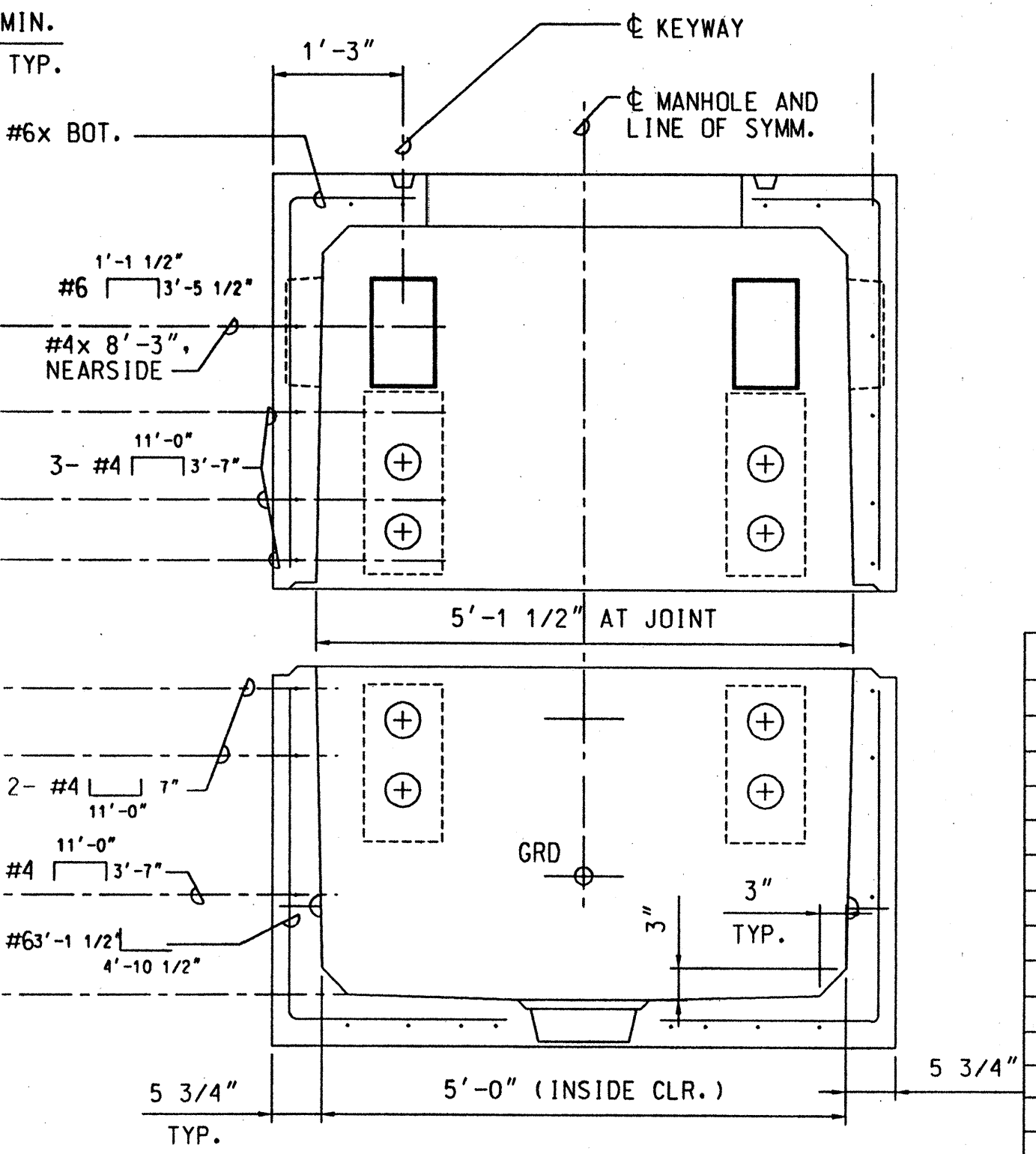
C END WALL REINFORCING ELEVATION  
S-2 SCALE: 3/4=1'-0"



