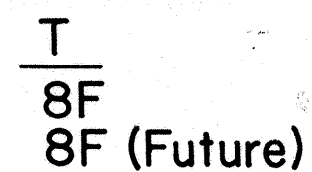
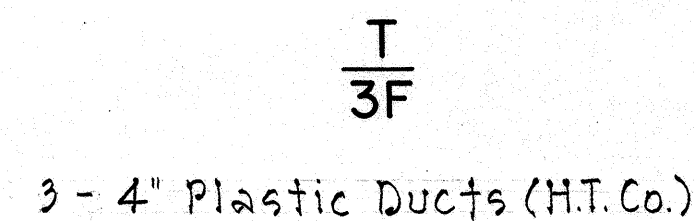
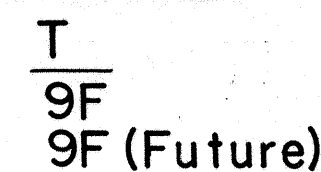


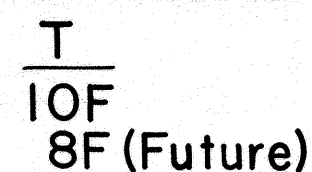
1. The Contractor shall notify H.T. Co. in writing 10 working days prior to commencing work on their utility system.
2. Existing utility facilities shown on these plans are approximate only. The Contractor shall verify their actual locations and make adjustments to any new or existing facility as directed by the Engineer.
3. Unless otherwise shown on the plans, the minimum depth of duct lines from finished grade to top of concrete jacket where ducts are concrete encased=3'-0".
4. Final depth of all pull boxes, handholes and manholes shall be determined in the field by the Engineer.
5. Existing utility cables which are to remain in place during construction shall be handled by the utility company's men only. The Contractor shall exercise caution to avoid disturbances to the cables or temporary guards erected by the utility company.
6. Contractor to stake out proposed ductline, pole and anchor locations and H.T. Co. to check location before Contractor undertakes excavation.
7. All ducts and conduits called for installation in concrete jacket shall be inspected and approved by the Engineer of H.T. Co. before concrete placing. 24 hours (minimum) notice to the Utility shall be given before pouring concrete.
8. Hawaiian Electric Company and Honolulu Gas Company shall adjust their respective facilities as shown in the plans and the Contractor shall coordinate his work with that of the respective utility companies.
9. The Contractor shall phase his work in such a manner that work near Makalapa Gate will be done last.



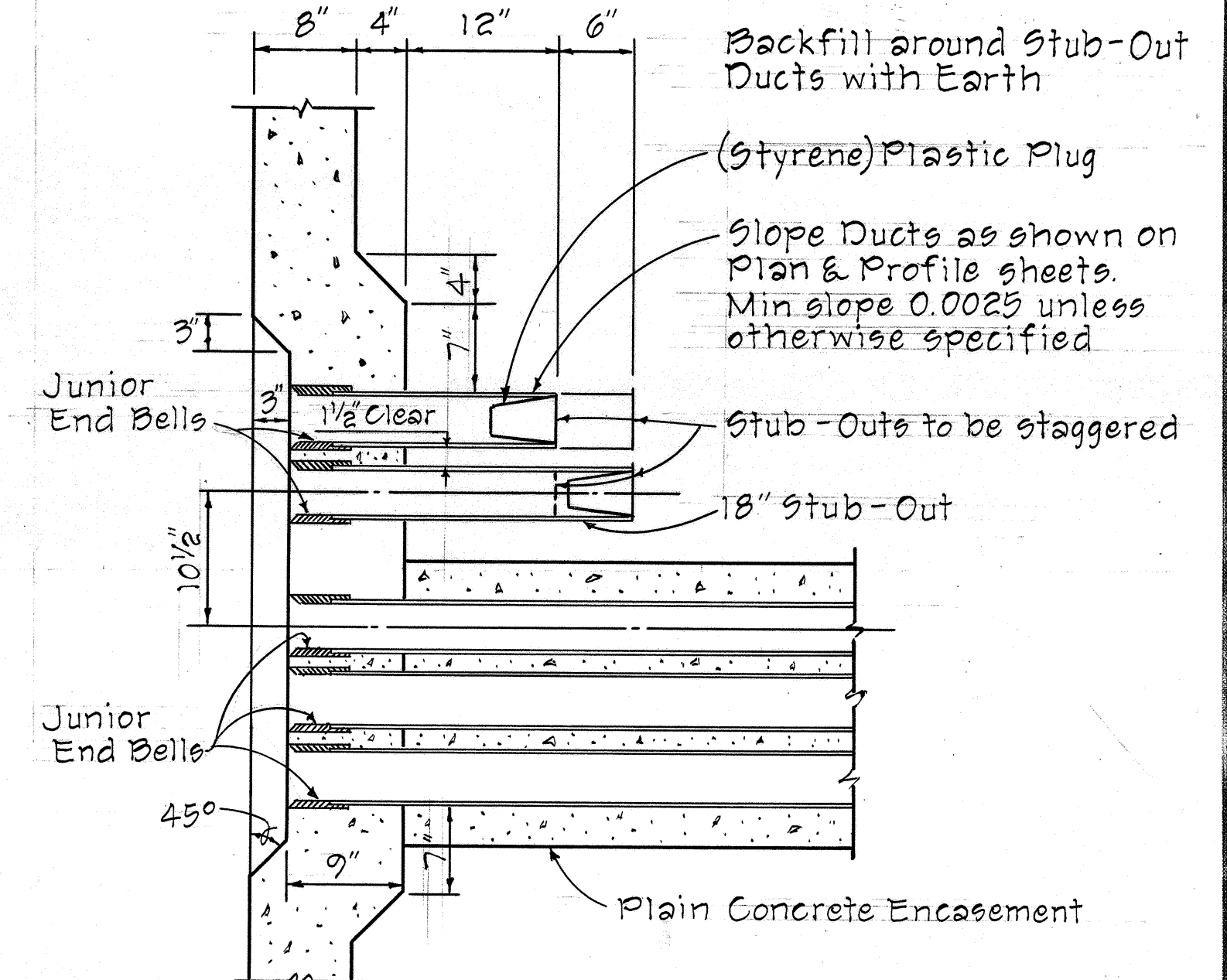
8 - 4" Plastic Ducts (H.T.Co.)  
9 - 4" Plastic Ducts (Future)  
(H.T.Co.)



7 - 4" Plastic Ducts (H.T.Co.)  
7 - 4" Plastic Ducts (Future)  
(H.T.Co.)

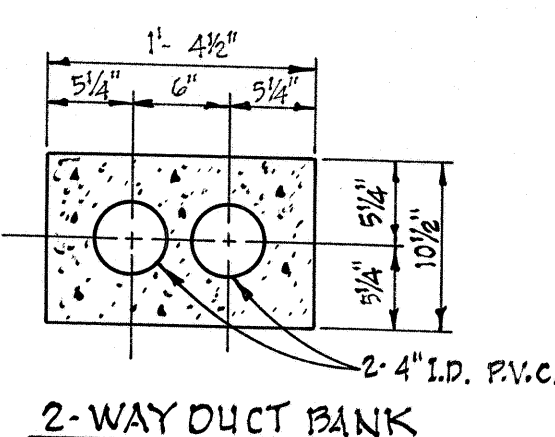


10 - 4" Plastic Ducts (H.T. Co.)  
8 - 4" Plastic Ducts (Future)  
(H.T. Co.)

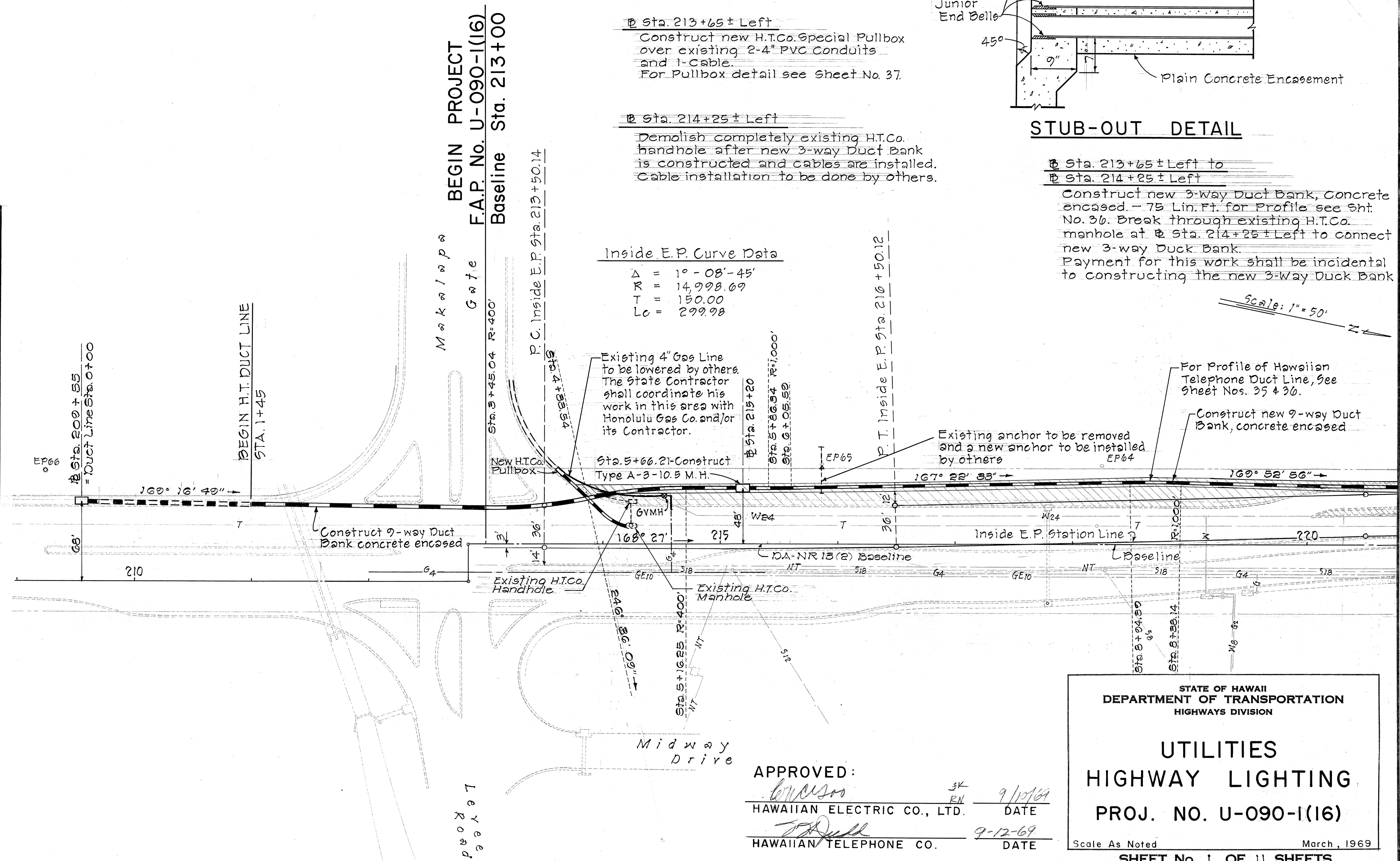


## STUB-OUT DETAIL

@ Sta. 213+65 ± Left to \_\_\_\_\_  
 @ Sta. 214+25 ± Left \_\_\_\_\_  
 Construct new 3-Way Duct Bank, Concrete  
 encased. - 75 Lin. Ft. for Profile see 3ht.  
 No. 36. Break through existing H.T.Co.  
 manhole at @ Sta. 214+25 ± Left to connect  
 new 3-Way Duct Bank.  
 Payment for this work shall be incidental  
 to constructing the new 3-Way Duct Bank



CHANGE ORDER #



APPROVED:

HAWAIIAN ELECTRIC CO., LTD.

HAWAIIAN TELEPHONE CO

JK  
RN  
LTD DATE

DATE  
9-12-69  
DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

UTILITIES  
HIGHWAY LIGHTING

PROJ. NO. U-090-1(16)

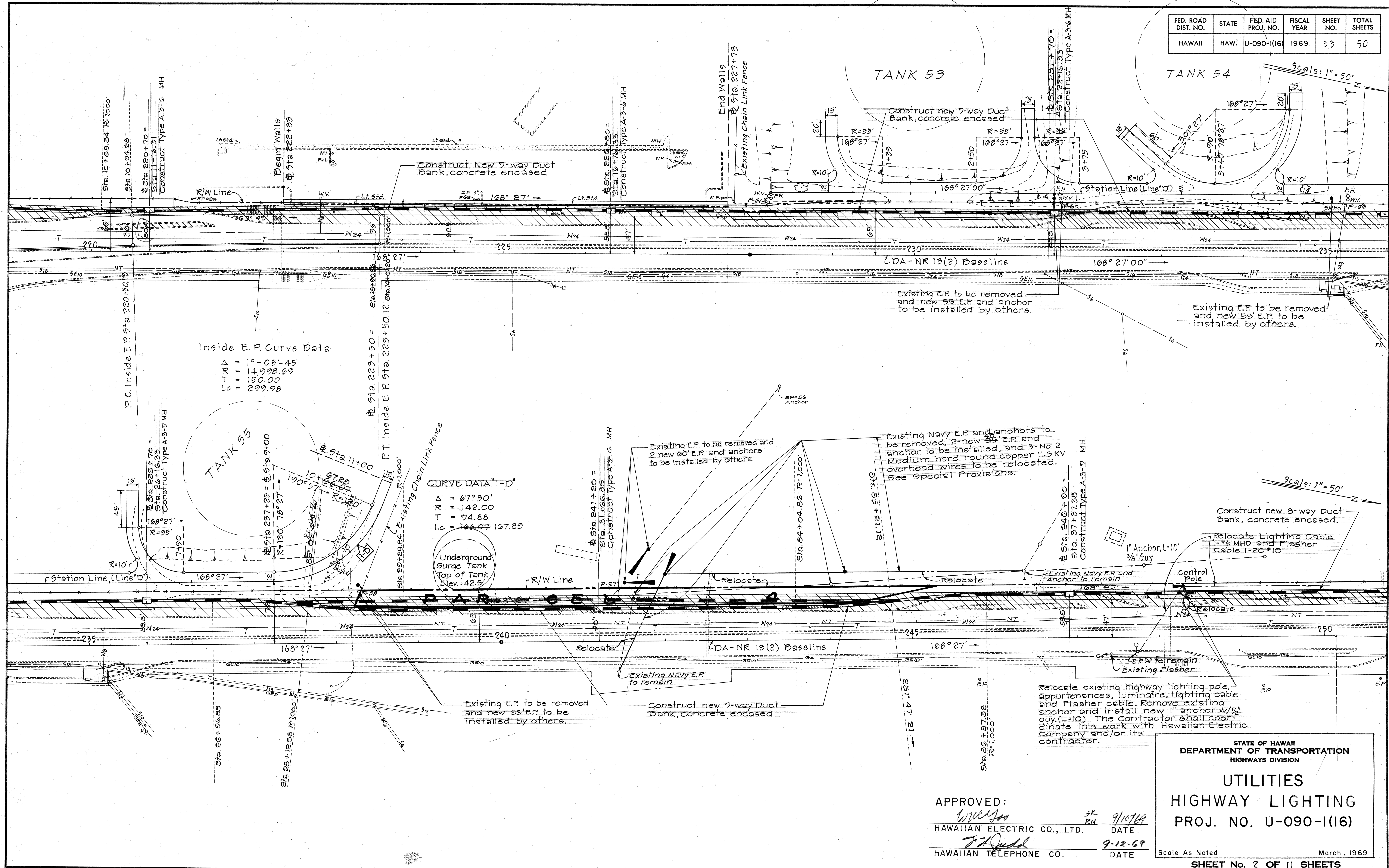
Scale As Noted

March, 1969

**SHEET No. 1 OF 11 SHEETS**



| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | U-090-1(16)           | 1969           | 33           | 50              |



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

UTILITIES  
HIGHWAY LIGHTING  
PROJ. NO. U-090-1(16)

Scale As Noted March, 1969

**SHEET No. 2 OF 11 SHEETS**

APPROVED:

HAWAIIAN ELECTRIC CO., LTD.

HAWAIIAN TELEPHONE CO.

