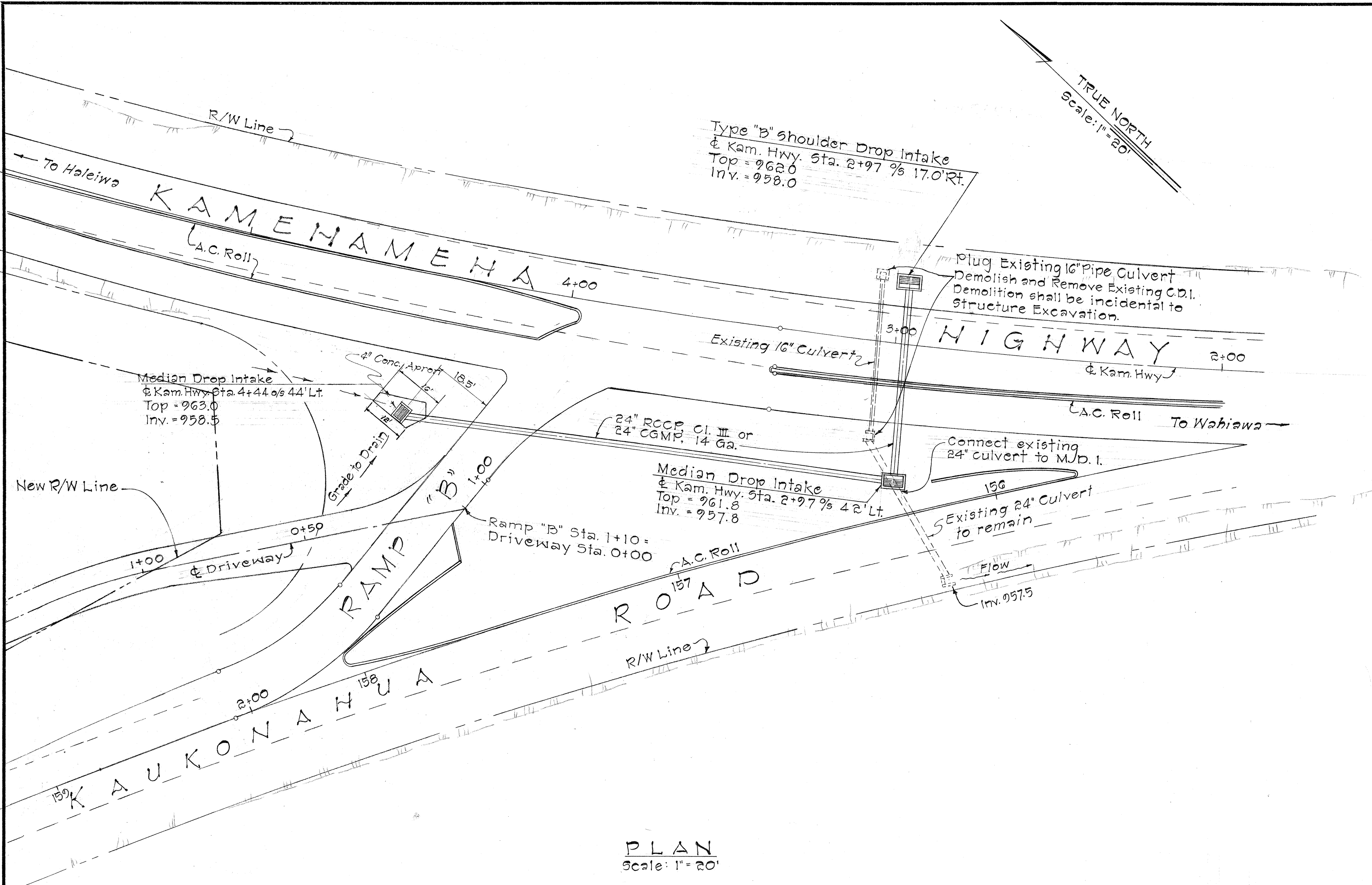


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | F-080-1(2)         | 1968        | 6         | 10           |



± Kam. Hwy. Sta. 4+44 1/2 44' Lt.  
Construct: M.D.I.  
Install: 24" RCCP, Cl. III or 24" CGMP, 14 Ga.