3 BASE SECTION - REFLECTED FLOOR SLAB REINFORCING PLAN  
S-2 SCALE: 3/4=1'-0"



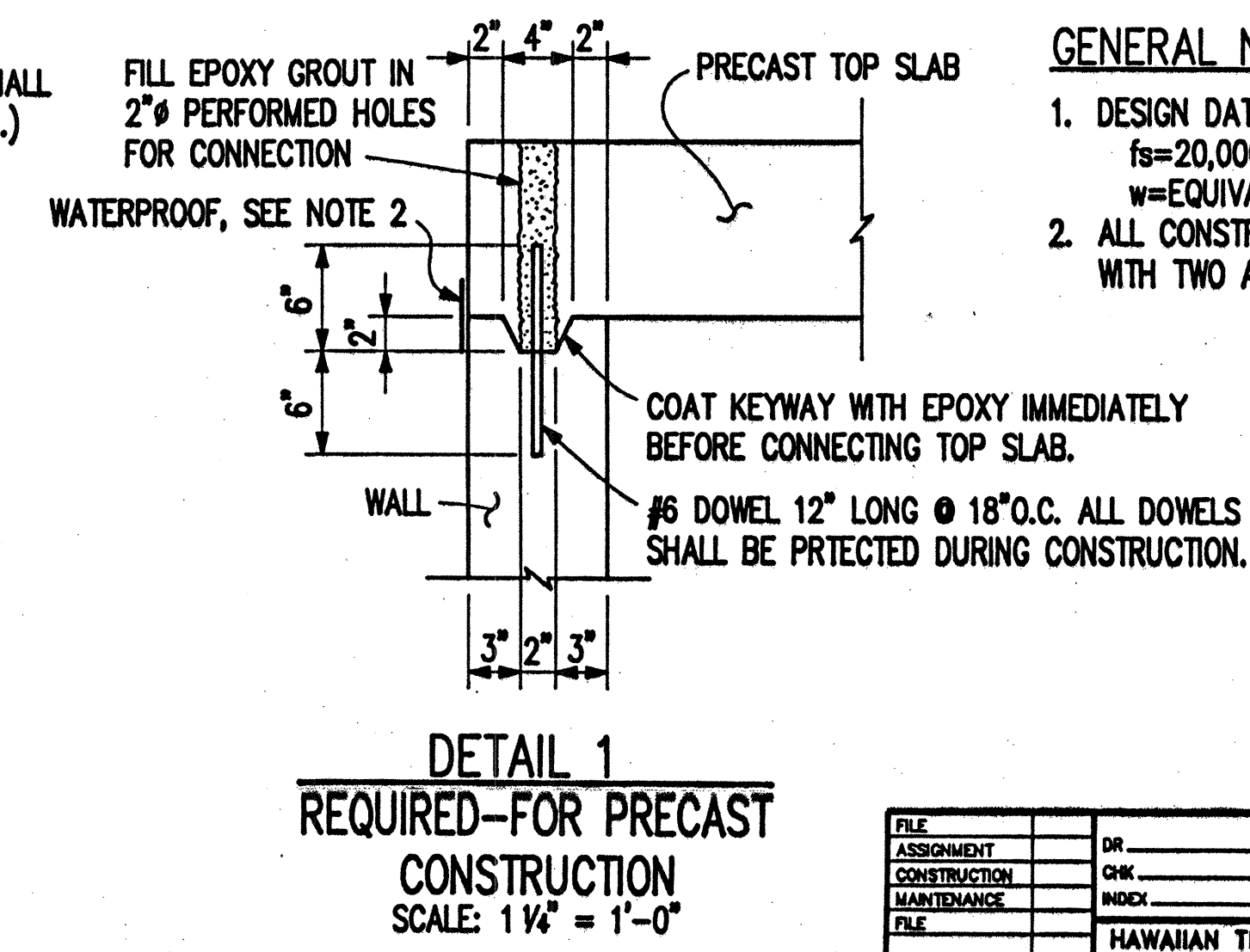