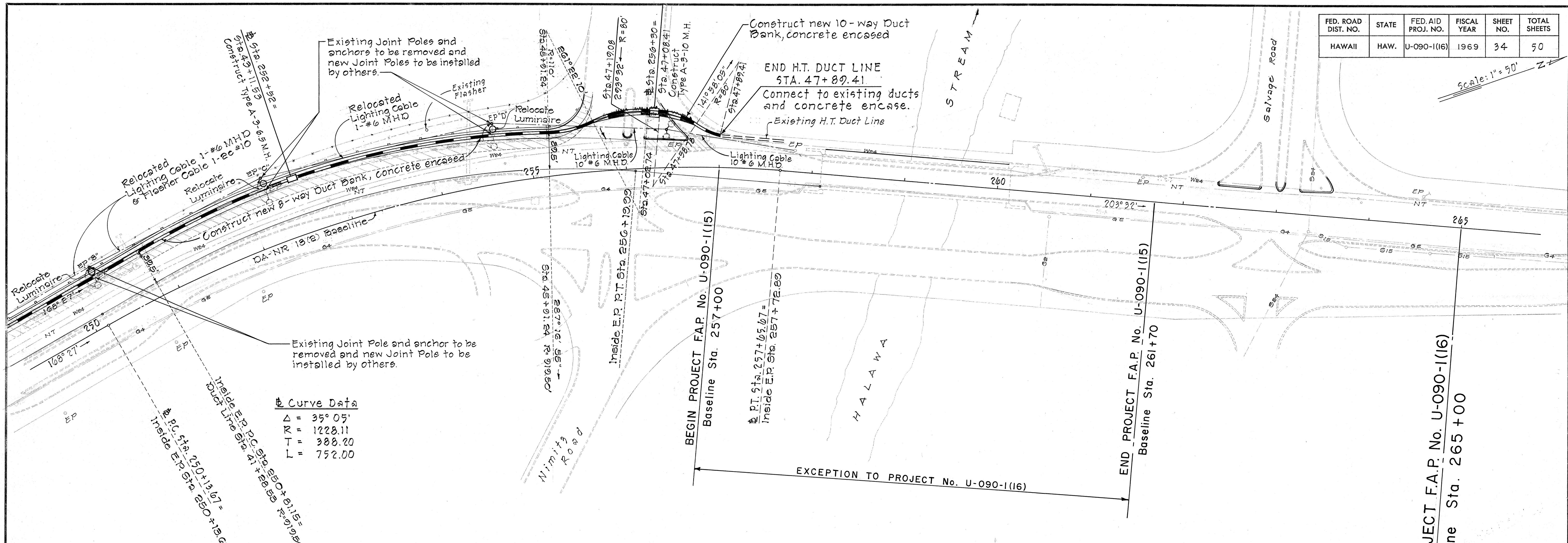
9/10/69  
DATE

9-12-69  
DATE

March , 1969



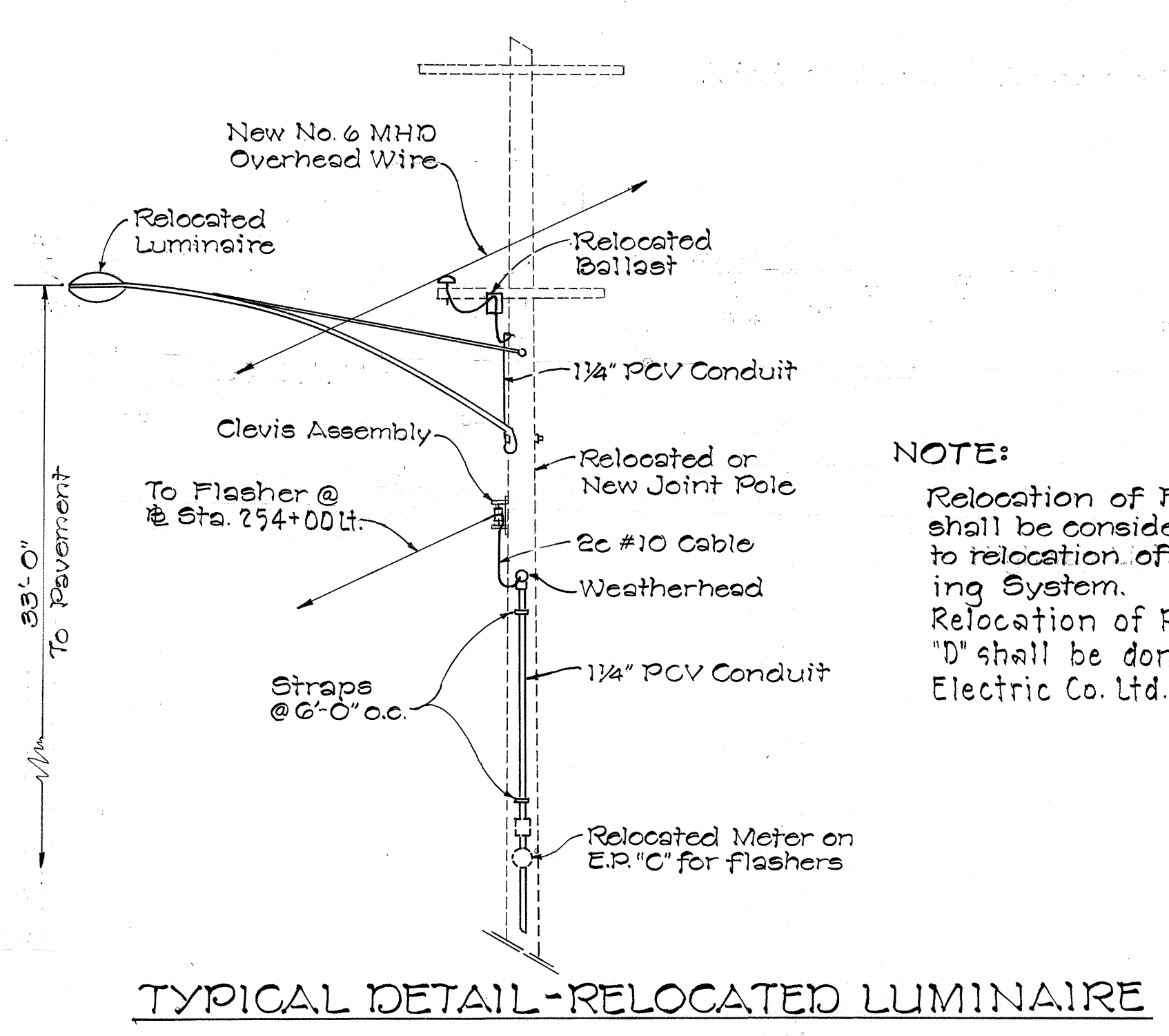
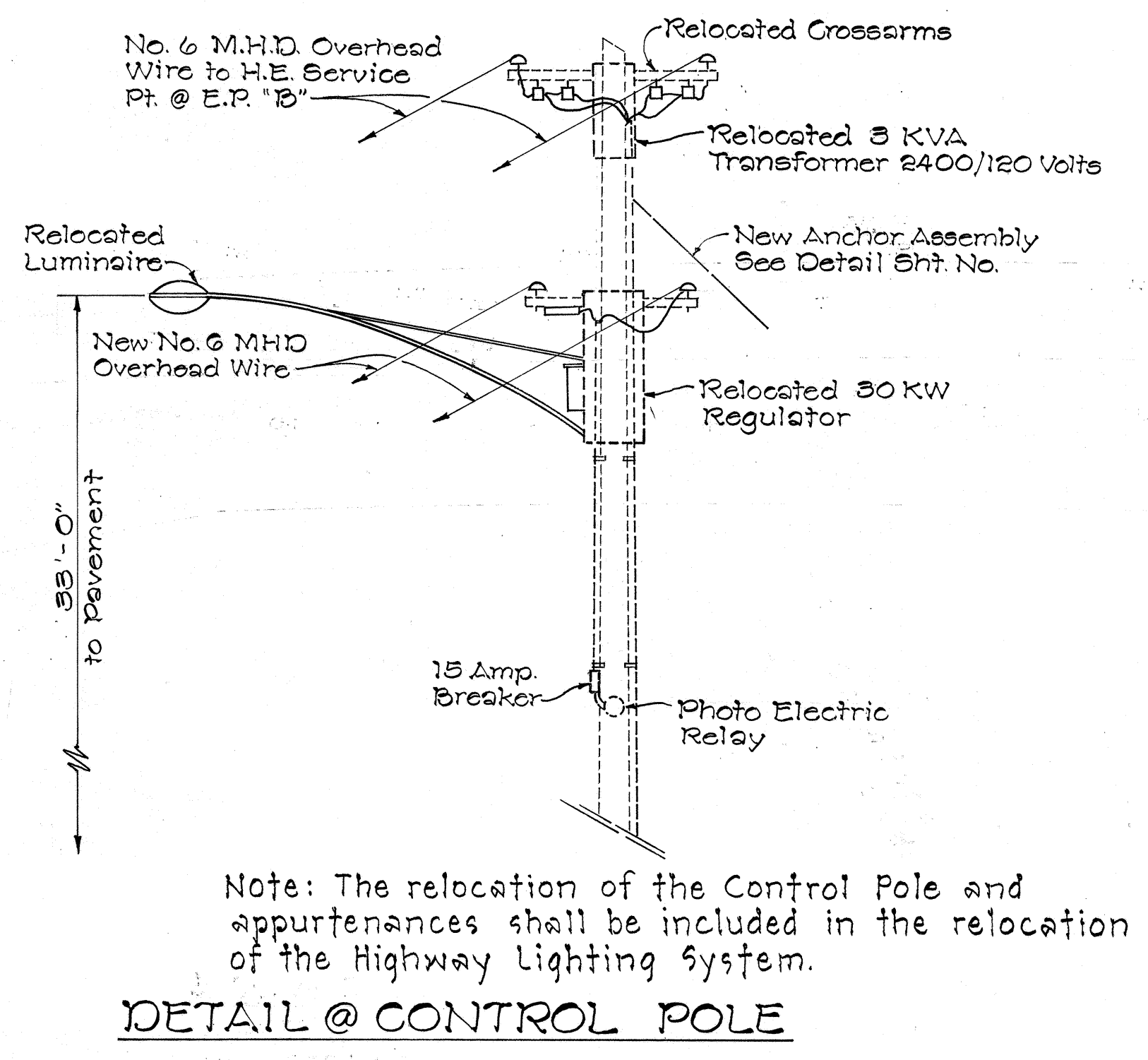
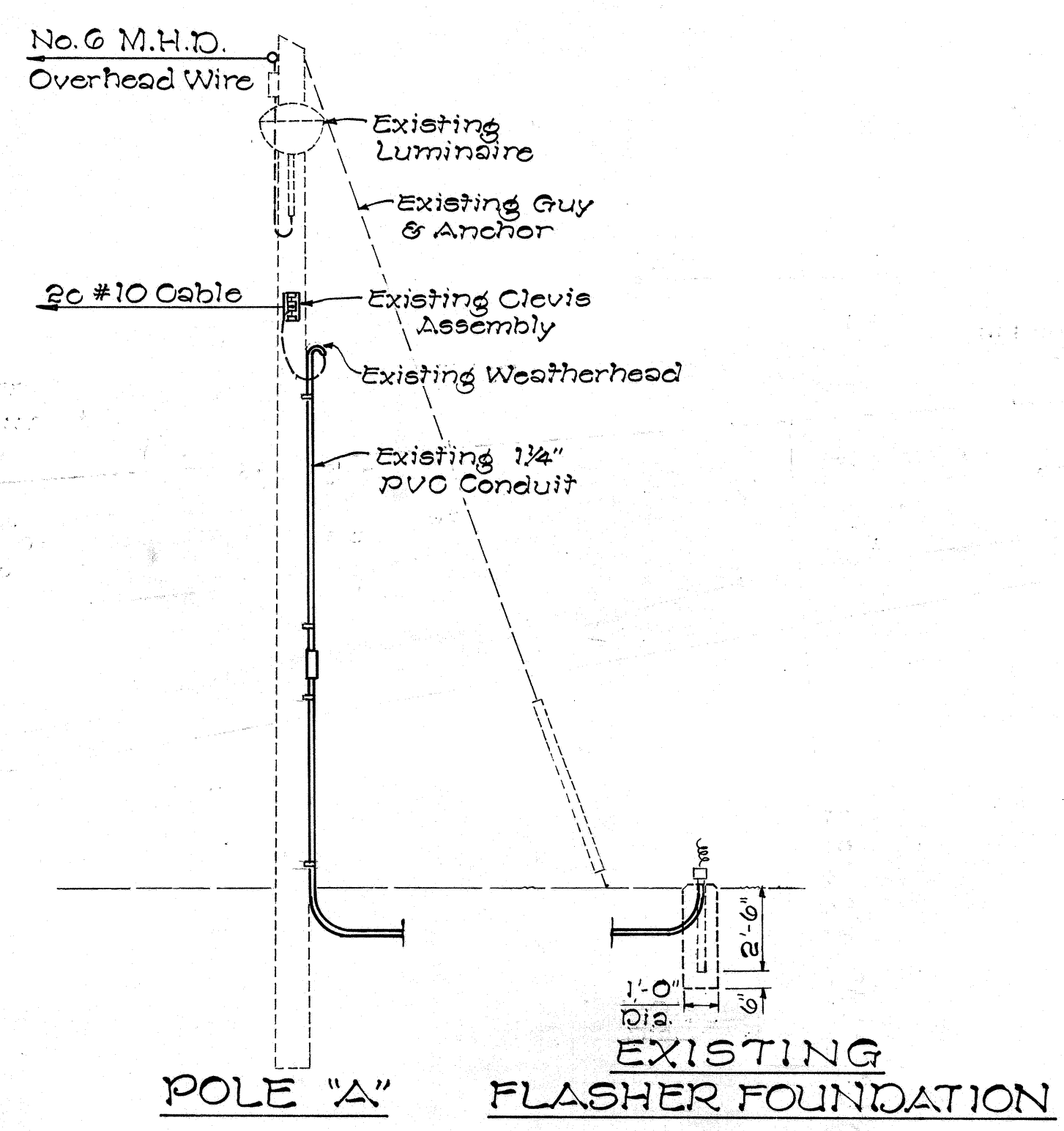
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-1(16)        | 1969        | 34        | 50           |



**Curve Data**

|          |                  |
|----------|------------------|
| $\Delta$ | $35^{\circ} 05'$ |
| $R$      | 1228.11          |
| $T$      | 388.20           |
| $L$      | 752.00           |

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DESIGNED BY   |      |
| CHECKED BY    |      |
| NOTED BY      |      |
| NO.           |      |



**NOTE:**  
Relocation of Flasher Cable shall be considered incidental to relocation of Highway Lighting System.  
Relocation of Poles "B", "C" and "D" shall be done by Hawaiian Electric Co. Ltd.

APPROVED: *[Signature]* *[Signature]* *[Signature]*  
HAWAIIAN ELECTRIC CO., LTD. *[Signature]* *[Signature]*  
HAWAIIAN TELEPHONE CO. *[Signature]*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**UTILITIES  
HIGHWAY LIGHTING**  
PROJ. NO. U-090-1(16)  
Scale As Noted March, 1969  
SHEET No. 3 OF 11 SHEETS

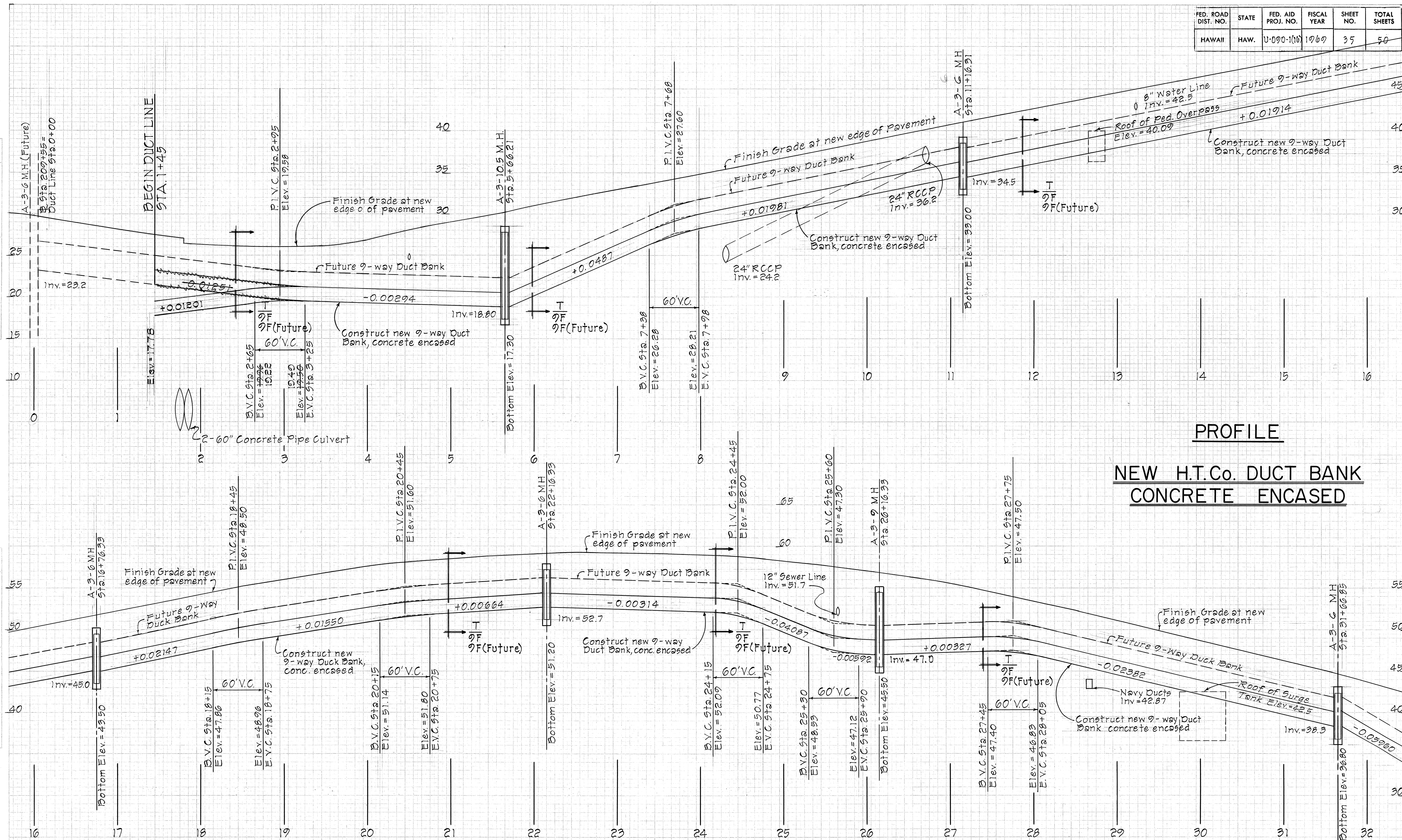
**HIGHWAY LIGHTING SYSTEM**  
NOT TO SCALE



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-1(10)        | 1969        | 35        | 50           |

| DATE | BY |
|------|----|
|      |    |
| DATE | BY |
|      |    |
| DATE | BY |
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| DATE | BY |
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| DATE | BY |
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| DATE | BY |
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| DATE | BY |
|      |    |
| DATE | BY |
|      |    |
| DATE | BY |
|      |    |
| DATE | BY |
|      |    |



## PROFILE

## NEW H.T.Co. DUCT BANK CONCRETE ENCASED

APPROVED:  
  
 HAWAIIAN TELEPHONE CO. DATE 7-12-69

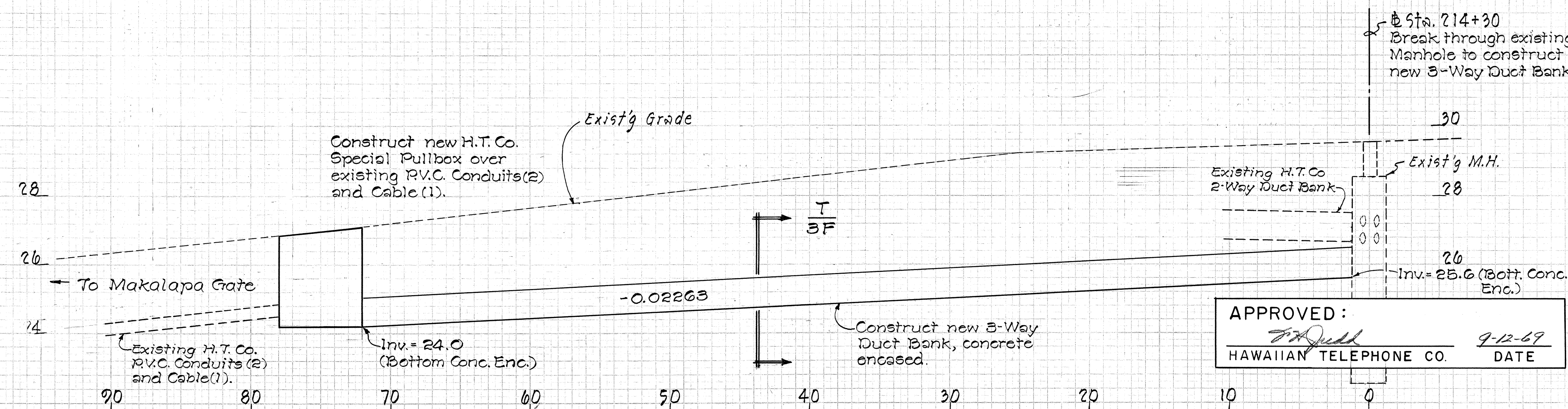
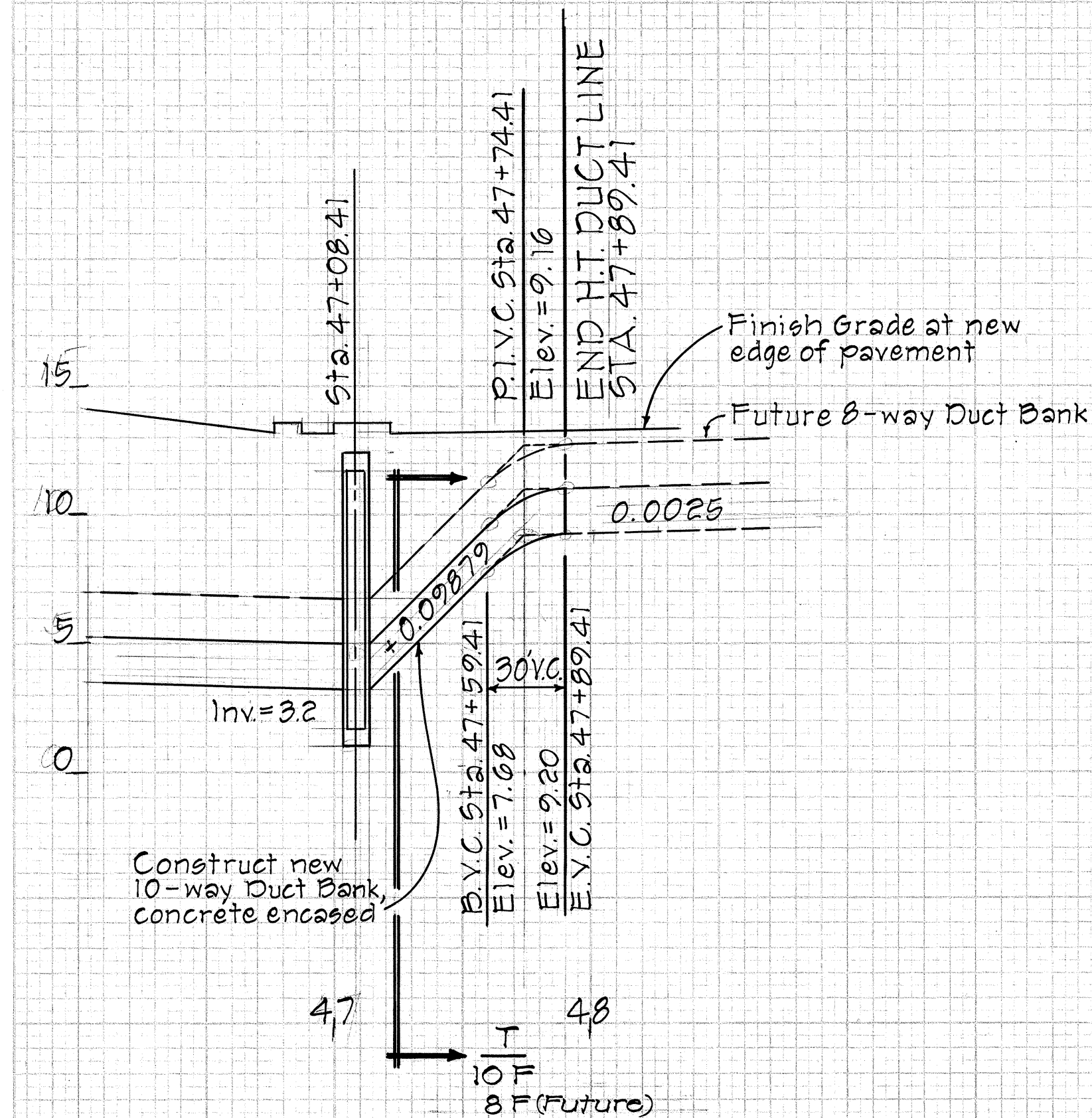
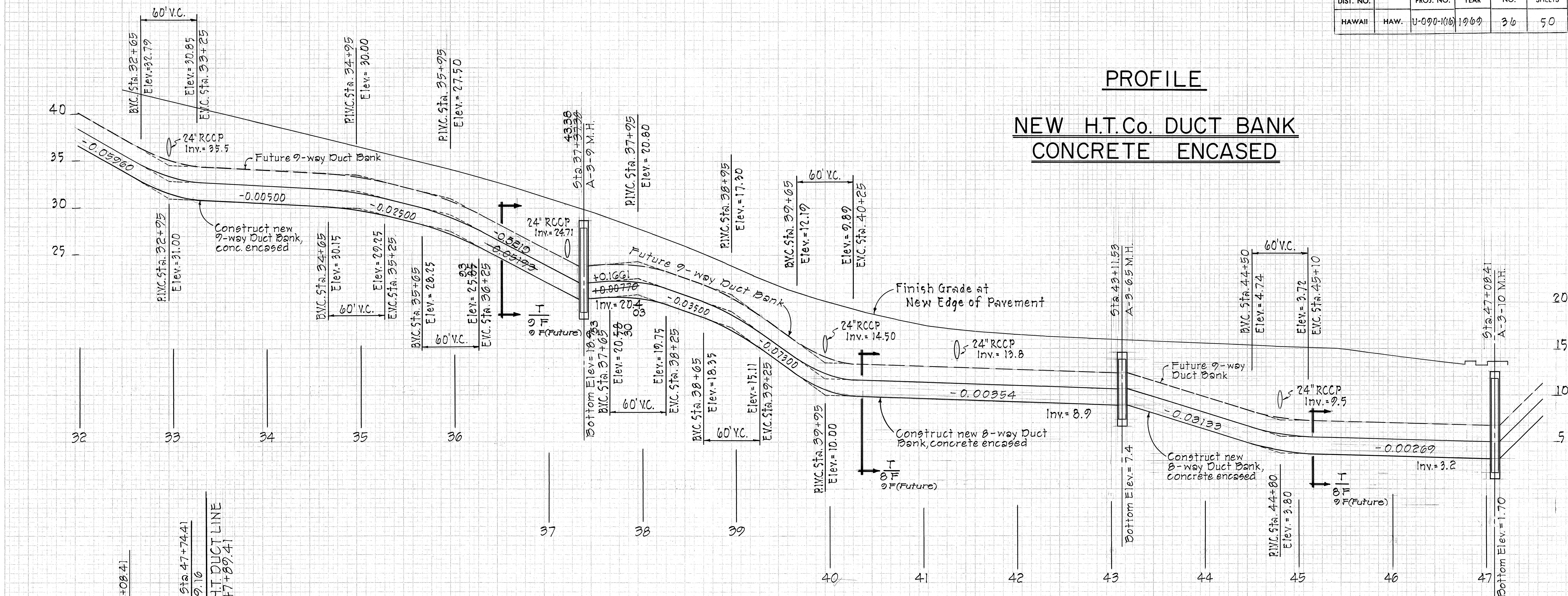
SHEET NO. 4 OF 11 SHEETS



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-1(16)        | 1969        | 36        | 50           |