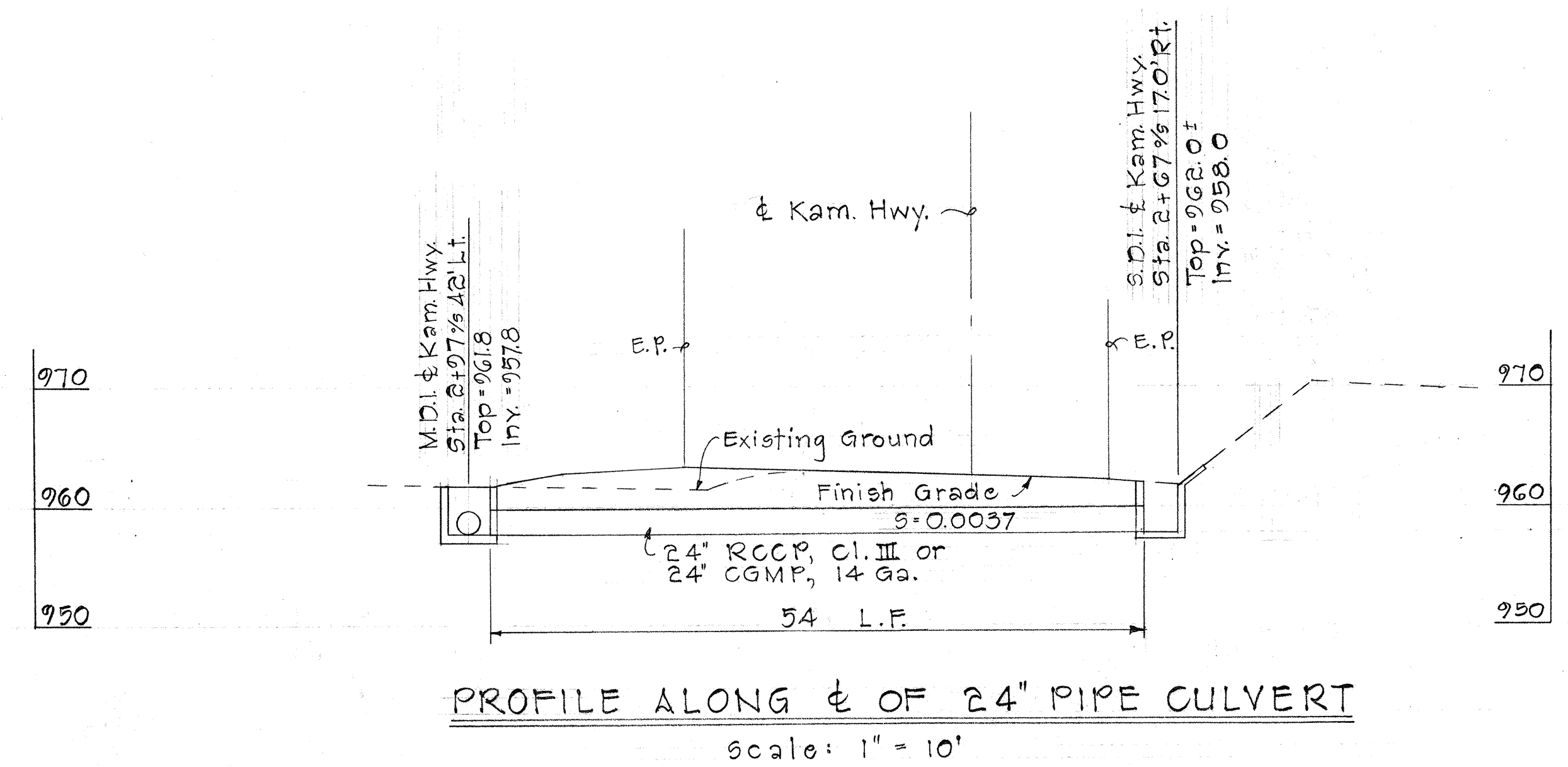
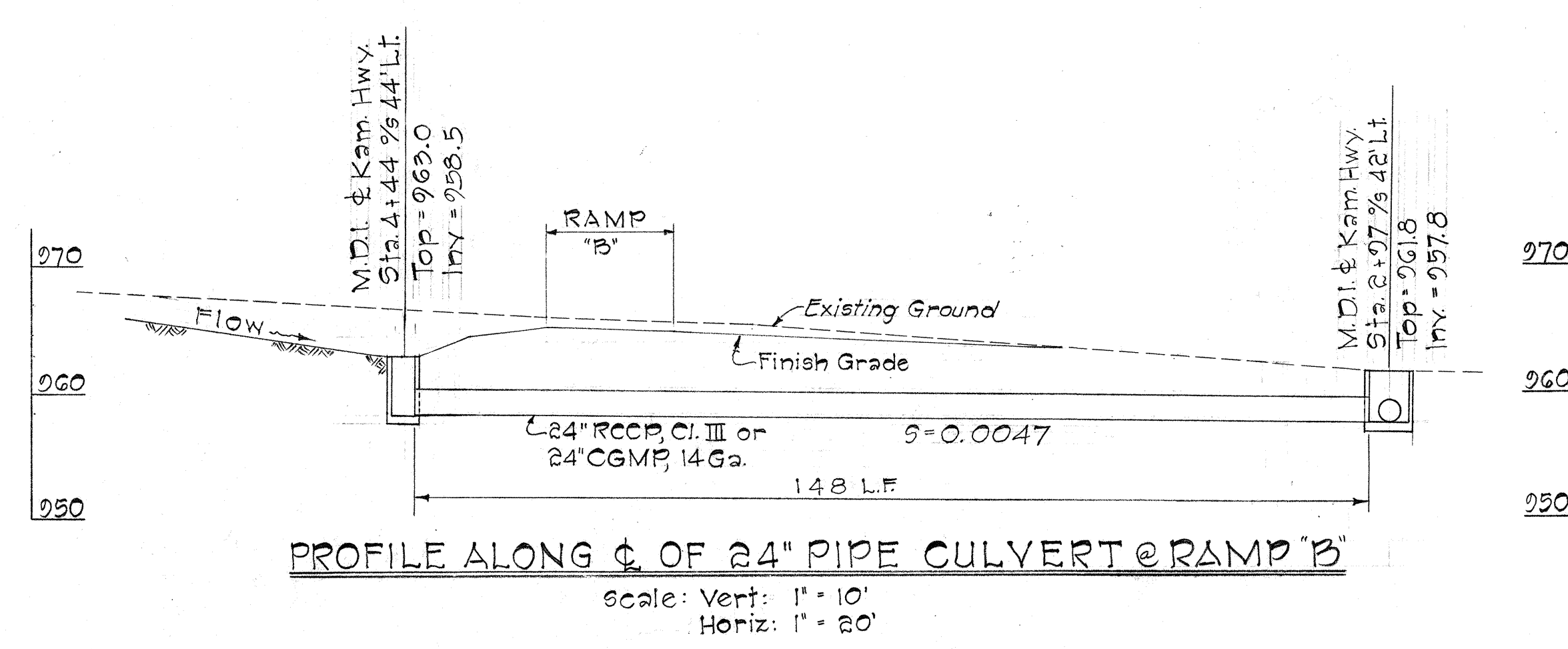
ESTIMATED QUANTITIES  
Structure Exc. 154 = 150 c.y.  
Cl. A-1 Conc. 35 = 30 c.y.  
24" Pipe Culvert = 148 l.f.  
Reinf. Steel 174 = 111 lbs.  
Modified Type A-2 Steel Frame & Grates = 1 ea.