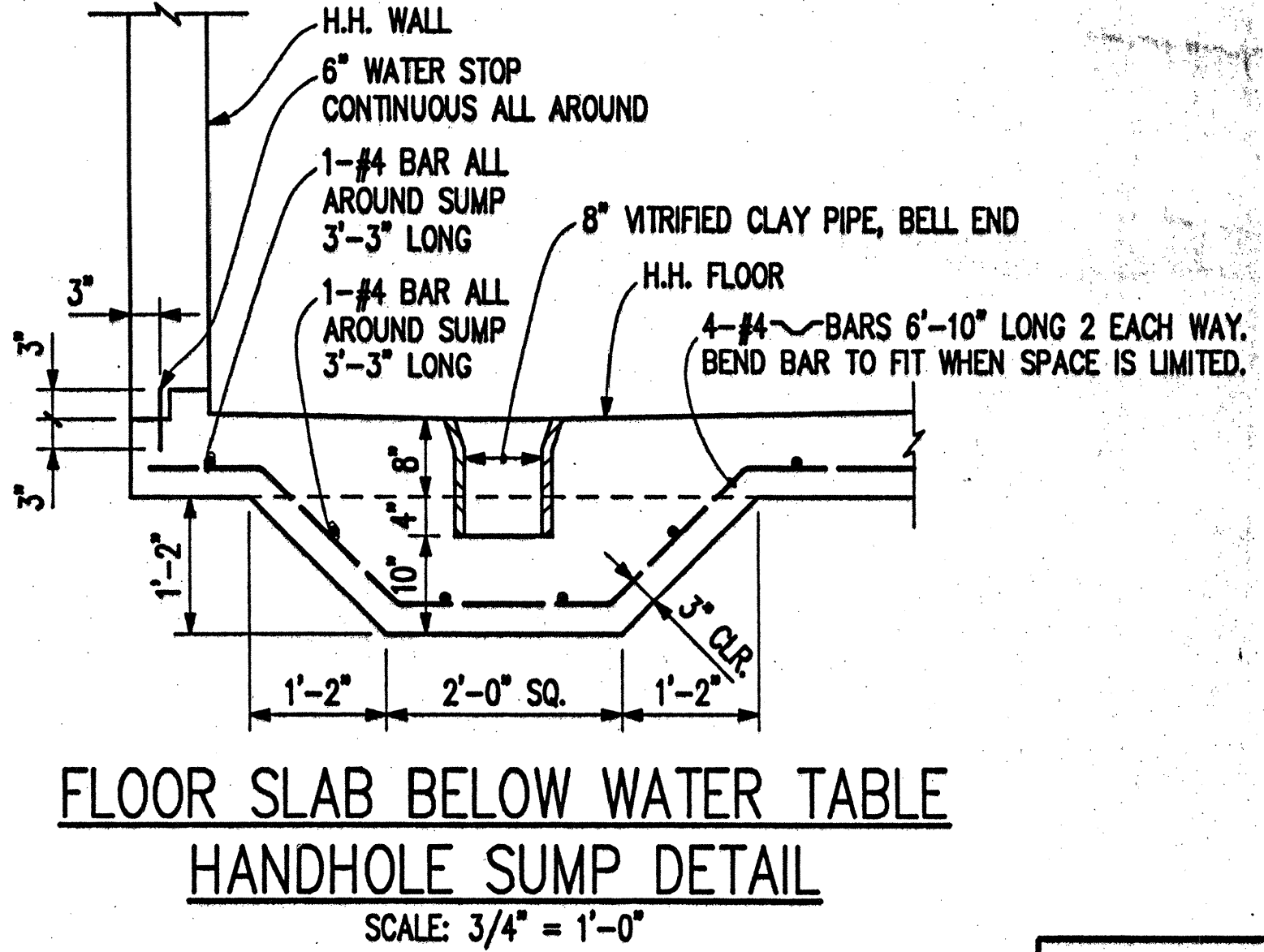
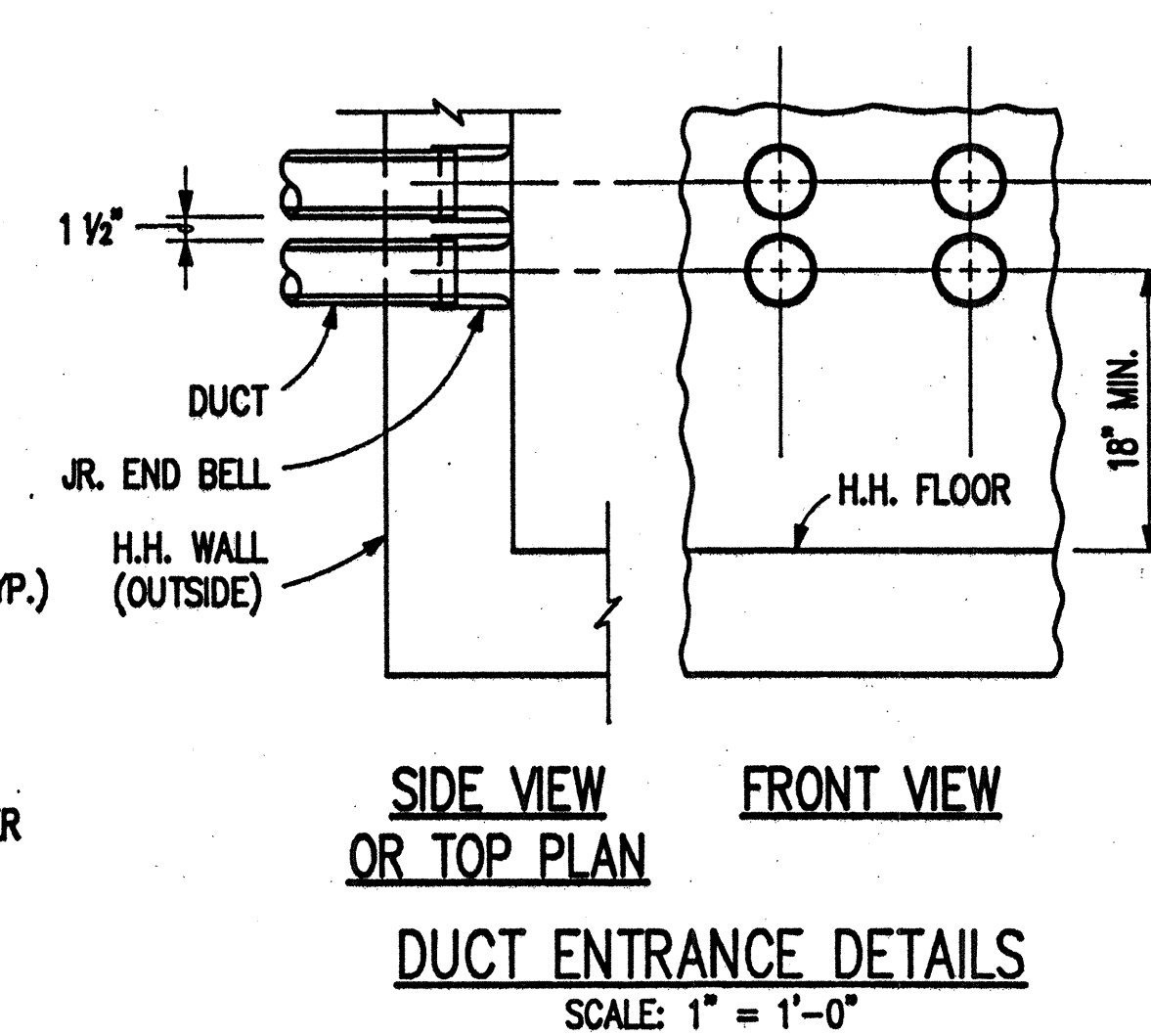
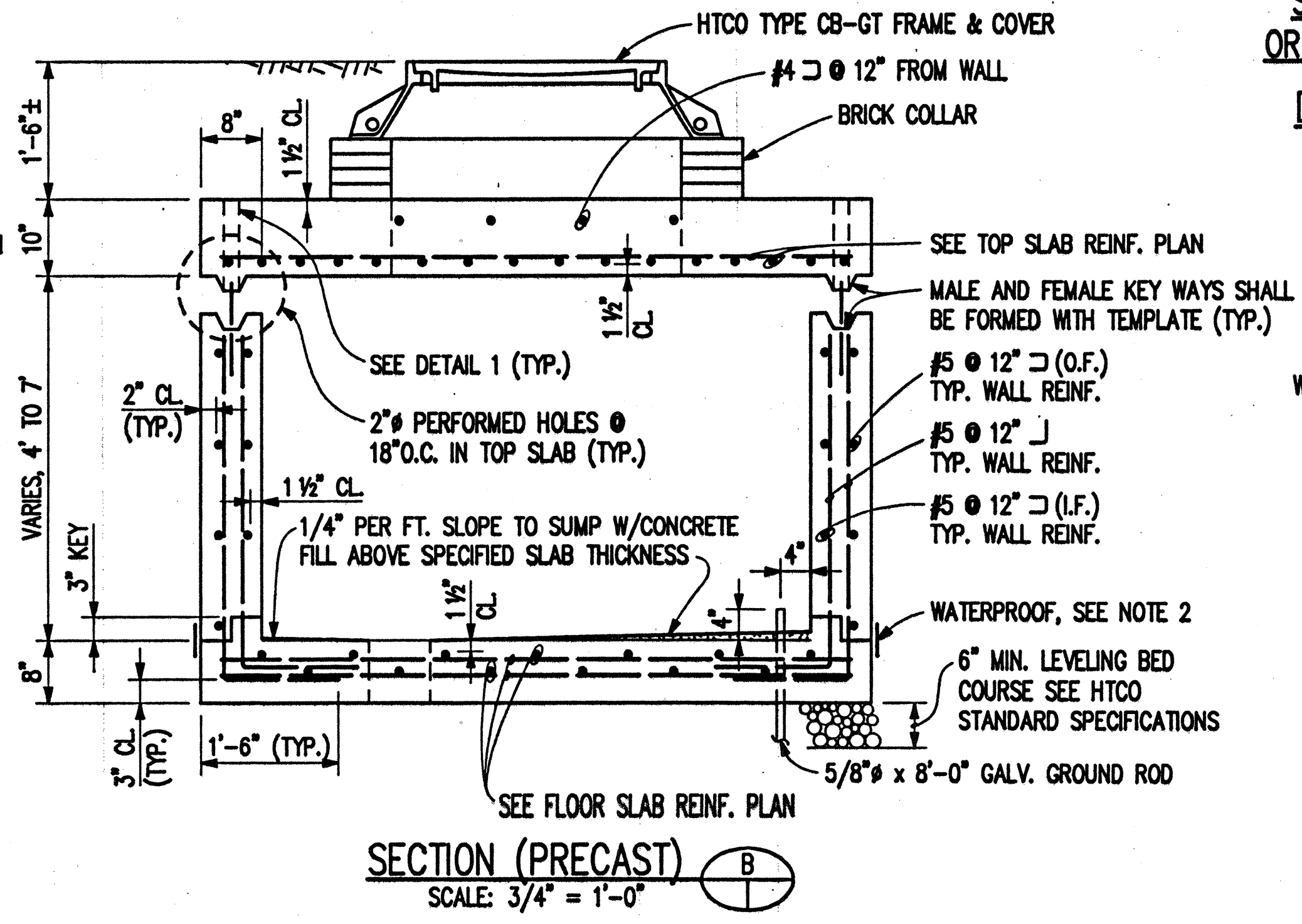