## PROFILE

### NEW H.T.Co. DUCT BANK CONCRETE ENCASED



## PROFILE

### LOWERING OF EXISTING 4" H.T.Co. DUCTS @ MAKALAPA GATE

APPROVED: *[Signature]*  
HAWAIIAN TELEPHONE CO. DATE 9-12-69

SHEET NO 5 OF 11 SHEETS

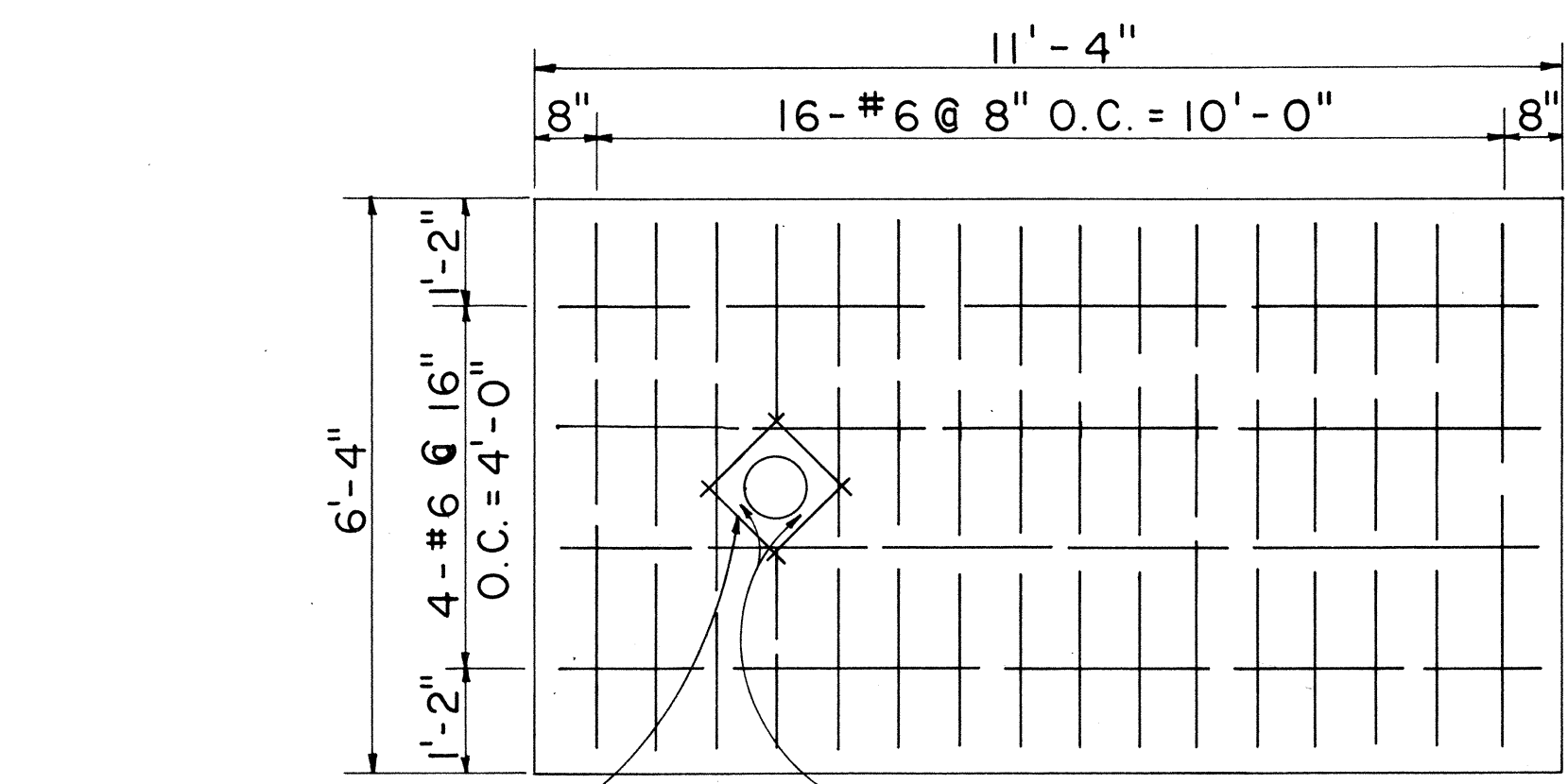


|                  |                         |  |            |  |
|------------------|-------------------------|--|------------|--|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY _____ |  | DATE _____ |  |
|                  | DRAWN BY _____          |  |            |  |
| NOTE BOOK        | TRACED BY _____         |  | BY _____   |  |
|                  | DESIGNED BY _____       |  | BY _____   |  |
|                  | QUANTITIES BY _____     |  | BY _____   |  |
|                  | CHECKED BY _____        |  | BY _____   |  |

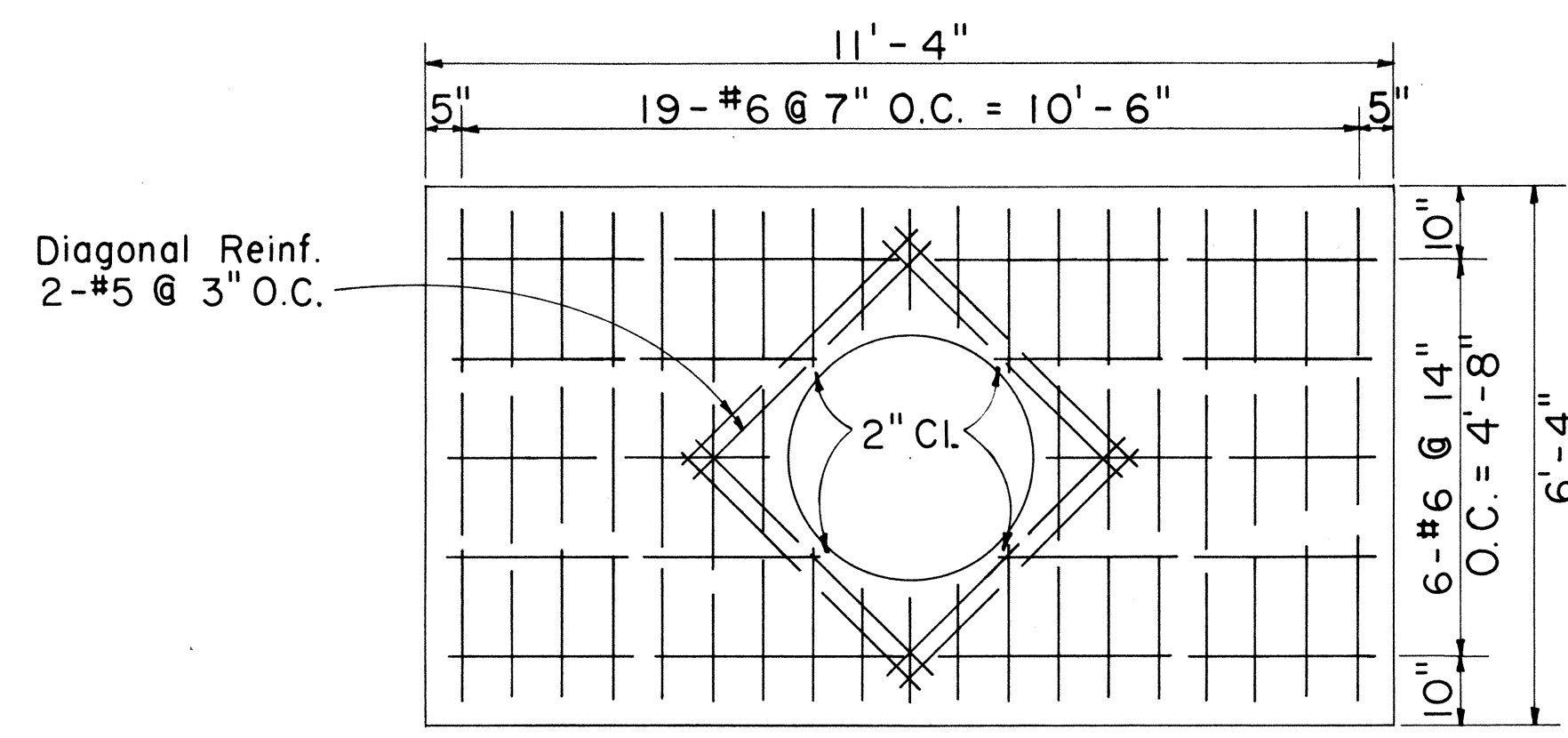




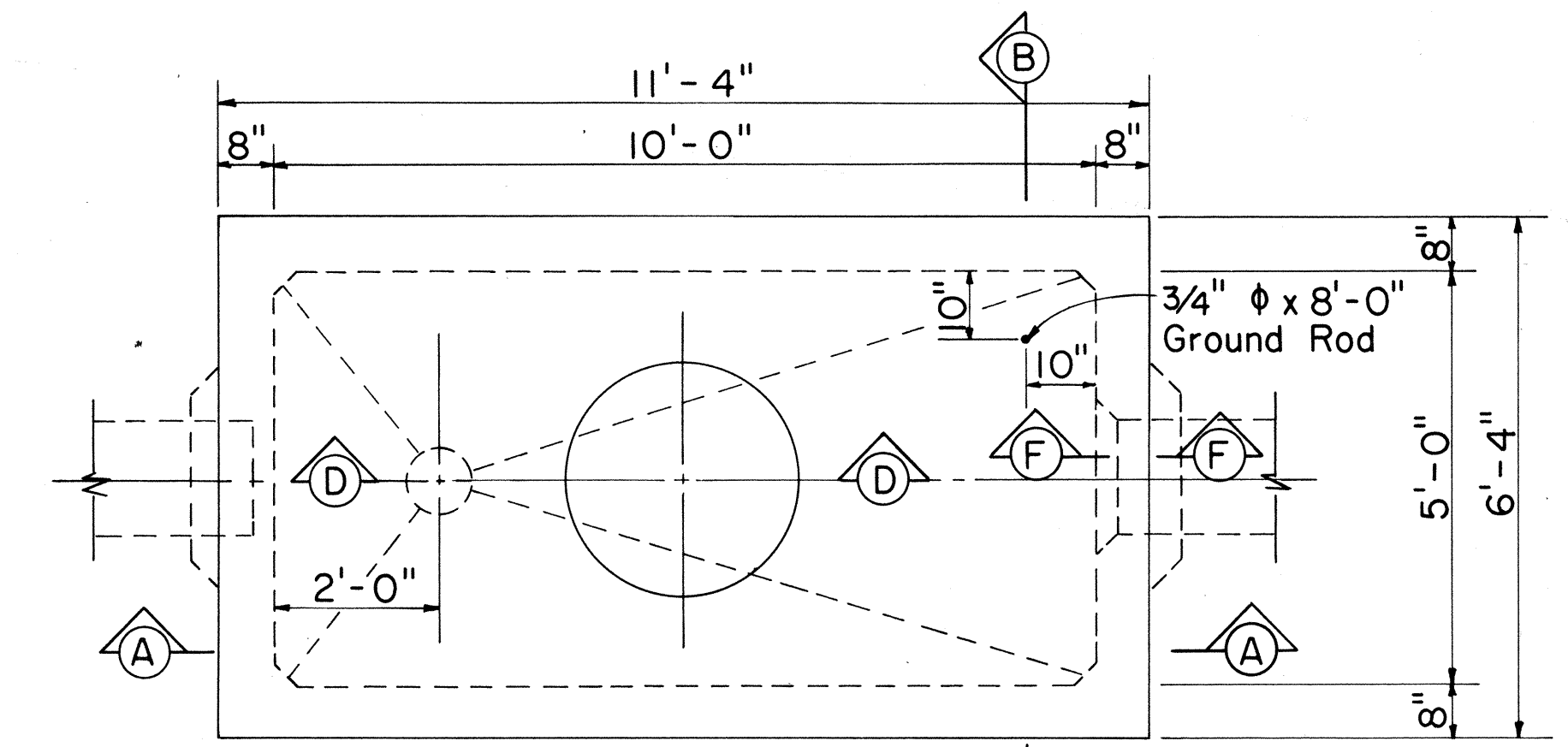
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-1(16)        | 1967        | 38        | 50           |



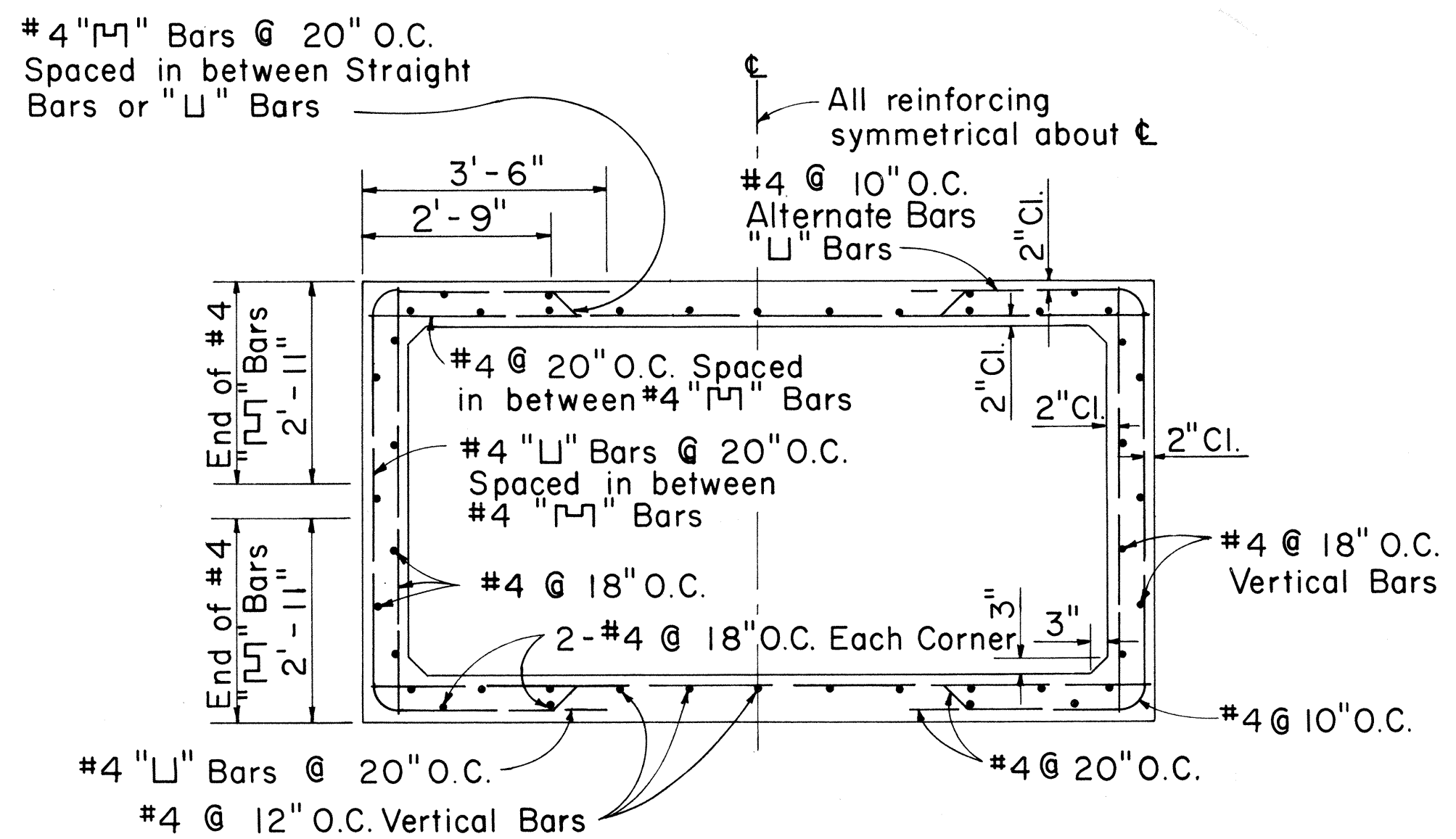
**FLOOR SLAB REINF. PLAN**  
Scale: 1/2" = 1'-0"



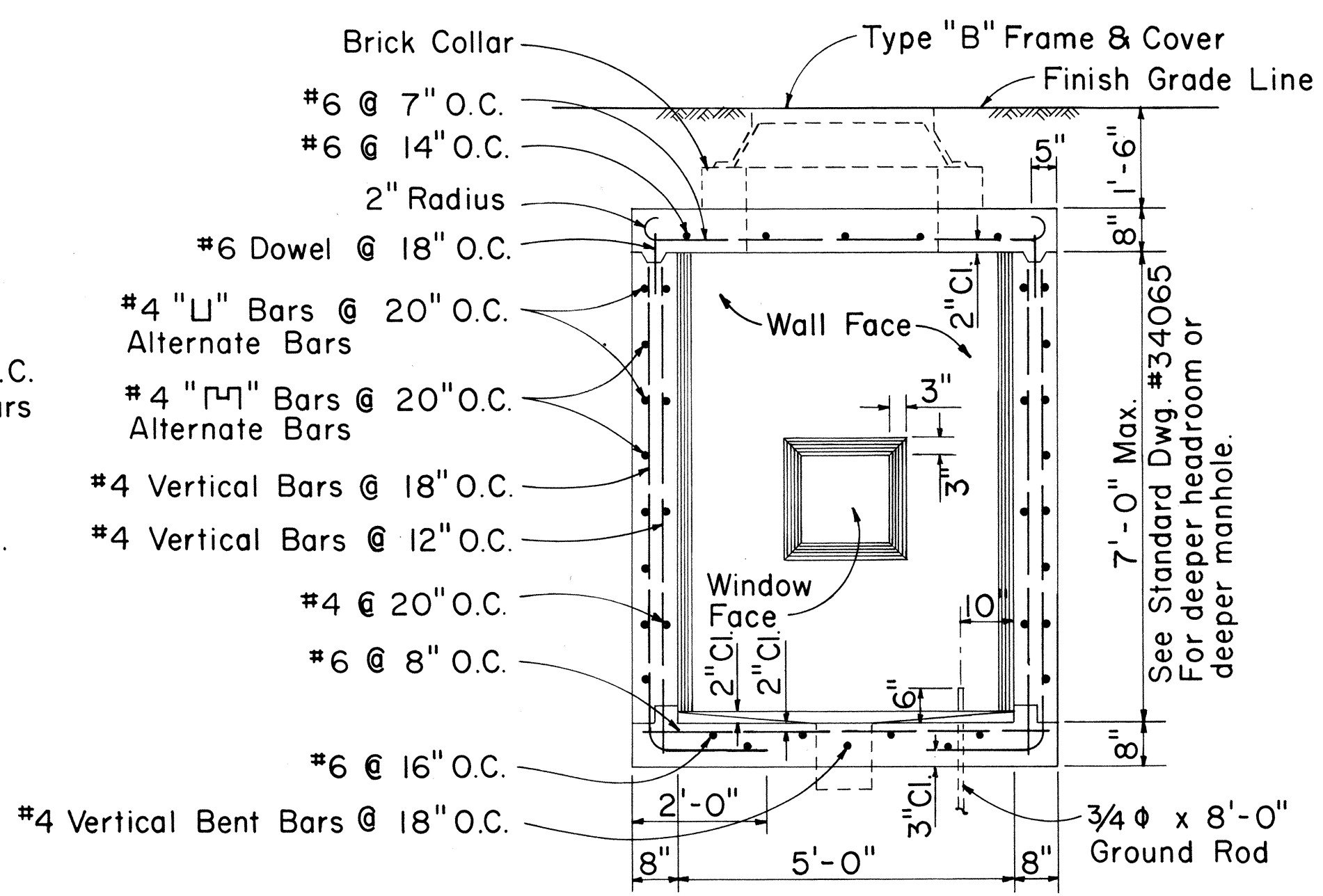
**ROOF SLAB REINF. PLAN**  
Scale: 1/2" = 1'-0"



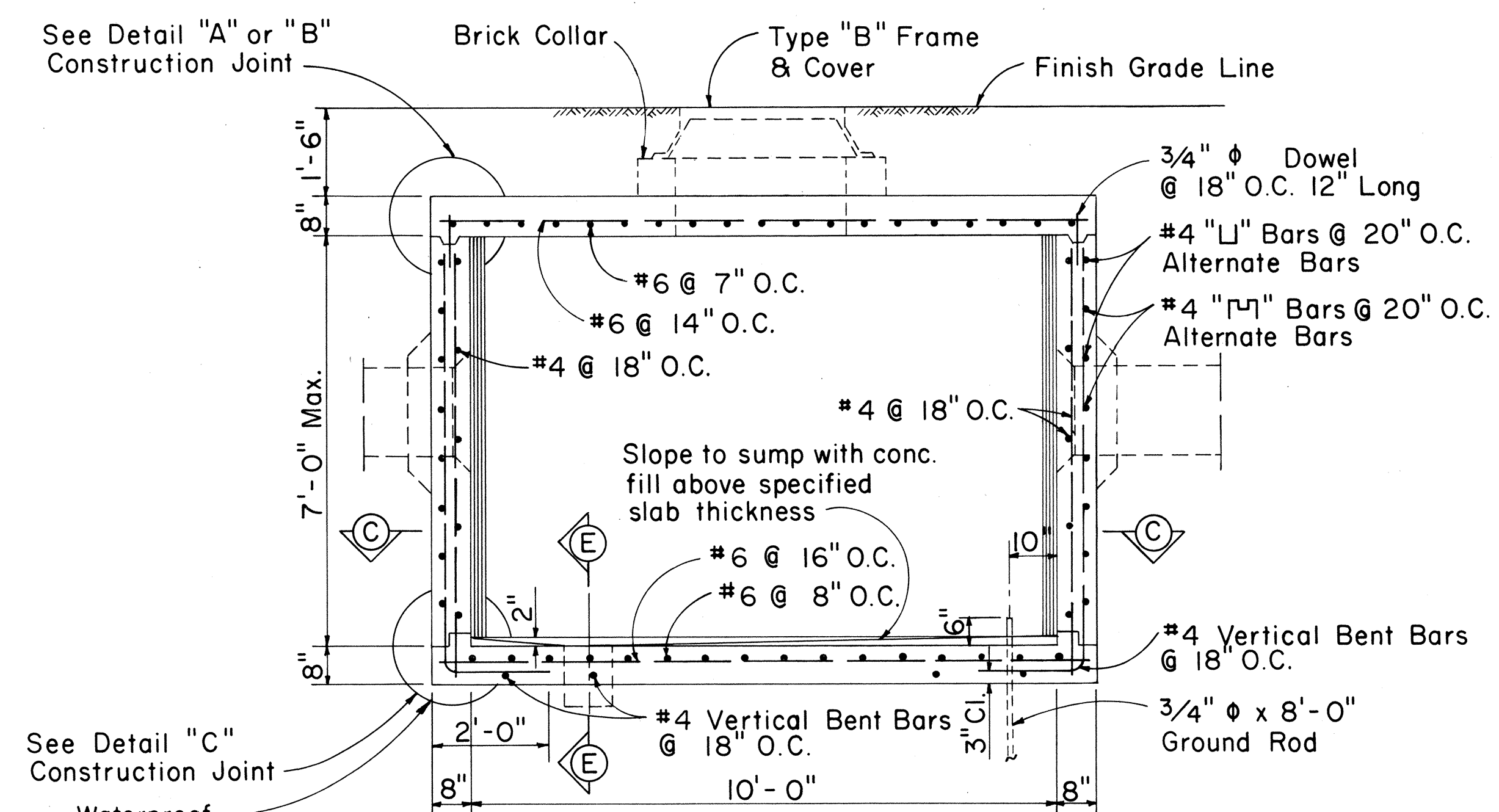
**PLAN-M.H. TYPE "A-3" SERIES  
FOR ROADWAY & SIDEWALK AREAS**  
Scale: 1/2" = 1'-0"



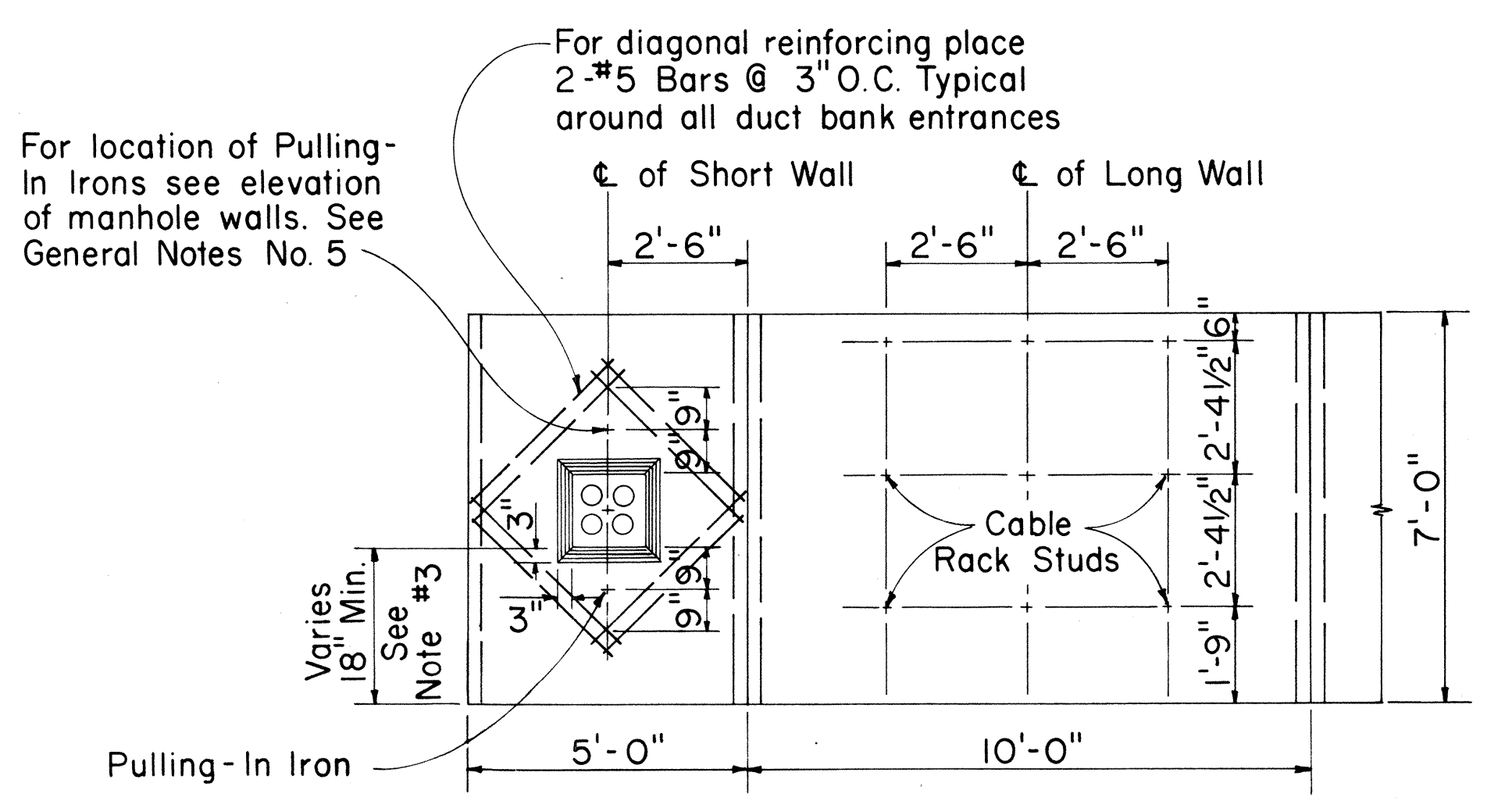
**SECTION "C-C"**  
Scale: 1/2" = 1'-0"