± Kam. Hwy. Sta. 2+97 1/2 17.0' Rt.  
Construct: Type "B" S.D.I.  
Install: 24" RCCP, Cl. III or 24" CGMP, 14 Ga. and make connection.

ESTIMATED QUANTITIES  
Structure Exc. 51 = 40 c.y.  
Class A-1 Conc. 35 = 30 c.y.  
24" Pipe Culvert = 54 l.f.  
Class B-1 Conc. = 1.0 c.y.  
Reinf. Steel 185 = 128 lbs.  
Modified Type A-2 Steel Frame & Grates = 1 ea.

± Kam. Hwy. Sta. 2+97 1/2 42' Lt.  
Construct: M.D.I. Cut Existing 24" Pipe and make connection.

ESTIMATED QUANTITIES  
Structure Exc. 13 = 9 c.y.  
Class A-1 Conc. 30 = 25 c.y.  
Reinf. Steel 174 = 111 lbs.  
Modified Type A-2 Steel Frame & Grates = 1 ea.



# DRAINAGE DETAILS AT RAMP "B" AND KAMEHAMEHA HIGHWAY

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

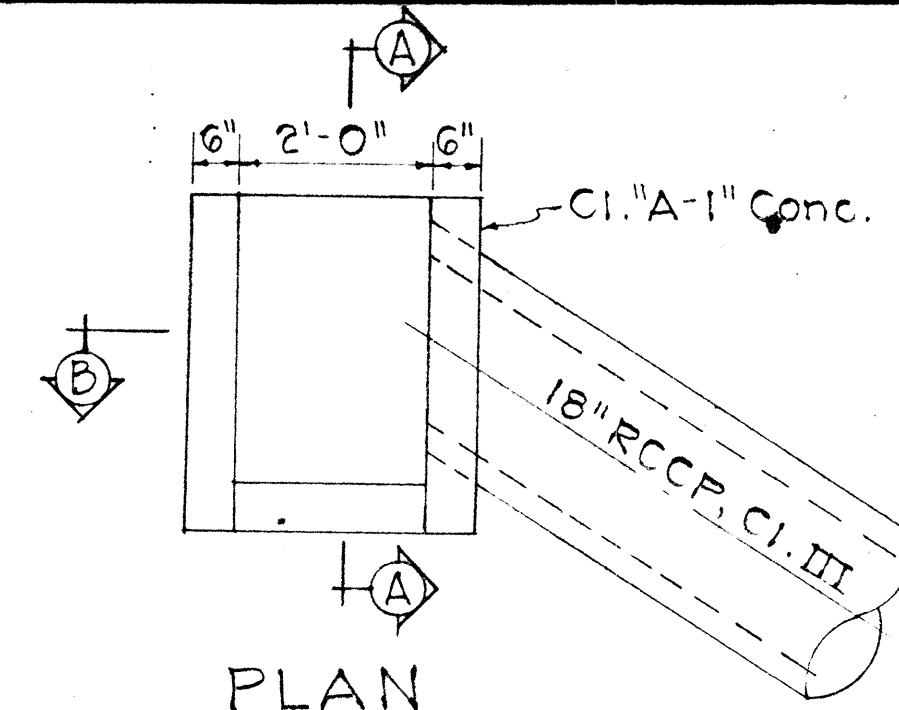
**DRAINAGE DETAILS**

INTERSECTION AT  
KAMEHAMEHA HIGHWAY  
AND KAUKONAHUA ROAD  
PROJECT No. F-080-1(2)  
Scale: As Noted Sept., 1967

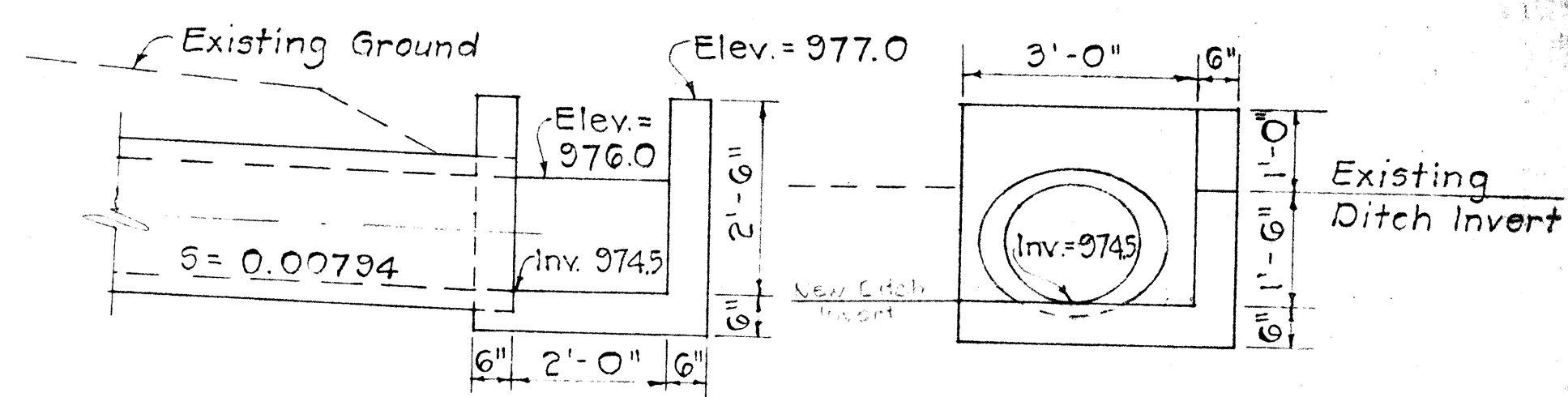
SHEET No. 1 OF 5 SHEETS

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

True North  
Scale: 1"=20'