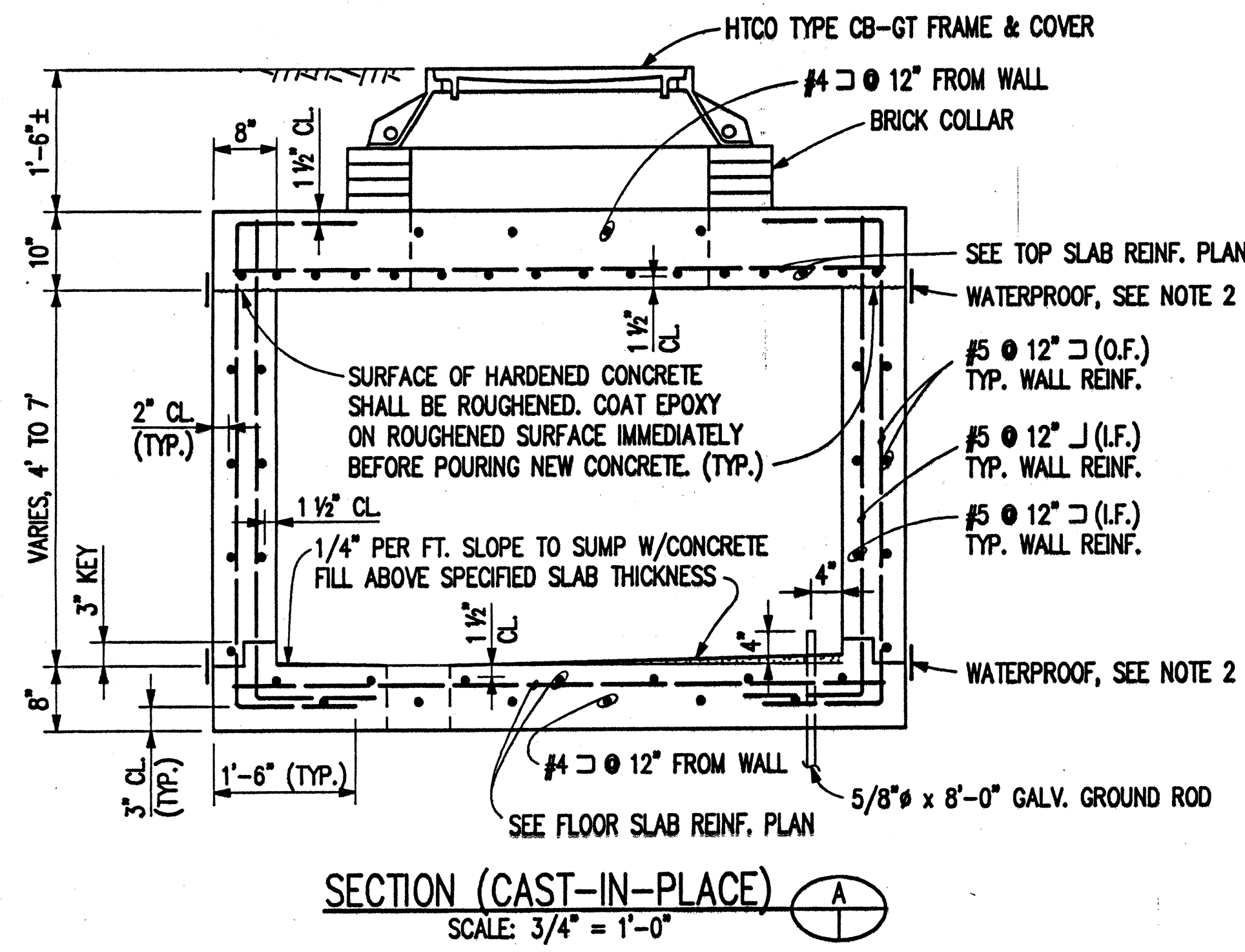
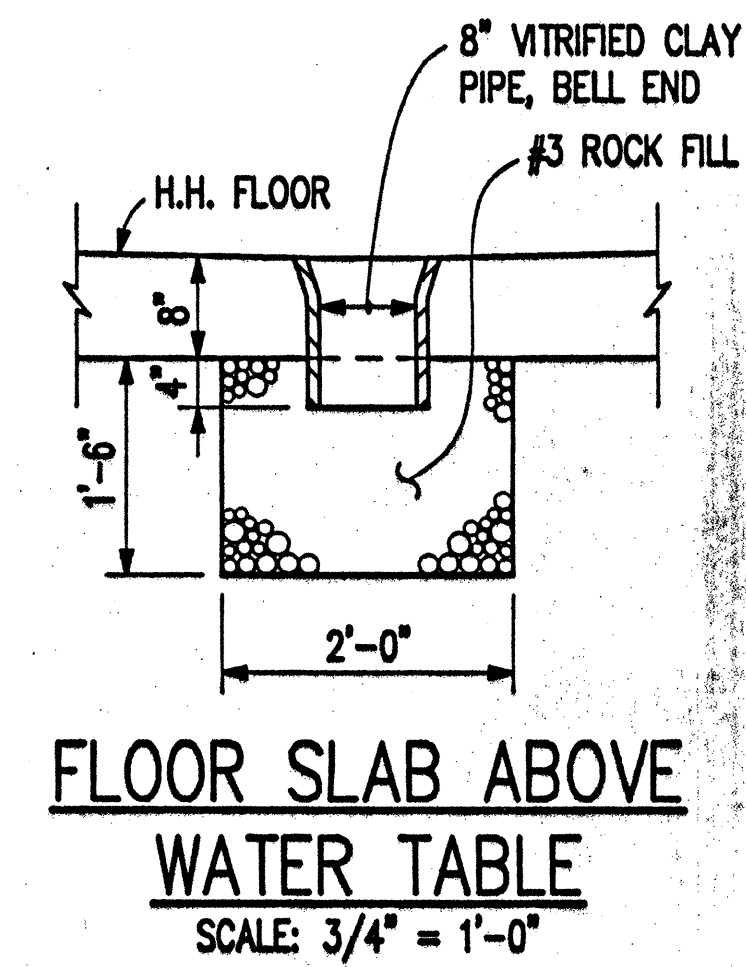
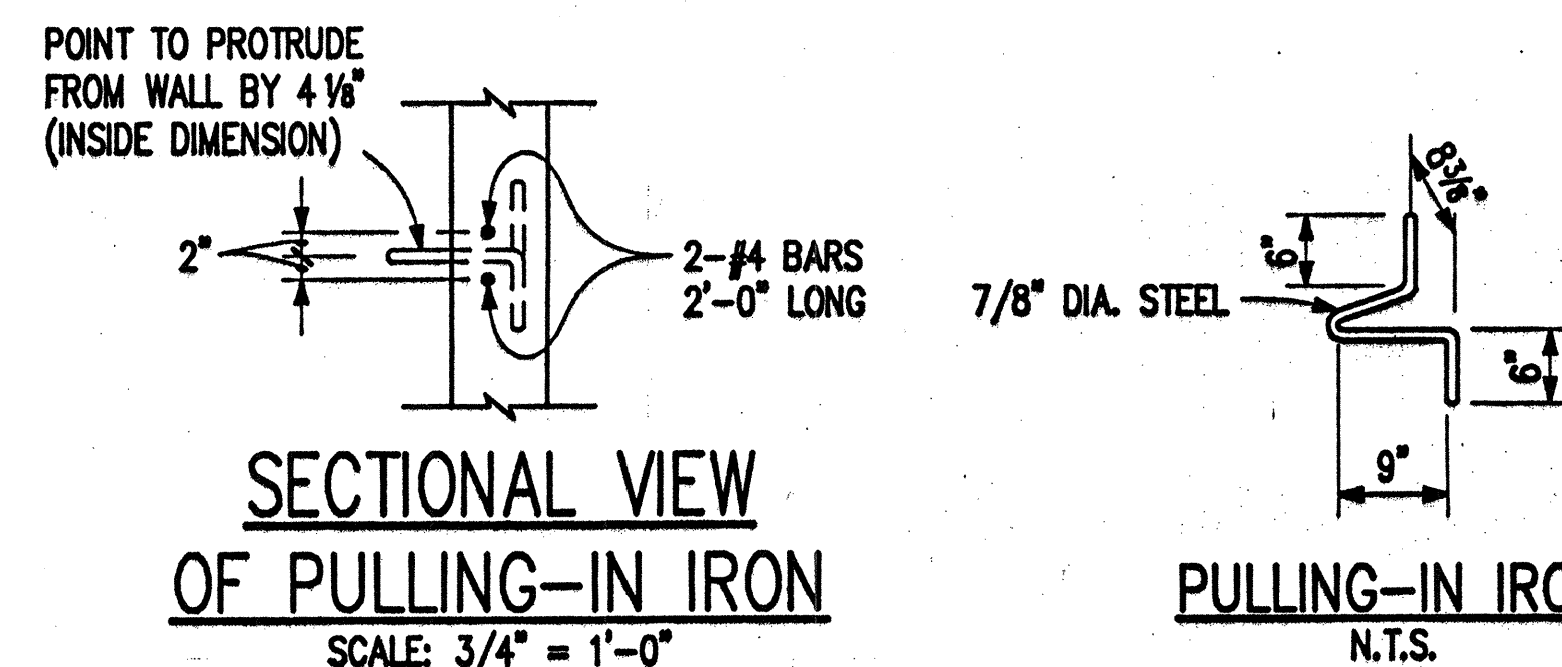
