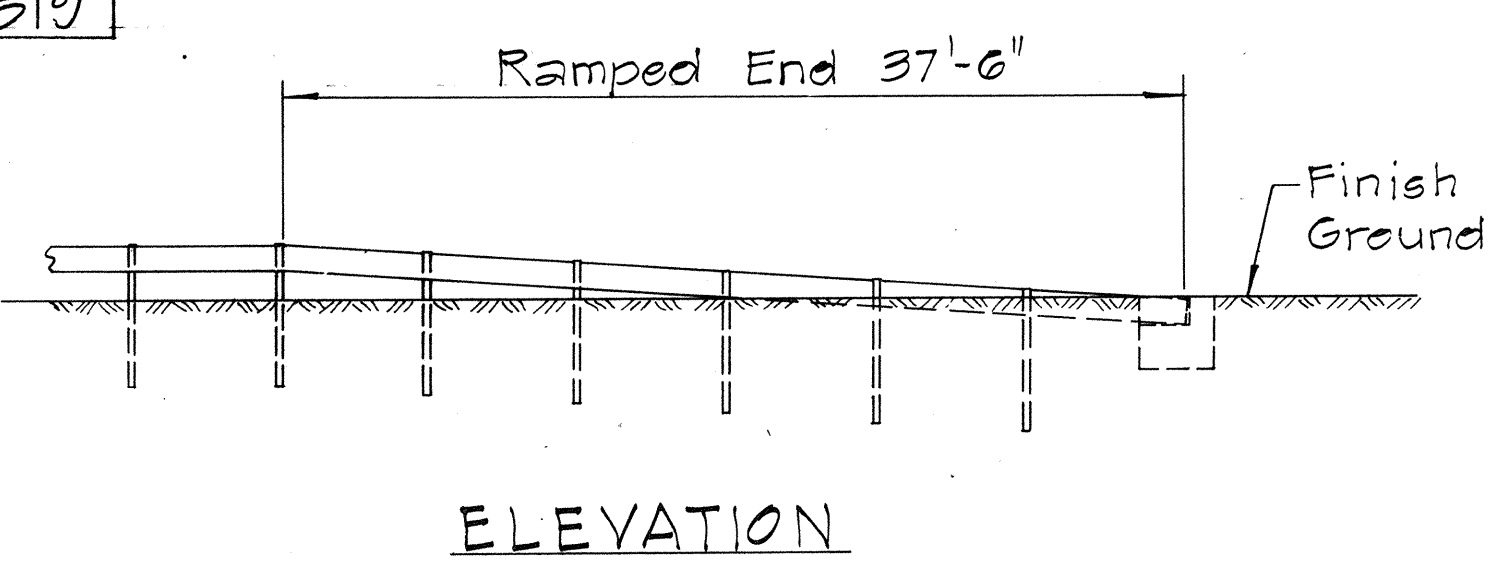
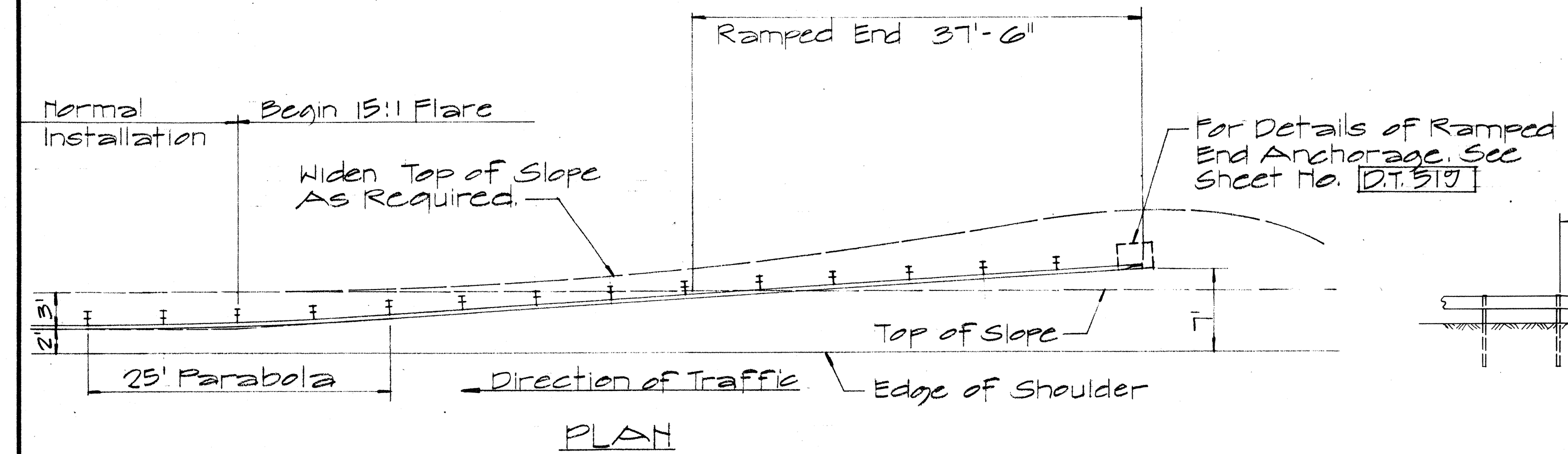
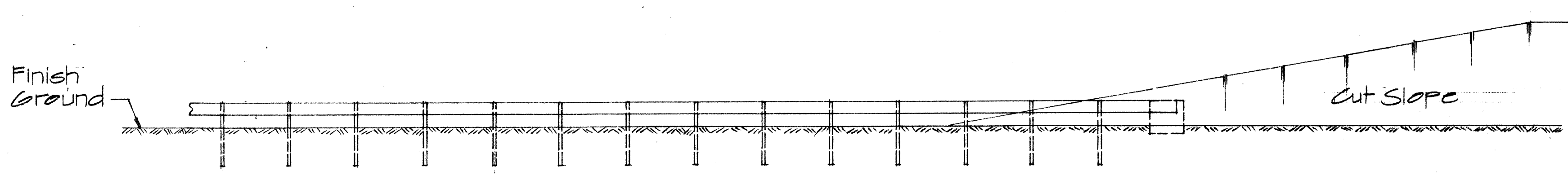
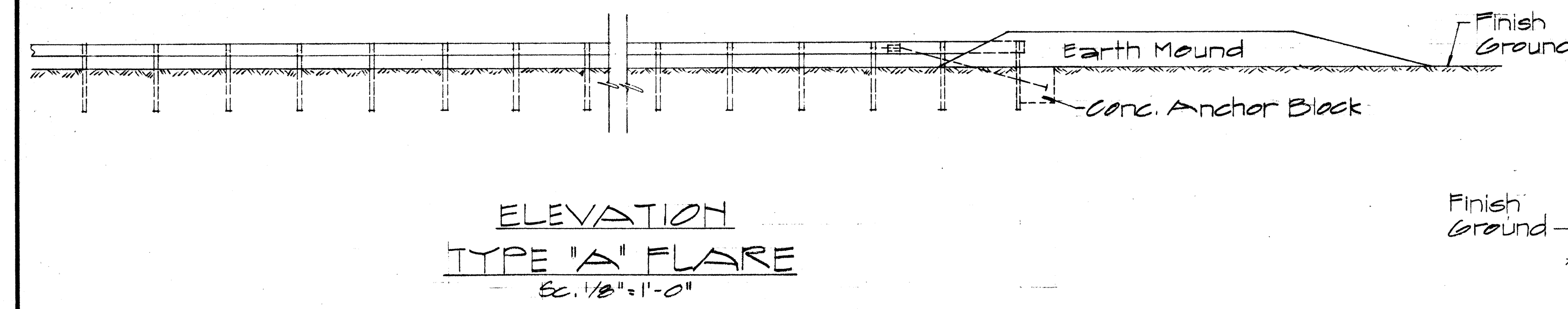
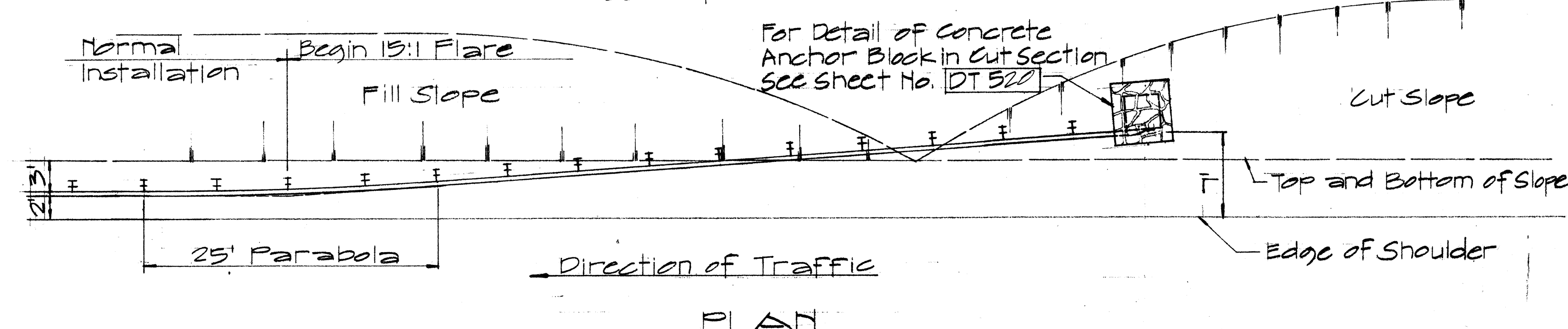
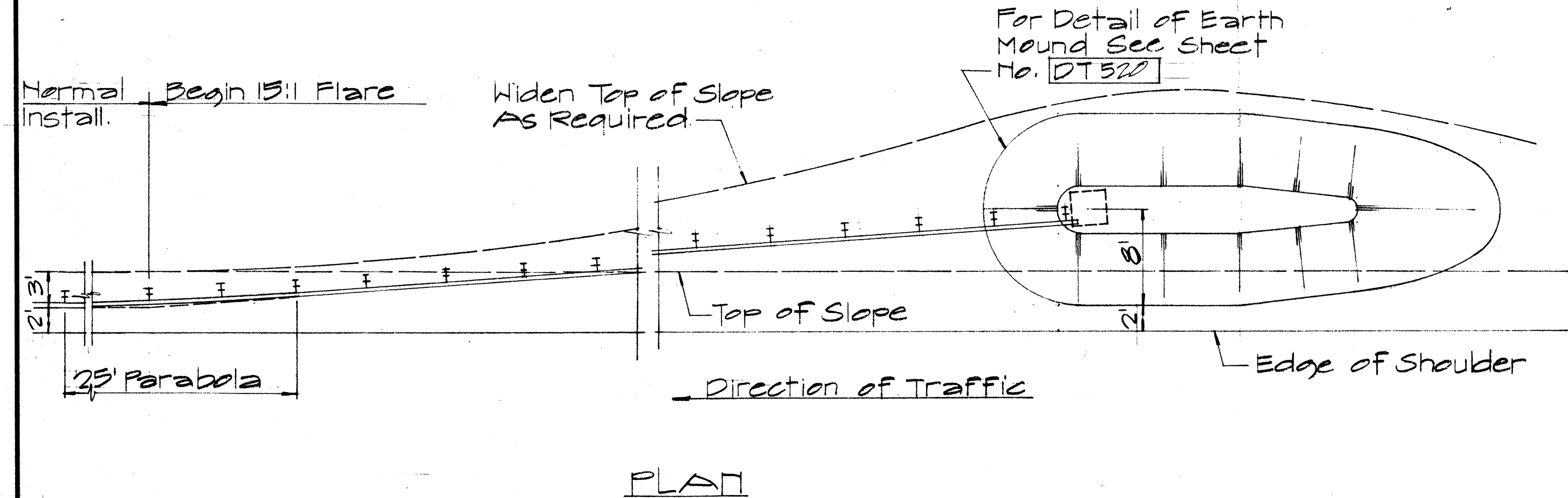
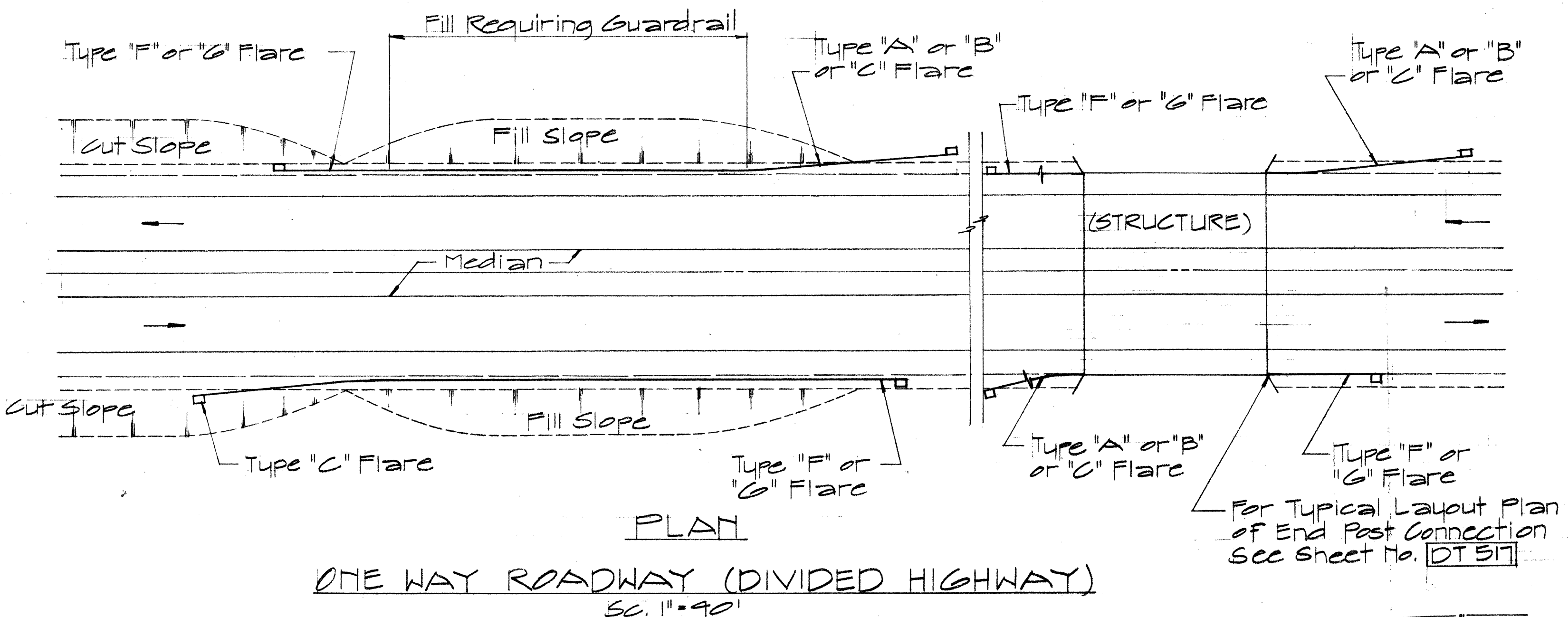
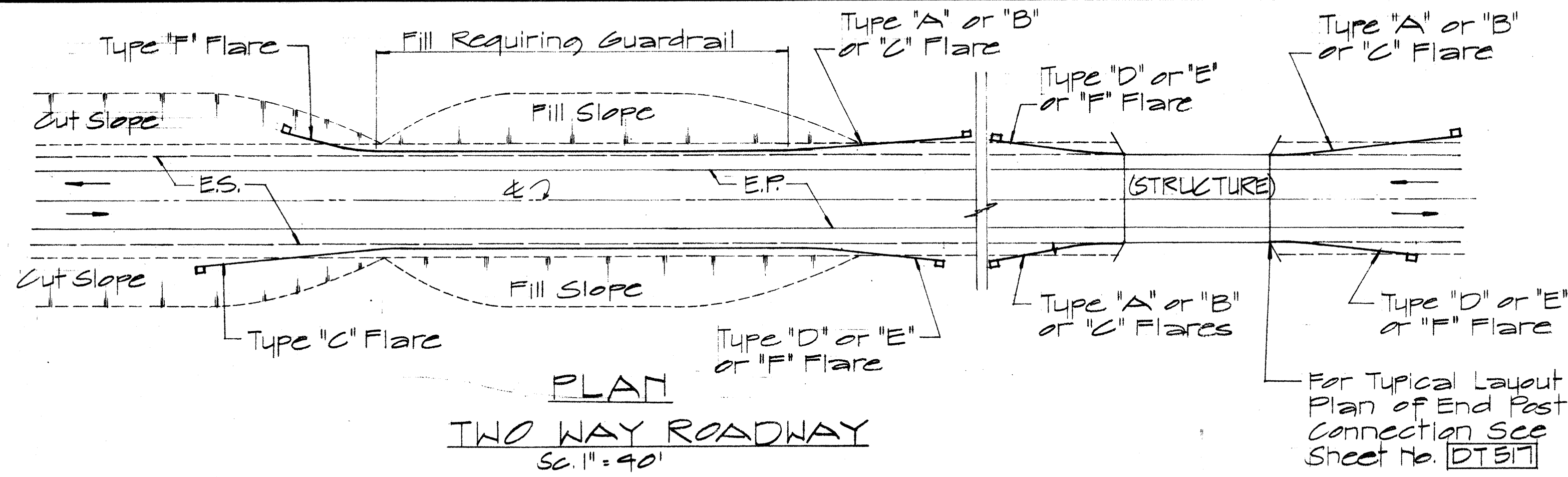






| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 18        | 24           |

NOTE:  
Metal guard rail connection to structures requires End Post Connection. See structure plans.