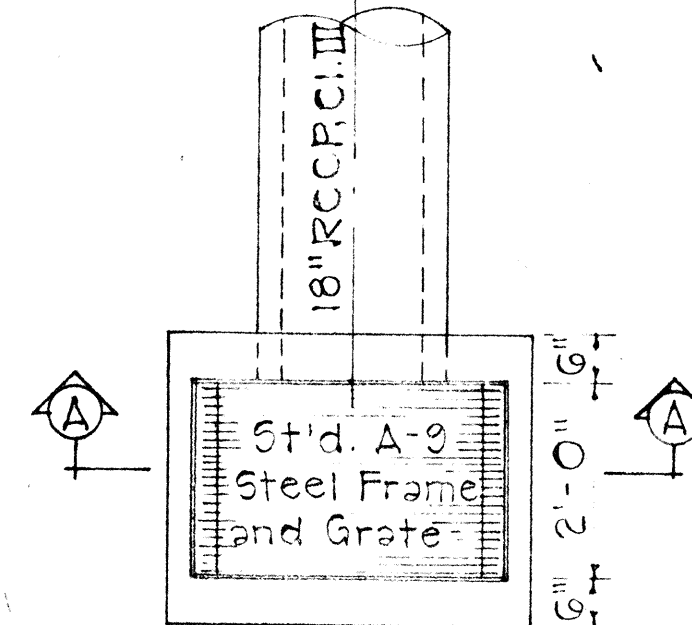
PLAN



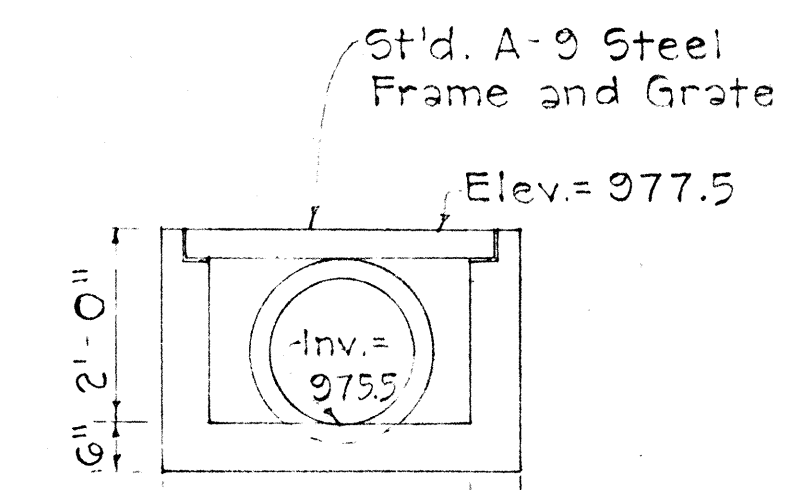
SECTION "B-B"

SECTION "A-A"

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

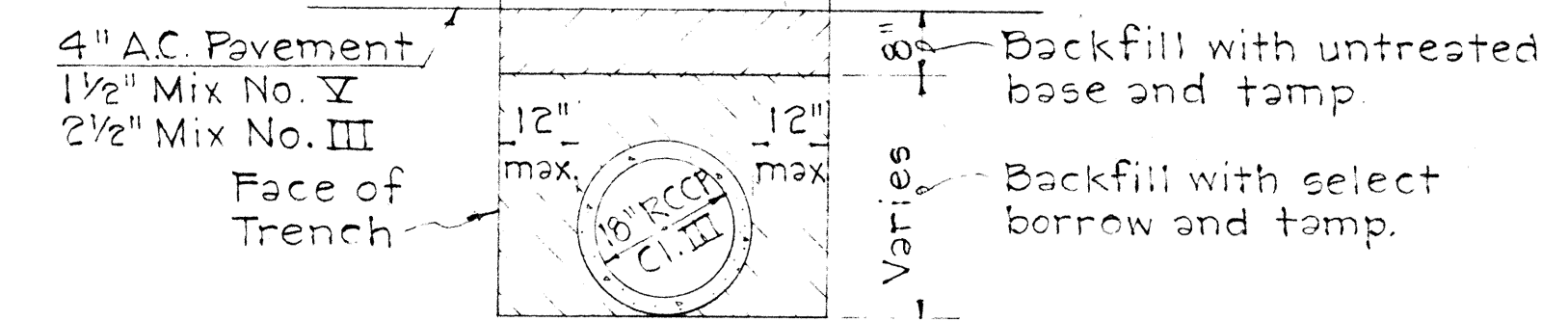


PLAN



SECTION "A-A"