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



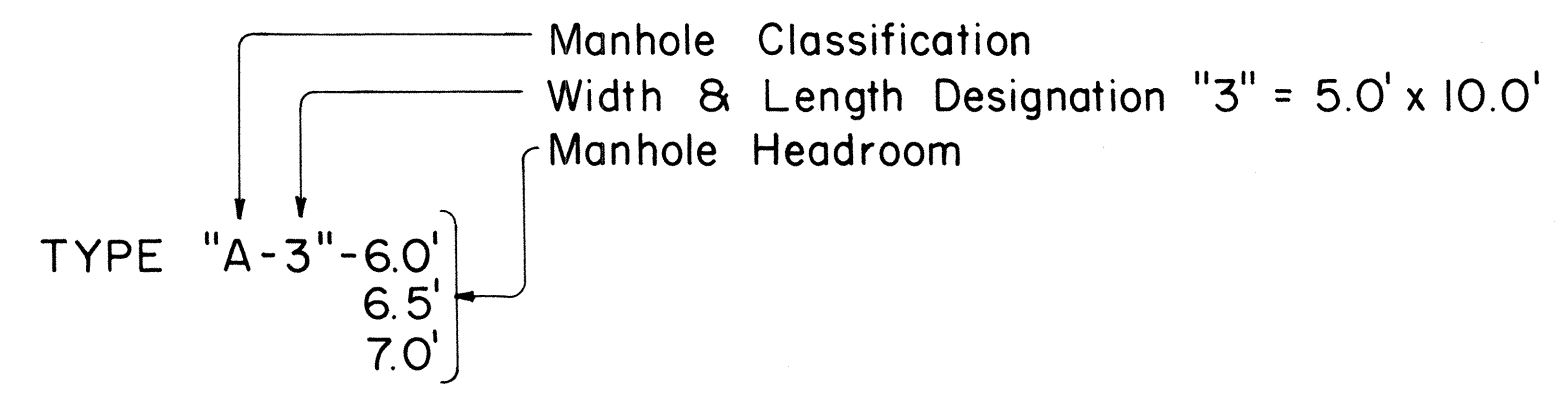
**SECTION "A-A"**  
Scale: 1/2" = 1'-0"



**ELEVATION OF M.H. WALLS - TYPE "A-3" SERIES**  
(OPPOSITE FACES SIMILAR)  
Scale: 3/8" = 1'-0"

**GENERAL NOTES:**

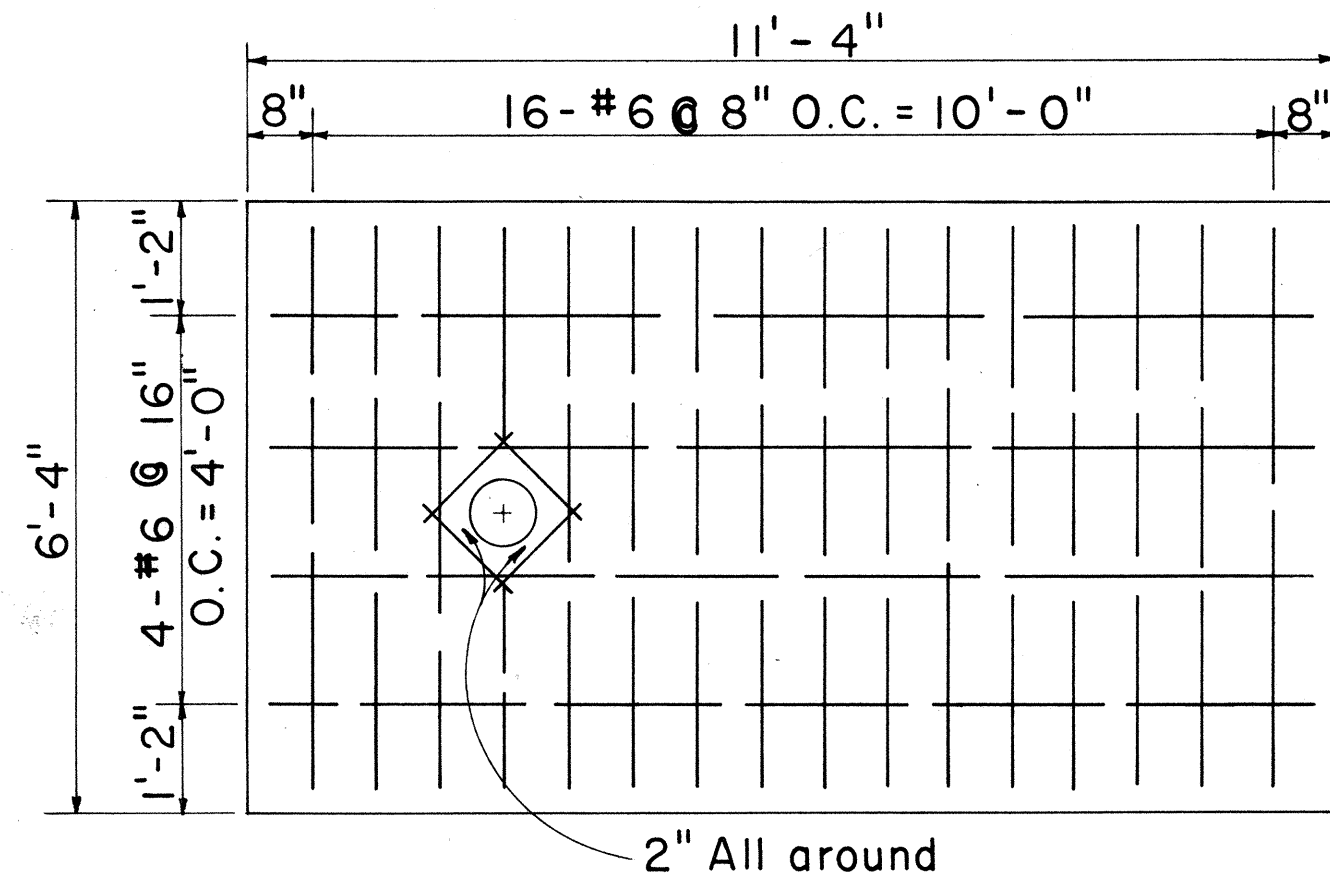
- Design Data:  
fs = 20,000 psi; fc = 3,000 psi; fc = 1,350 psi; n = 10  
w = Equivalent Fluid Pressure: 30#/ft<sup>2</sup>
- All Construction Joints shall be waterproofed with two applications of Thoro Seal or equal.
- For Duct Window location see Plan Profile Sheets for Elevations.
- Duct Window to 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.



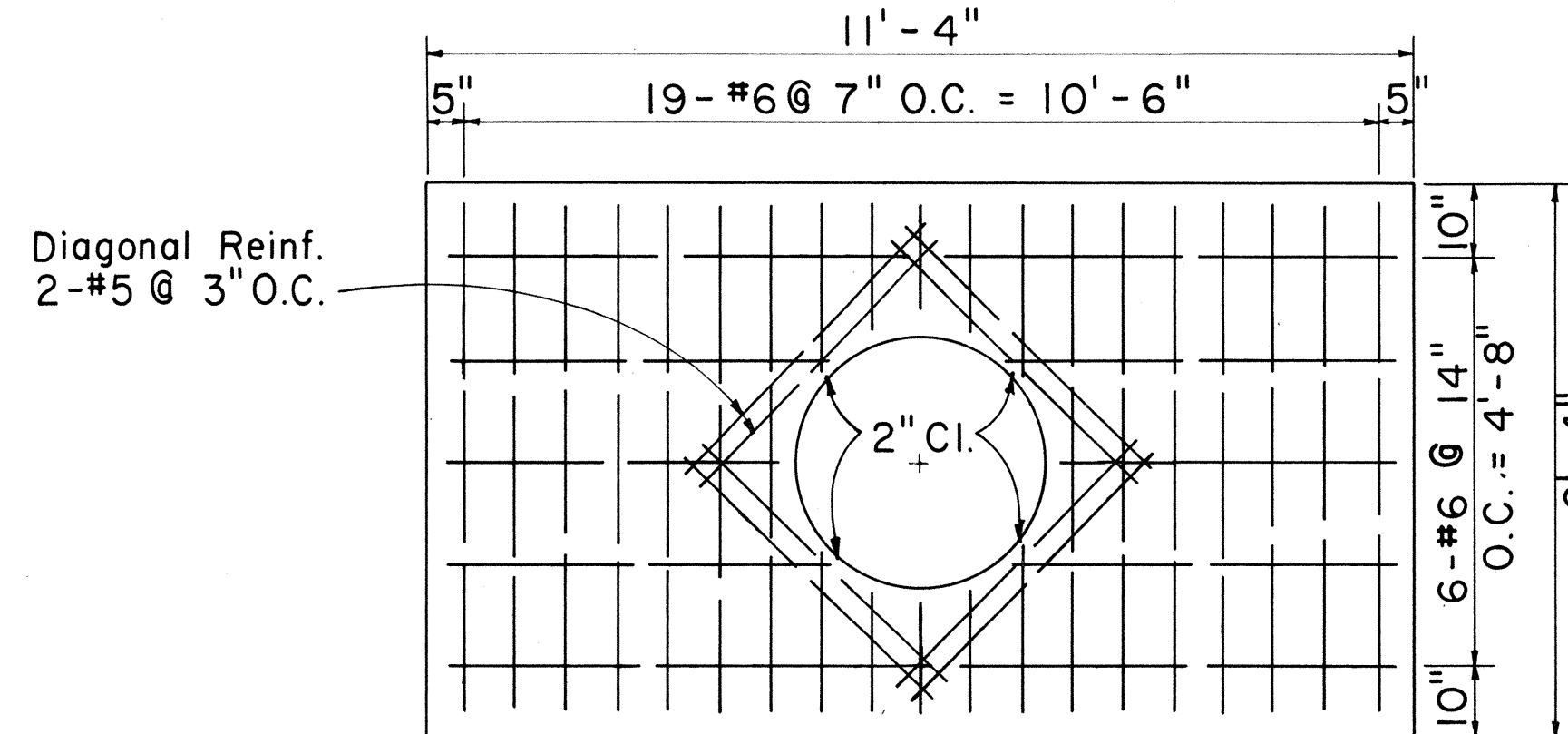
APPROVED: \_\_\_\_\_  
Hawaiian Telephone Co., Ltd. Date: 9-12-69  
H.T. Co., Ltd. Drawing No. 34064  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**TYPE "A-3" MANHOLES  
FOR 6.0' TO 7.0'  
HEADROOM**  
Scale: As Noted Date: \_\_\_\_\_  
SHEET No. 7 OF 11 SHEETS



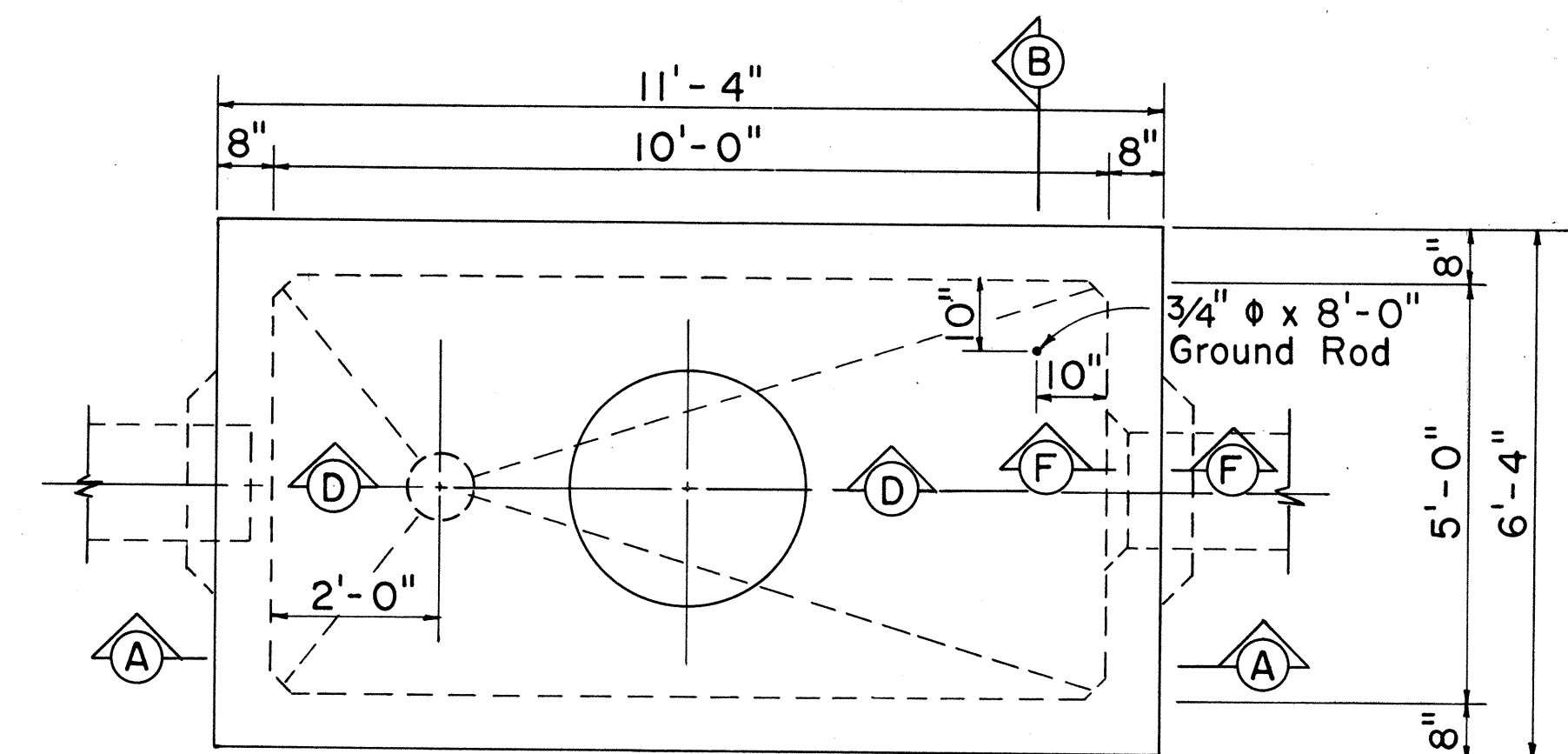
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-1(16)        | 1969        | 39        | 50           |



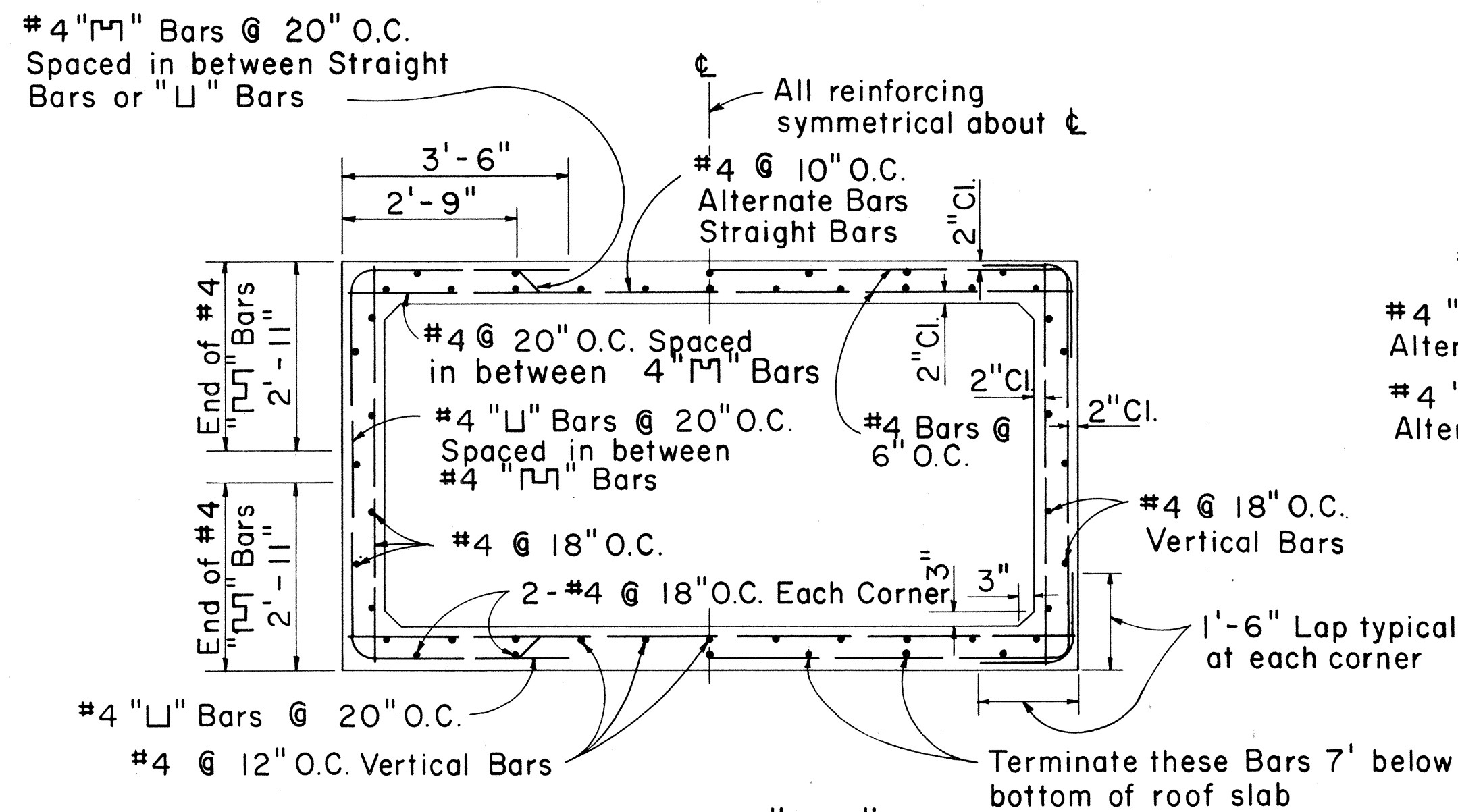
**FLOOR SLAB REINF. PLAN**  
Scale: 1/2" = 1'-0"



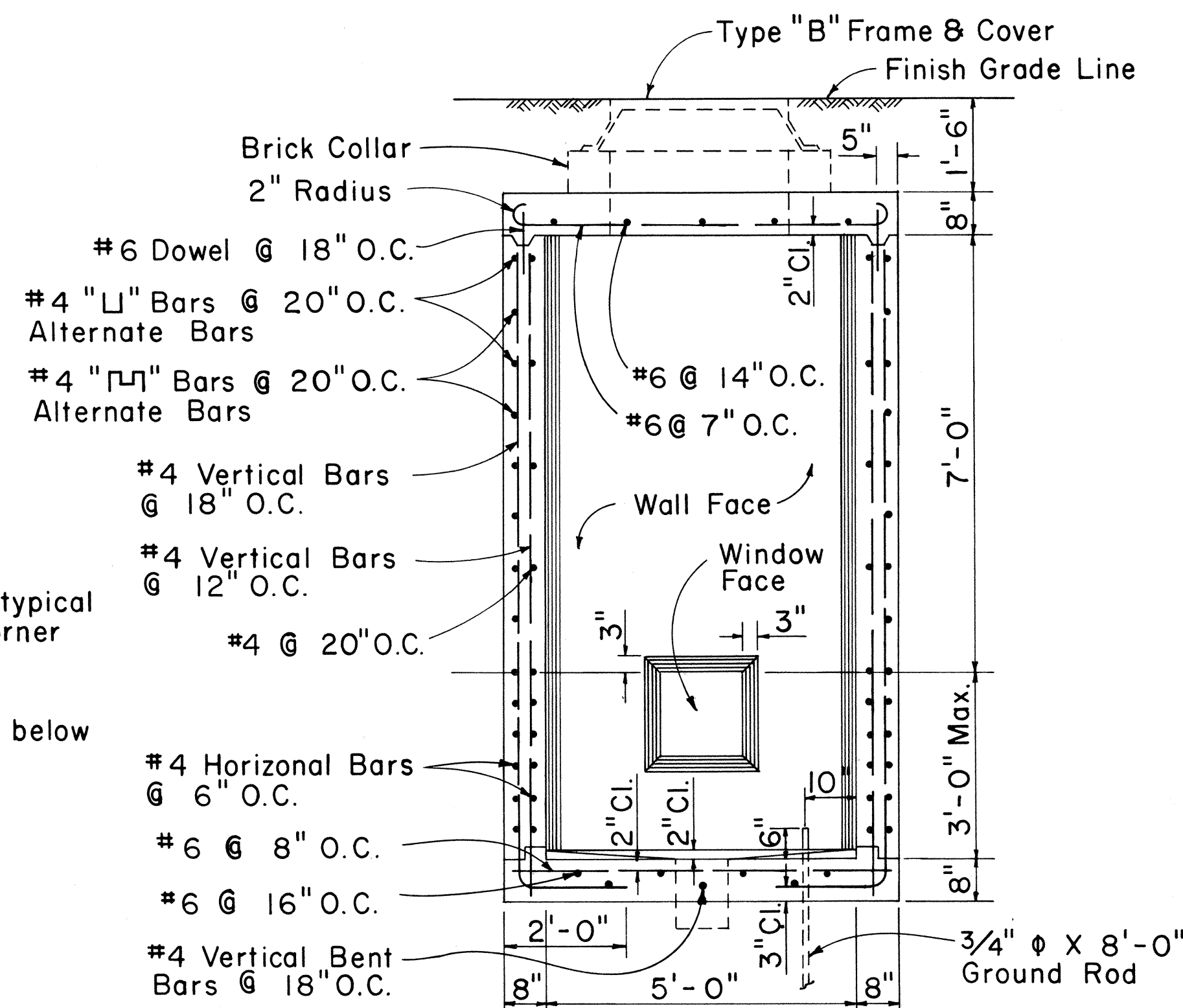
**ROOF SLAB REINF. PLAN**  
Scale: 1/2" = 1'-0"