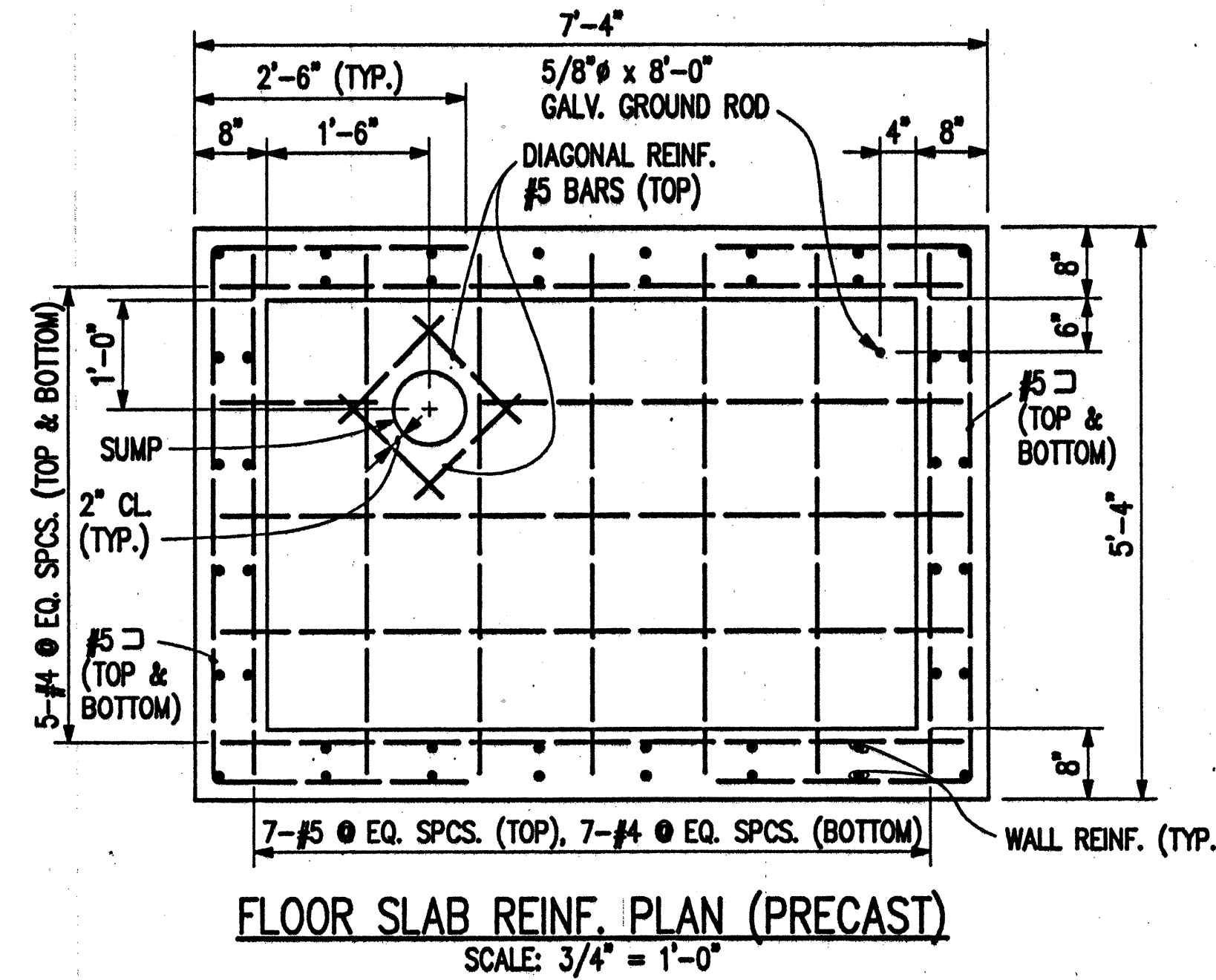
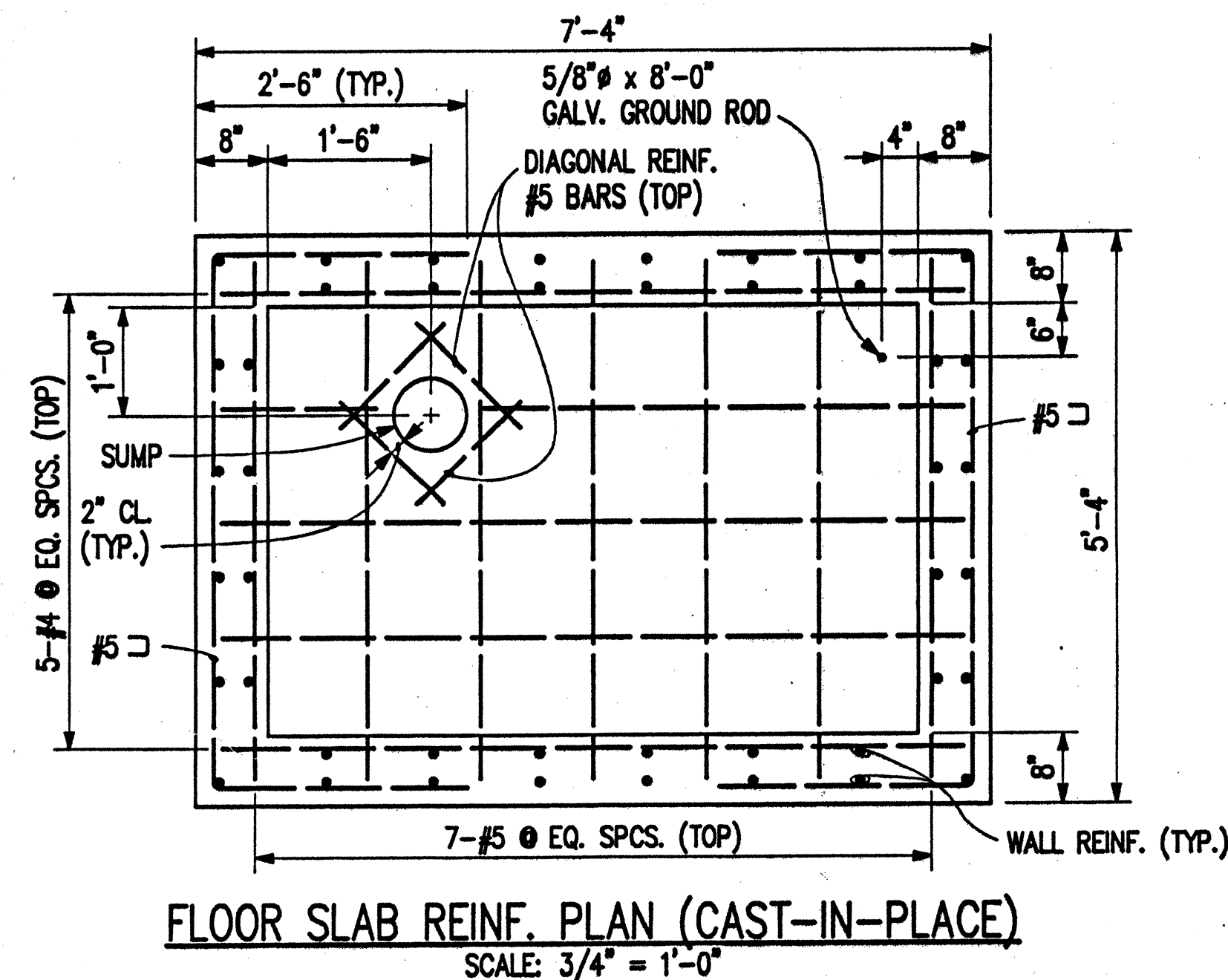