ELEVATION  
TYPE "C" FLARE  
SC. 1/8" = 1'-0"

| NO. | REVISION | APPROVED BY | DATE |
|-----|----------|-------------|------|
|     |          |             |      |

APPROVAL RECOMMENDED:  
*Eishi Tanaka* 12-29-69  
TRAFFIC ENGINEER DATE

APPROVED:  
*[Signature]* 12-30-69  
ASSISTANT CHIEF, ENGINEERING DATE

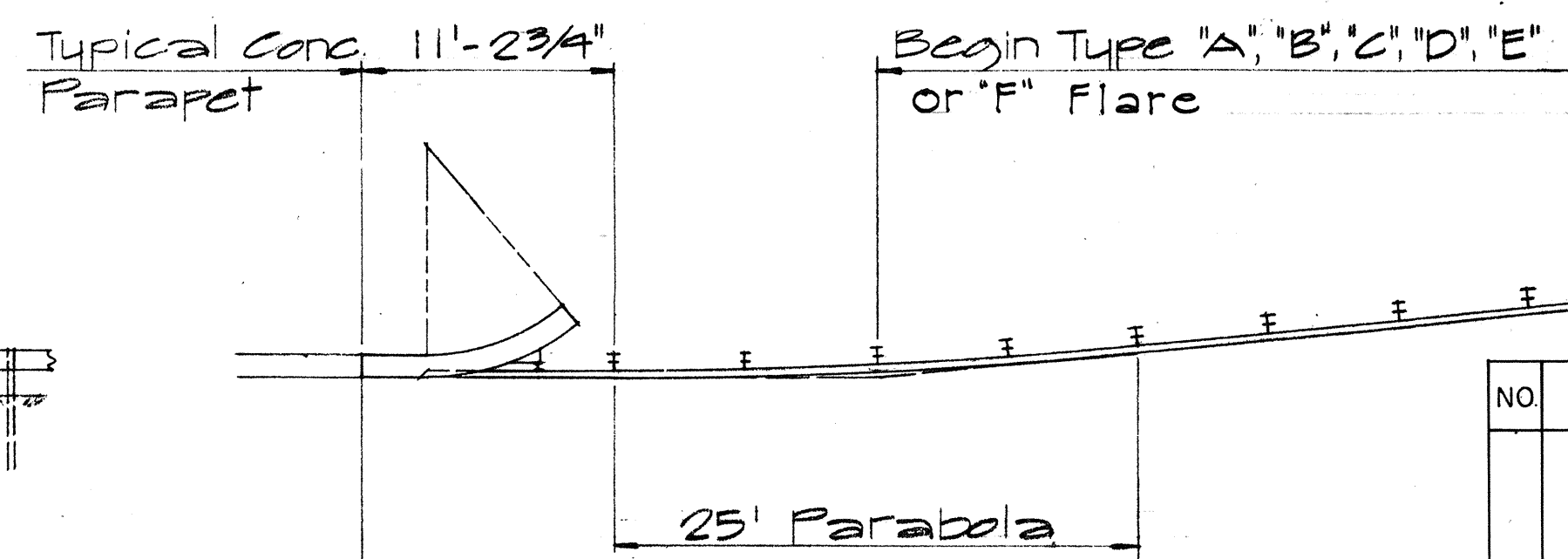
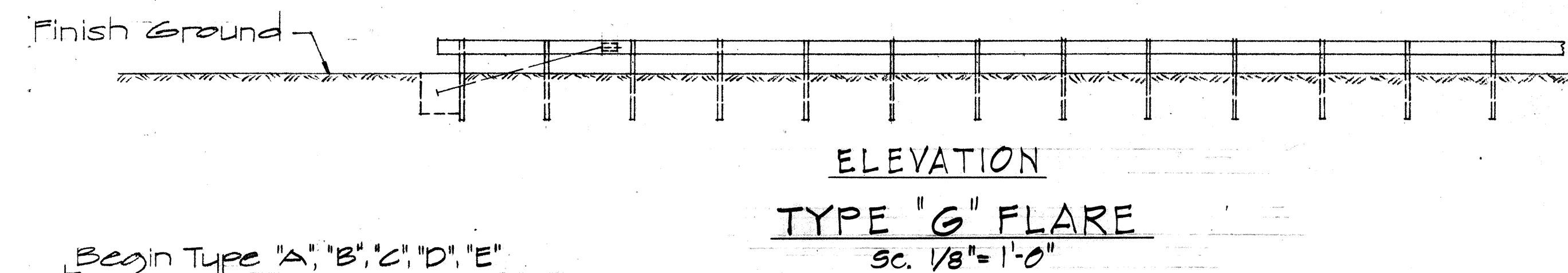
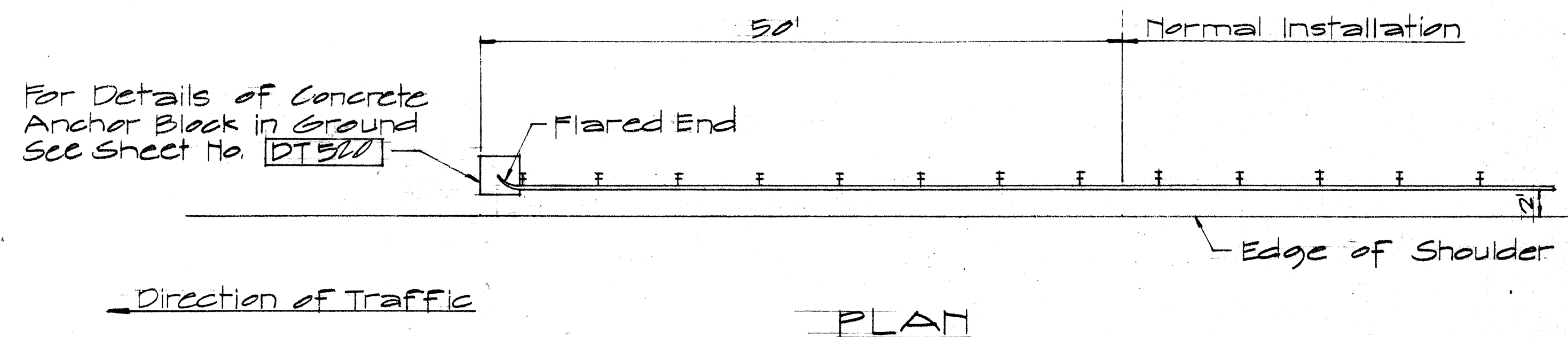
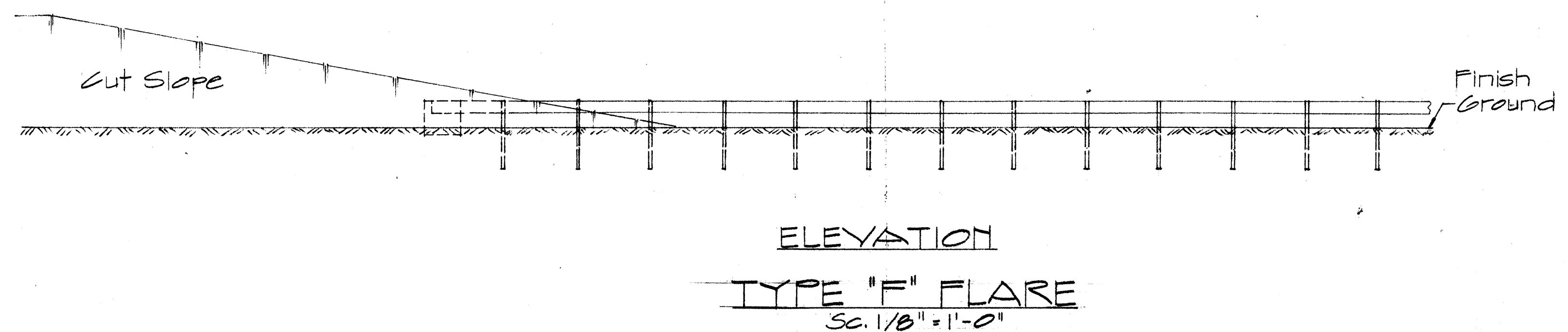
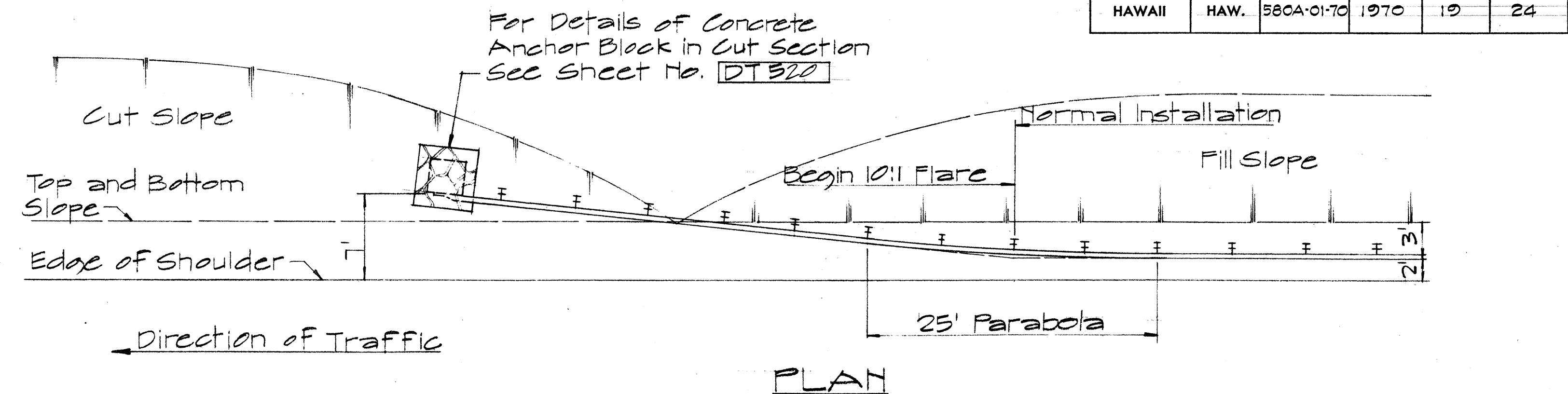
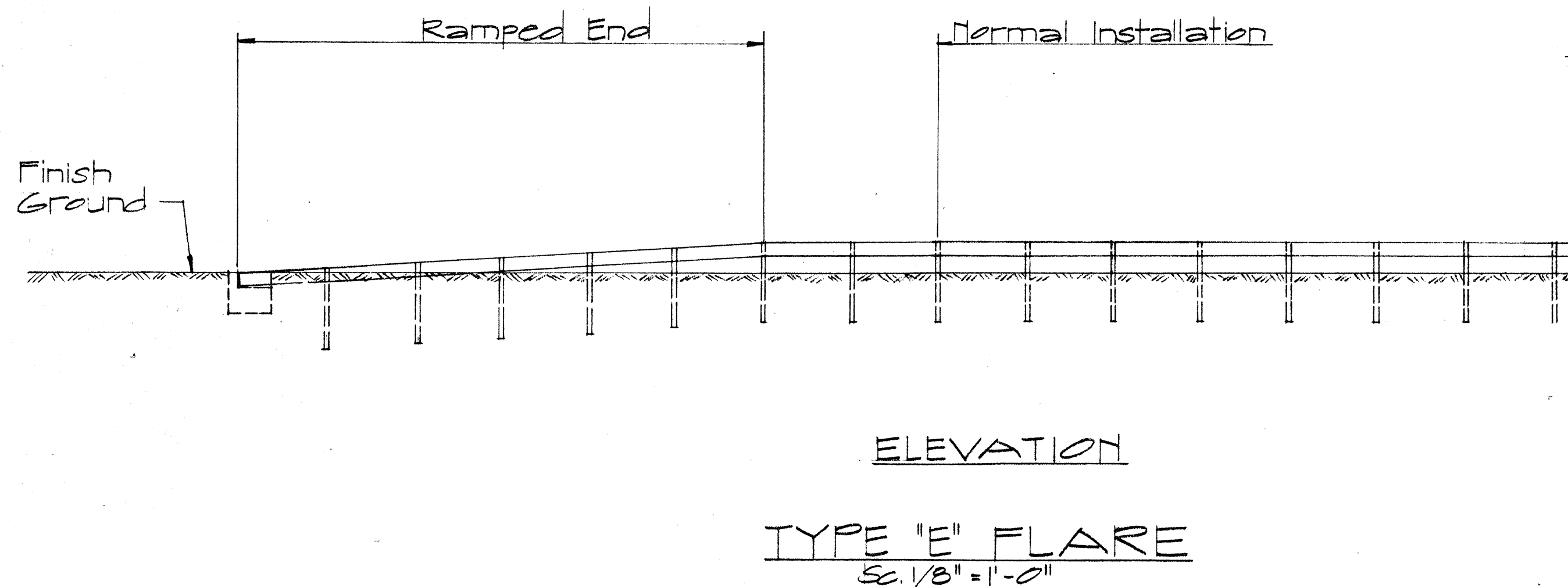
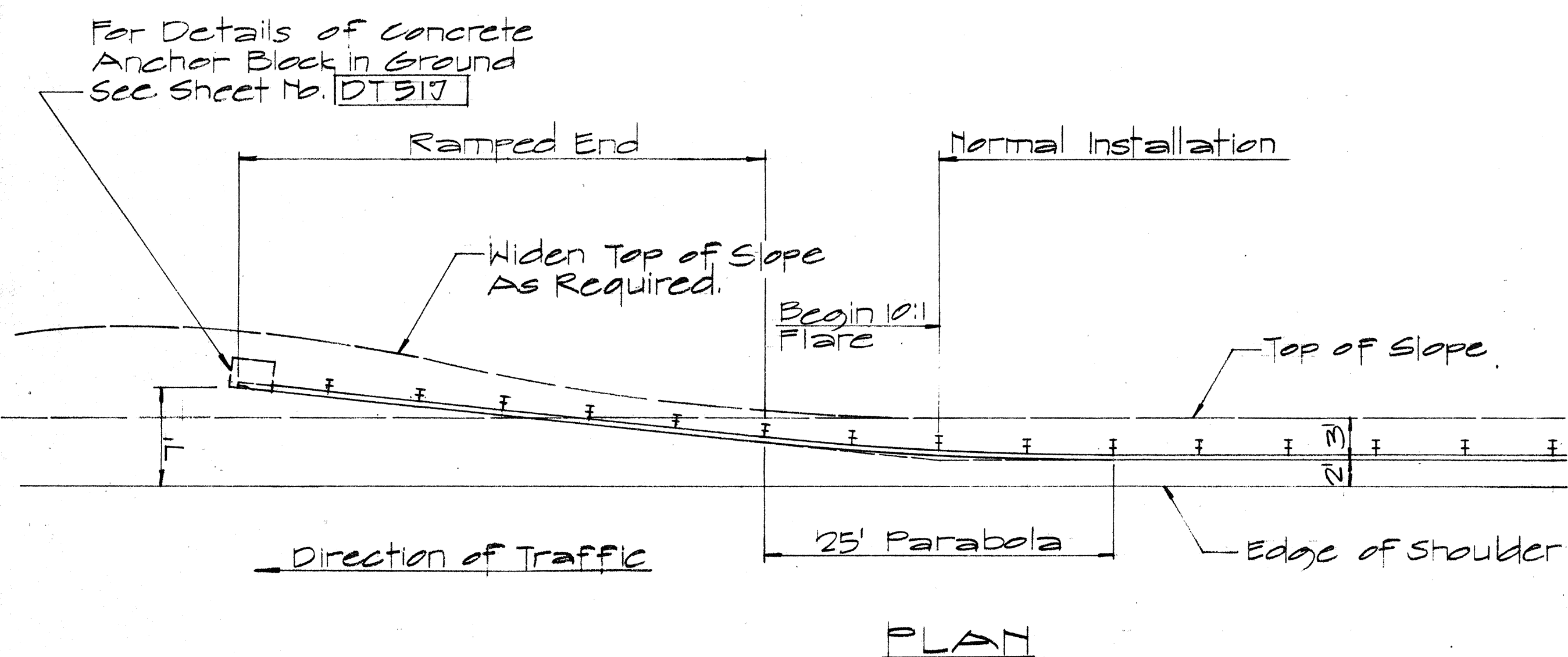
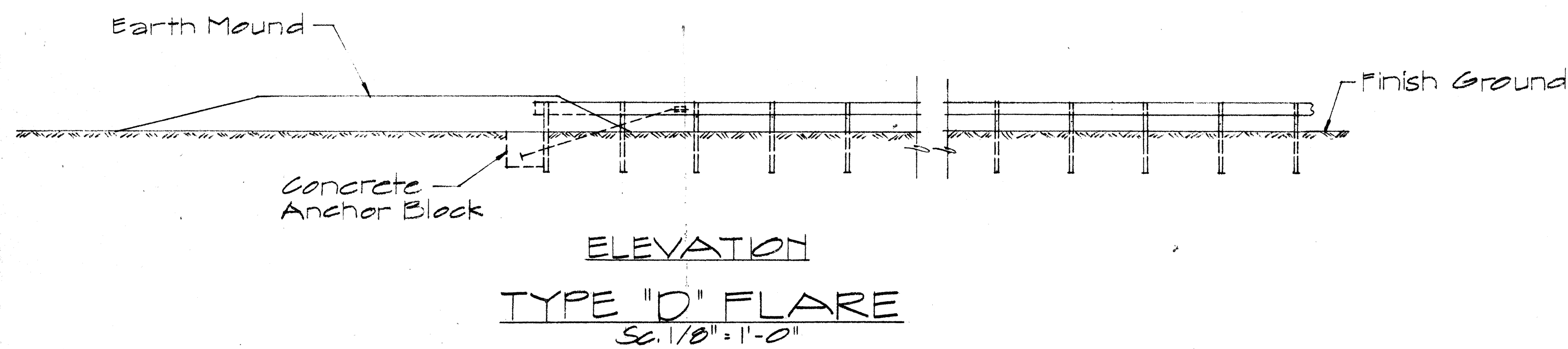
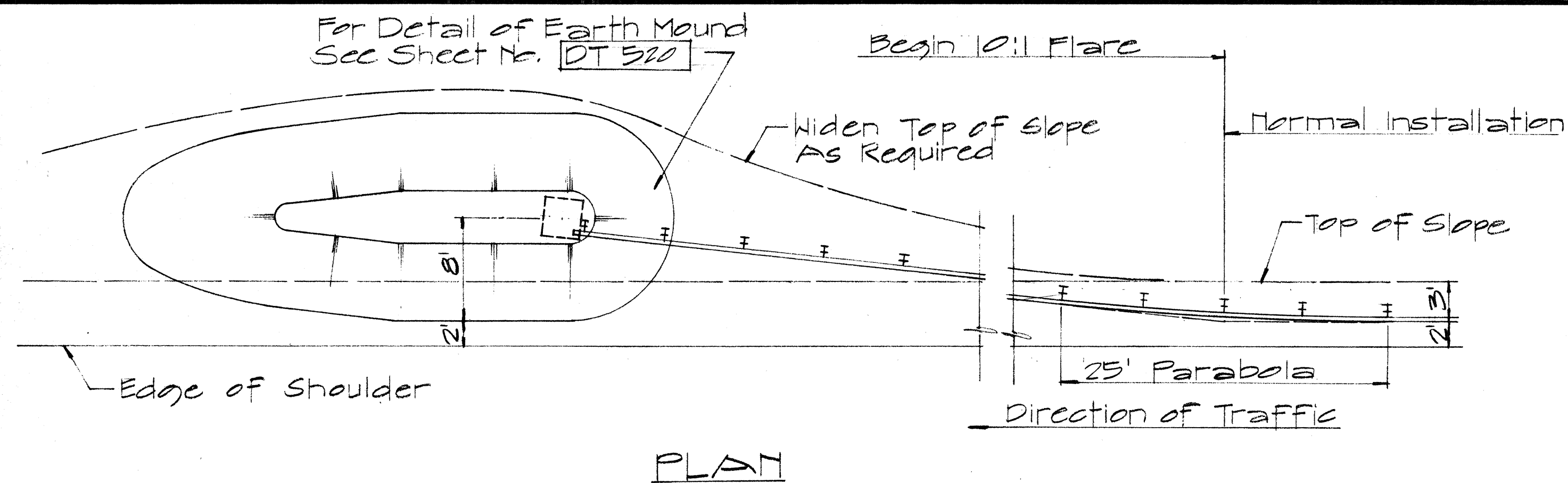
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS  
OF APPROACH END  
FLARE - ONE & TWO  
WAY ROADWAY**

SC. As Noted April 1969  
SHEET No. 3 OF 9 SHEETS DT 516

DATE  
DESIGNED BY  
CHECKED BY  
QUANTITIES BY  
NOTED BY  
ORIGINAL PLAN  
NO.