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

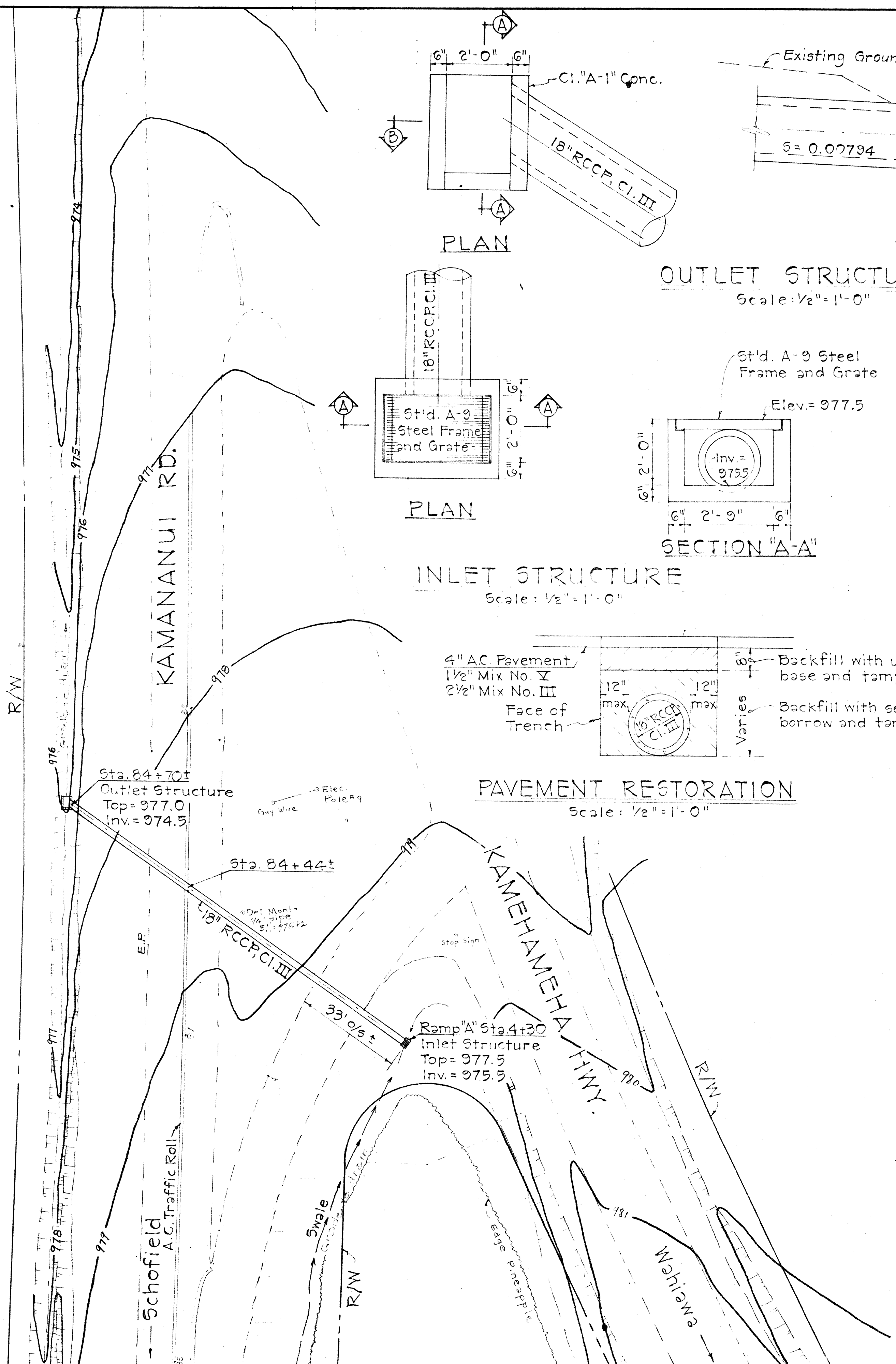


PAVEMENT RESTORATION  
Scale: 1/2"=1'-0"

STA. 84+44±  
Construct: Inlet and Outlet  
Structure. Restore Pavement.  
Install: 18" RCCP, Cl. III  
(For detail see this sheet)

ESTIMATED QUANTITIES

|                                          |   |          |
|------------------------------------------|---|----------|
| Structure Exc.                           | = | 72 C.Y.  |
| Cl. "A-1" Conc.                          | = | 1 C.Y.   |