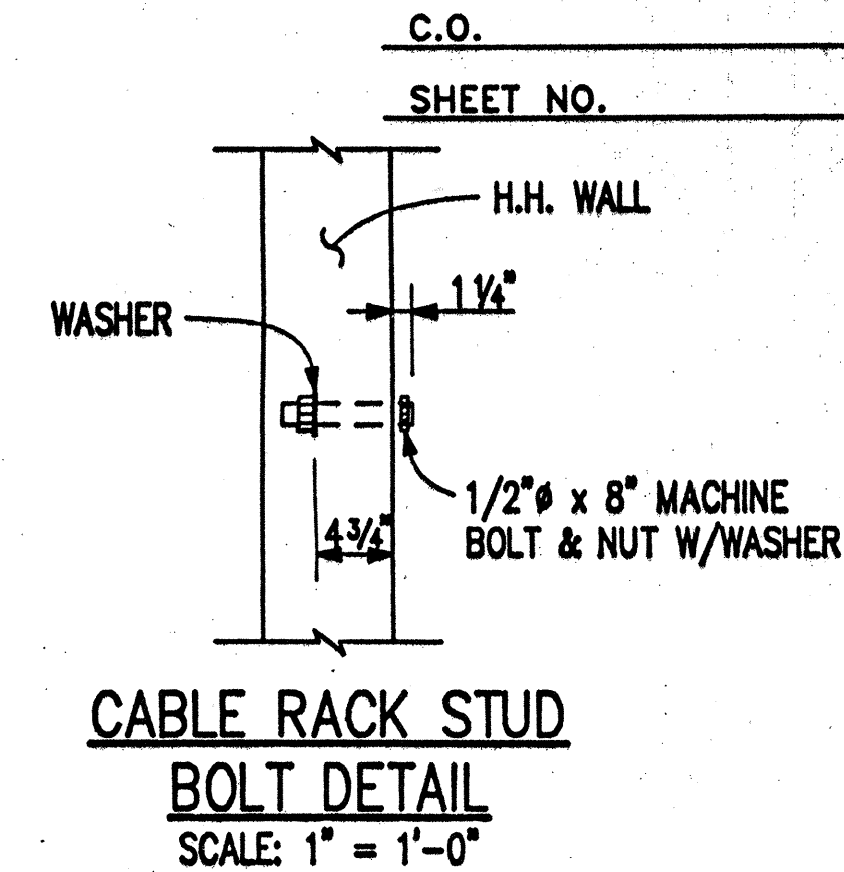
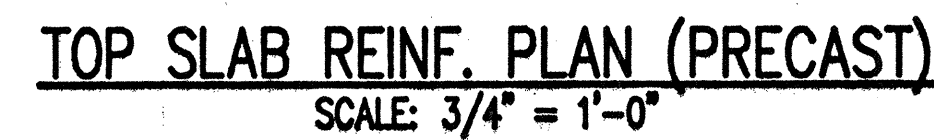
B LONGITUDINAL SECTION  
S-2 SCALE: 3/4=1'-0"