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 19        | 24           |



TYPICAL LAYOUT PLAN OF END POST CONNECTION

Sc. 1/8" = 1'-0"

APPROVAL RECOMMENDED:  
*Euske Tanaka* 12/29/69  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Wm. J. Sal* 12-30-69  
 ASSISTANT CHIEF, ENGINEERING DATE

| NO. | REVISION | APPROVED BY | DATE |
|-----|----------|-------------|------|
|     |          |             |      |

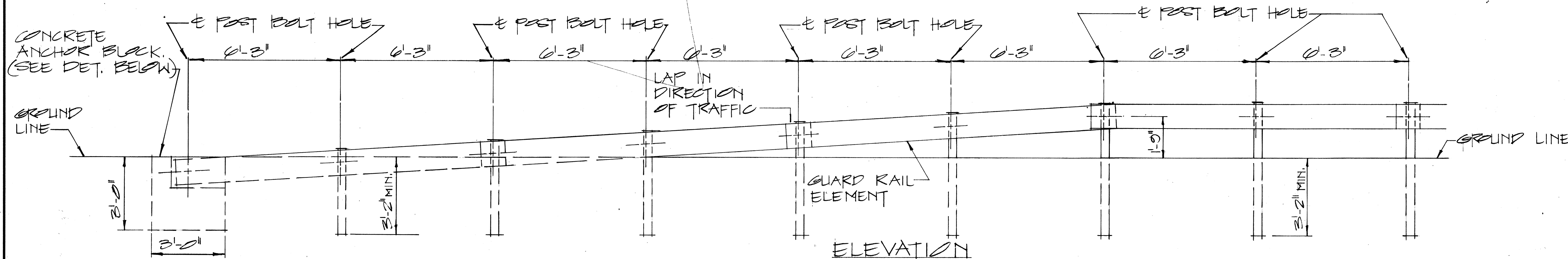
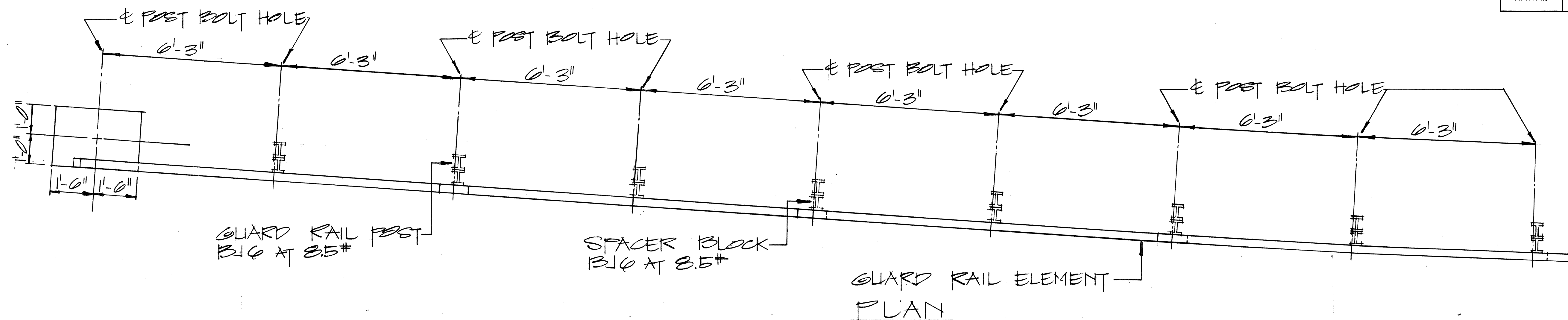
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

STANDARD DETAILS  
 OF TRAILING END  
 FLARE - ONE & TWO  
 WAY ROADWAY

Sc. As Noted April 1969

SHEET No. 4 OF 9 SHEETS DT 517

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 20        | 24           |

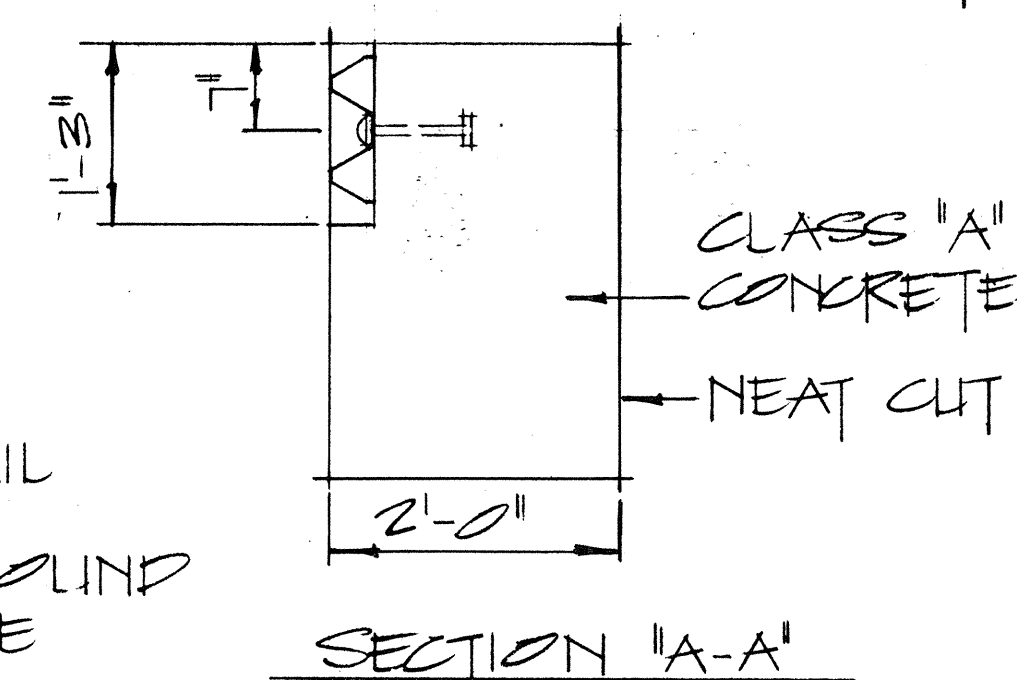
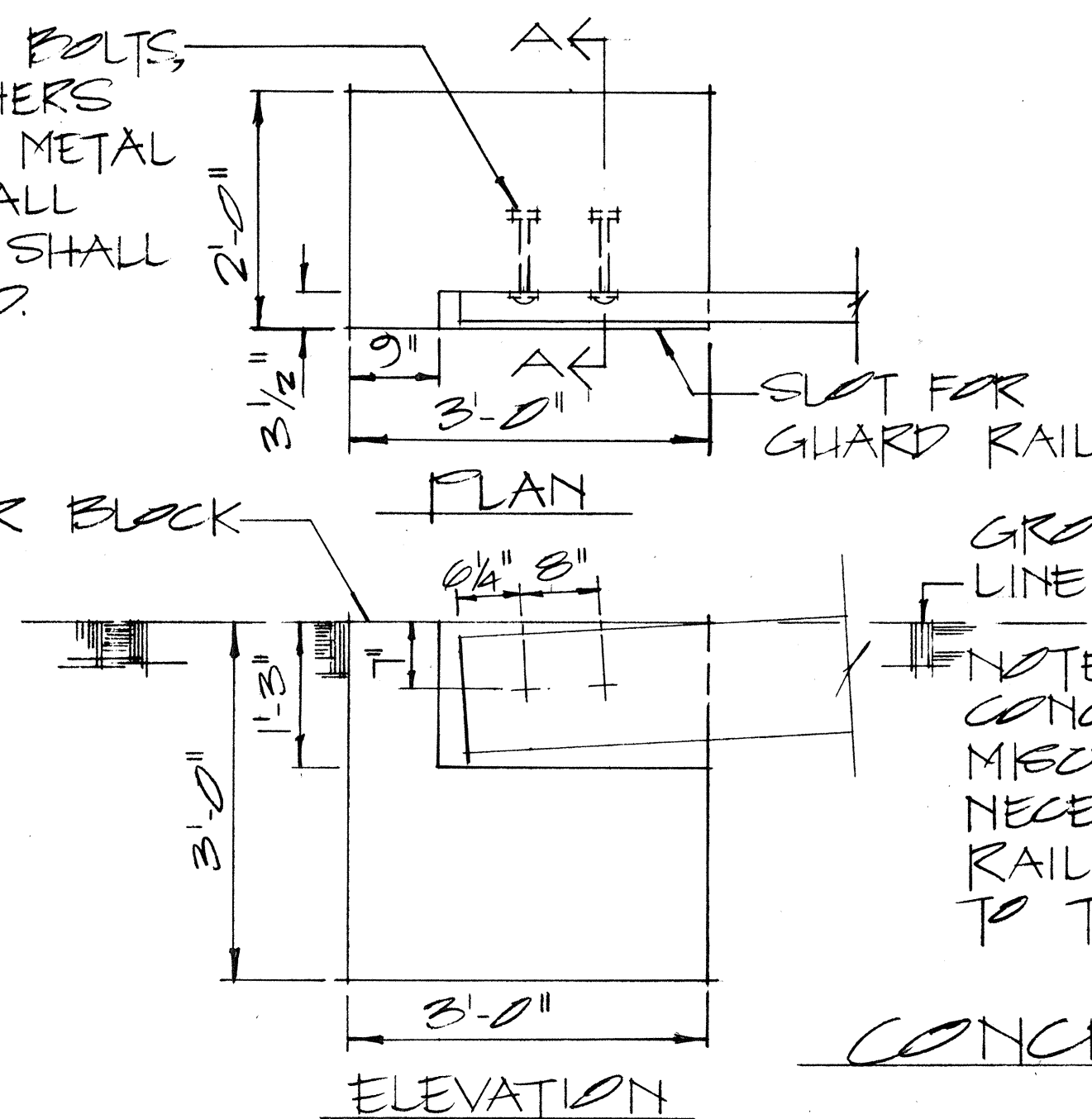


## RAMP END ANCHORAGE

SCALE:  $\frac{1}{2}'' = 1'-0''$

2-5/8" x 7/4" LONG BOLTS, W/ NUTS & WASHERS INCIDENTAL TO METAL GUARD RAIL. ALL METAL PIECES SHALL BE GALVANIZED.

TOP OF ANCHOR BLOCK TO BE FLUSH W/ GROUND.



NOTE: CONCRETE, EXCAVATION AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS, SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.

CONCRETE ANCHOR BLOCK  
SCALE:  $\frac{3}{4}'' = 1'-0''$

APPROVAL RECOMMENDED:  
*Euske Tanaka*  
TRAFFIC ENGINEER  
12/29/69  
DATE

APPROVED:  
*John J. J. J.*  
ASSISTANT CHIEF, ENGINEERING  
12-30-69  
DATE

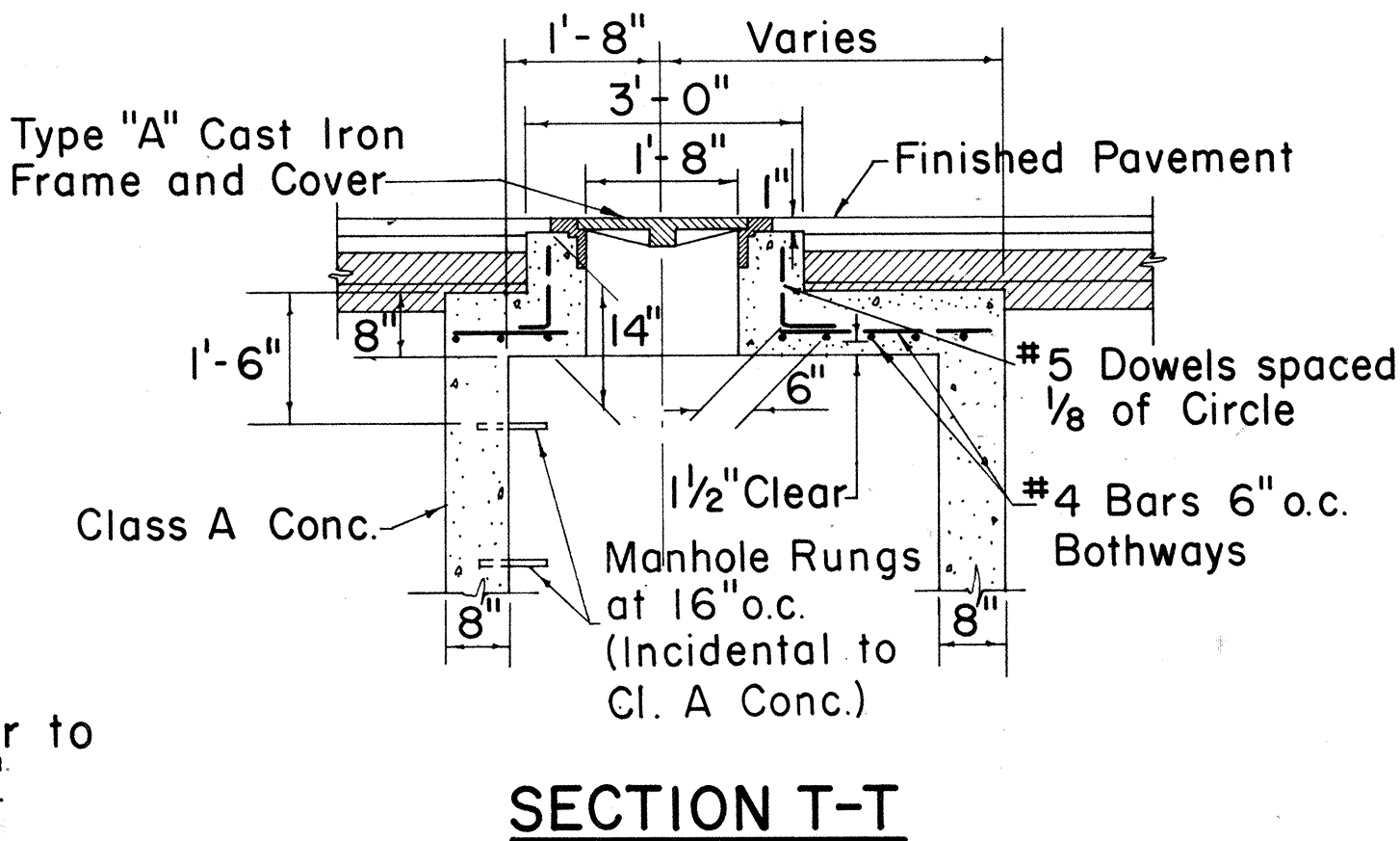
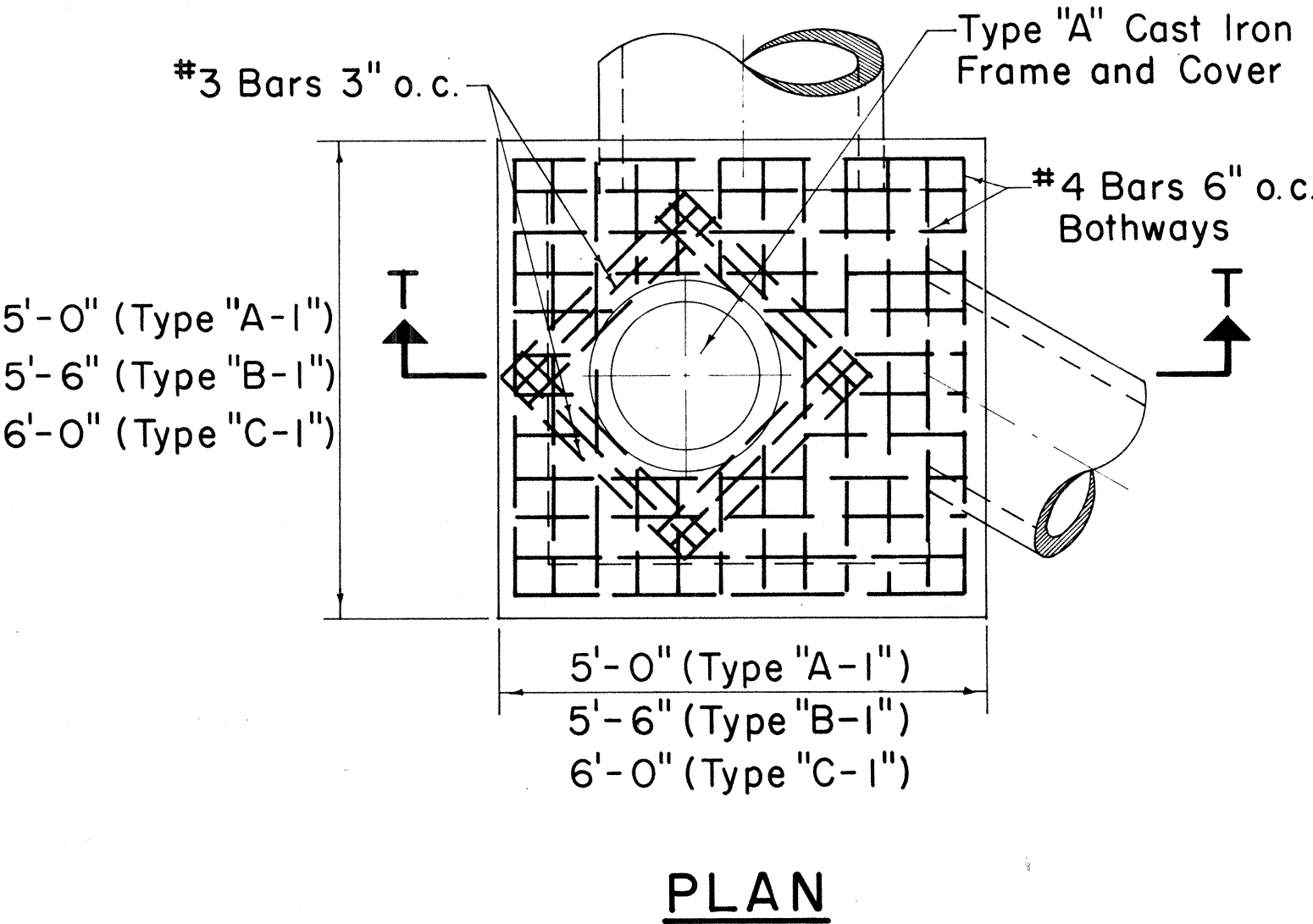
| NO. | REVISION | APPROVED BY | DATE |
|-----|----------|-------------|------|
|     |          |             |      |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STANDARD DETAILS**  
**GUARD RAIL, TYPE 3**  
**RAMP END ANCHORAGE**  
SCALE: AS SHOWN

SHEET No. 5 OF 9 SHEETS PT510

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

| FED. ROAD DIST. NO. | STATE  | PROJECT    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|--------|------------|-------------|-----------|--------------|
| HAWAII              | HAWAII | 580A-01-70 | 1970        | 21        | 24           |