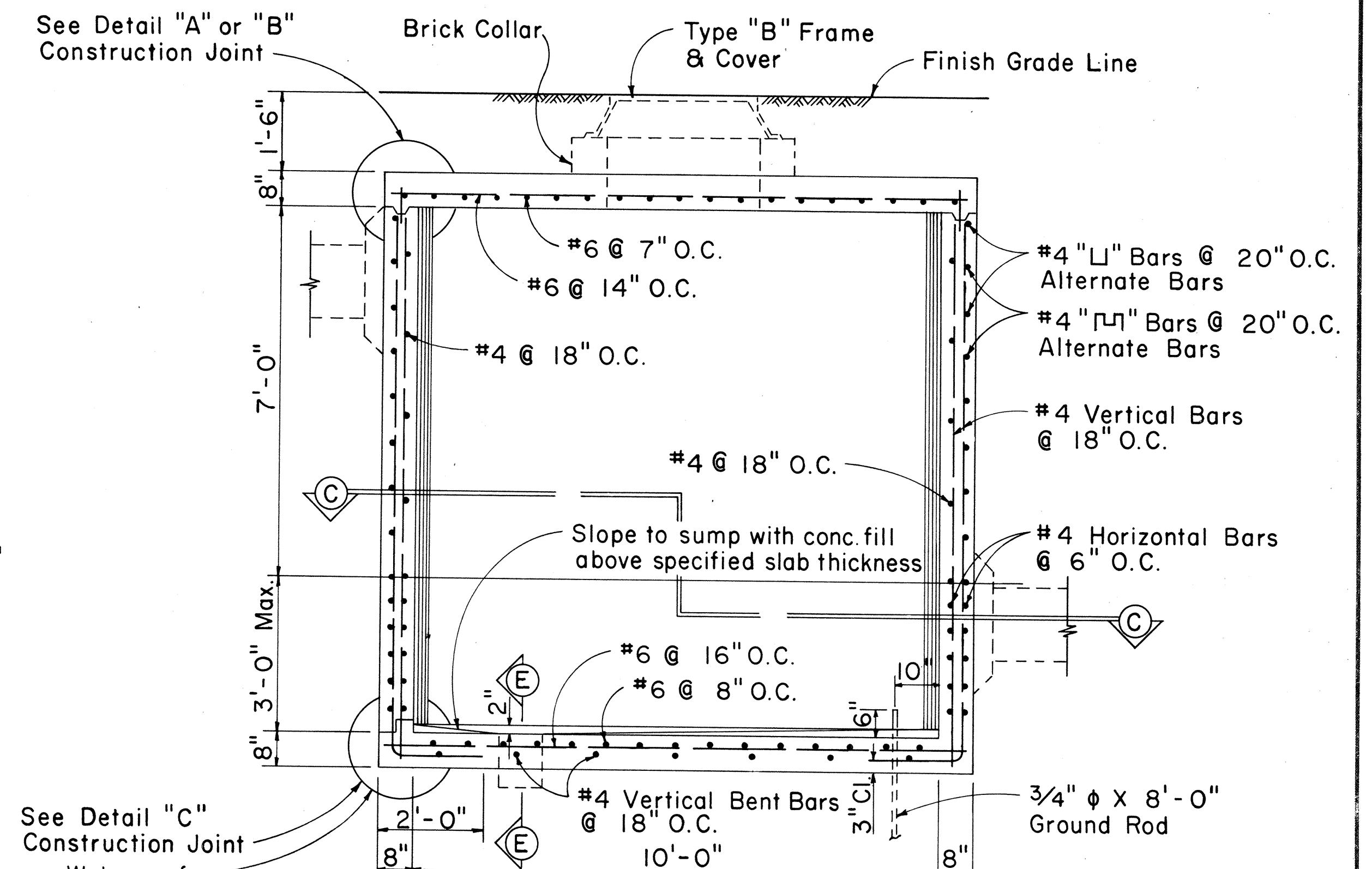
**PLAN - M.H. TYPE "A-3" SERIES  
FOR ROADWAY & SIDEWALK AREAS**  
Scale: 1/2" = 1'-0"



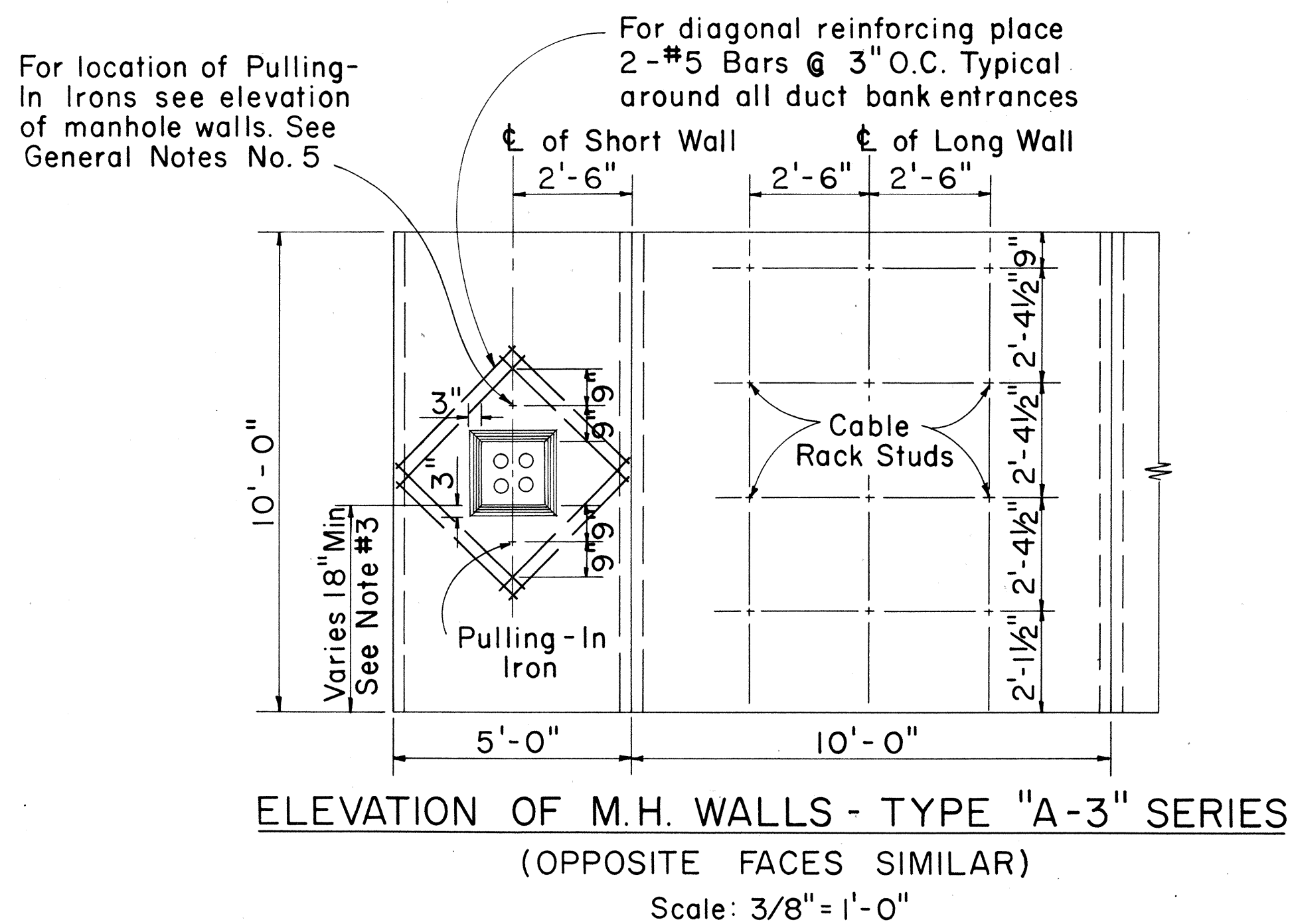
**SECTION "C-C"**  
Scale: 1/2" = 1'-0"



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

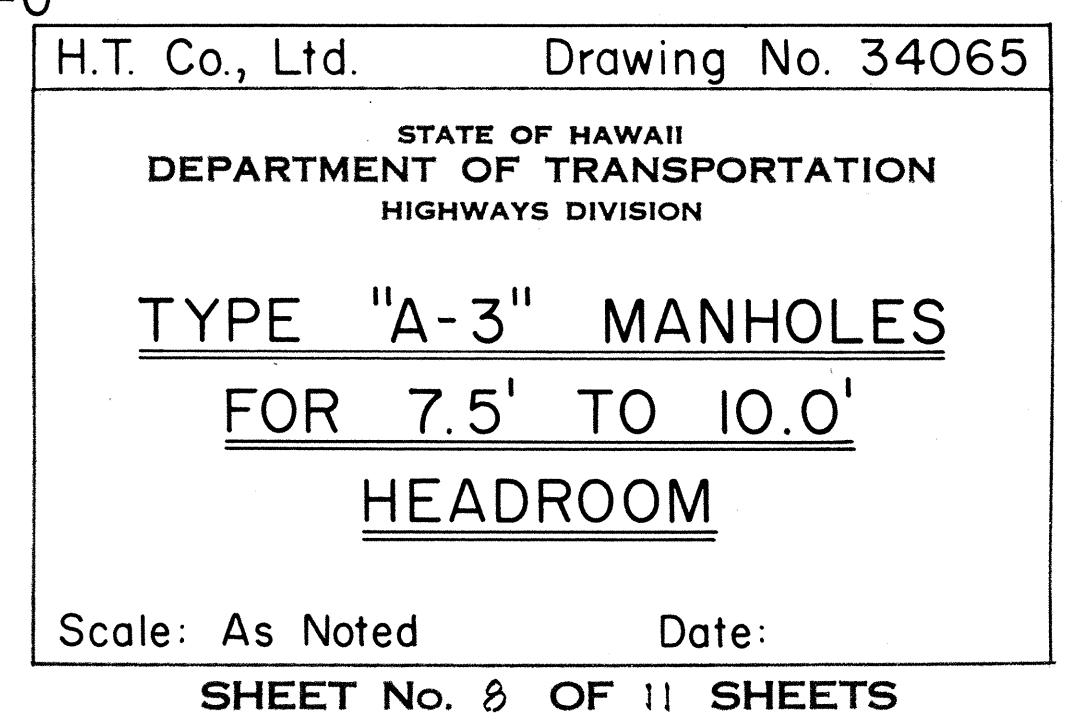
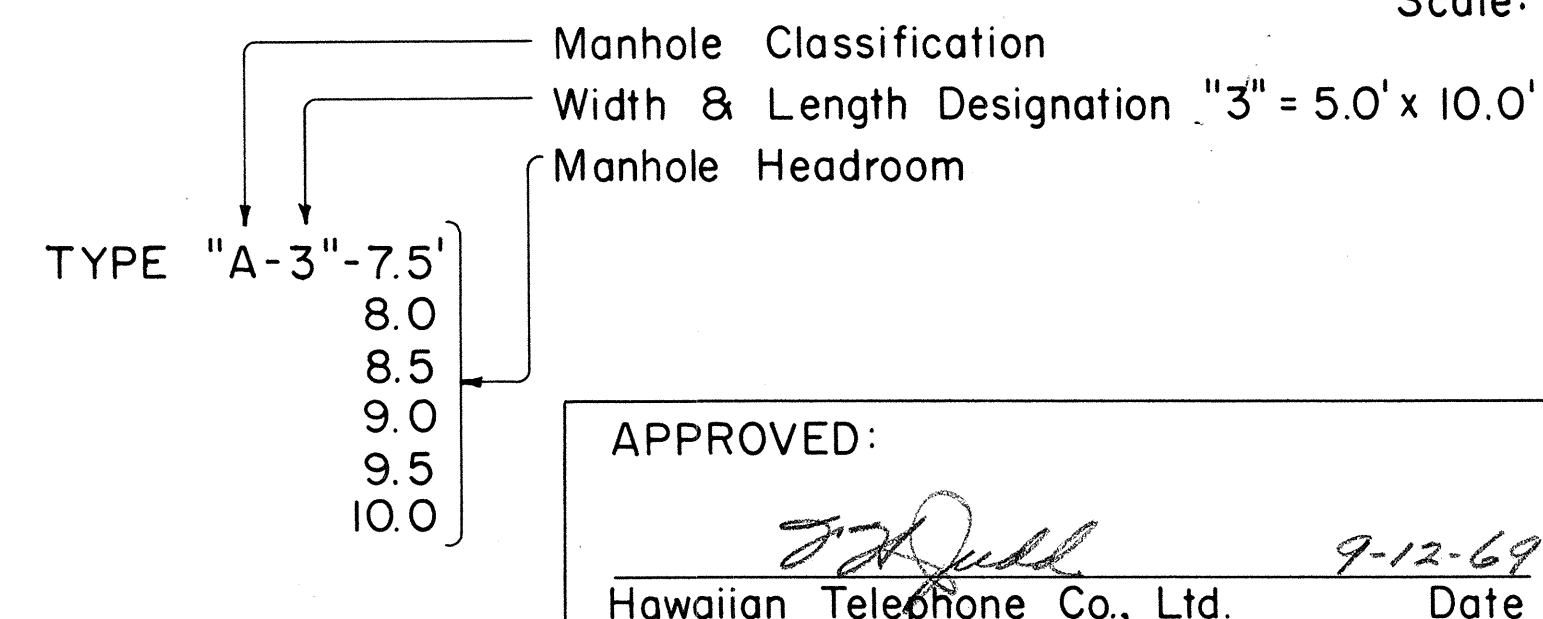


**SECTION "A-A"**  
Scale: 1/2" = 1'-0"



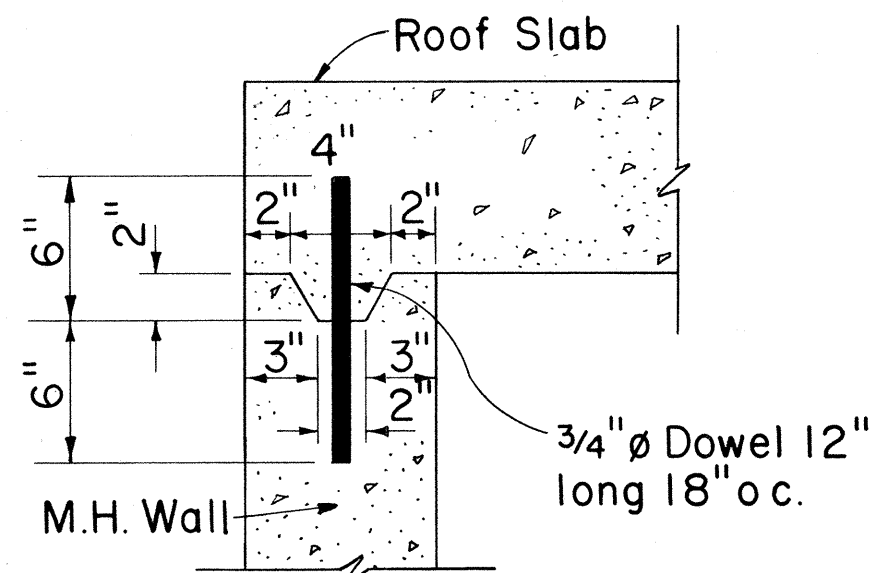
### GENERAL NOTES:

- Design Data:  
fs = 20,000 psi; fc = 3,000 psi; fc = 1,350 psi; n = 10  
w = Equivalent Fluid Pressure: 30#/ft<sup>2</sup>
- 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.

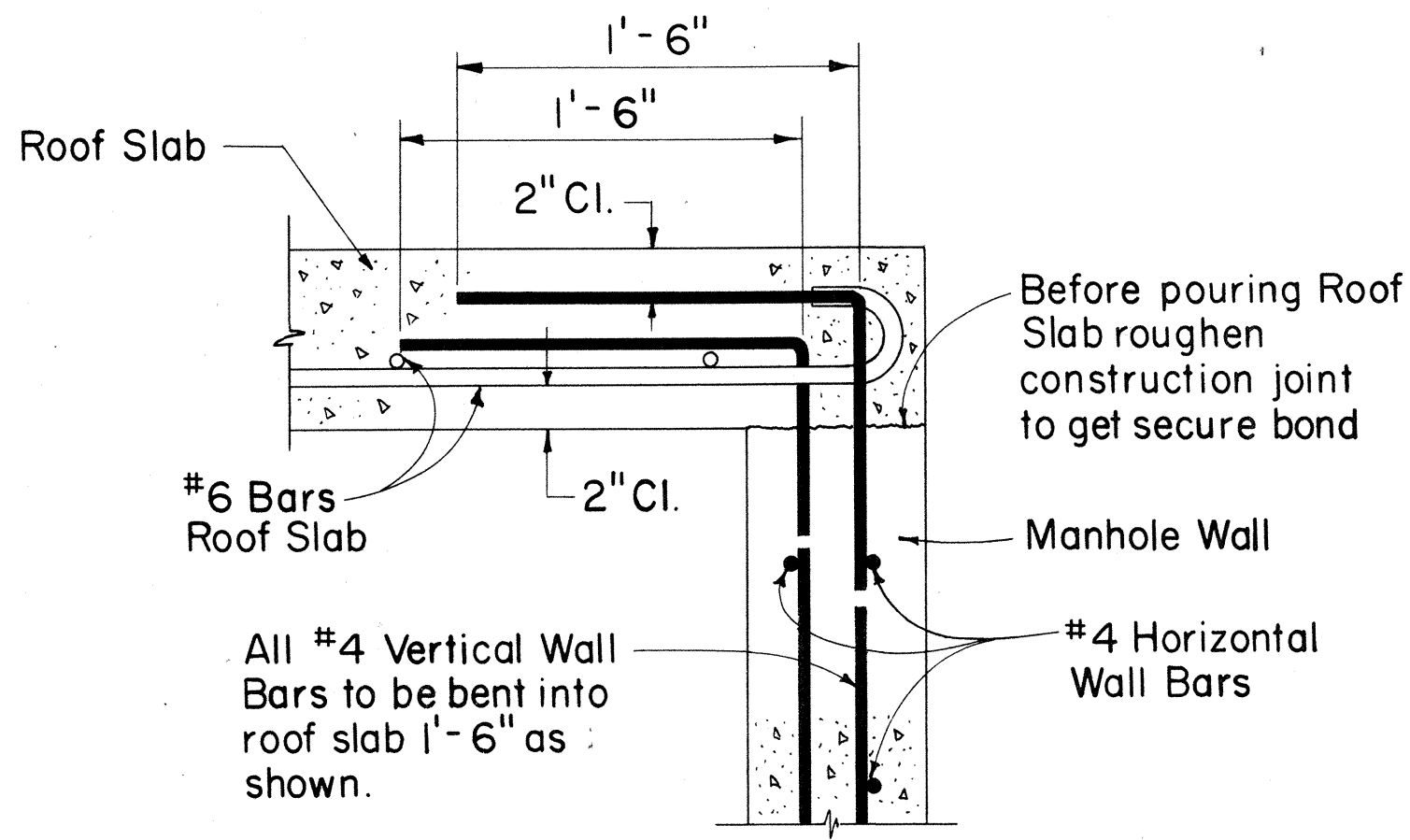




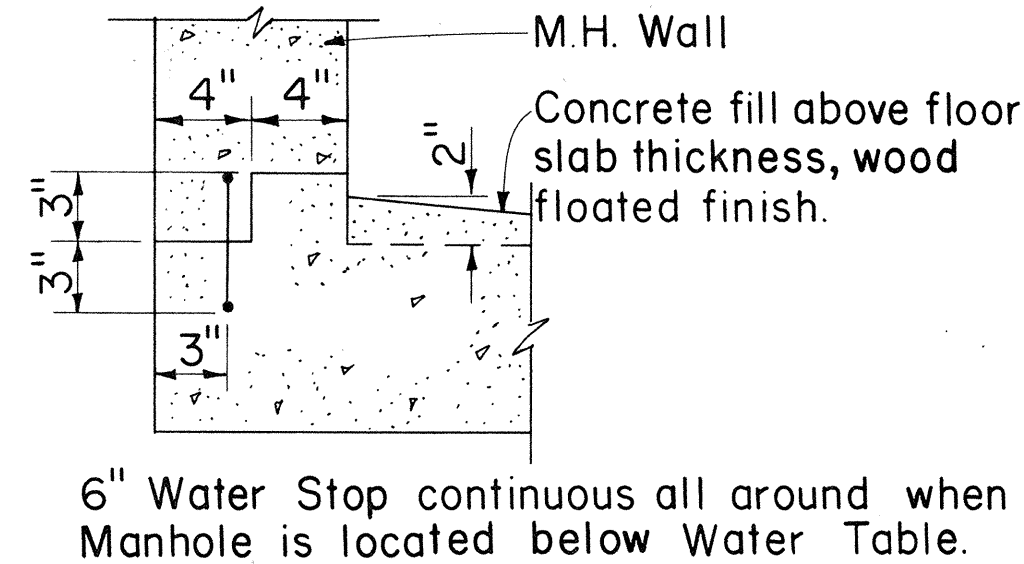
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | U-090-106          | 1969        | 40        | 50           |



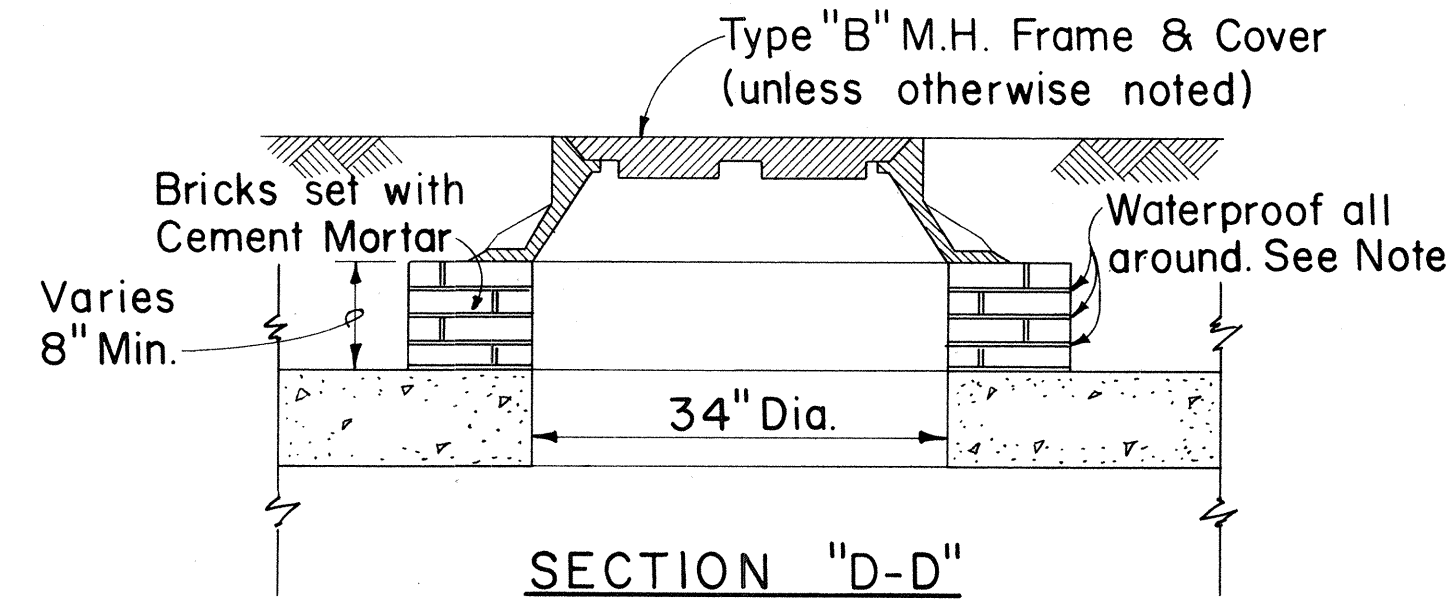
**DETAIL "A"**  
TOP CONSTRUCTION JOINT  
Scale: 1 1/2" = 1'-0"  
(Optional for cast-in-place construction)  
Required for precast construction