C TYPICAL TRANSVERSE SECTION  
S-2 SCALE: 3/4=1'-0"

|                                      |         |     |   |              |       |    |       |    |                               |                                           |       |   |
|--------------------------------------|---------|-----|---|--------------|-------|----|-------|----|-------------------------------|-------------------------------------------|-------|---|
| REVISIONS                            |         |     |   | FILE         | DR    | LD | ENG   | KT | S-2                           | 5'-0"x 10'-6"x 6'-6"<br>TWO-PIECE MANHOLE | 34108 | D |
| DESCRIPTION                          | DATE    | ENG | R | ASSIGNMENT   | CHK   | DD | TEL   |    |                               |                                           |       |   |
| REDRAWN, QUALITY CONTROL             | 5/22/98 | KT  |   | CONSTRUCTION | INDEX |    | APP'D |    |                               |                                           |       |   |
|                                      |         |     |   | MAINTENANCE  |       |    |       |    |                               |                                           |       |   |
|                                      |         |     |   | TOTAL PRINTS |       |    |       |    |                               |                                           |       |   |
| HAWAIIAN TELEPHONE COMPANY<br>HAWAII |         |     |   |              |       |    |       |    | DATE 05/22/98<br>SHEET 2 OF 2 |                                           |       |   |





**GENERAL NOTES:**

1. DESIGN DATE:  
fs=20,000 psi; f'c=3000 psi; fc=1200 psi; n=9  
w=EQUIVALENT FLUID PRESSURE: 60 psf
2. ALL CONSTRUCTION JOINTS SHALL BE WATERPROOFED  
WITH TWO APPLICATIONS OF THORO SEAL OR EQUAL.

A circular professional engineer seal. The outer ring contains the text "HUI PANG CHEN" at the top and "HAWAII, U.S.A." at the bottom, separated by two five-pointed stars on the left and right. The inner circle contains the text "LICENSED PROFESSIONAL ENGINEER" and "No. 3865-S" below it.

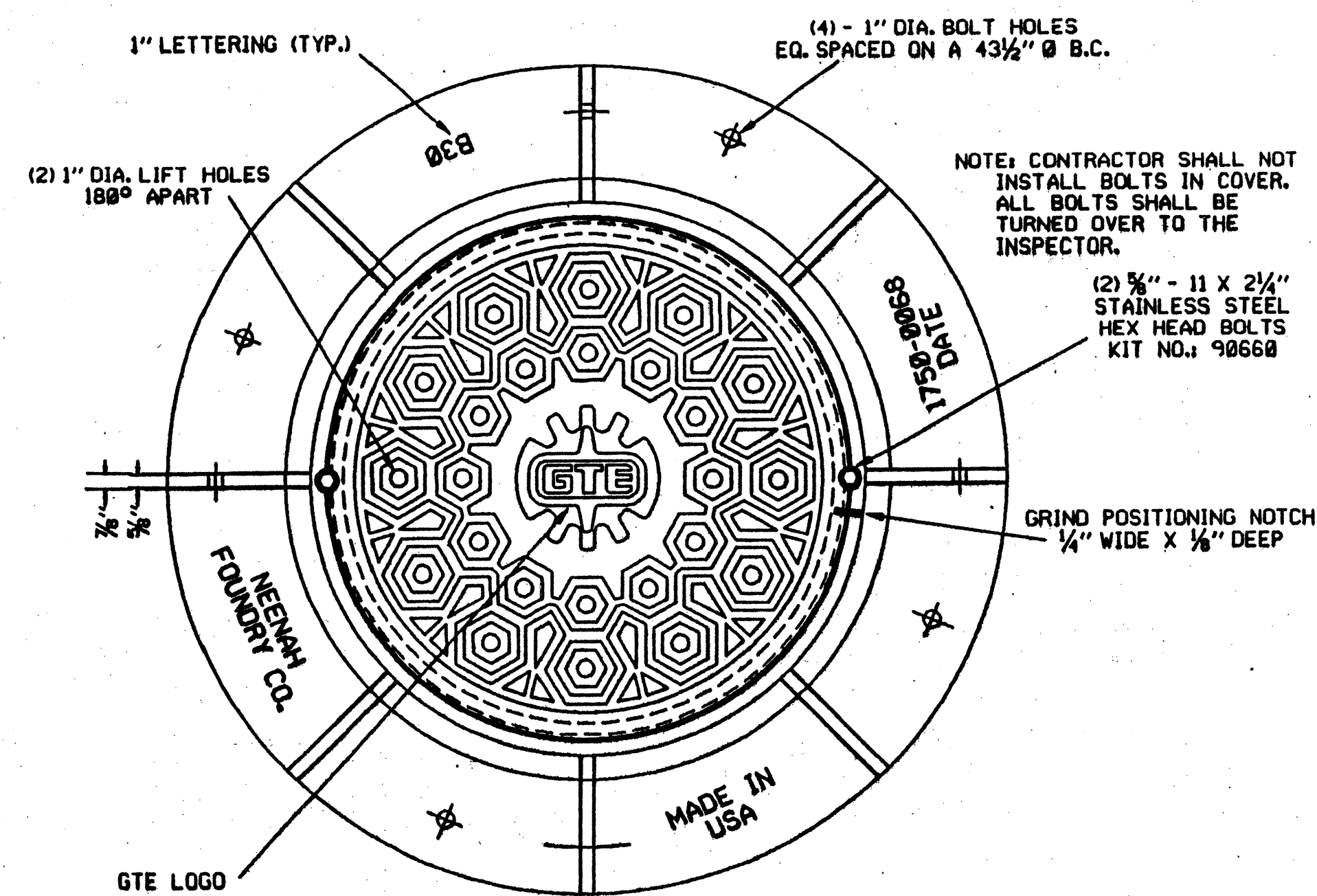
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