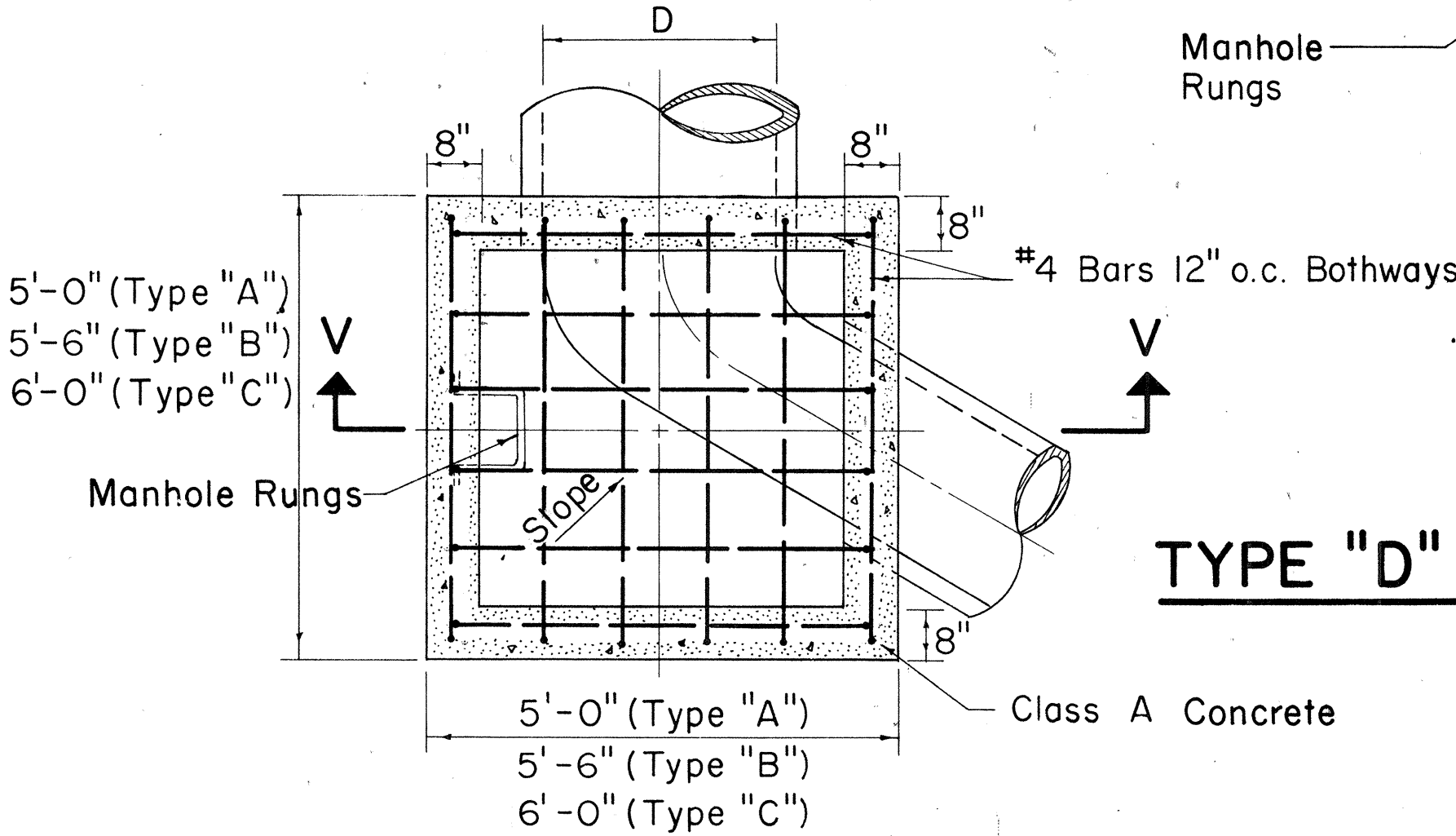
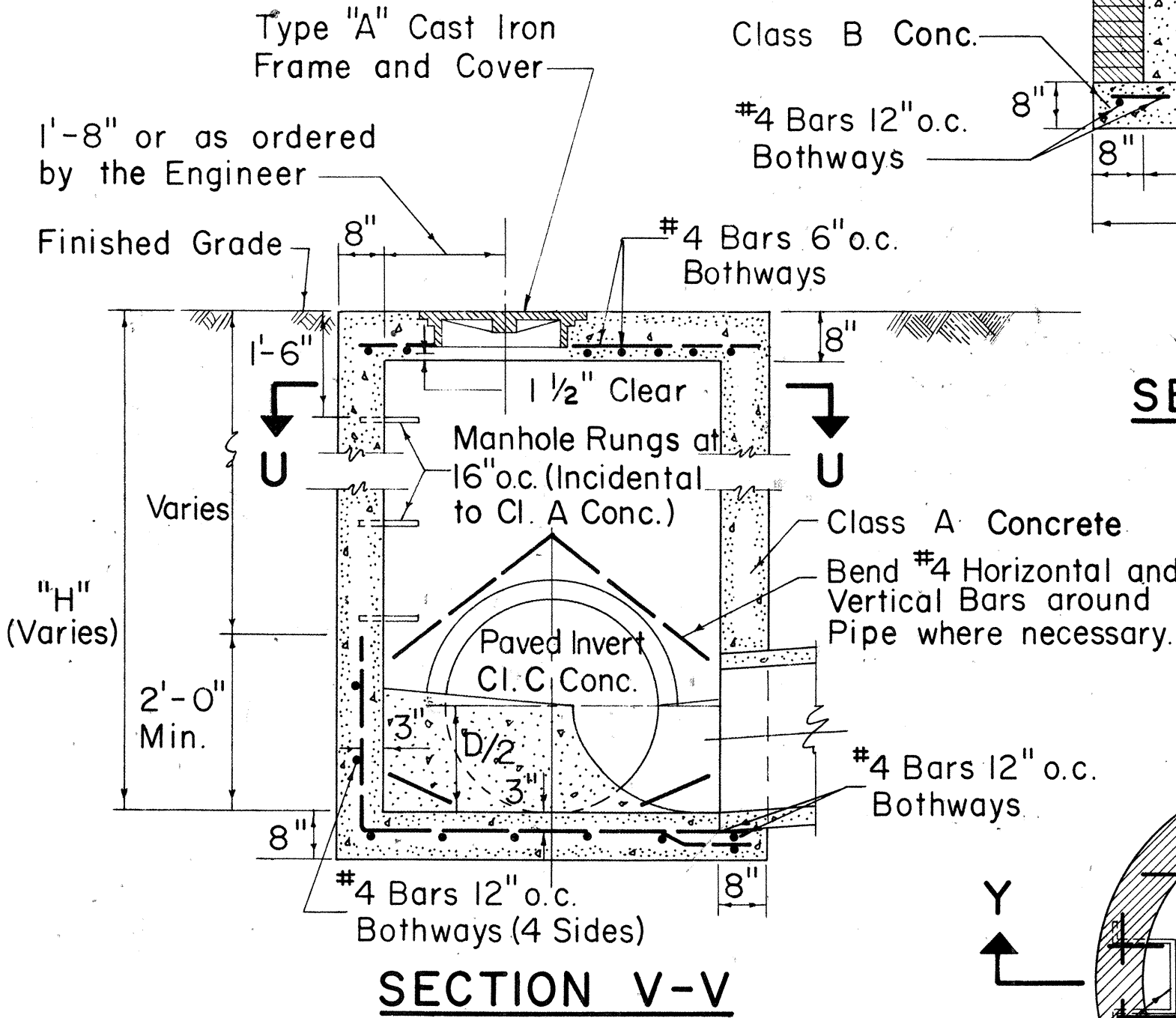


Note:  
Bottom detail similar to Type "A", "B", & "C"

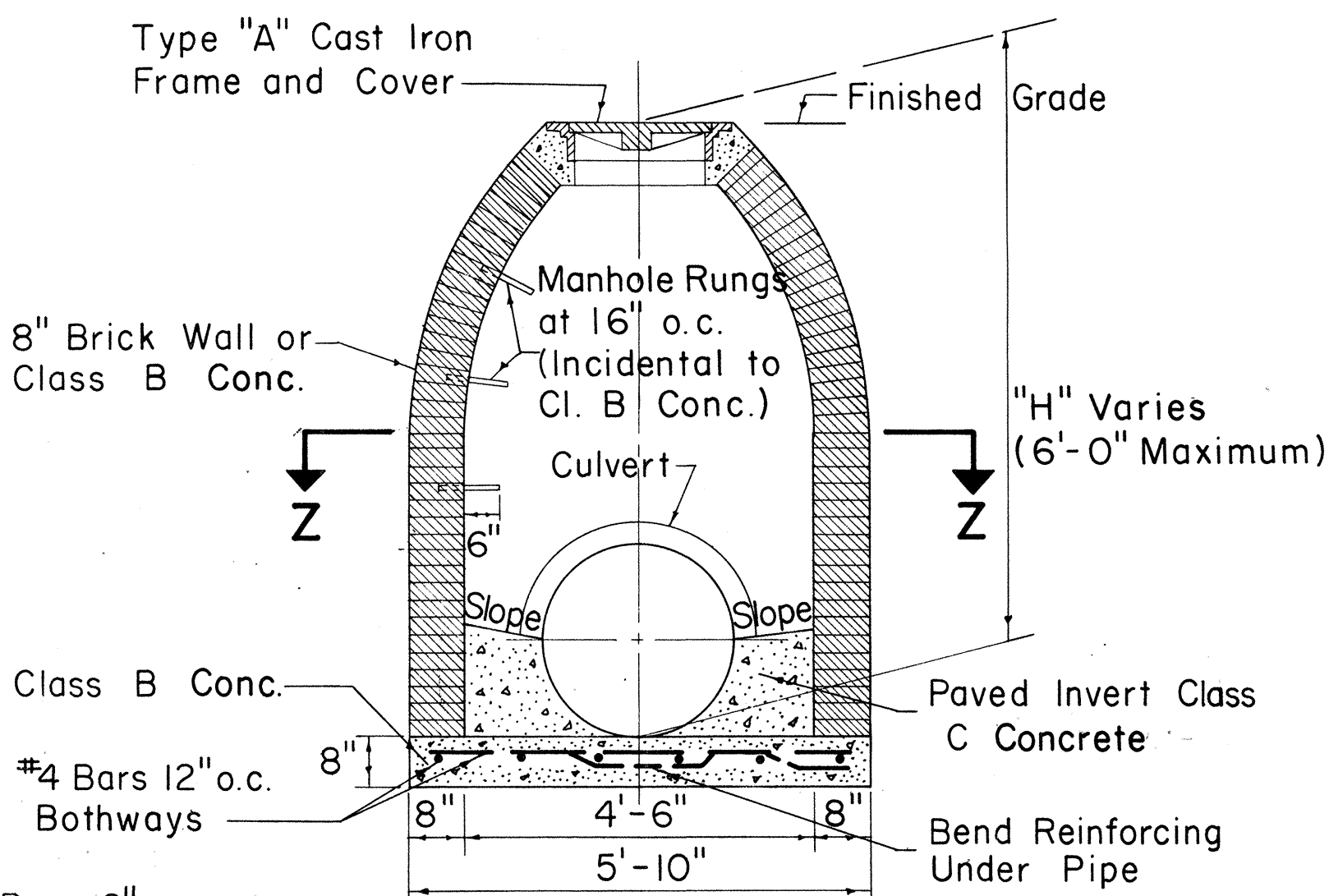
TYPE "A-I", "B-I", & "C-I"  
STORM DRAIN MANHOLE  
TOP DETAIL UNDER PAVEMENT  
Scale: 1/2" = 1'-0"

GENERAL NOTES

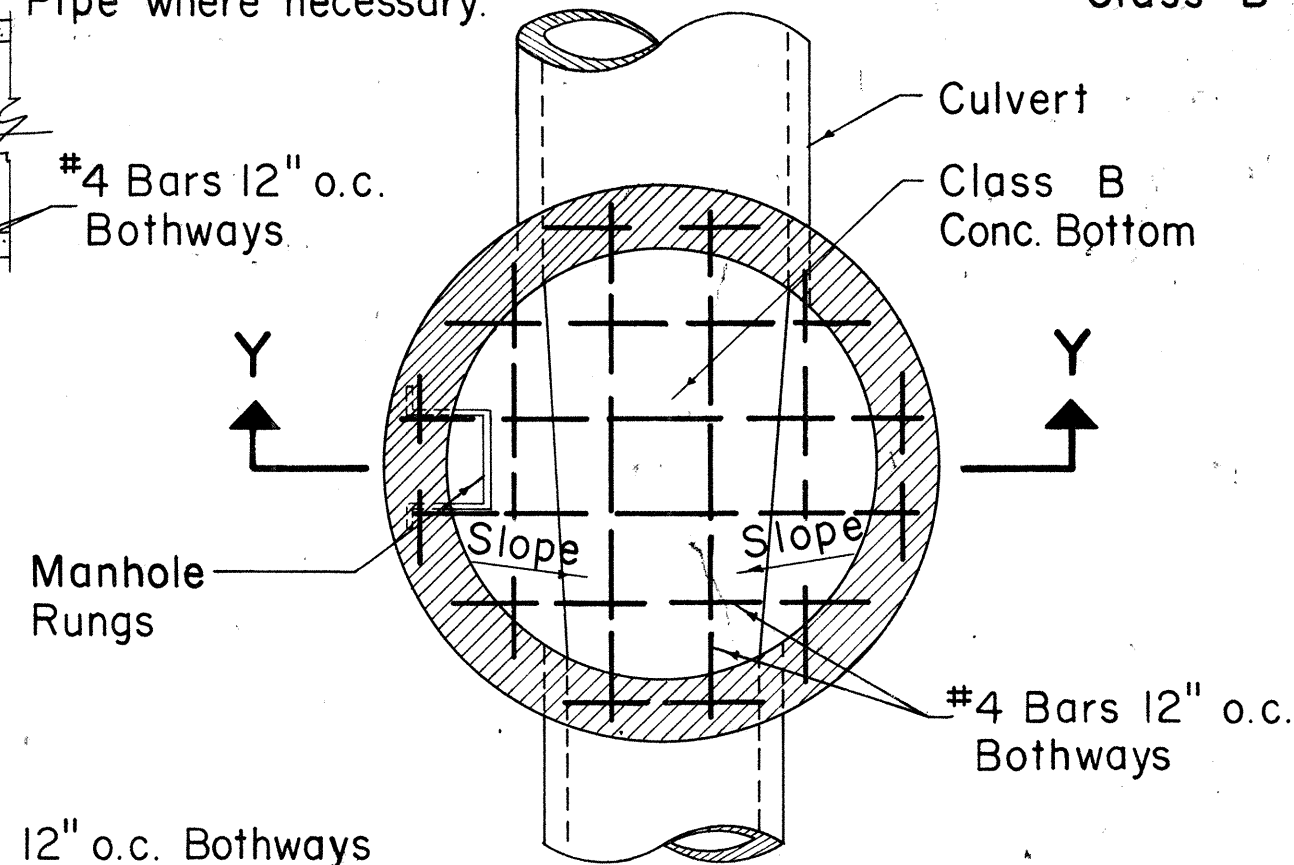
- Culvert shall enter and leave S.D.M.H. from any position and in the direction indicated by the plans or ordered by the Engineer.
- Manhole Rungs (16" o.c.) are required when "H" is greater than 4'-6". Only one rung (12" from the bottom) is required if "H" is 4'-6" or less. Type "A" C.I. Frame and Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.



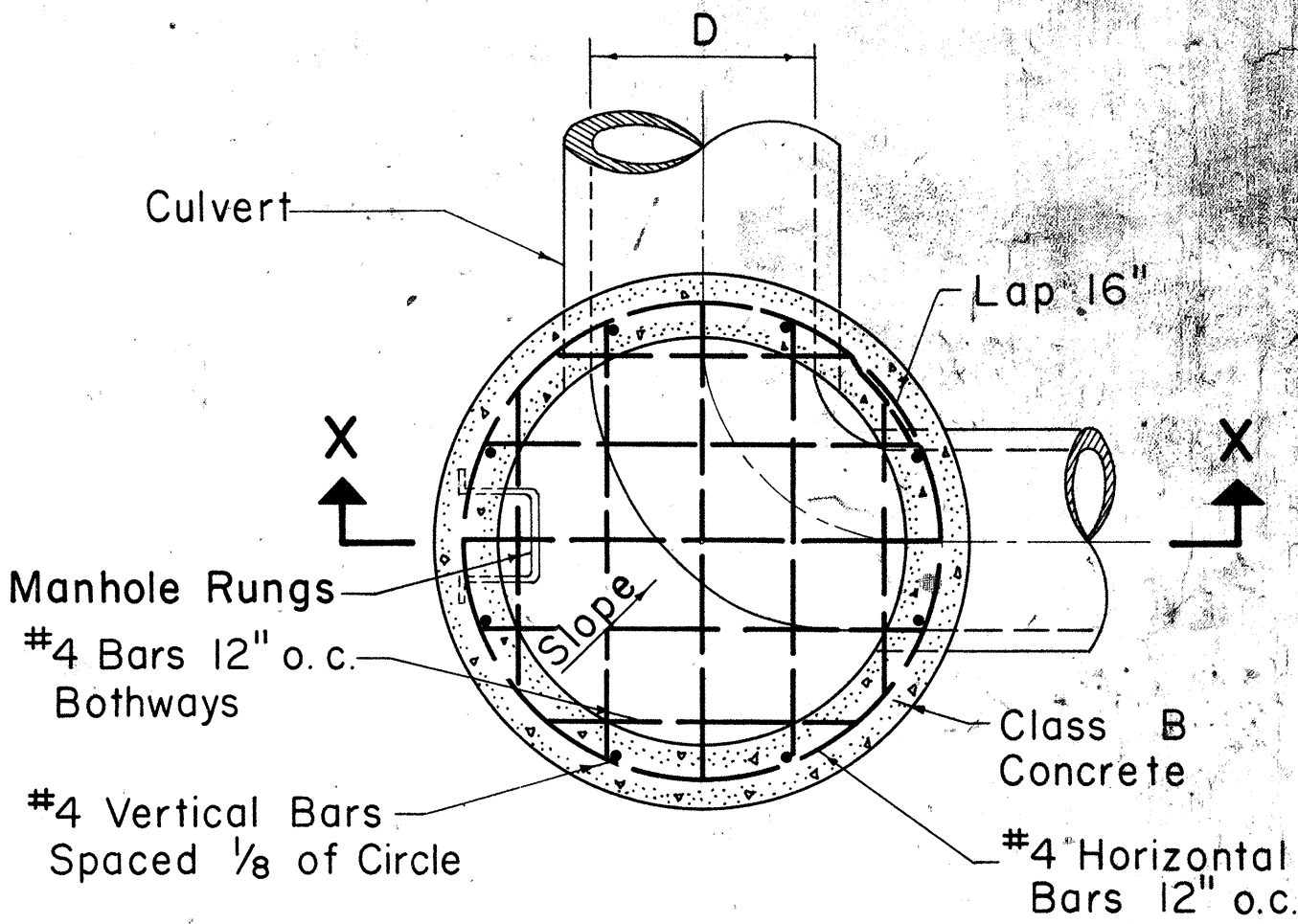
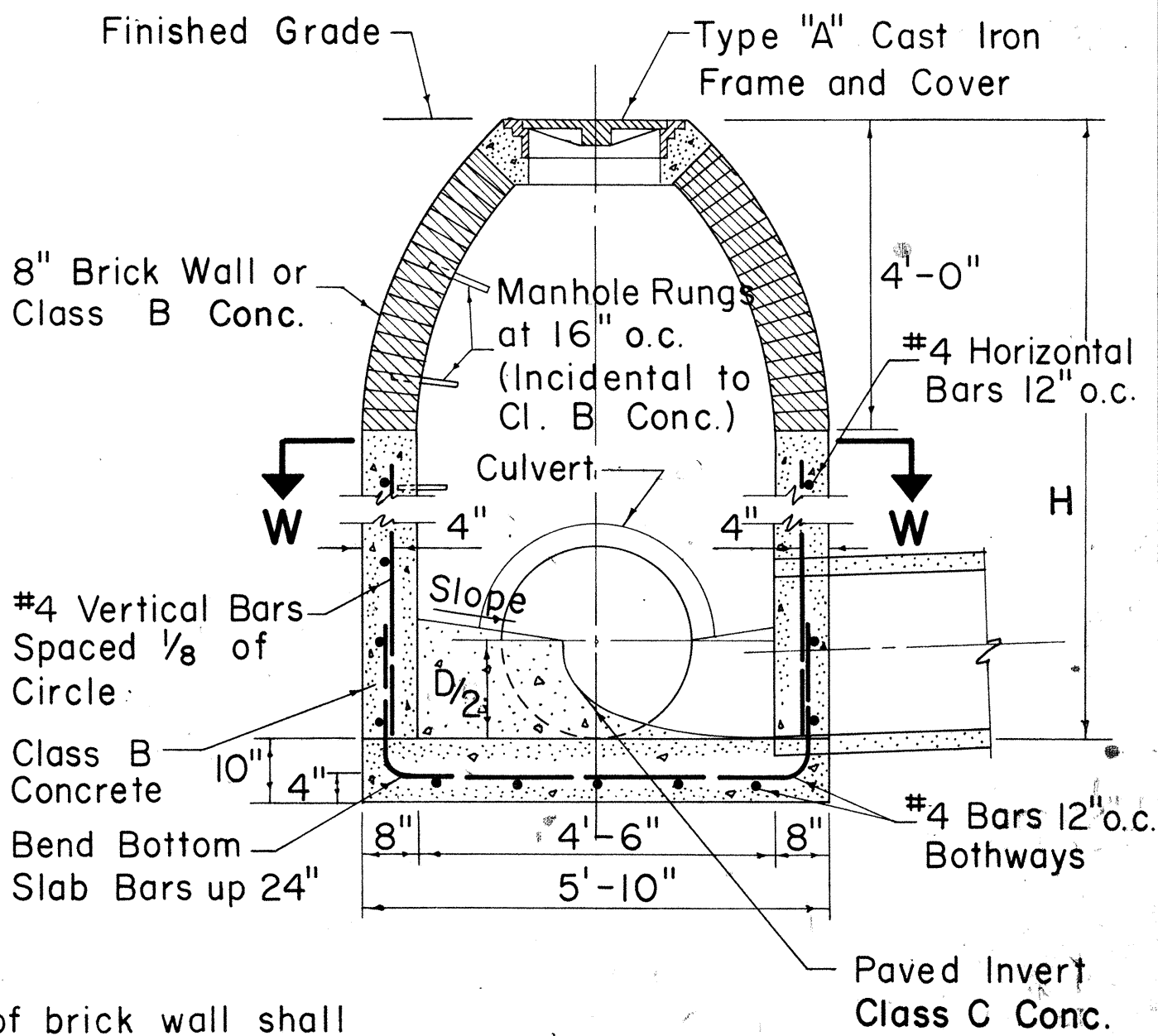
TYPE "A", "B", & "C"  
S.D.M.H.  
Scale: 1/2" = 1'-0"



- NOTE:
- Exterior surface of brick wall shall be plastered with 1" thickness of 1:2 Cement Mortar.
  - Number, size and direction of culvert at manhole to be as shown on plans.
  - Paved invert not required at drop manholes.
  - All Class C Concrete to be incidental to Class B Concrete.