| 18" Pipe Culvert                         | = | 126 L.F. |
| Untreated Base                           | = | 3.5 C.Y. |
| Select Borrow                            | = | 49 C.Y.  |
| Asphalt Concrete<br>Pavement Mix No. V   | = | 1.5 Tons |
| Asphalt Concrete<br>Pavement Mix No. III | = | 2.5 Tons |
| Type "A-9" Steel<br>Frame & Grate        | = | 1 Ea.    |



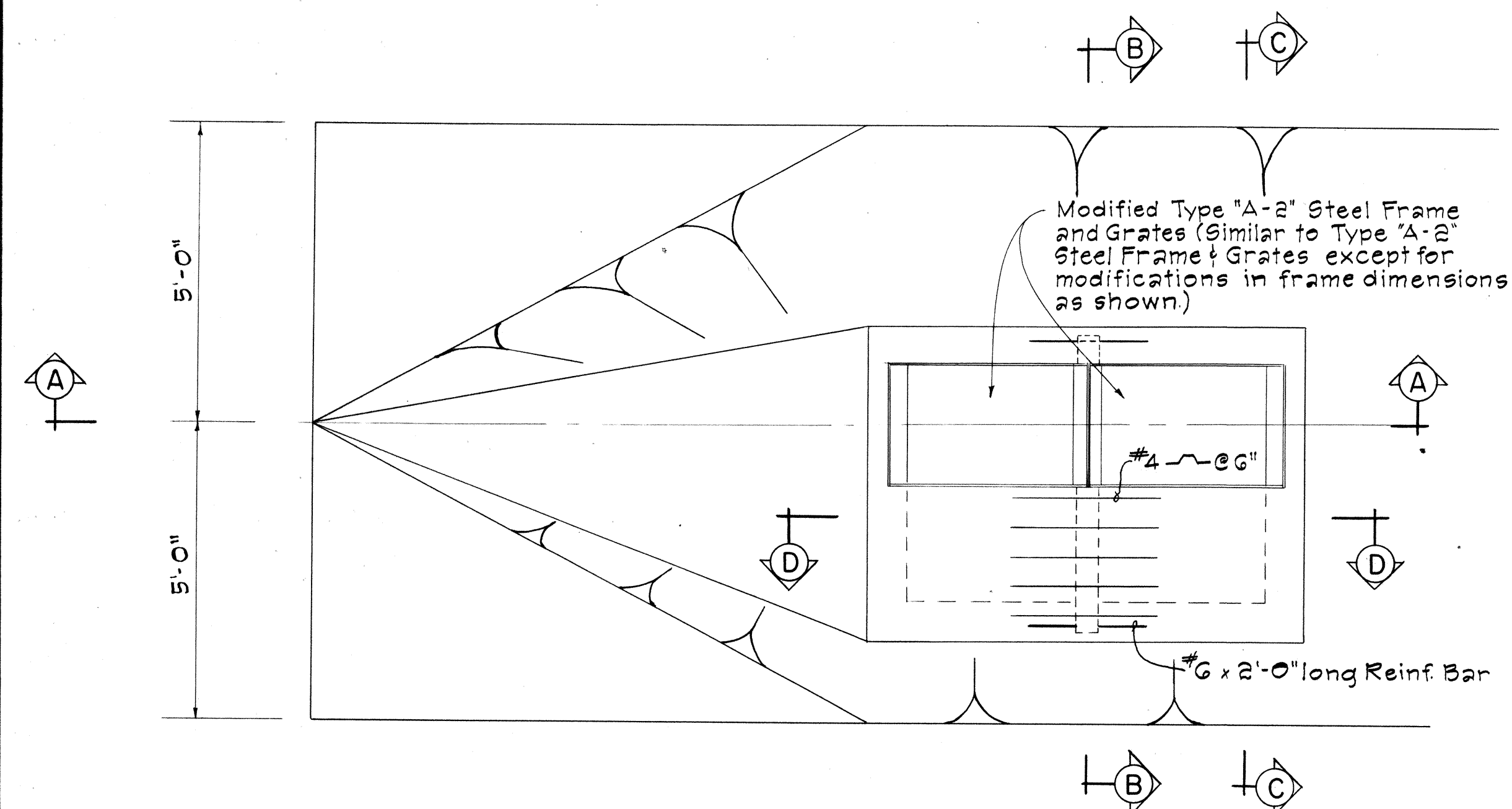
Note: Construct by CCO #2  
Proj. F-080-1(2)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