Huipang Chen

**DETAIL 1**  
**REQUIRED-FOR PRECAST**  
**CONSTRUCTION**  
**SCALE: 1 1/4" = 1'-0"**

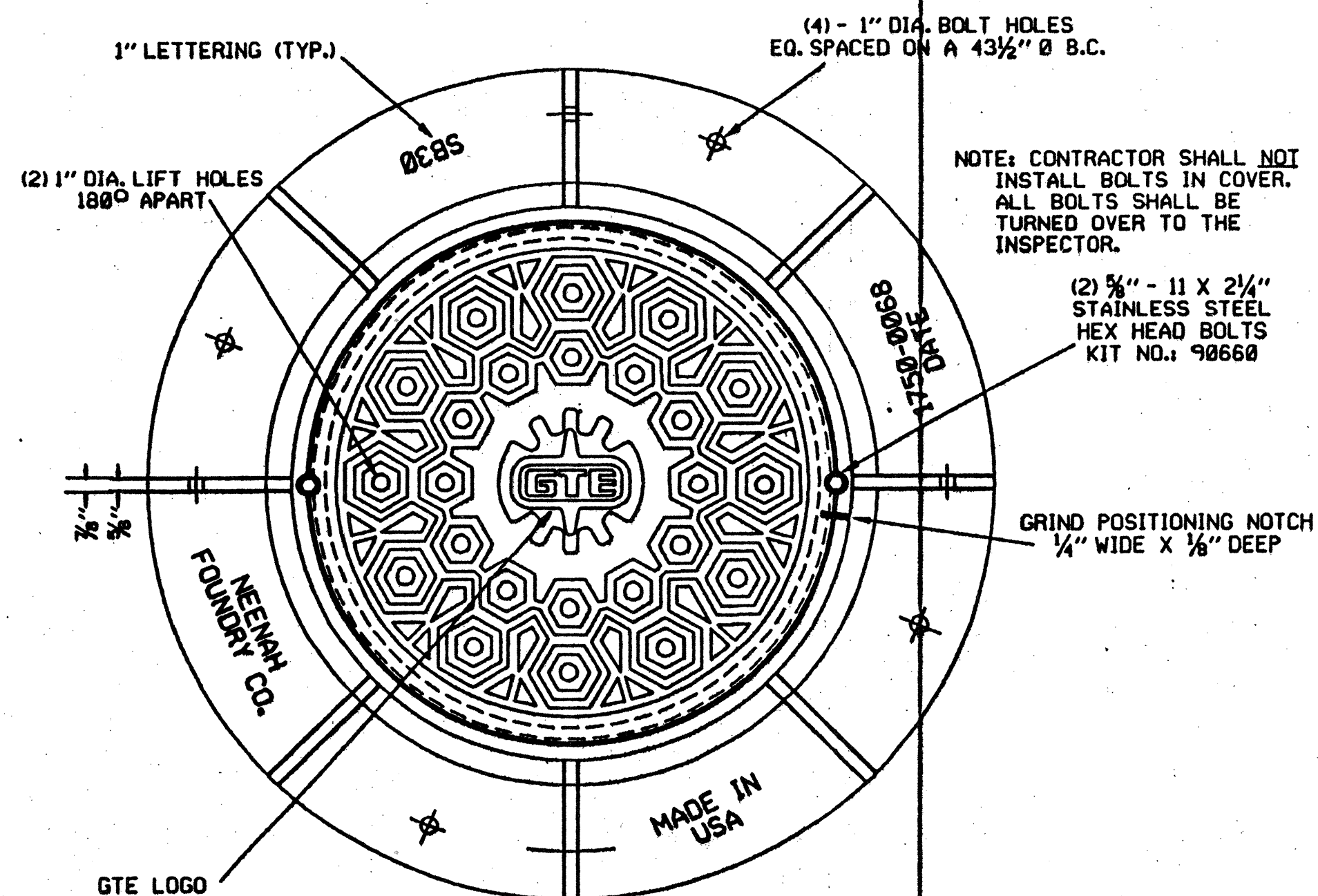
|              |                            |     |                                                                                                                               |       |
|--------------|----------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------|-------|
| FILE         | DR                         | ENG | STANDARD HANDHOLE                                                                                                             |       |
| ASSIGNMENT   | CHK                        | TEL | TYPE 2 TRAFFIC BEARING                                                                                                        |       |
| CONSTRUCTION | INDEX                      | APP | <div style="text-align: right;">  </div> |       |
| MAINTENANCE  | HAWAIIAN TELEPHONE COMPANY |     | DATE: 7/2/83                                                                                                                  | 34107 |
| FILE         | HAWAII                     |     | SHEET 1 OF 1                                                                                                                  | D     |
| TOTAL PRINTS | SHEET NO. OF SHEETS        |     |                                                                                                                               |       |





TYPE CB-GT FRAME & COVER  
FOR NORMAL APPLICATIONS

MATERIAL CODE: 182058  
COMPONENT NO.: FRAME: 1750-0067, LID: 1750-0017  
WEIGHT: FRAME: 426 LBS., LID: 266 LBS.  
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B  
FINISH: NO PAINT



TYPE C1B-GT FRAME & COVER  
FOR HEIGHT RESTRICTED AREAS

MATERIAL CODE: 182060  
COMPONENT NO.: FRAME: 1750-0068, LID: 1750-0017  
WEIGHT: FRAME: 360 LBS., LID: 266 LBS.  
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B  
FINISH: NO PAINT

GENERAL NOTES:

- ALL NEW MANHOLES SHALL USE THE FRAME AND COVERS SHOWN ON THIS STANDARD DRAWING.
- STD DRAWING 34037 SHOWING THE TYPE B OR SB FRAME AND COVER WILL BE USED FOR SPECIAL REPLACEMENTS ONLY.
- MANHOLE FRAME AND COVERS CAN BE OBTAINED FROM NEENAH FOUNDRY COMPANY, P.O. BOX 729, NEENAH, WISCONSIN 54957 (PH 414-725-7000) OR THE REGIONAL OFFICE AT CYPRESS, CALIFORNIA 90630 (PH 714-827-5369).

4. ROOF SLAB OPENING DIMENSIONS:

| TYPE | SLAB OPENING |
|------|--------------|
| CB   | 36"          |
| C1B  | 36"          |

|                    |         |                     |              |                                                                  |                   |               |
|--------------------|---------|---------------------|--------------|------------------------------------------------------------------|-------------------|---------------|
| <b>WORK SAFELY</b> |         | <b>HIGH VOLTAGE</b> |              | PROPRIETARY INFORMATION FOR USE BY AUTHORIZED GTE EMPLOYEES ONLY |                   | C.D.          |
| POWER CO.          | PHASE   | FILE NO.            | CONSTRUCTION | PIPELINE NO.                                                     | ENG. F. CHANG     | TEL. 834-6316 |
| CONNECTED          | GROUND. | SAFETY AFFECTED     | YES          | NO                                                               | DRAWN BY J. CHINN | DATE 6-17-91  |
| TOTAL              |         | TOTAL               |              | HAWAIIAN TEL                                                     |                   | 34086         |