TYPE "D" STORM DRAIN MANHOLE  
Scale: 1/2" = 1'-0"



TYPE "E" STORM DRAIN MANHOLE  
Scale: 1/2" = 1'-0"

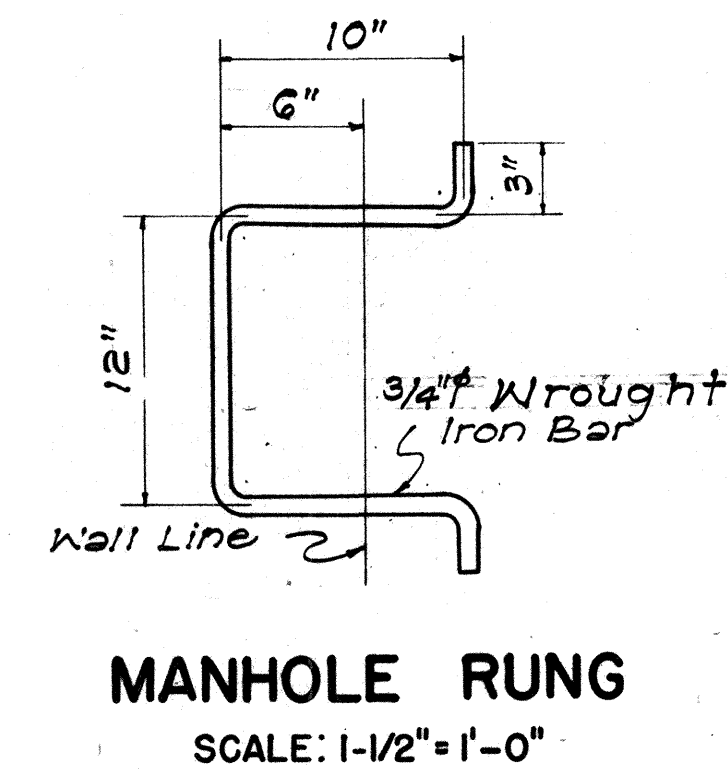
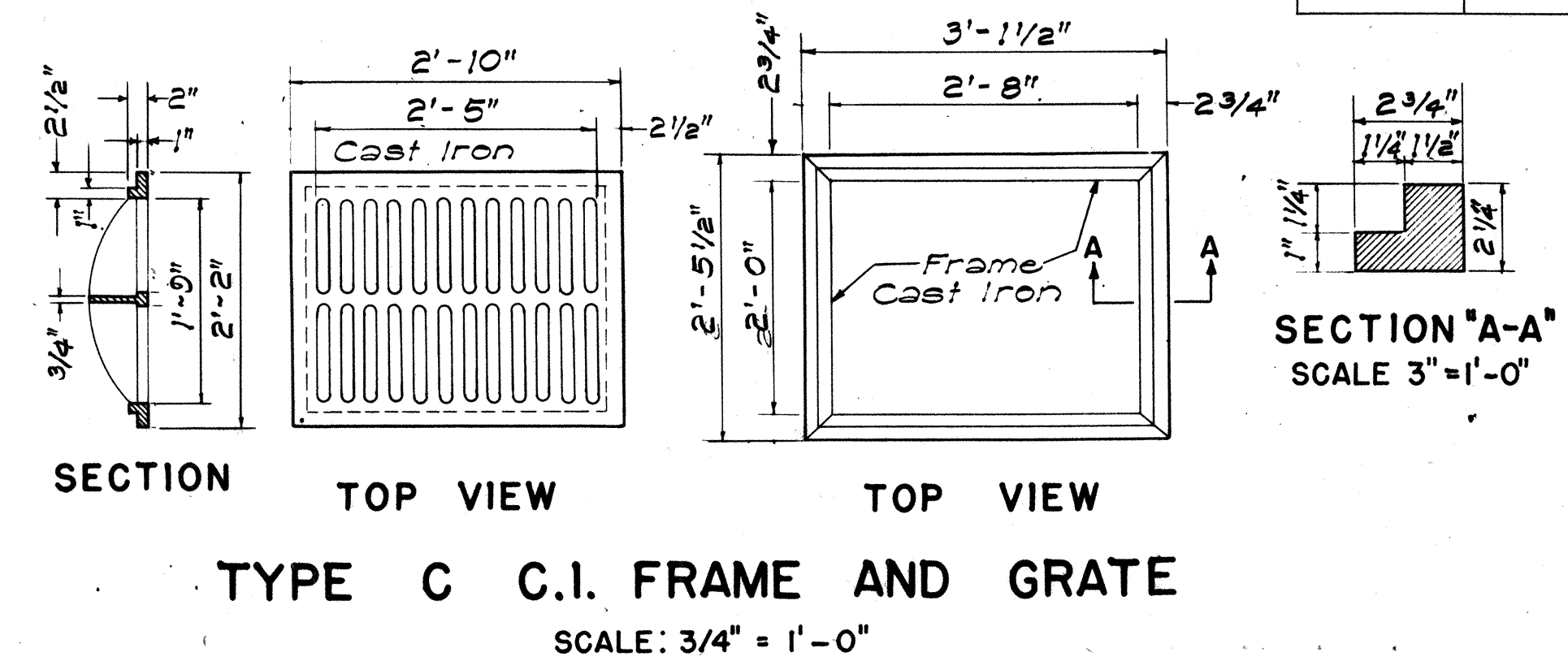
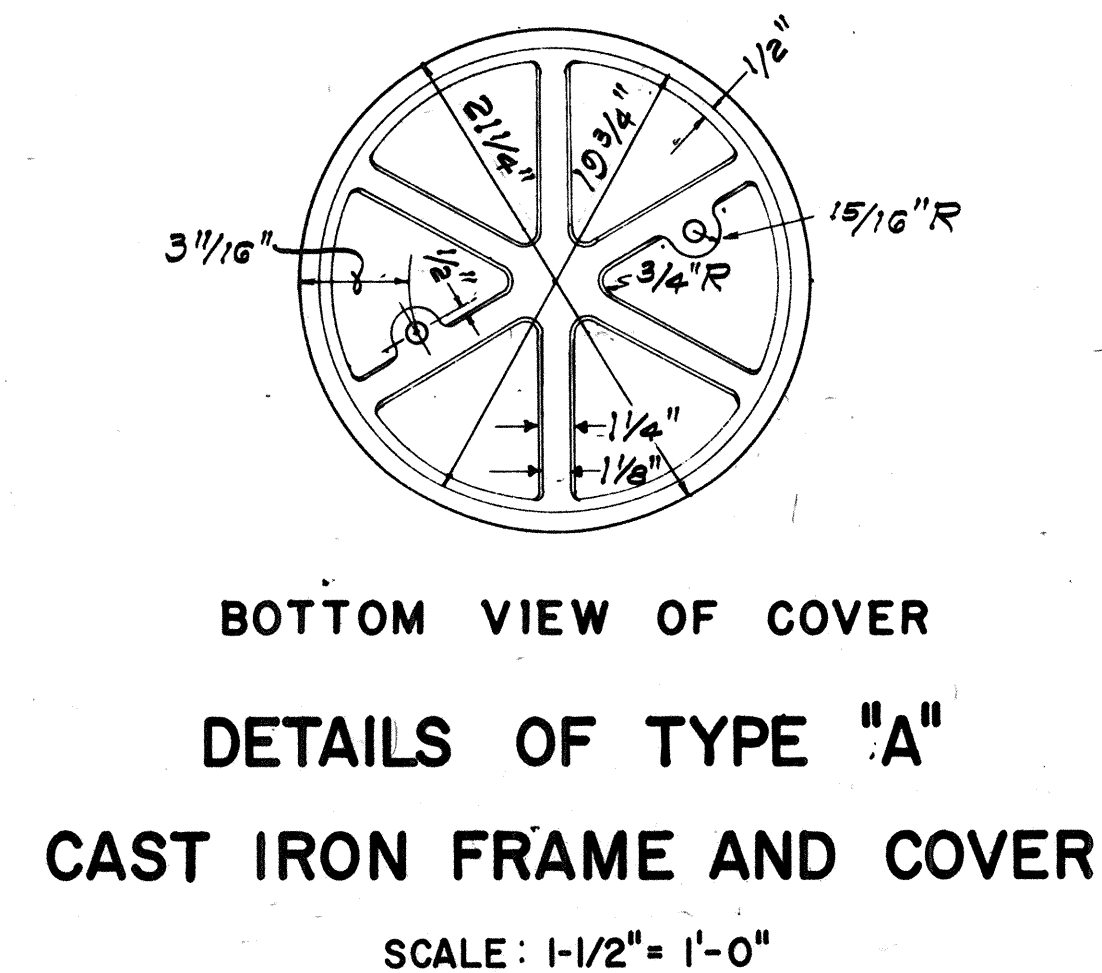
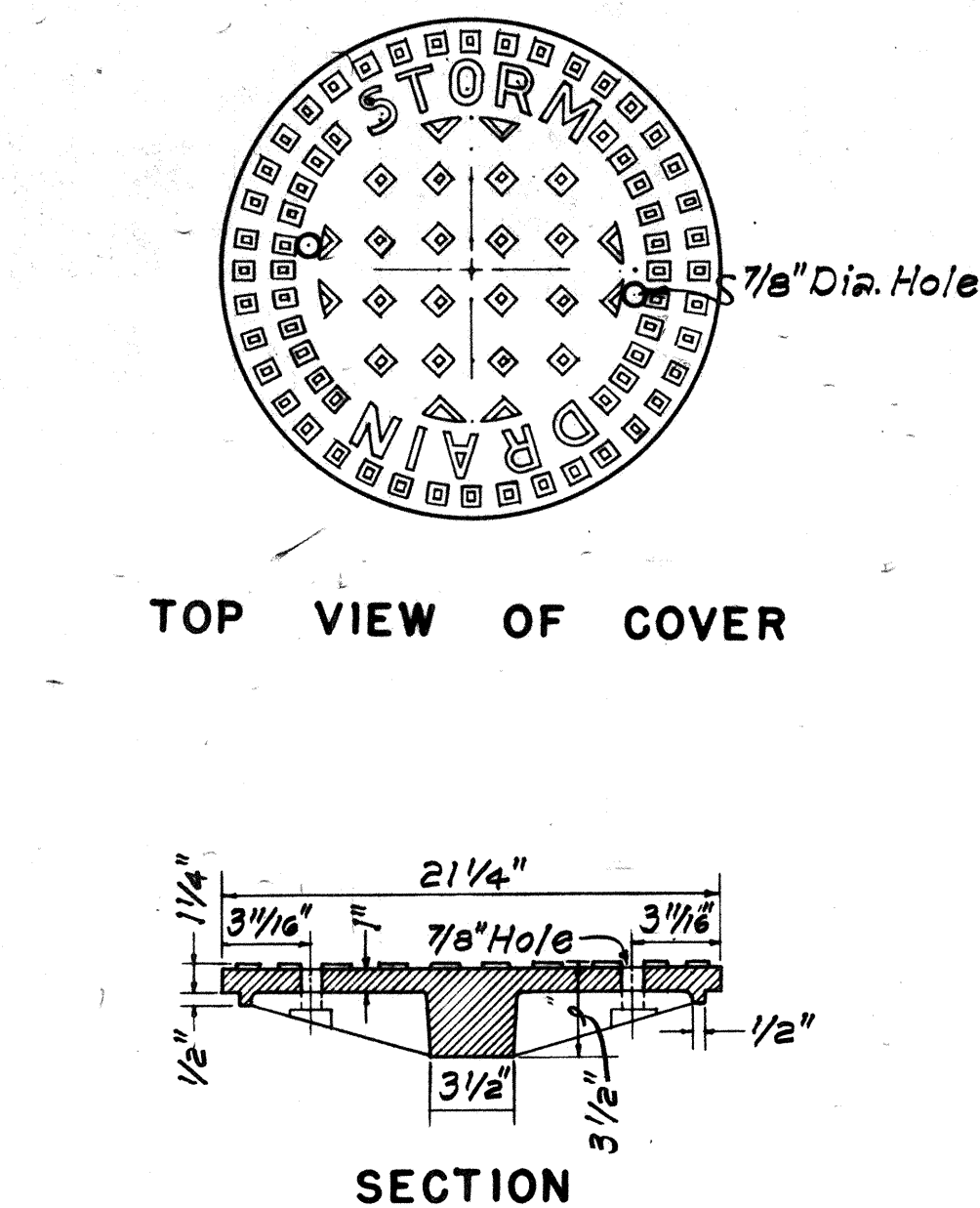
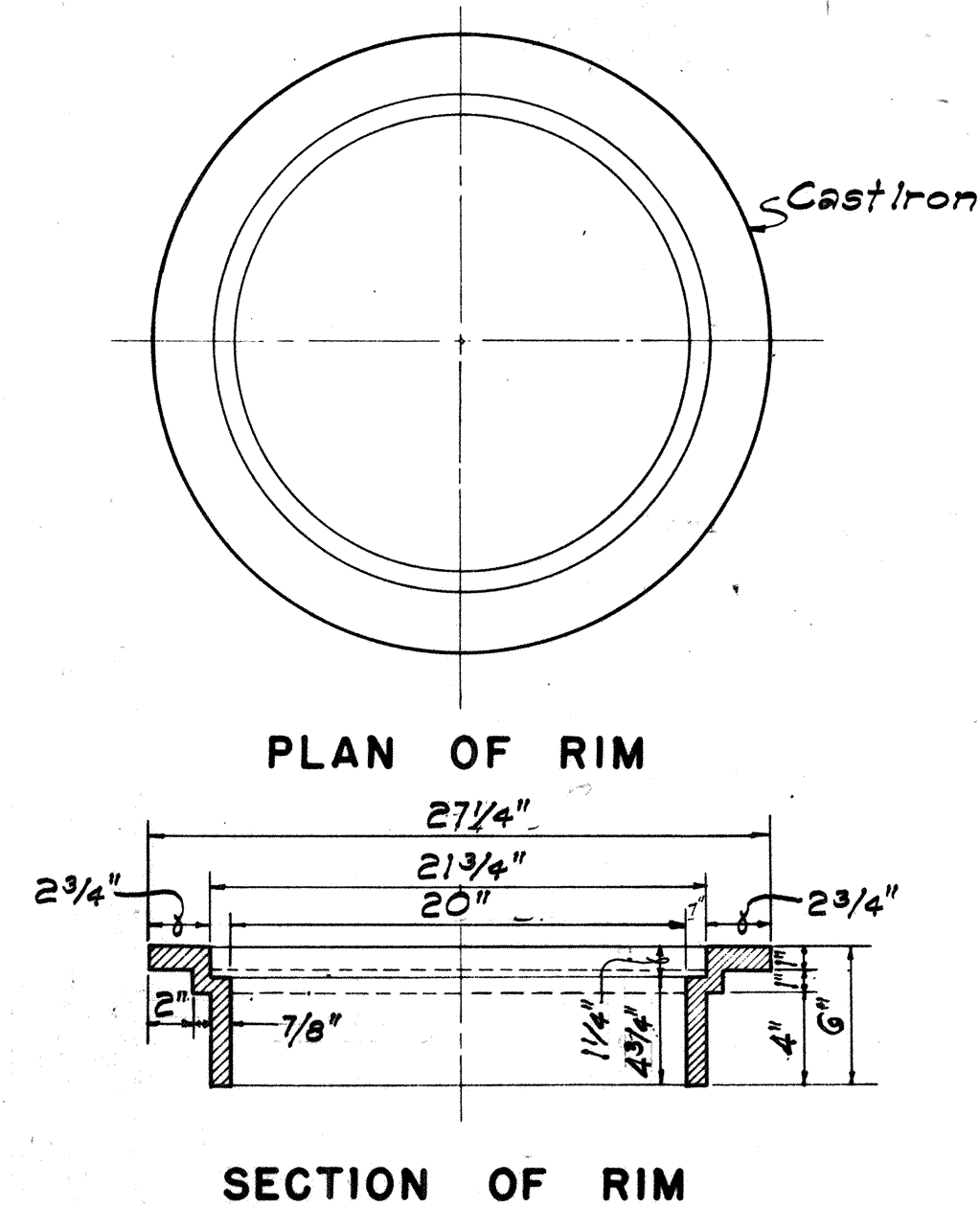
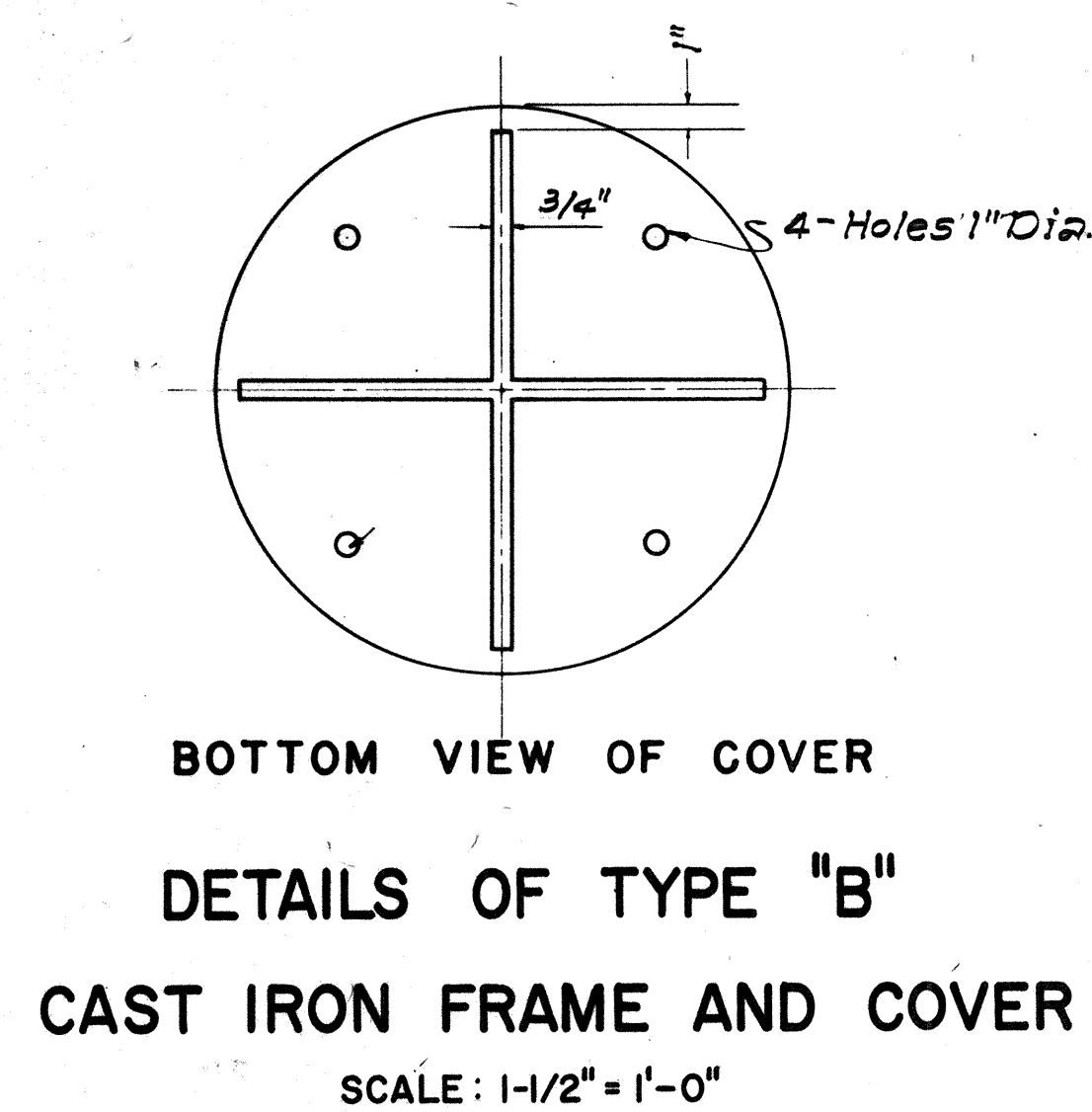
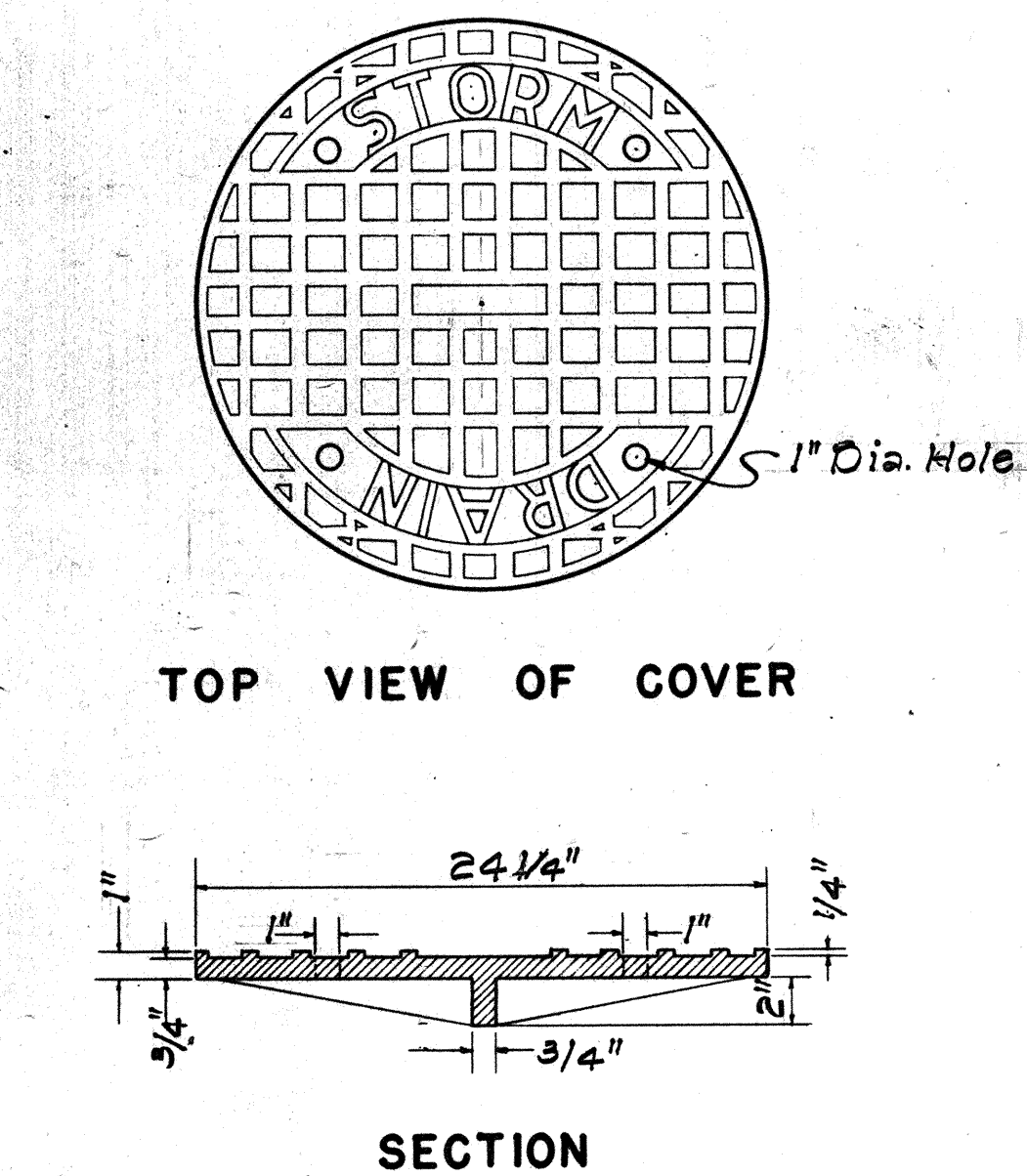
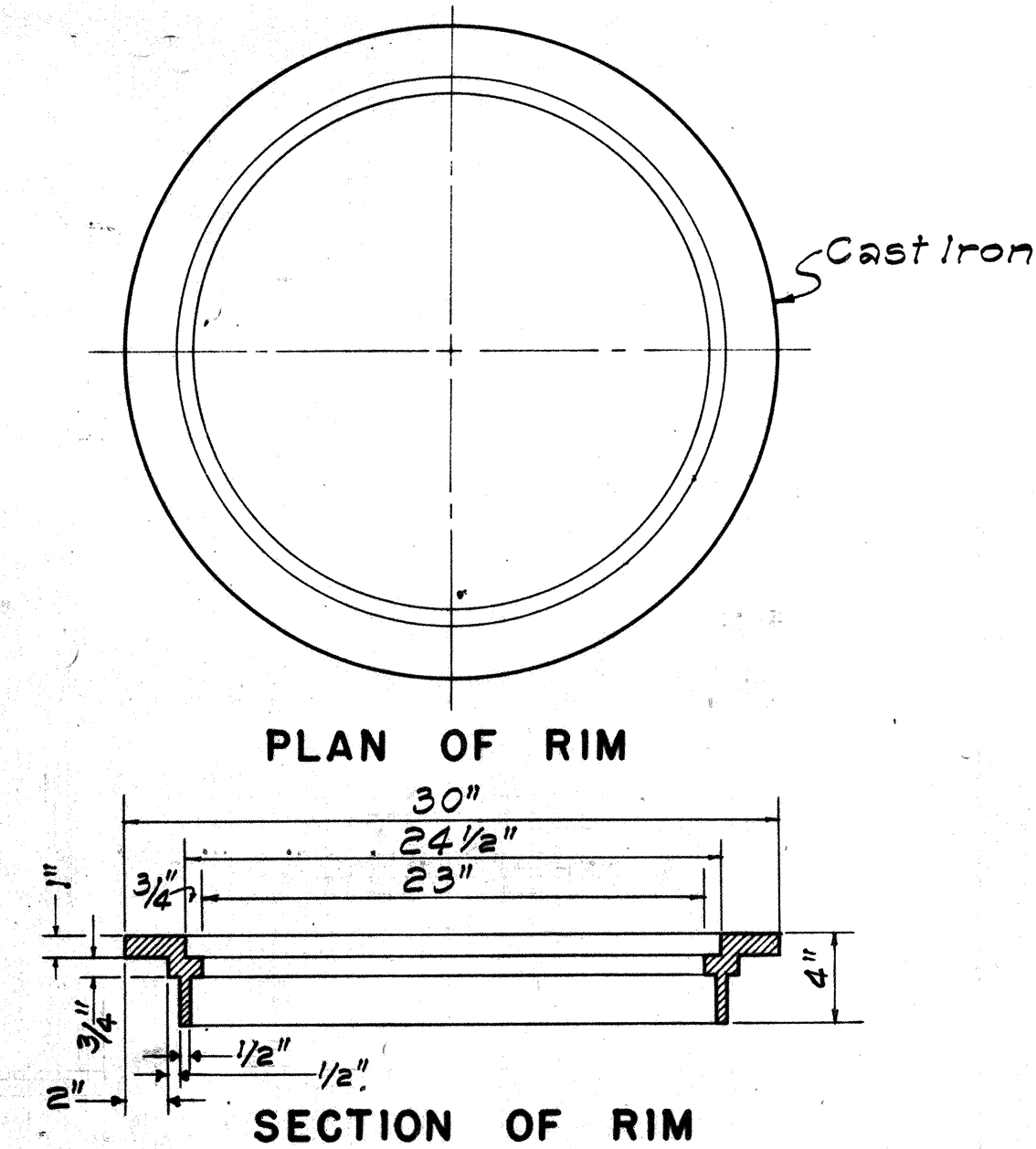
APPROVAL RECOMMENDED:  
*P. J. J. J.*  
HYDRAULIC DESIGN ENGINEER 12-17-69  
DATE