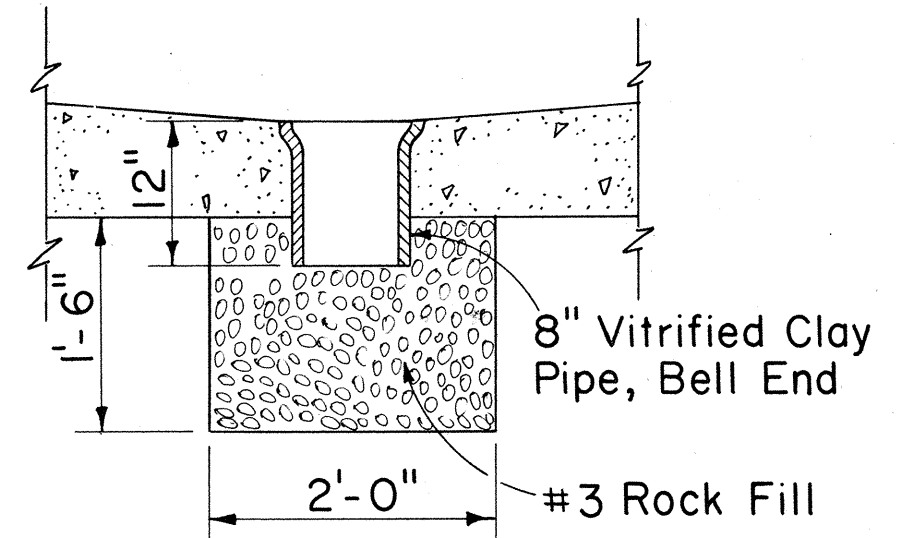
**DETAIL "B"**  
(USED FOR CAST-IN-PLACE CONSTRUCTION)  
Scale: 1 1/2" = 1'-0"



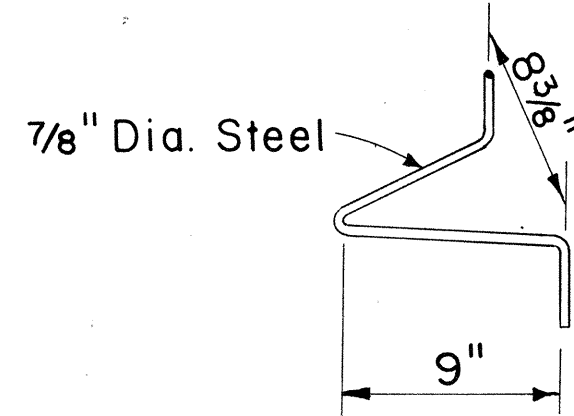
**DETAIL "C"**  
BOTTOM CONSTRUCTION JOINT  
Scale: 1 1/2" = 1'-0"



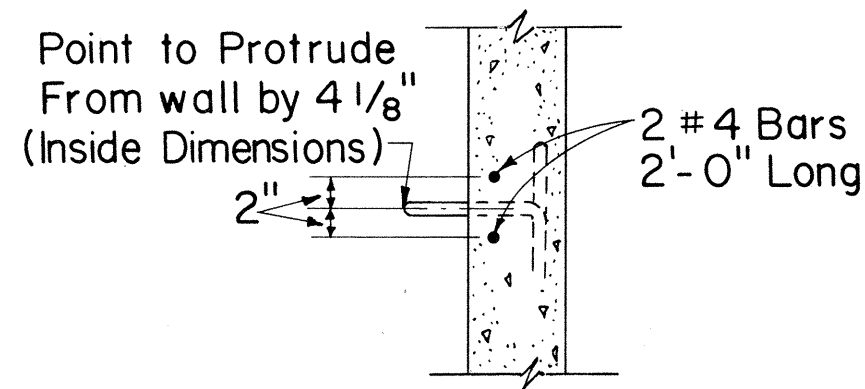
**SECTION "D-D"**  
M.H. COVER DETAIL  
Scale: 3/4" = 1'-0"



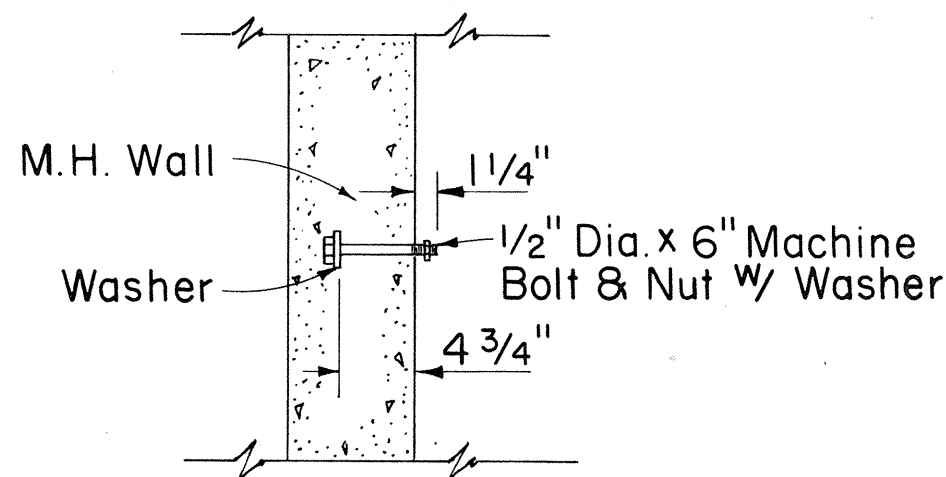
**SECTION "E-E"**  
M.H. SUMP DETAIL  
Scale: 3/4" = 1'-0"  
Note: See Section "E<sub>1</sub>-E<sub>1</sub>" Below



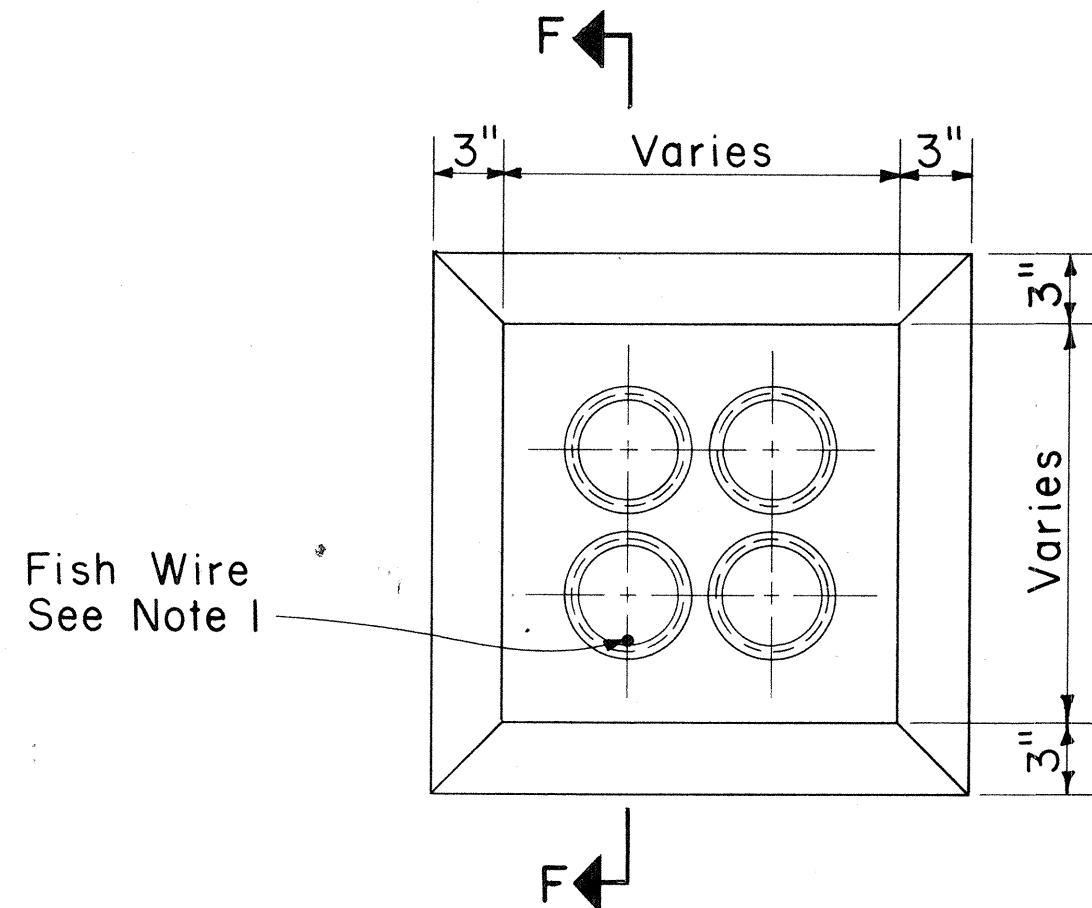
**PULLING-IN IRON**



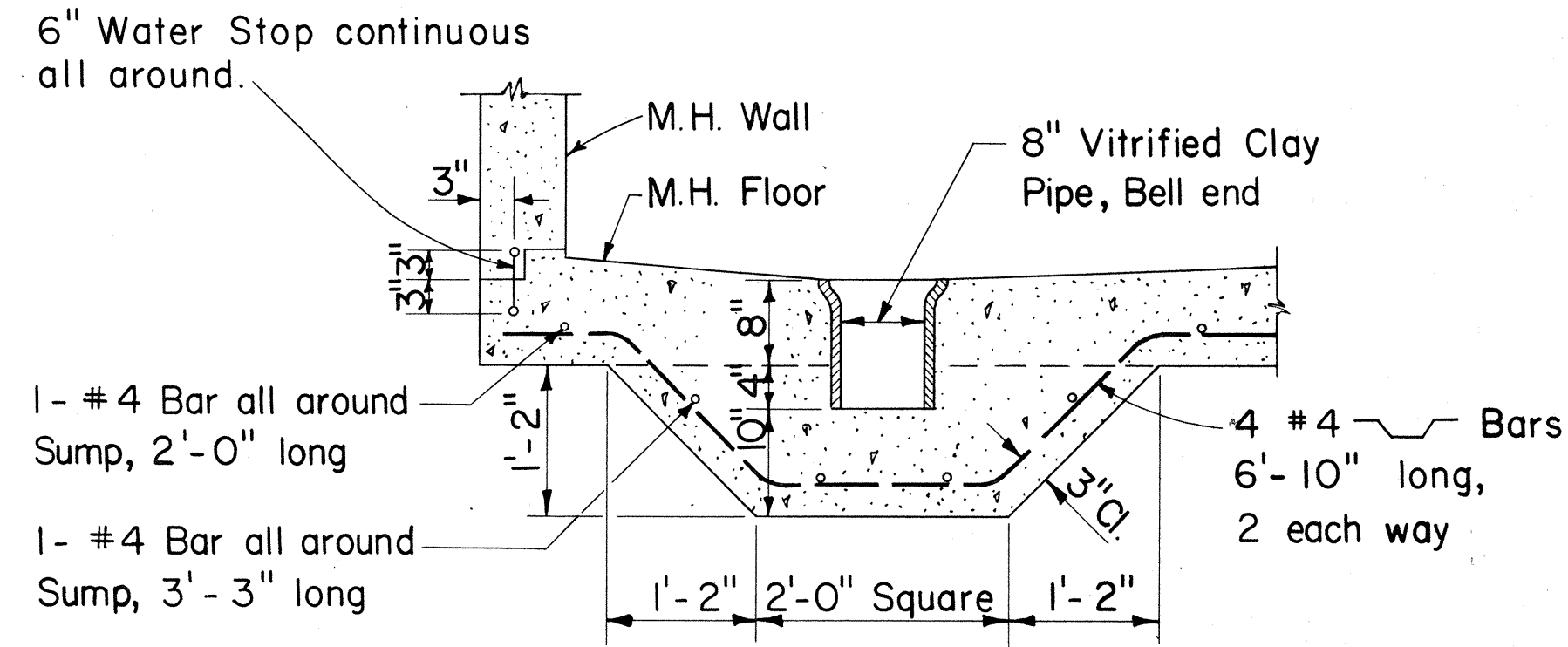
**SECTIONAL VIEW OF PULLING-IN IRON**  
Scale: 3/4" = 1'-0"



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

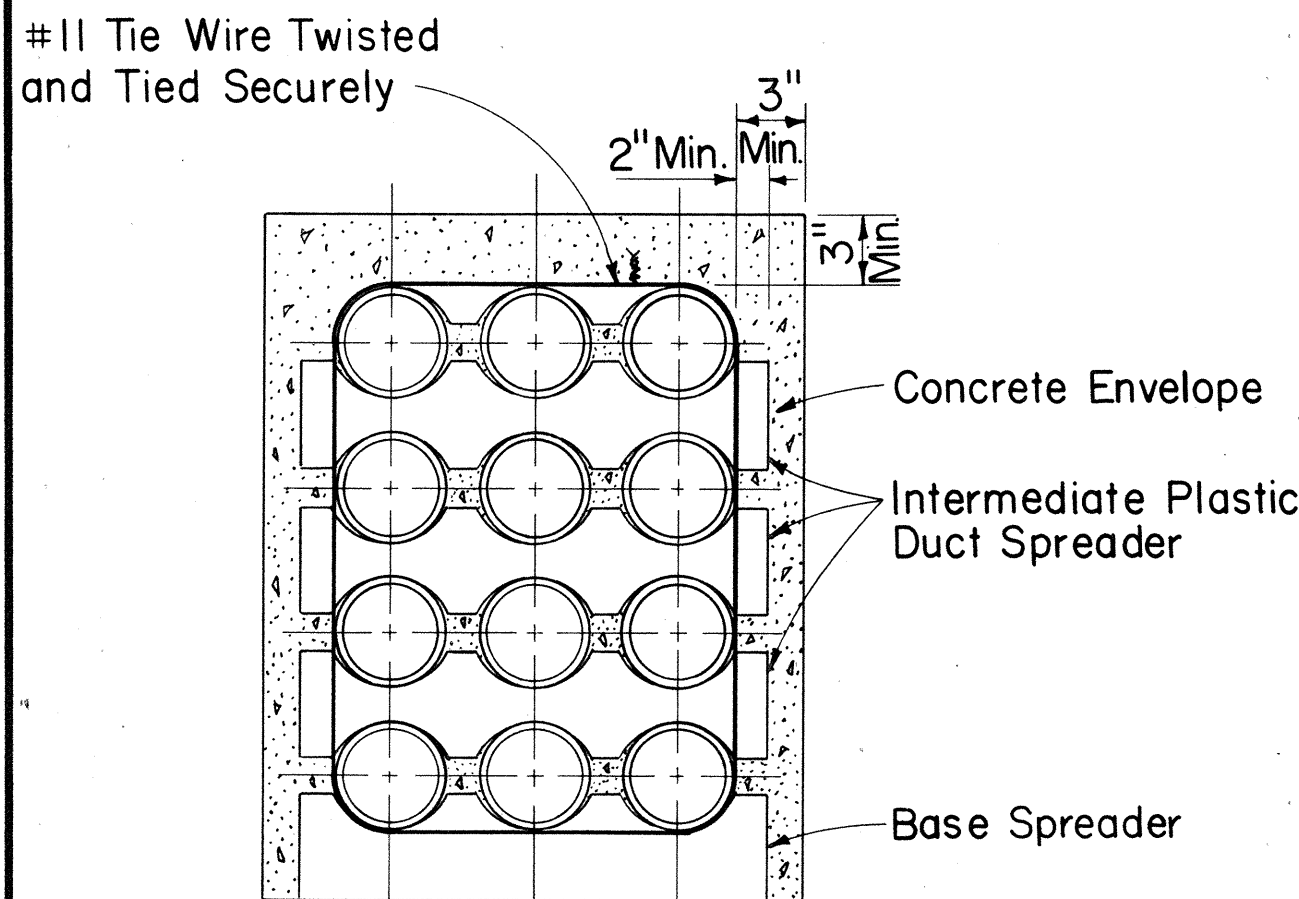


**TYPICAL MANHOLE DUCT WINDOW**  
Scale: 1 1/2" = 1'-0"

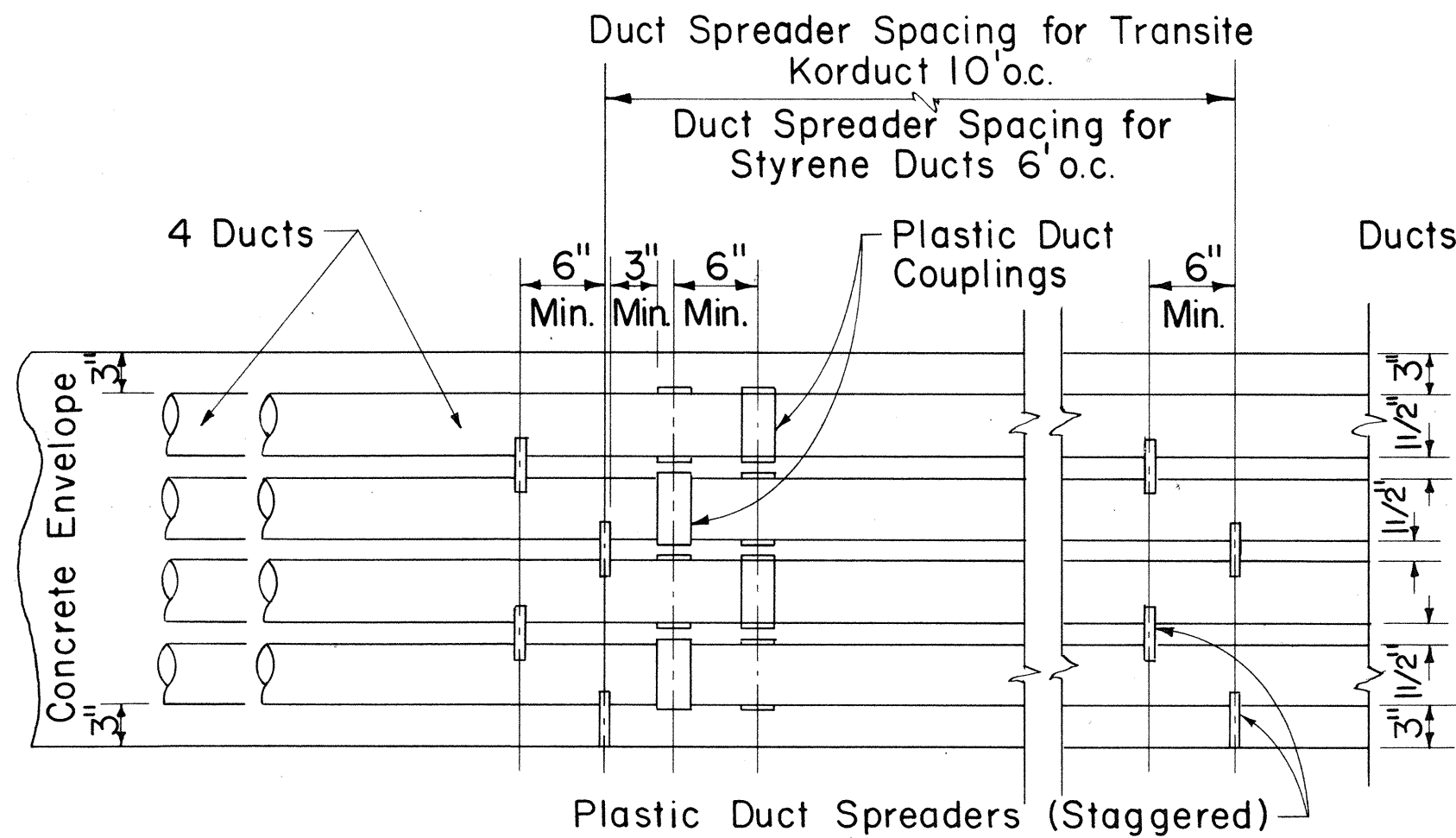


Note: Only for manholes located below water table

**SECTION "E<sub>1</sub>-E<sub>1</sub>"**  
MANHOLE SUMP DETAIL  
Scale: 3/4" = 1'-0"

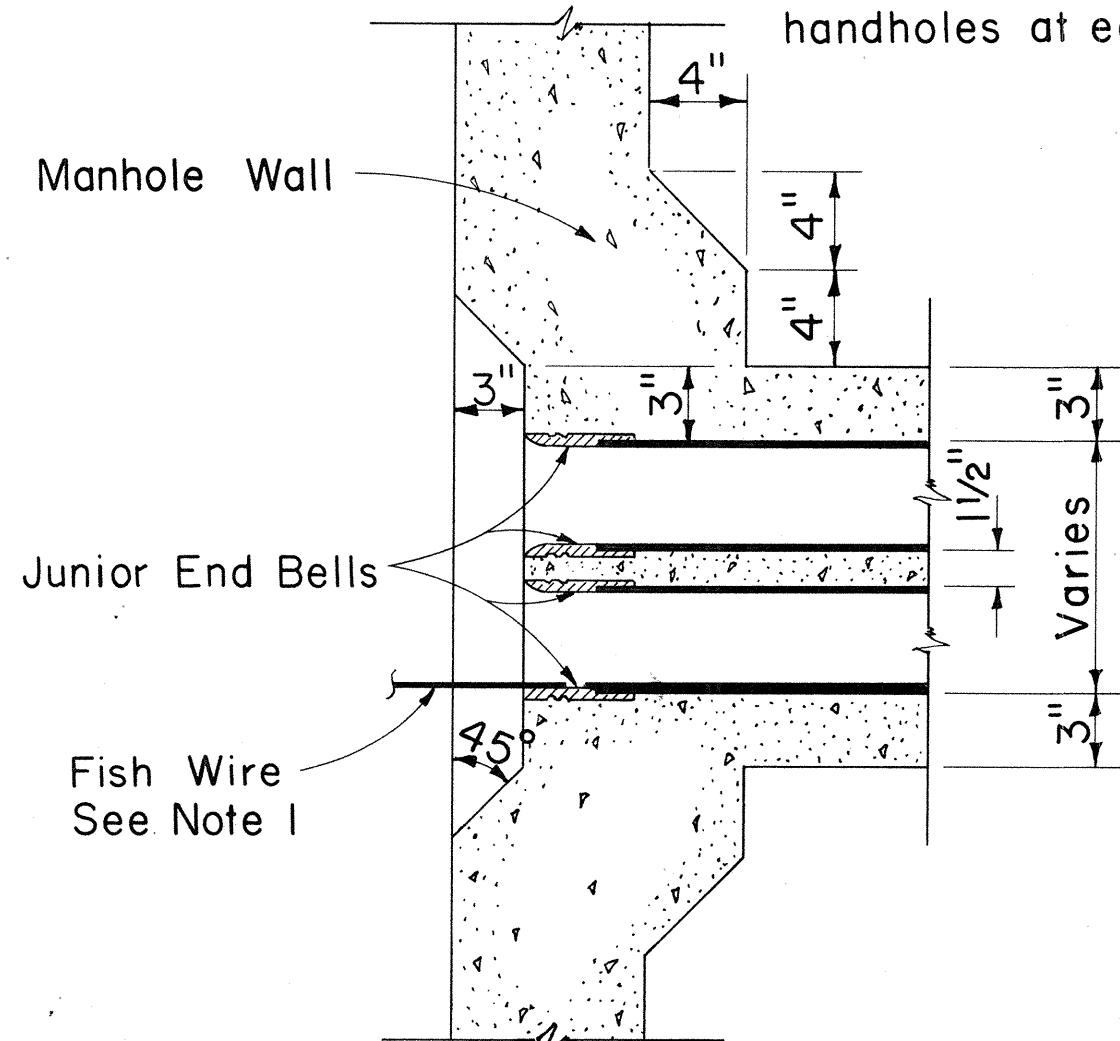


**SECTION SHOWING SPACERS**



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

**NOTES: PULLING-IN IRON**  
A. Pulling-In Iron to be supplied by Hawaiian Telephone Co., and installed by Contractor.  
B. Install one Pulling-In Iron opposite each duct entrance. Location to be determined in field.