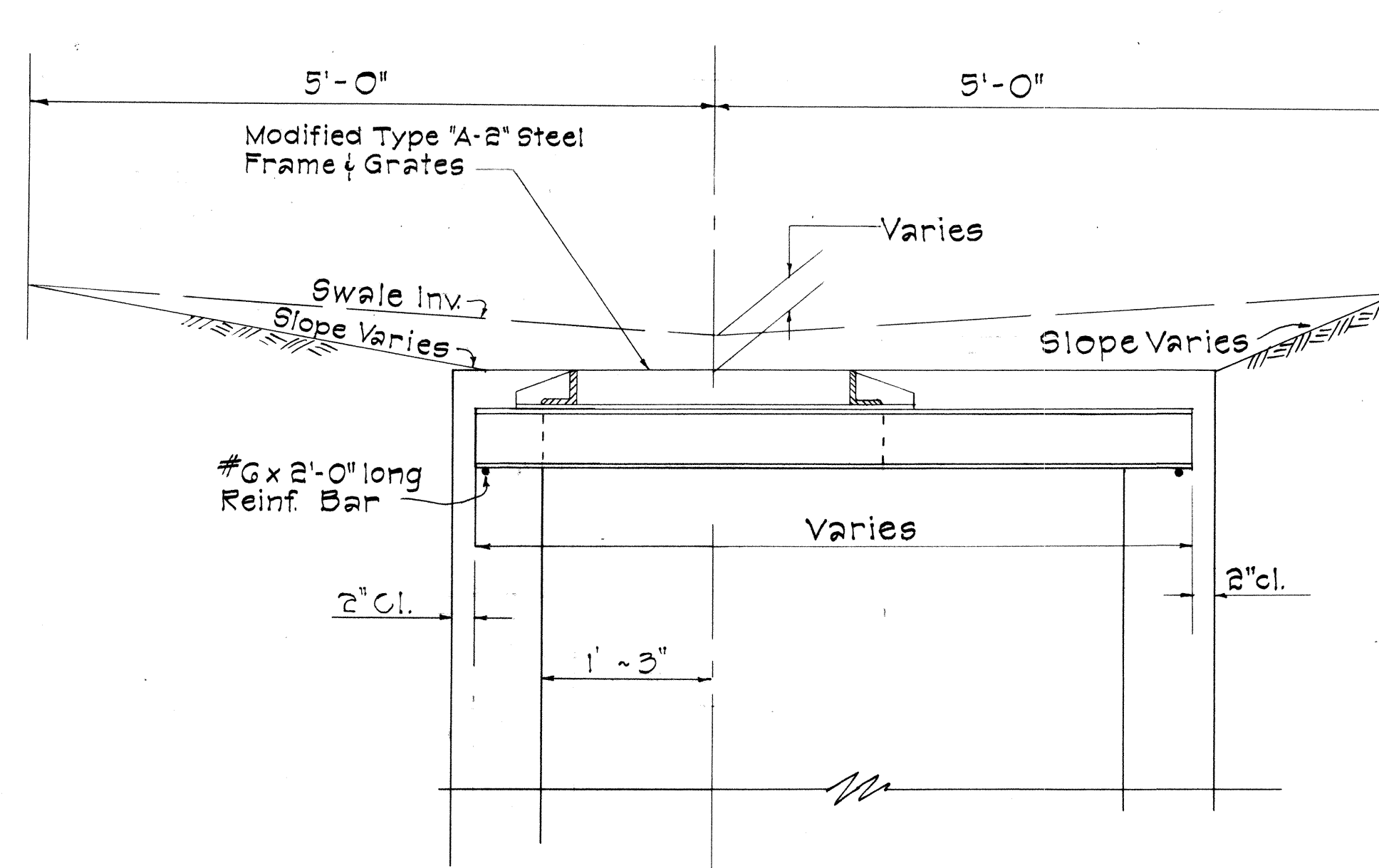
**DRAINAGE IMPROVEMENT**  
AT  
**INTERSECTION OF  
KAMANANUI RD. & KAMEHAMEHA HWY.**  
Proj. No. ~~F-080-1(3)~~  
F-080-1(2)  
Scale: As Shown Date: Jan. 8, 1969  
SHEET No. 1 OF 1 SHEETS