APPROVED:  
*J. J. J. J.*  
ASST. CHIEF, ENGINEERING 12-17-69  
DATE

| NO. | REVISION | APPROVED BY | DATE |
|-----|----------|-------------|------|
|     |          |             |      |

|                                                                      |
|----------------------------------------------------------------------|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |
| STANDARD DETAILS<br>STORM DRAIN MANHOLES                             |
| Scales: As Noted Date: July, 1969                                    |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 22        | 24           |



APPROVAL RECOMMENDED:  
 HYDRAULIC DESIGN ENGINEER  
 DATE 12-17-69

APPROVED:  
 ASSISTANT CHIEF, ENGINEERING  
 DATE 12-17-69

| NO. | REVISION | APPROVED BY | DATE |
|-----|----------|-------------|------|
|     |          |             |      |

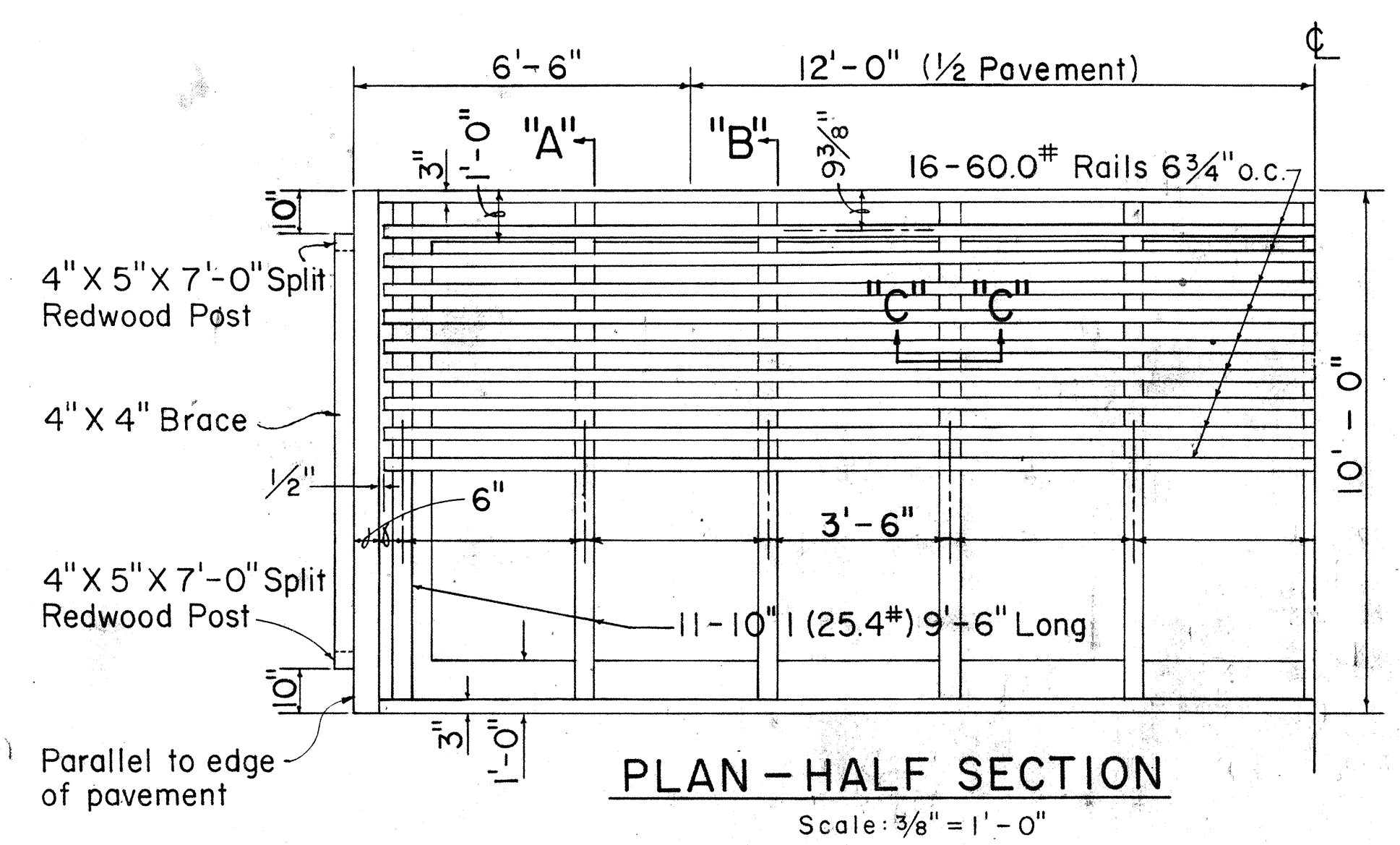
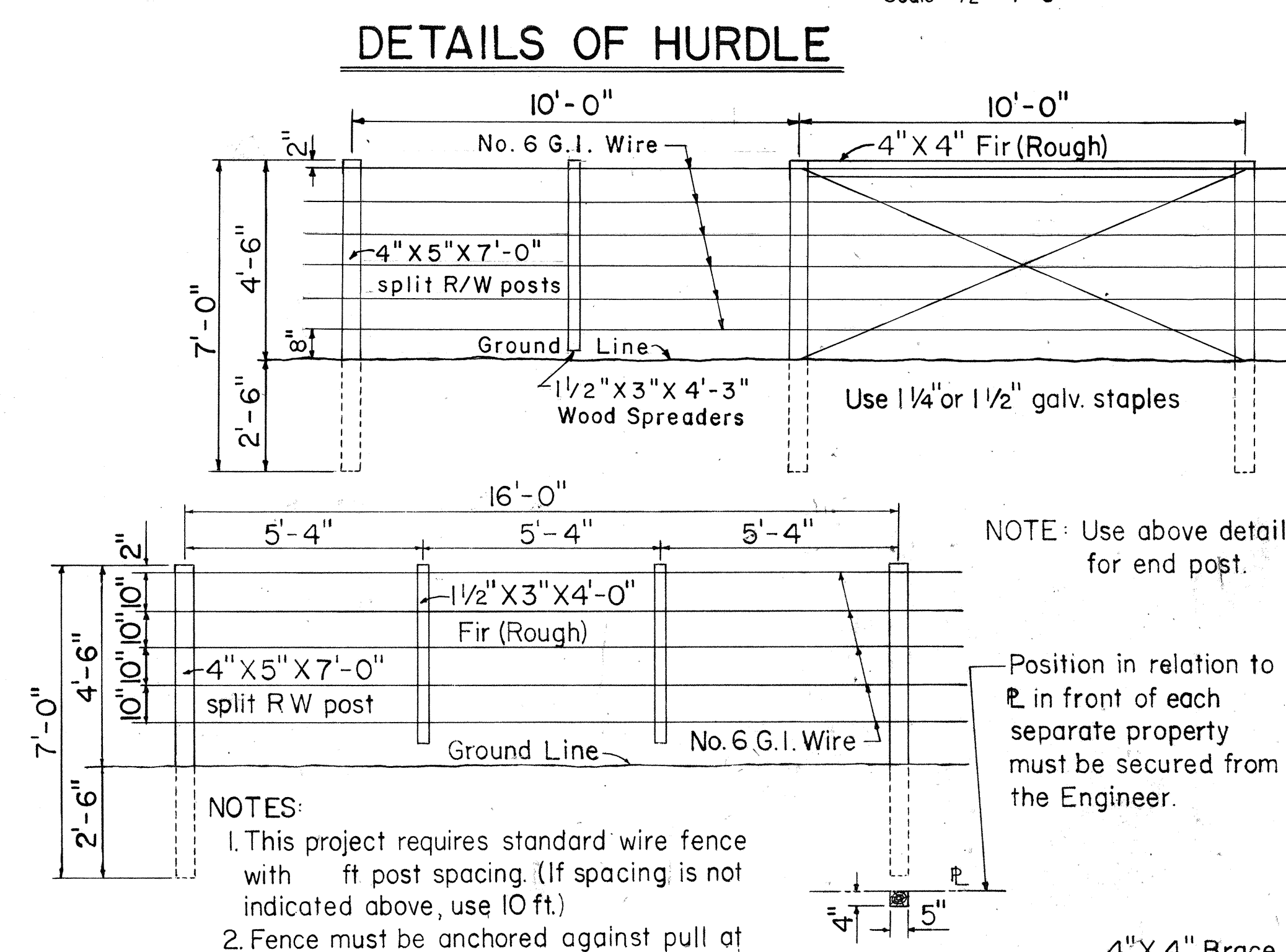
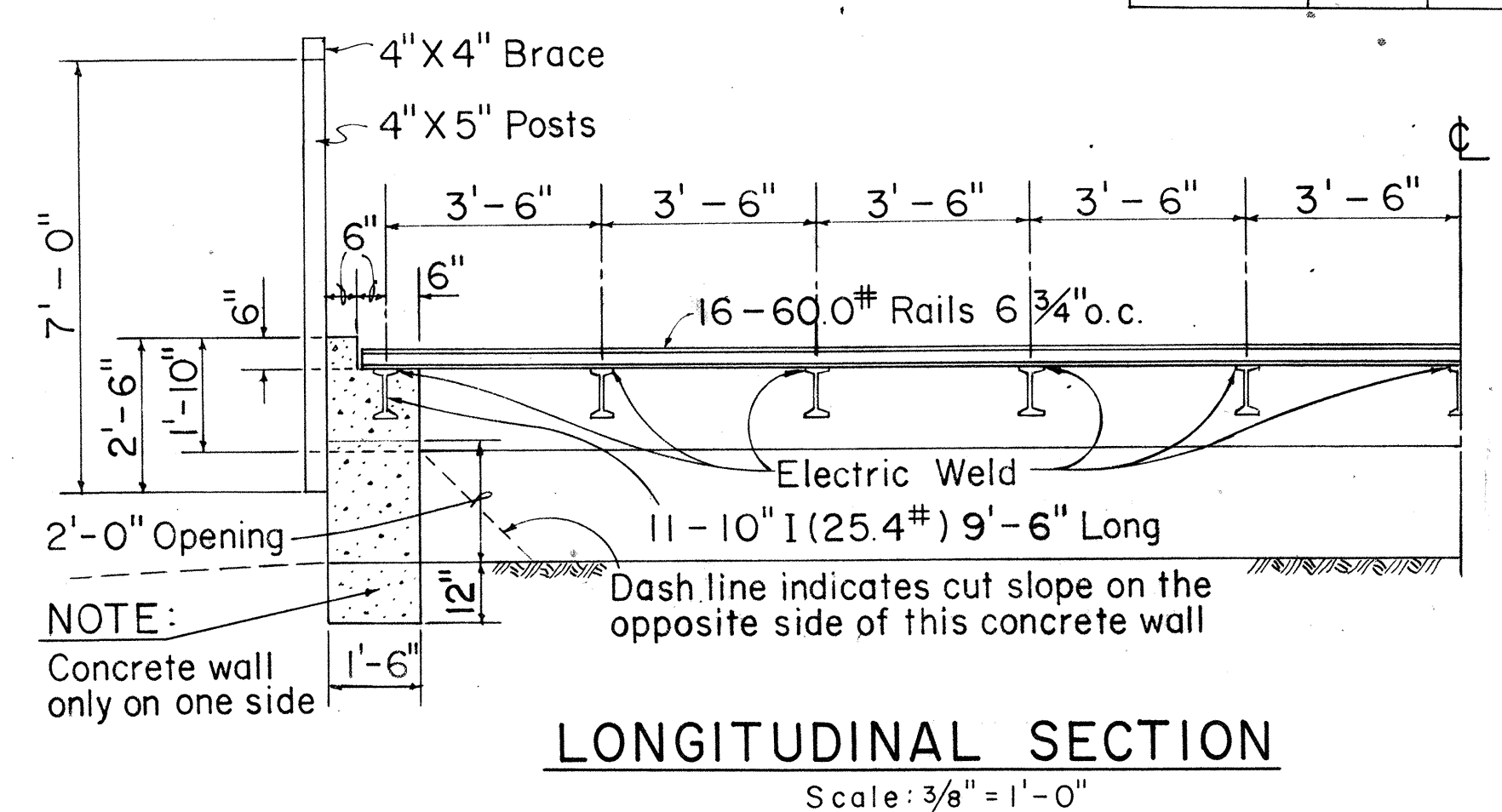
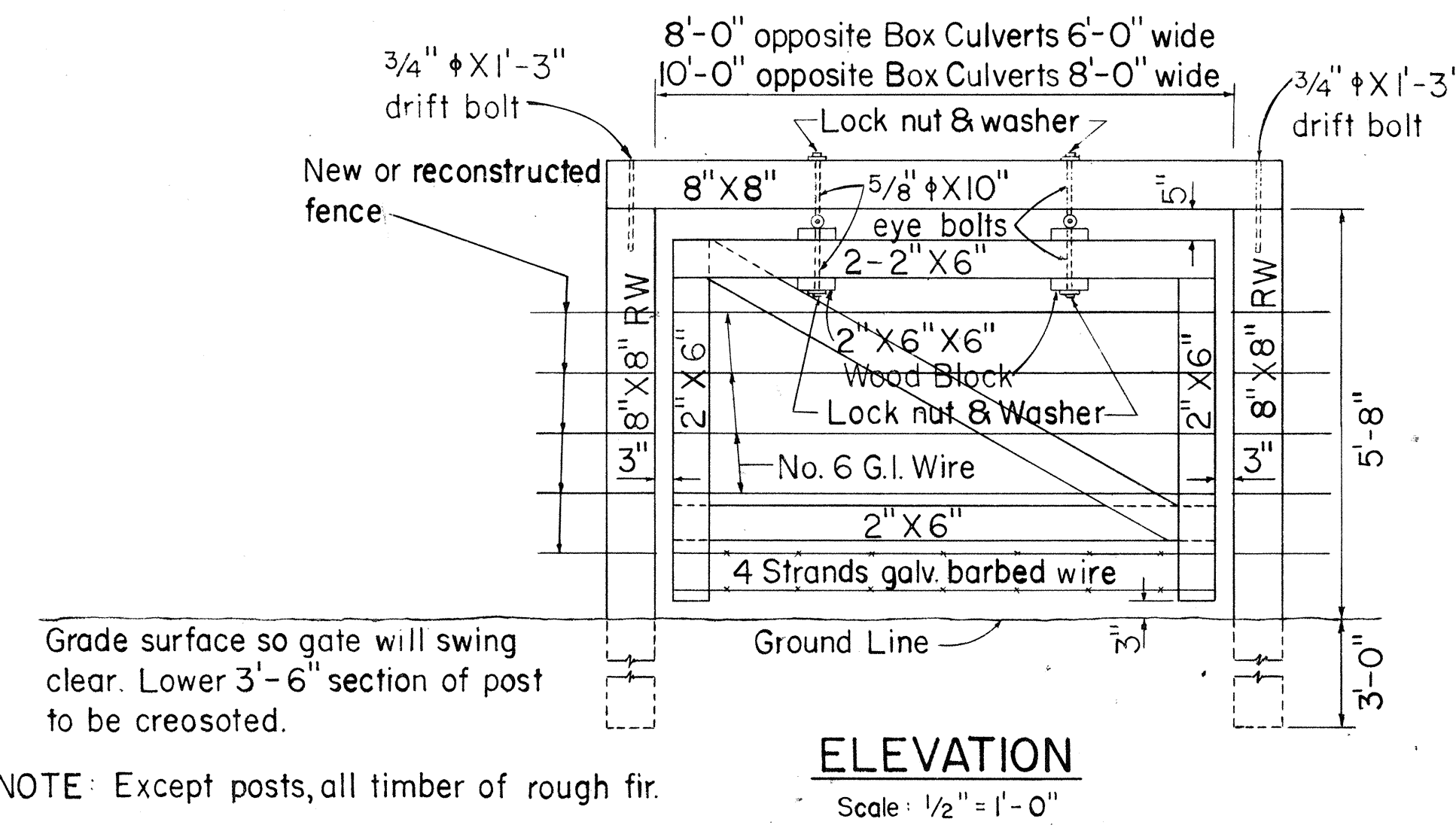
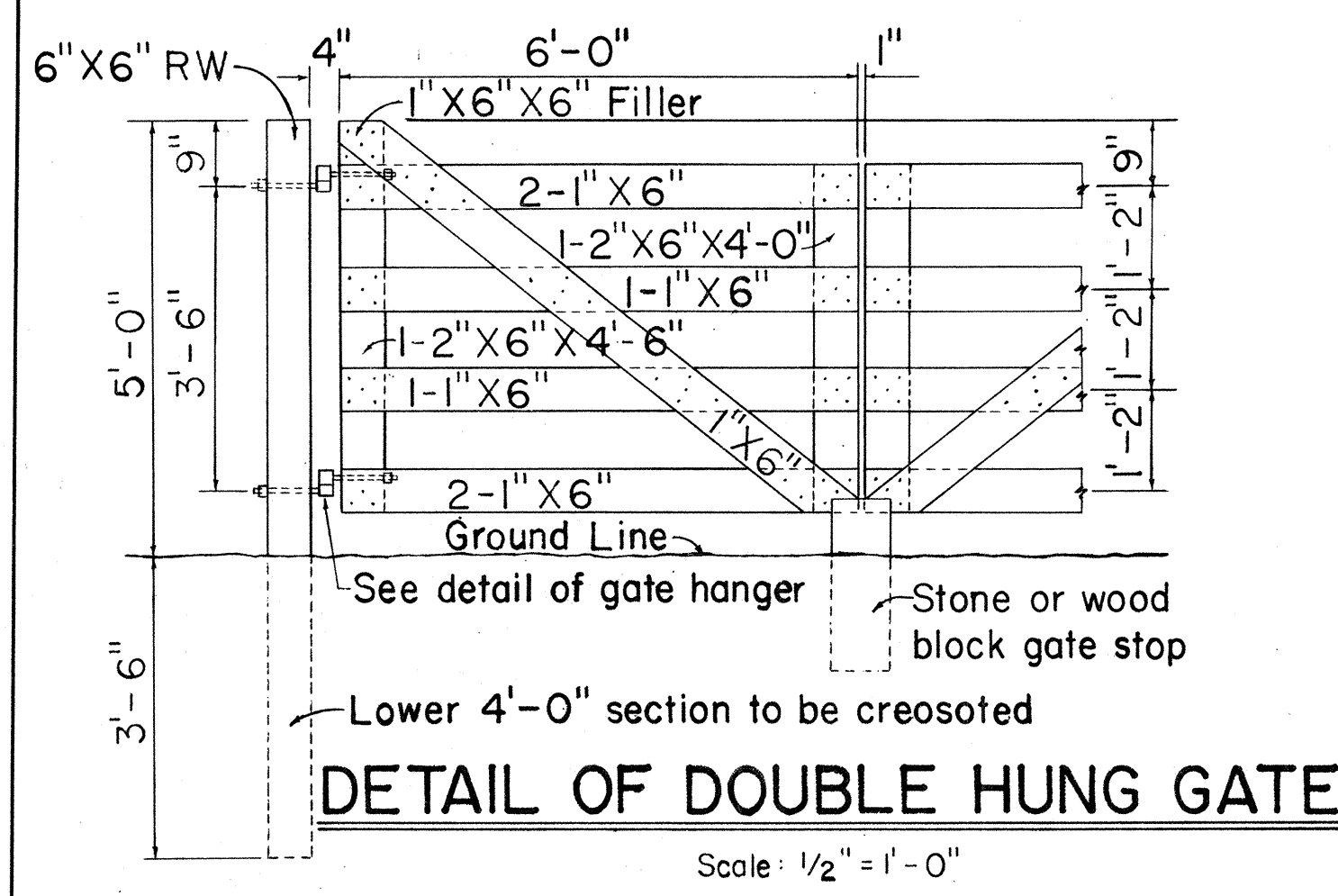
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

STANDARD DETAILS  
 CATCH BASIN AND  
 MANHOLE CASTINGS

Scale: As Noted Date: July, 1969  
 SHEET NO 7 OF 9 SHEETS DH 6

|               |             |      |
|---------------|-------------|------|
| ORIGINAL PLAN | DESIGNED BY | DATE |
| NOTE BOOK     | DRAWN BY    |      |
|               | CHECKED BY  |      |
|               |             |      |

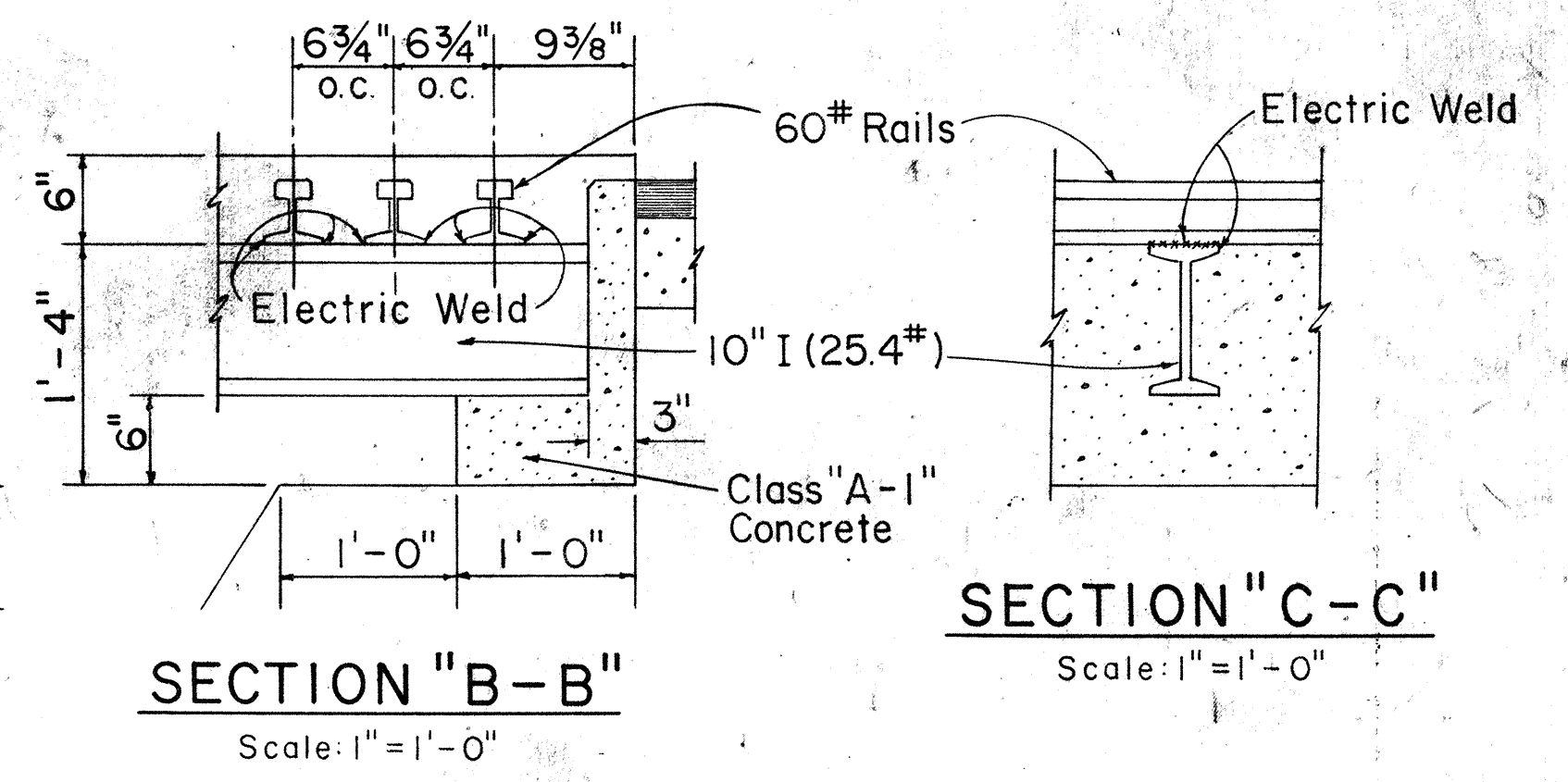
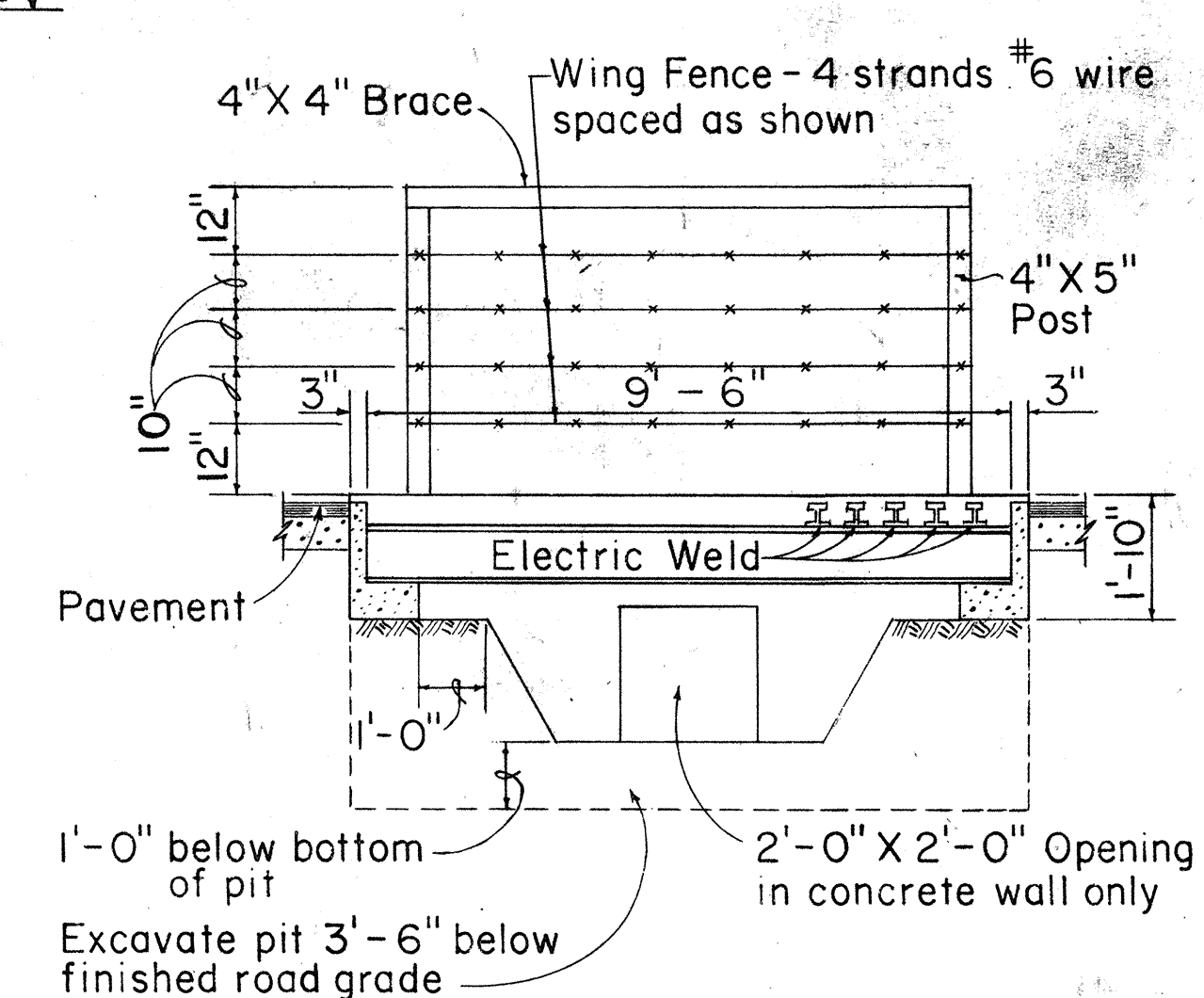
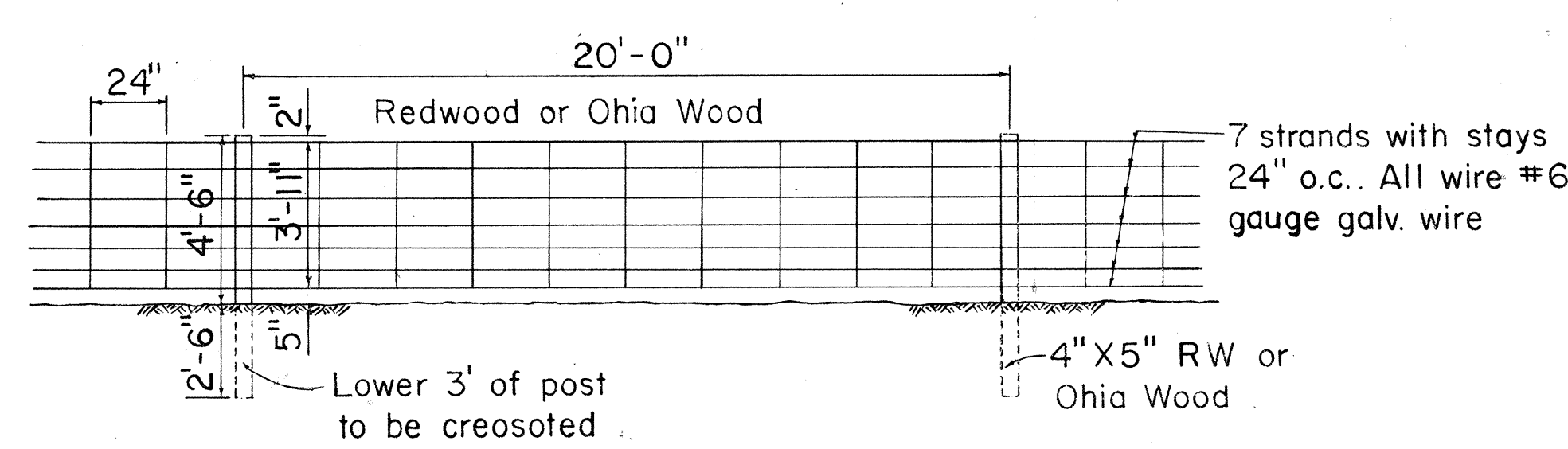
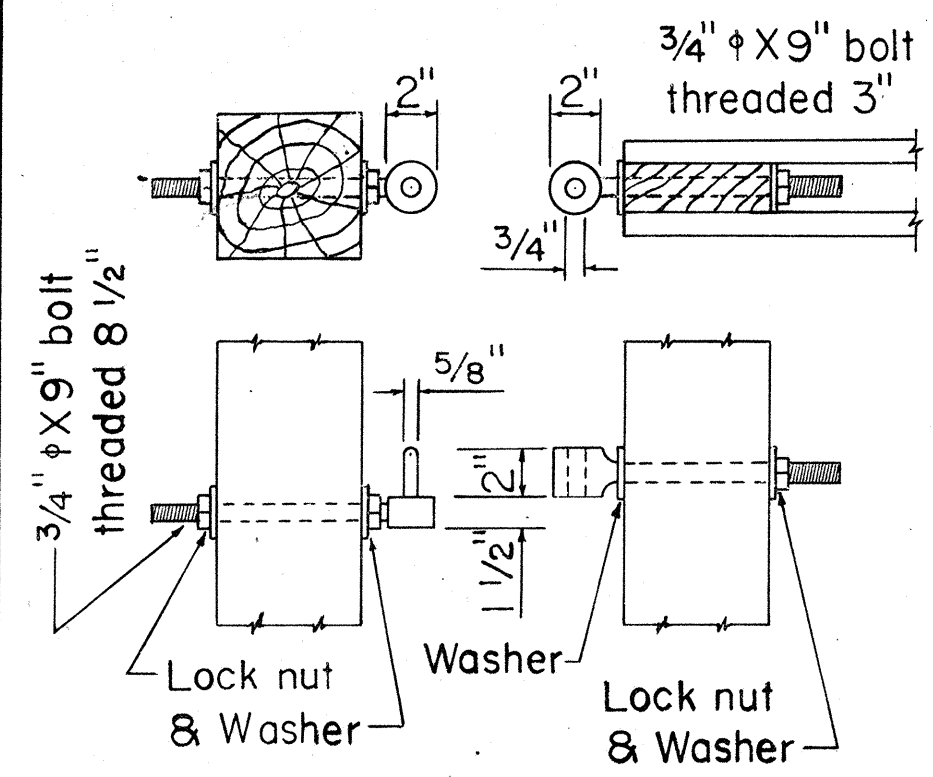
| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 23        | 24           |