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:  
*J. H. Smith*  
Hawaiian Telephone Co., Ltd. 9-12-69 Date

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
STANDARD DETAILS  
TYPE "A" MANHOLE  
AND MISCELLANEOUS  
TELEPHONE DETAILS

Scale: As Noted Date:  
SHEET No. 9 OF 11 SHEETS



| FOR 25' & 30' POLES WITH 8'-0" ANCHOR RODS              |                         |                                  |                             |         |
|---------------------------------------------------------|-------------------------|----------------------------------|-----------------------------|---------|
| "A"                                                     | "B"                     | "C"                              | "D" = ("A" + "B")           |         |
| LEAD-ANCHOR ROD TO C OF POLE                            | ANCHOR ROD TO C OF HOLE | VERTICAL DEPTH 18" D.M. 24" D.M. | TOTAL DISTANCE POLE TO HOLE |         |
| 5'-0"                                                   | 1'-8"                   | 7'-1"                            | 7'-4"                       | 6'-8"   |
| 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"  |
| FOR 35' THRU 70' POLES WITH 8'-0" ANCHOR RODS           |                         |                                  |                             |         |
| 5'-0"                                                   | 1'-0"                   | 7'-3"                            | 7'-4"                       | 6'-0"   |
| 10'-0"                                                  | 1'-11"                  | 7'-1"                            | 7'-3"                       | 11'-11" |
| 15'-0"                                                  | 2'-8"                   | 6'-9"                            | 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 40' THRU 70' POLES WITH 1 1/4" x 10'-0" ANCHOR RODS |                         |                                  |                             |         |
| 5'-0"                                                   | 1'-7"                   |                                  | 9'-4"                       | 6'-7"   |
| 10'-0"                                                  | 3'-0"                   |                                  | 9'-0"                       | 13'-0"  |
| 15'-0"                                                  | 4'-2"                   |                                  | 8'-6"                       | 19'-2"  |
| 20'-0"                                                  | 5'-3"                   |                                  | 7'-11"                      | 25'-3"  |
| 25'-0"                                                  | 6'-2"                   |                                  | 7'-3"                       | 31'-2"  |

D. M. = Deadman

TABLE 2 ANCHOR ROD - ANCHOR SLUG - SQUARE WASHER COMBINATION

| H.E. CODE NO. | ANCHOR ROD              | WORKING TENSION 1/2 ULT (LBS.) | H.E. CODE NO. | CONC. ANC. (IN.) | H.E. CODE NO. | WASHER SIZE     | QTY. |
|---------------|-------------------------|--------------------------------|---------------|------------------|---------------|-----------------|------|
| 617           | 5/8" x 8'-0" Steel      | 8,000                          | 518           | 18               | 2320          | 4" x 4" x 3/16" | 2    |
| 615           | 5/8" x 8'-0" Cu Cov Stl | 9,250                          | 518           | 18               | **            | 3" x 3" x 1/8"  | 2    |
| 618           | 3/4" x 8'-0" Steel      | 11,500                         | 518           | 18               | 2330          | 6" x 6" x 3/8"  | 1    |
| 619           | 1" x 8'-0" Steel        | 18,000                         | 524           | 24               | 2331          | 6" x 6" x 1/2"  | 1    |
| 616           | 1" x 8'-0" Cu Cov Stl   | 22,500                         | 524           | 24               | **            | 4" x 4" x 3/16" | 2    |
| 613           | 1 1/4" x 10'-0" Steel   | 29,000                         | 524           | 24               | 2330          | 6" x 6" x 3/8"  | 2    |

\*\* Use bronze square washers included in anchor rod assembly on copper covered steel (Cu Cov Stl) anchor rods.

ANCHORING DATA

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

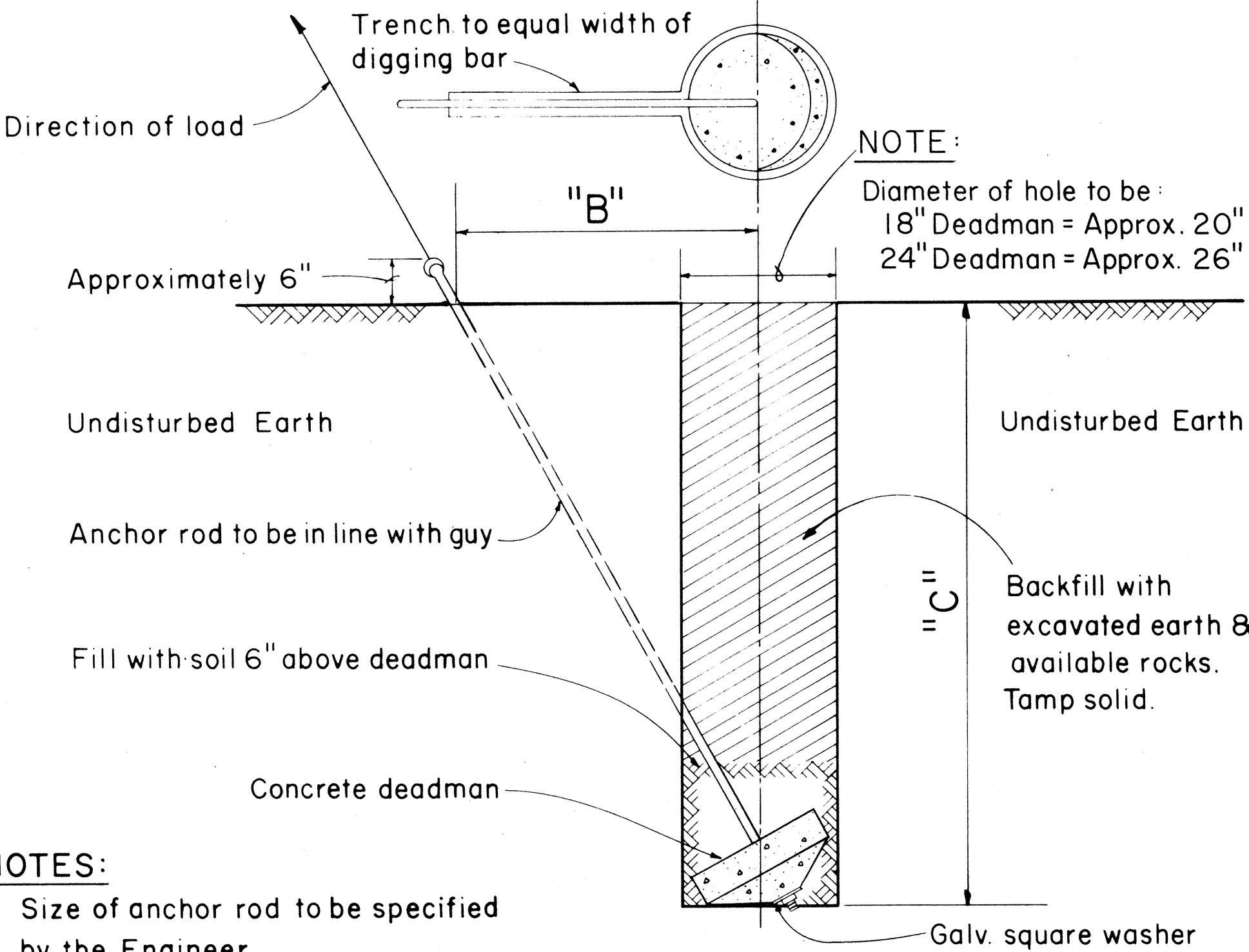
STANDARD DETAILS

ANCHOR DETAILS AND  
ANCHORING DATA

Scales: As Noted

Date

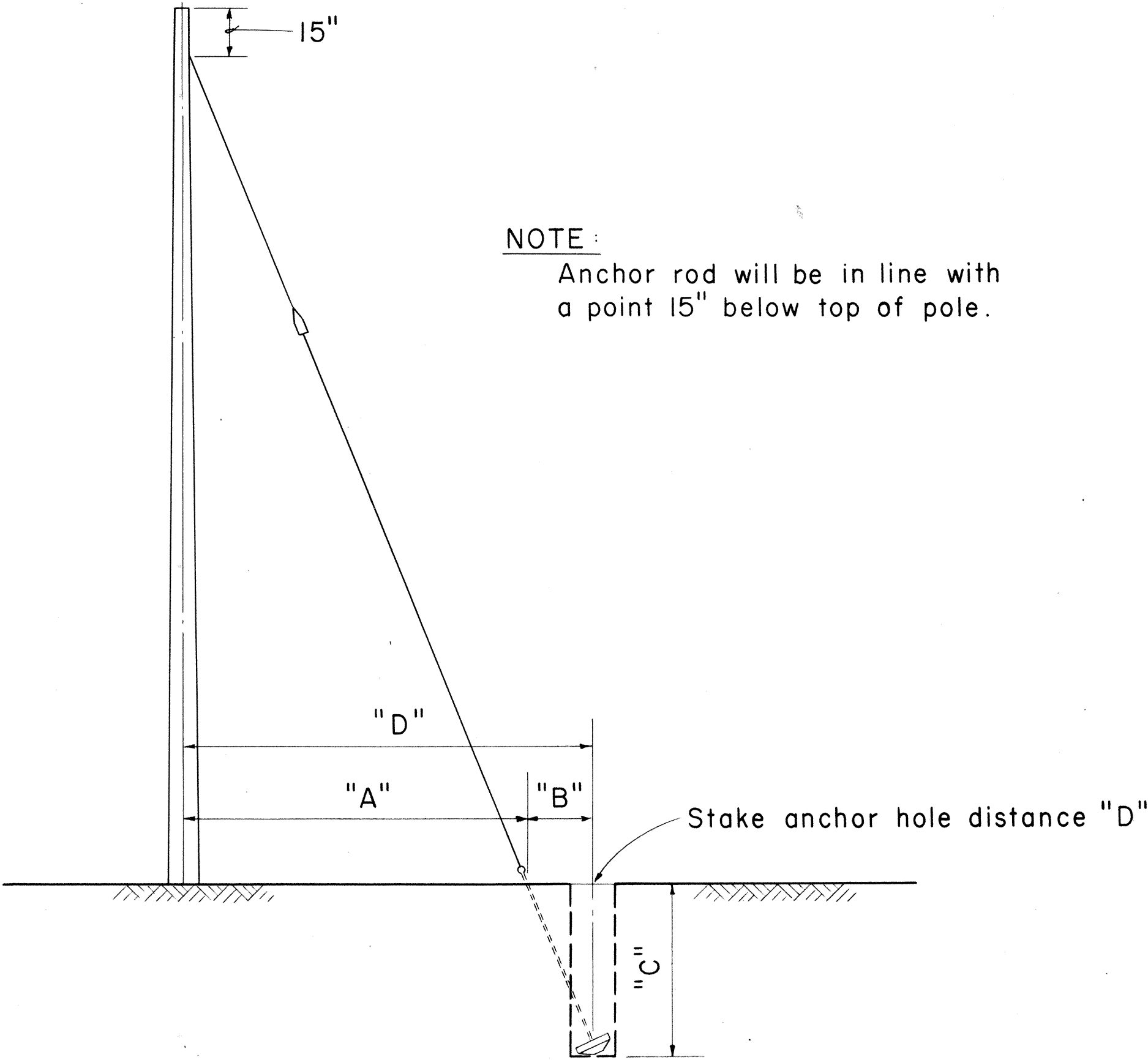
SHEET No. 10 OF 11 SHEETS



- NOTES:
- Size of anchor rod to be specified by the Engineer
  - Use Anchoring Data.

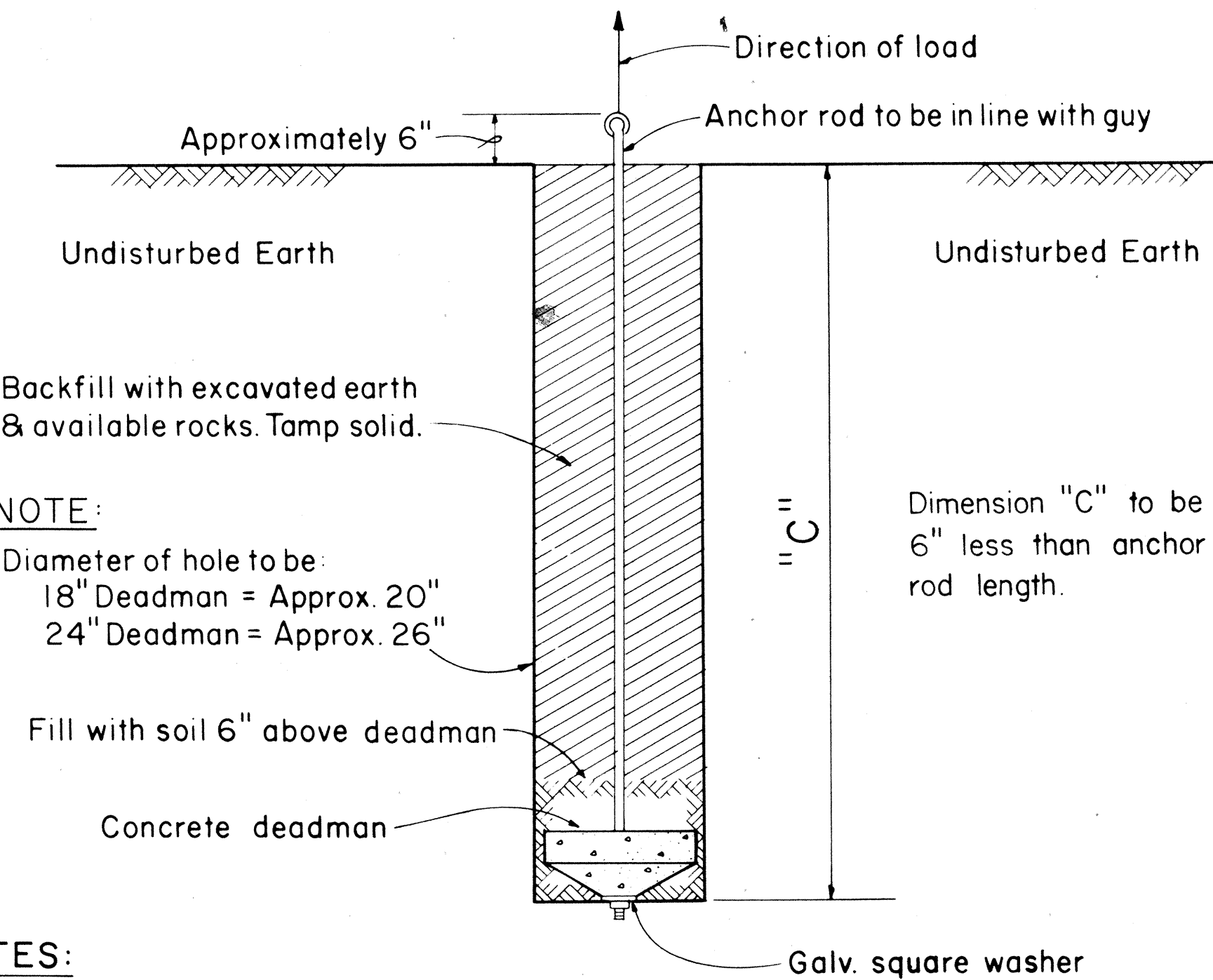
GUY ANCHOR DEADMAN

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



- NOTE:
- Anchor rod will be in line with a point 15" below top of pole.

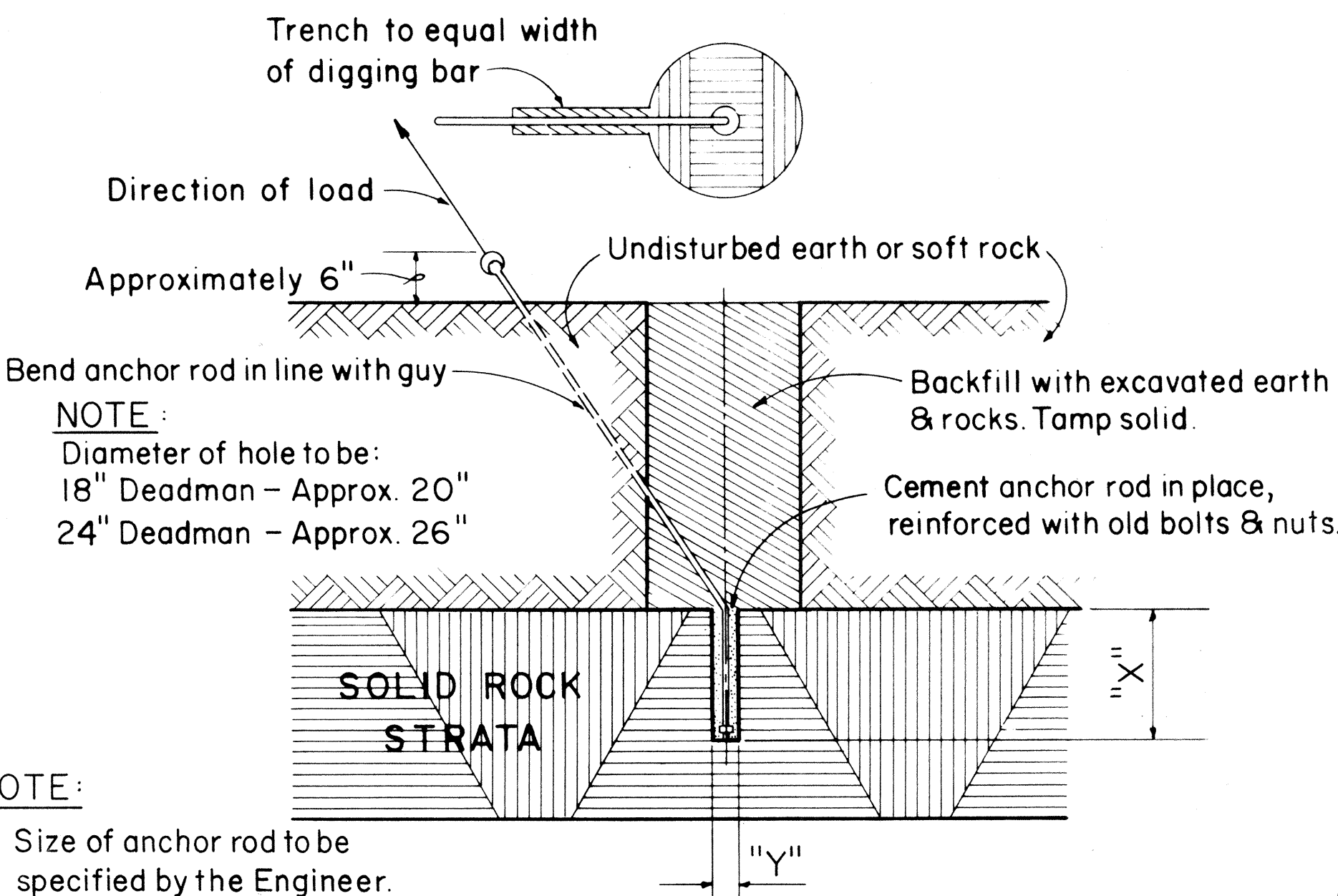
Not to Scale



- NOTES:
- Size of anchor rod to be specified by the Engineer.
  - Use Anchoring Data.

SIDE - WALK ANCHOR

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



- NOTE:
- Size of anchor rod to be specified by the Engineer.
  - "X" Should not be less than 24". If "X" is less than 24" complete hole & install anchor.
  - "Y" 5/8" Anchor rod drill 2" hole  
3/4" Anchor rod drill 2" hole  
1" Anchor rod drill 2 1/2" hole  
1 1/4" Anchor rod drill 3" hole
  - Use Anchoring Data.

ROCK ANCHOR

Not to Scale



| CREOSOTED DOUGLAS FIR & YELLOW PINE POLE DATA |       |                                     |      |              |      |                       |                          |         |                                              |
|-----------------------------------------------|-------|-------------------------------------|------|--------------|------|-----------------------|--------------------------|---------|----------------------------------------------|
| LENGTH IN FEET                                | CLASS | APPROX. MINIMUM DIMENSIONS (INCHES) |      |              |      | AVERAGE WEIGHT (LBS.) | POLE SETTING DEPTH (FT.) |         | BREAKING LOAD 2'-0" BELOW TOP OF POLE (LBS.) |
|                                               |       | AT TOP                              |      | 6' FROM BUTT |      |                       | DOUGLAS FIR              | IN SOIL |                                              |
|                                               |       | DIA.                                | CIR. | DIA.         | CIR. |                       |                          |         |                                              |
| 25                                            | 5     | 6.04                                | 19   | 8.26         | 26   | 525                   | 4.5                      | 3       | 1900                                         |
| 30                                            | 3     | 7.32                                | 23   | 10.32        | 32.5 | 810                   | 5                        | 3.5     | 3000                                         |
|                                               | 5     | 6.04                                | 19   | 8.90         | 28   | 600                   | 5                        | 3.5     | 1900                                         |
| 35                                            | 2     | 7.96                                | 25   | 12.23        | 37.5 | 1260                  | 5                        | 3.5     | 3700                                         |
|                                               | 5     | 6.04                                | 19   | 9.55         | 30   | 770                   | 5                        | 3.5     | 1900                                         |
| 40                                            | 3     | 7.32                                | 23   | 11.77        | 37   | 1320                  | 5.5                      | 3.5     | 3000                                         |
| 45                                            | 2     | 7.96                                | 25   | 13.20        | 41.5 | 1845                  | 6                        | 4       | 3700                                         |
|                                               | 3     | 7.32                                | 23   | 12.25        | 38.5 | 1575                  | 6                        | 4       | 3000                                         |
| 50                                            | 2     | 7.96                                | 25   | 13.70        | 43   | 2150                  | 6.5                      | 4       | 3700                                         |
|                                               | 3     | 7.32                                | 23   | 12.70        | 40   | 1850                  | 6.5                      | 4       | 3000                                         |
| 55                                            | 1     | 8.59                                | 27   | 15.11        | 47.5 | 2860                  | 7                        | 4.5     | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 14.15        | 44.5 | 2475                  | 7                        | 4.5     | 3700                                         |
|                                               | 3     | 7.32                                | 23   | 13.20        | 41.5 | 2145                  | 7                        | 4.5     | 3000                                         |
| 60                                            | 1     | 8.59                                | 27   | 15.75        | 49.5 | 3360                  | 7                        | 4.5     | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 14.62        | 46   | 2820                  | 7                        | 4.5     | 3700                                         |
| 65                                            | 1     | 8.59                                | 27   | 16.20        | 51   | 3835                  | 7.5                      | 5       | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 15.11        | 47.5 | 3250                  | 7.5                      | 5       | 3700                                         |
| 70                                            | 1     | 8.59                                | 27   | 16.70        | 52.5 | 4340                  | 7.5                      | 5       | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 15.60        | 49   | 3640                  | 7.5                      | 5       | 3700                                         |
| 75                                            | 1     | 8.59                                | 27   | 17.20        | 54   | 4800                  | 8                        | 5.5     | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 16.05        | 50.5 | 4050                  | 8                        | 5.5     | 3700                                         |
| 80                                            | 1     | 8.59                                | 27   | 17.50        | 55   | 5240                  | 8                        | 6       | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 16.40        | 51.5 | 4400                  | 8                        | 6       | 3700                                         |
| 85                                            | 1     | 8.59                                | 27   | 18.00        | 56.5 | 5780                  | 8.5                      | 6.5     | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 16.88        | 53   | 4930                  | 8.5                      | 6.5     | 3700                                         |
| 90                                            | 1     | 8.59                                | 27   | 18.30        | 57.5 | 6300                  | 8.5                      | 6.5     | 4500                                         |
|                                               | 2     | 7.96                                | 25   | 17.20        | 54   | 5400                  | 8.5                      | 6.5     | 3700                                         |

NOTE:

The ultimate fiber stress for creosoted Southern Yellow Pine & Douglas Fir is 7,400 Lbs. per square inch.