- NOTES:
1. This project requires standard wire fence with 10 ft post spacing. (If spacing is not indicated above, use 10 ft.)
  2. Fence must be anchored against pull at least every 500 ft. and also at top of rise and bottom of dip.
  3. Lower 3'-0" section of posts to be creosoted.

### DETAILS OF STANDARD WIRE FENCE WITH WOOD POSTS

NOTE: Use 3/4" x 11" bolts for Cattle Gate



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

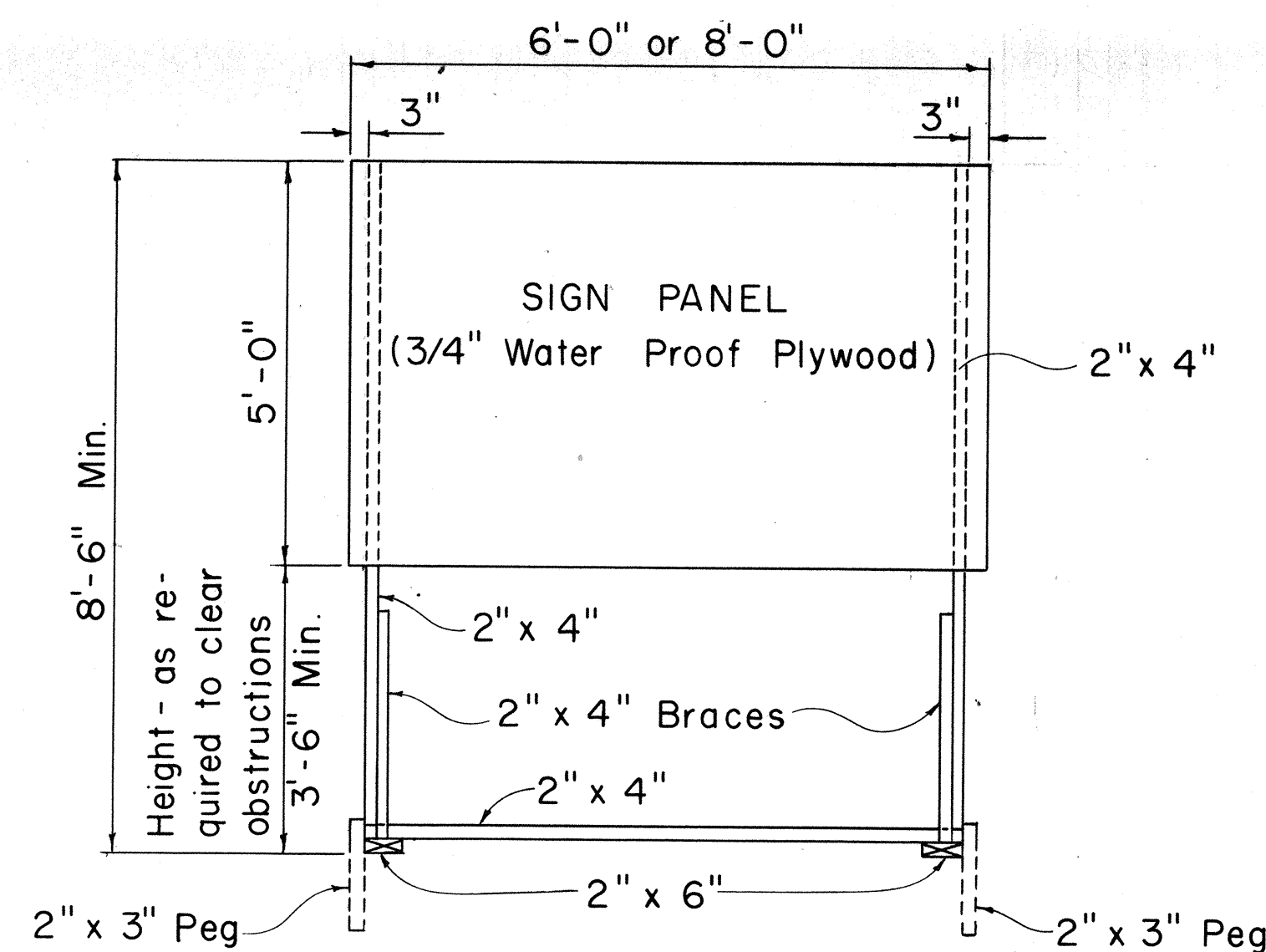
MISCELLANEOUS DETAILS

PROJECT No. 580A-01-70

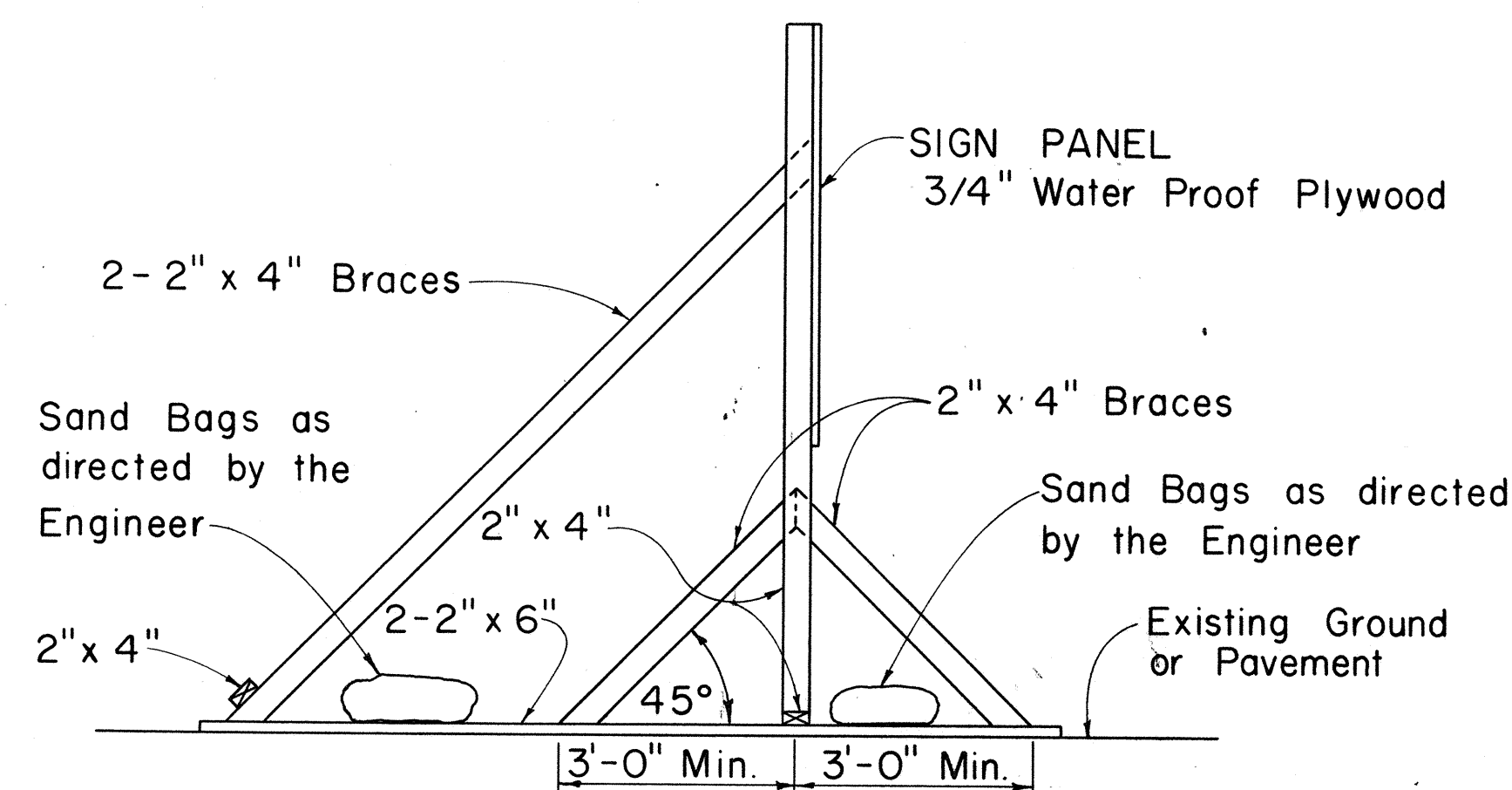
Scales: As Noted Date:

### CATTLE GUARD DETAILS

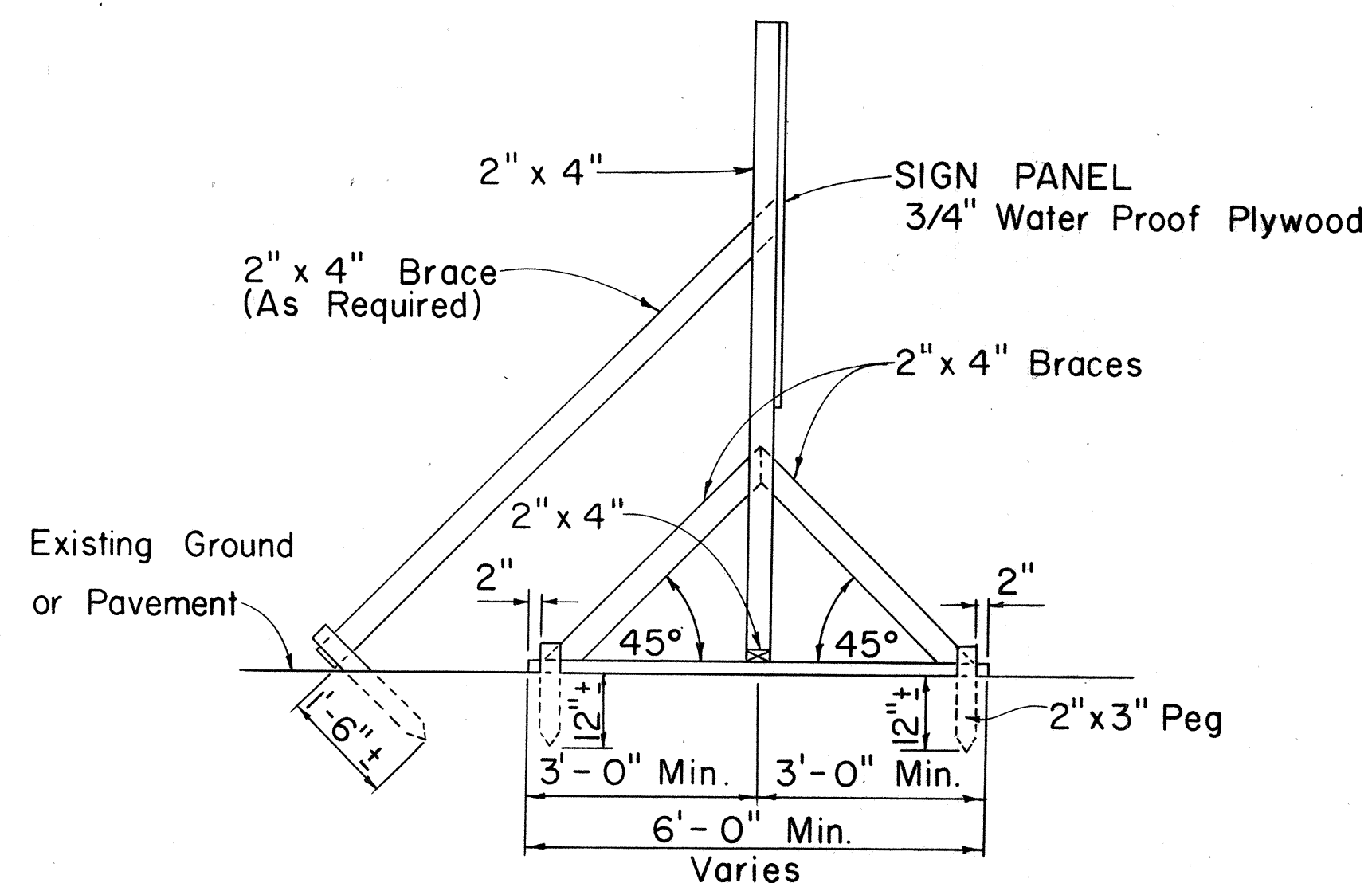
| FED. ROAD DIST. NO. | STATE | PROJ. NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 580A-01-70 | 1970        | 24        | 24           |



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

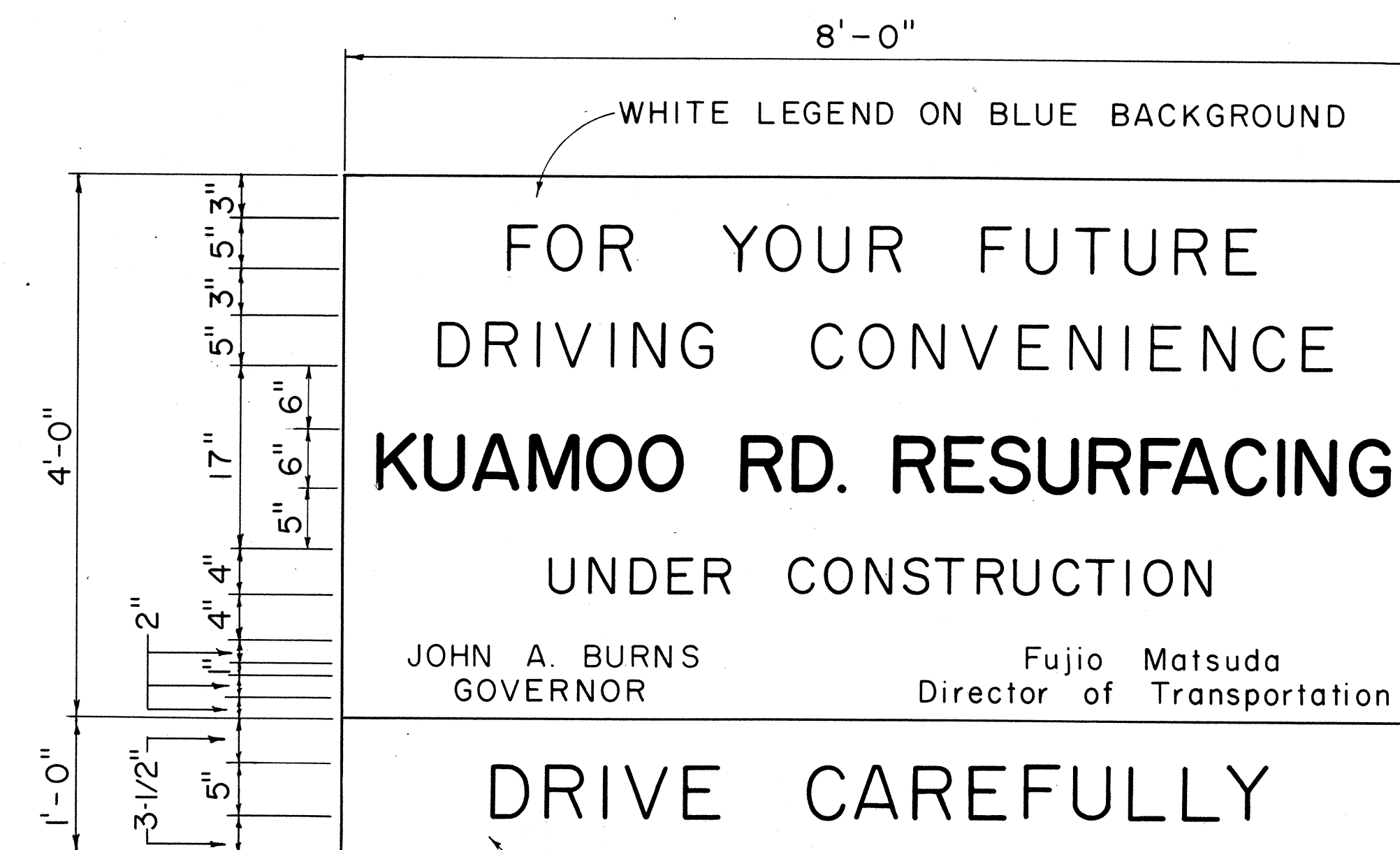


SIDE VIEW  
(SIGN SUPPORT AND FRAME WEIGHTED DOWN)  
Scale: 1/2" = 1'-0"



SIDE VIEW  
(SIGN SUPPORT AND FRAME ANCHORED IN GROUND)  
Scale: 1/2" = 1'-0"

**SIGN SUPPORT AND FRAME**  
Scale: As Shown



BLACK LEGEND ON YELLOW BACKGROUND  
USE SERIES "D" LETTERS

### GENERAL NOTES

1. The sign panels will be constructed by the State and will be available for pick up by the Contractor from the State Highway Maintenance Yard.
2. The Contractor shall construct the sign supports and frames and install the sign panels at the locations shown on the plans and as ordered by the Engineer.
3. At the end of construction the Contractor shall remove the sign panels and return it to the State Highway Maintenance Yard. Sign supports and frames shall be removed and cleared from the project site.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

TYPICAL DETAILS

PROJECT INFORMATION SIGN

Scale: As Shown

SHEET No. 2 OF 2 SHEETS

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