Weights are for untreated poles. Add 5% as estimate of added weight of creosote treatment.

REFERENCES:

American Standards Association O5.4-1941, O5.6-1945.  
Standard Handbook for Electrical Engineers, Eighth Edition  
H. E. Co. Specification for Poles.

WOOD POLE DATA

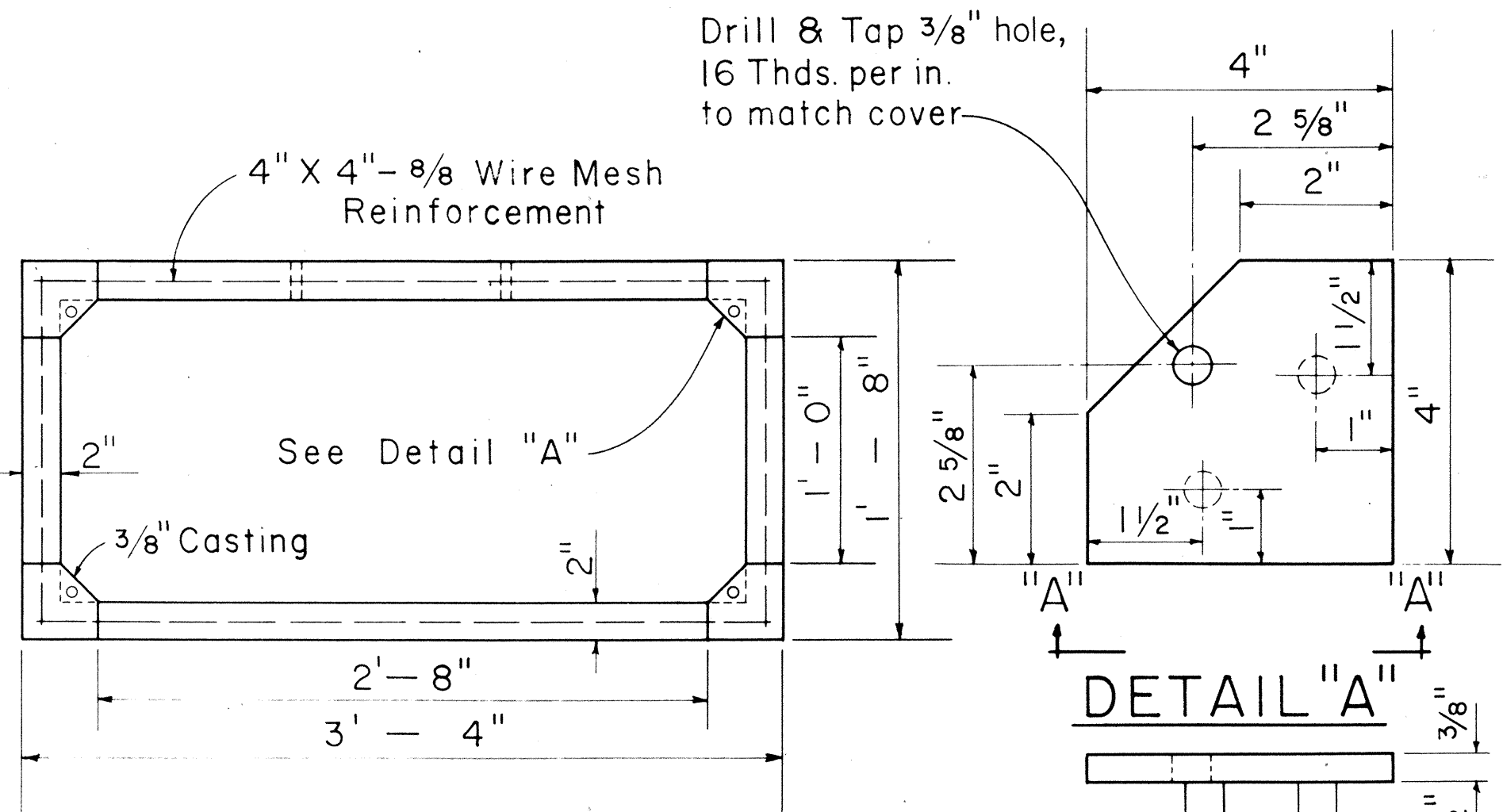
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
STANDARD DETAILS

SERVICE BOX DETAILS  
AND WOOD POLE DATA

Scales: As Noted

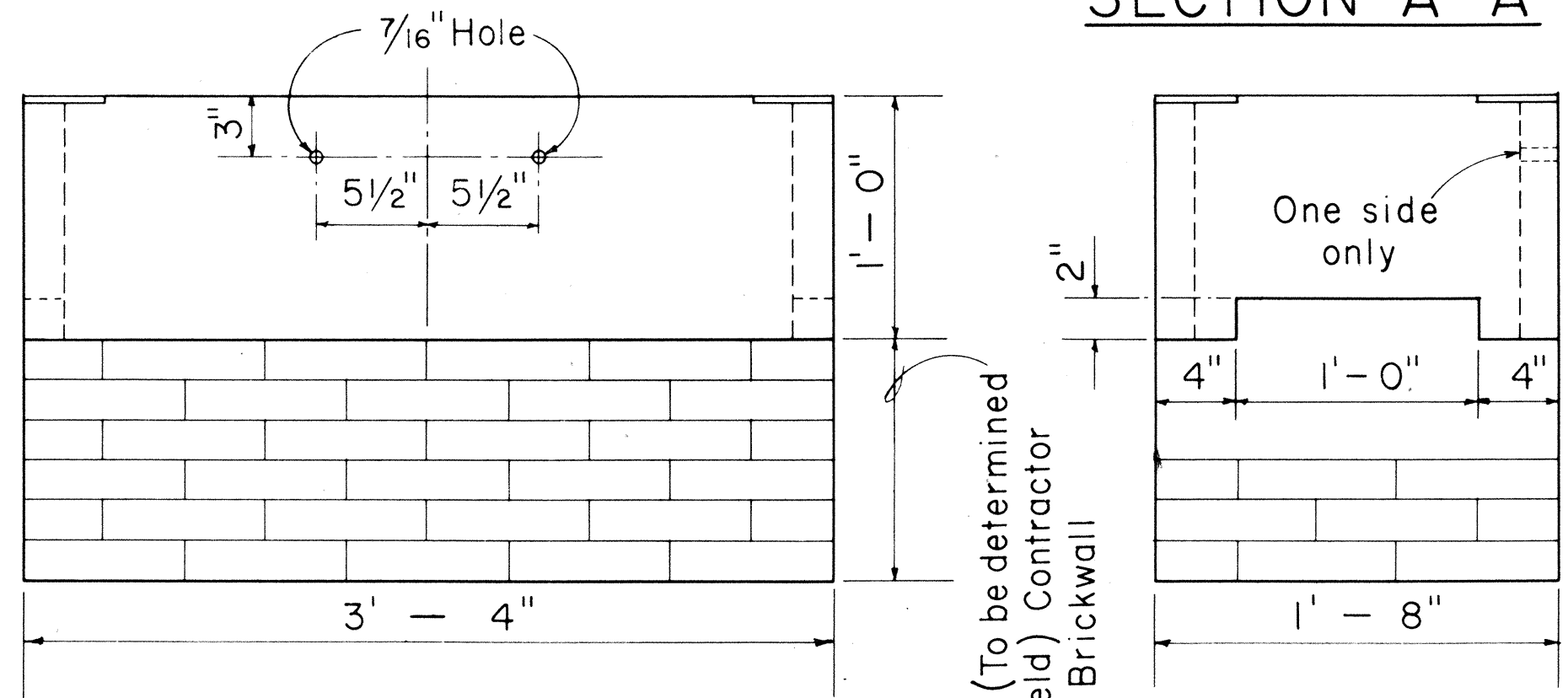
Date

SHEET NO. 11 OF 11 SHEETS



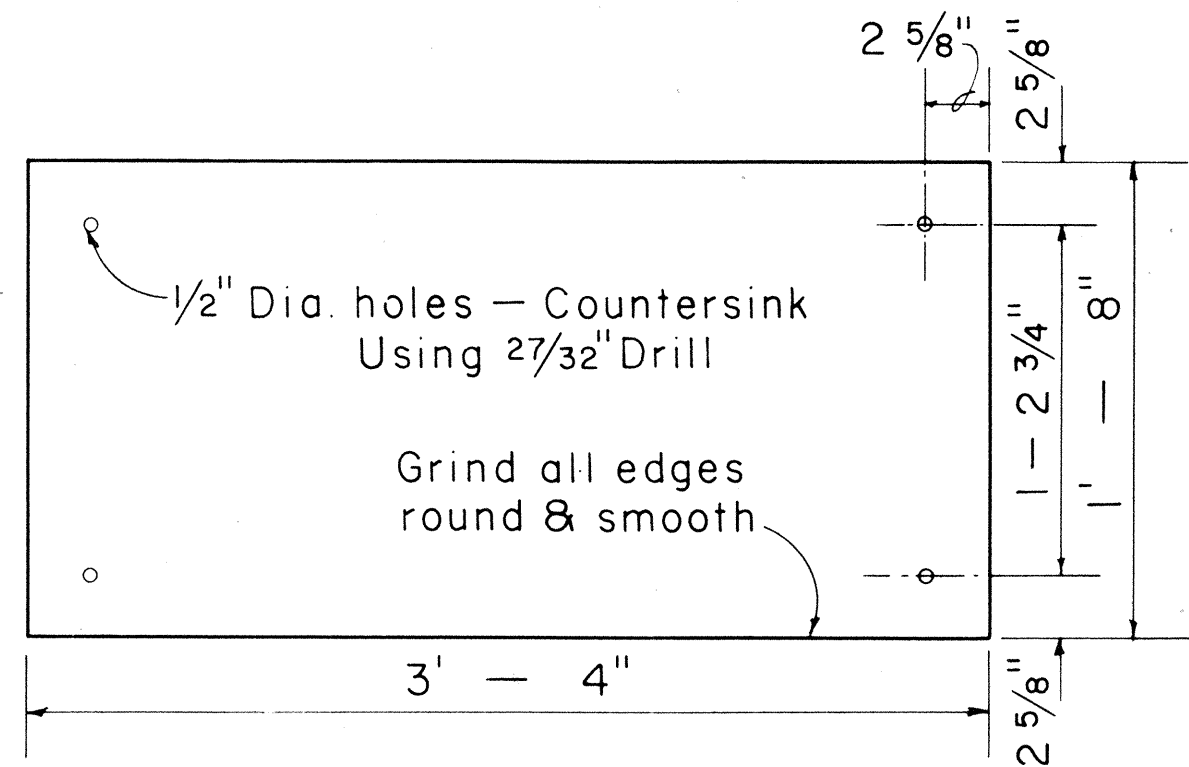
PLAN

SECTION "A-A"



SIDE VIEW

END VIEW



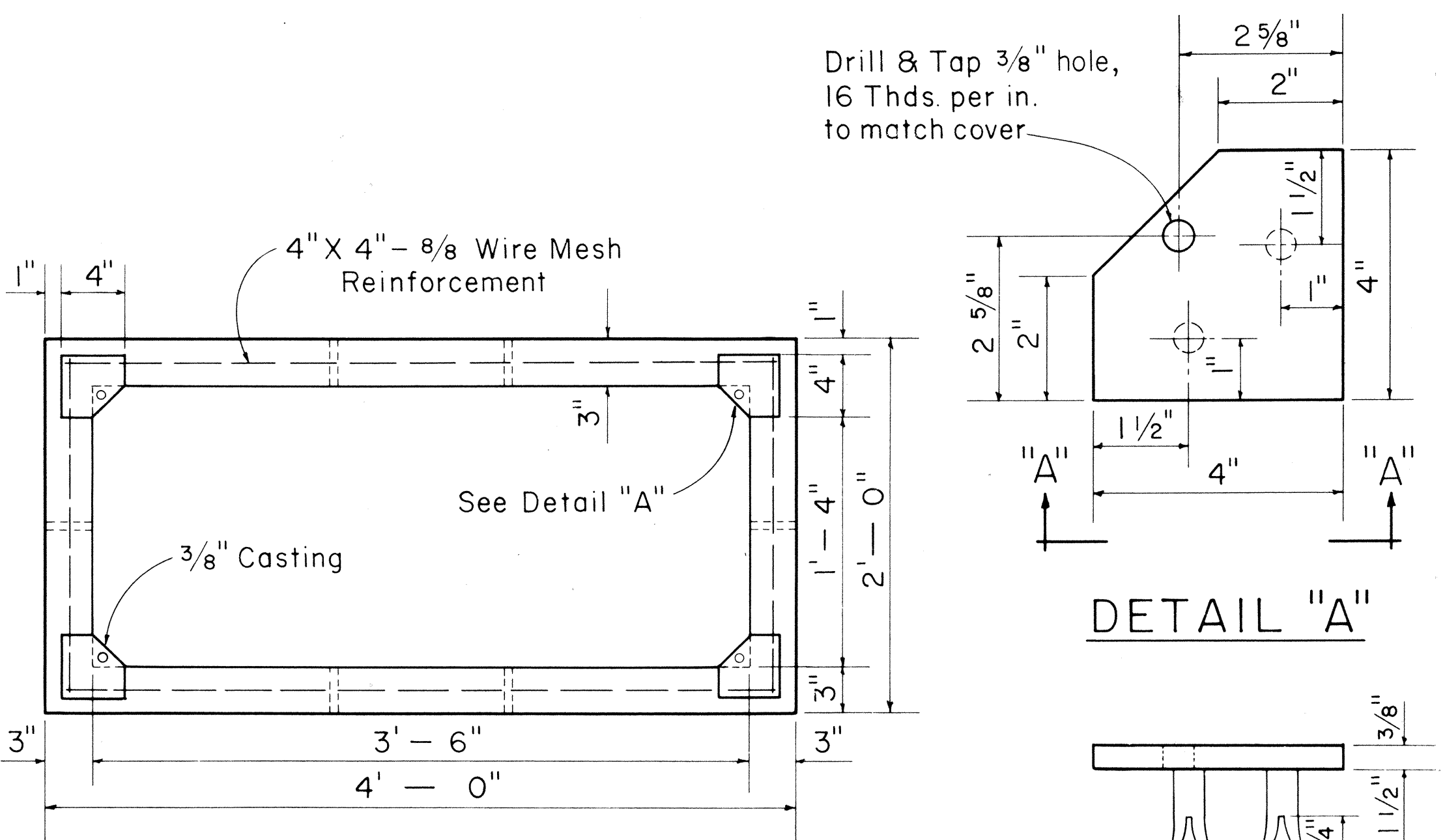
1/4" CHECKER PLATE COVER

(Hot dip galvanize checkered plate after drilling, countersinking, and grinding edge)

1'-4" X 3'-0" CONCRETE  
SERVICE BOX

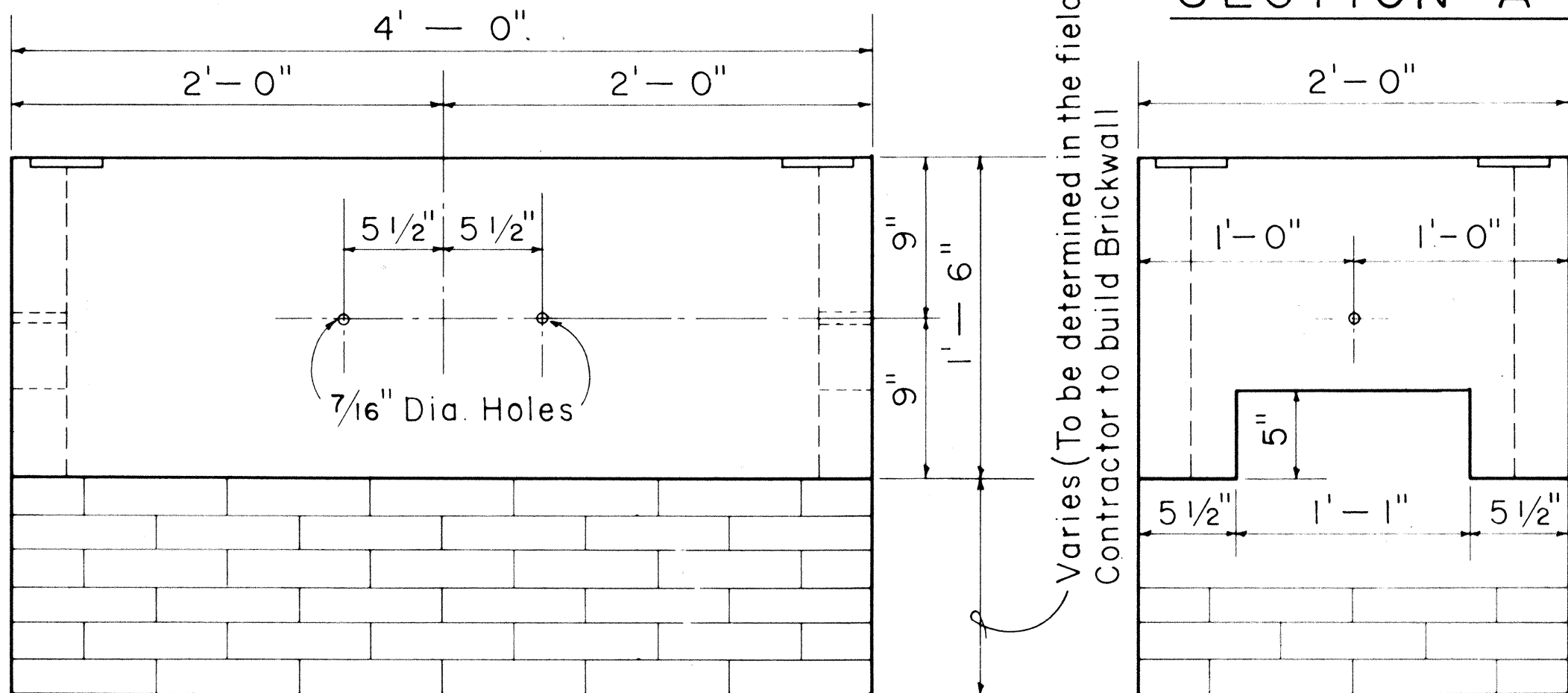
Scale: 1 1/2" = 1'-0"

OII250



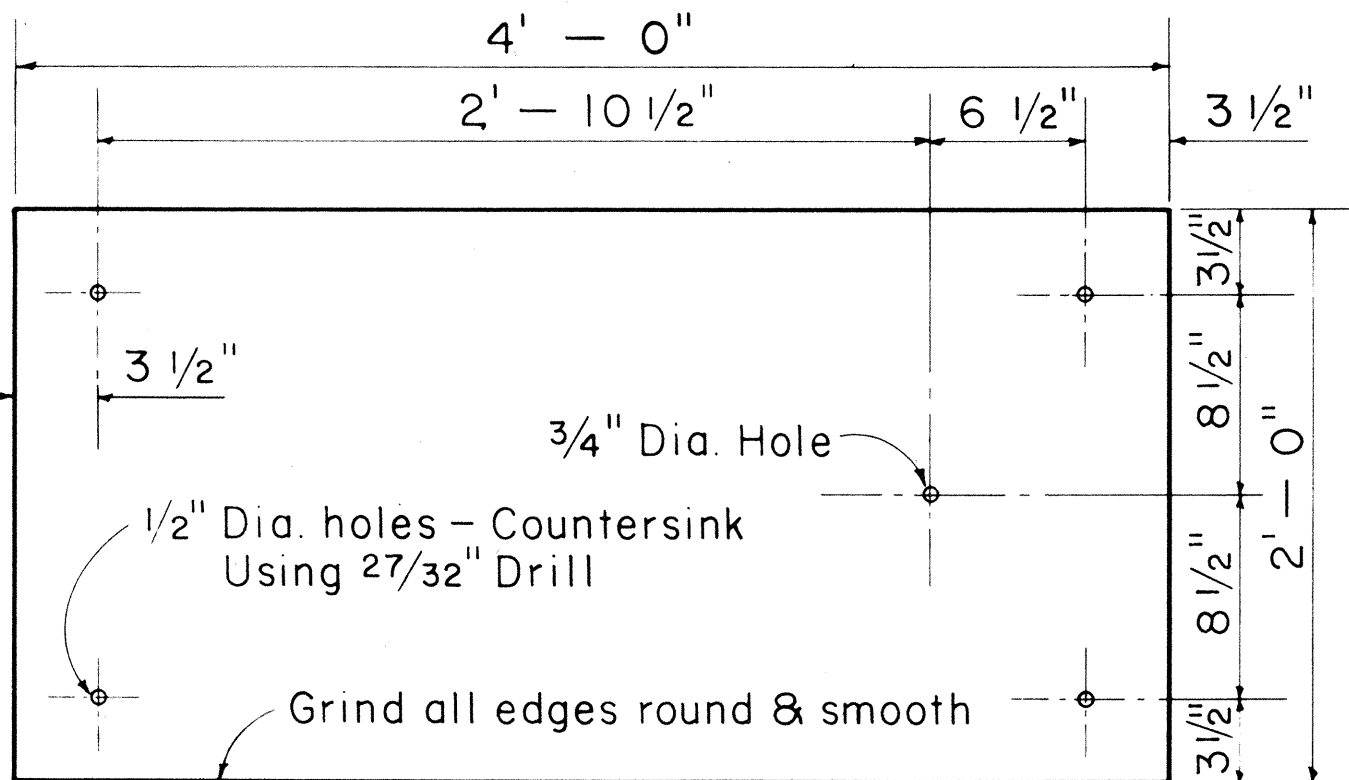
PLAN

SECTION "A-A"



SIDE VIEW

END VIEW



1/4" CHECKER PLATE COVER

(Hot dip galvanize checkered plate after drilling, countersinking, and grinding edge)

1'-6" X 3'-6" CONCRETE  
SERVICE BOX

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

OII255

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