CO 6 5(1)

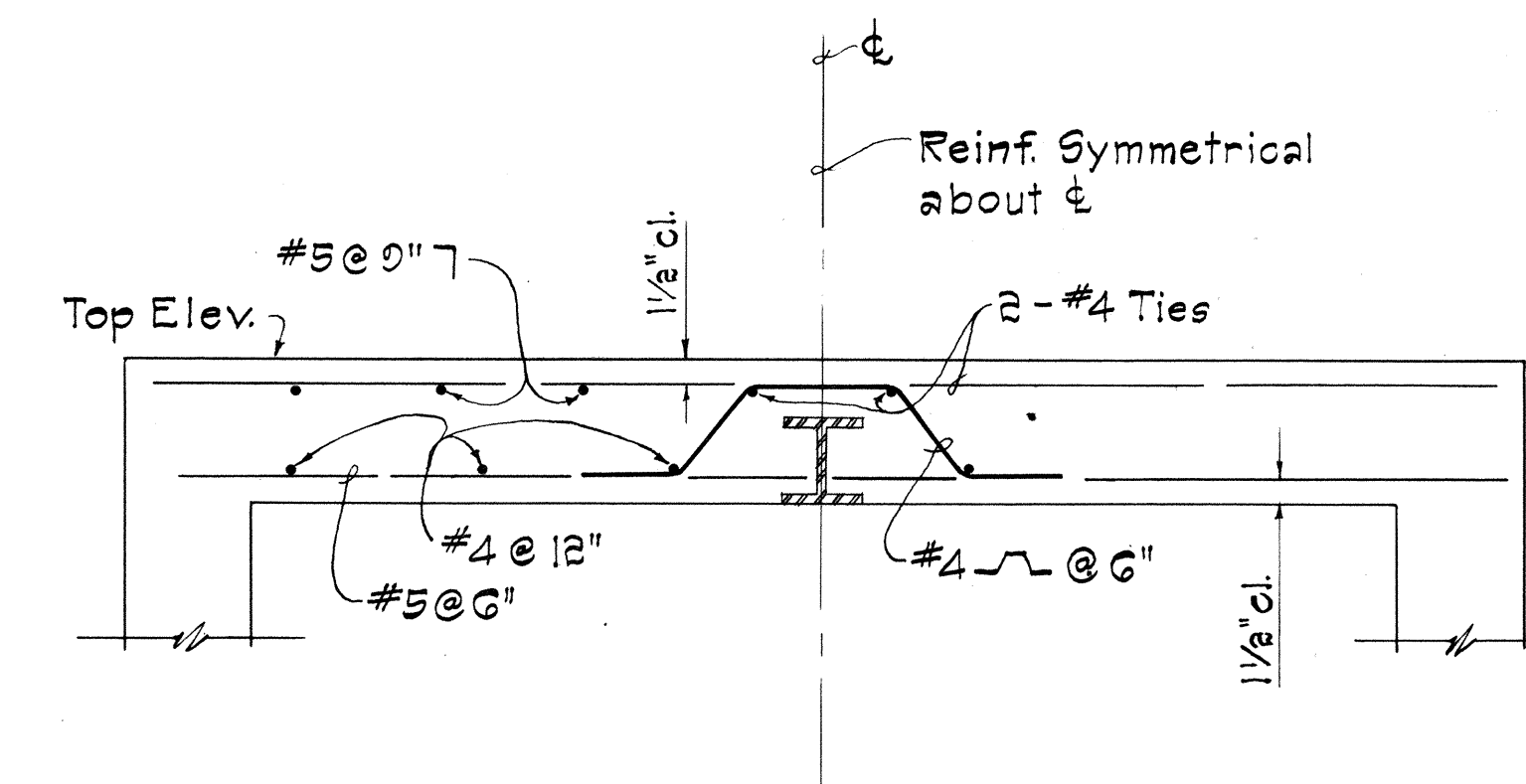
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | F-080-1(2)         | 1968        | 7         | 19           |



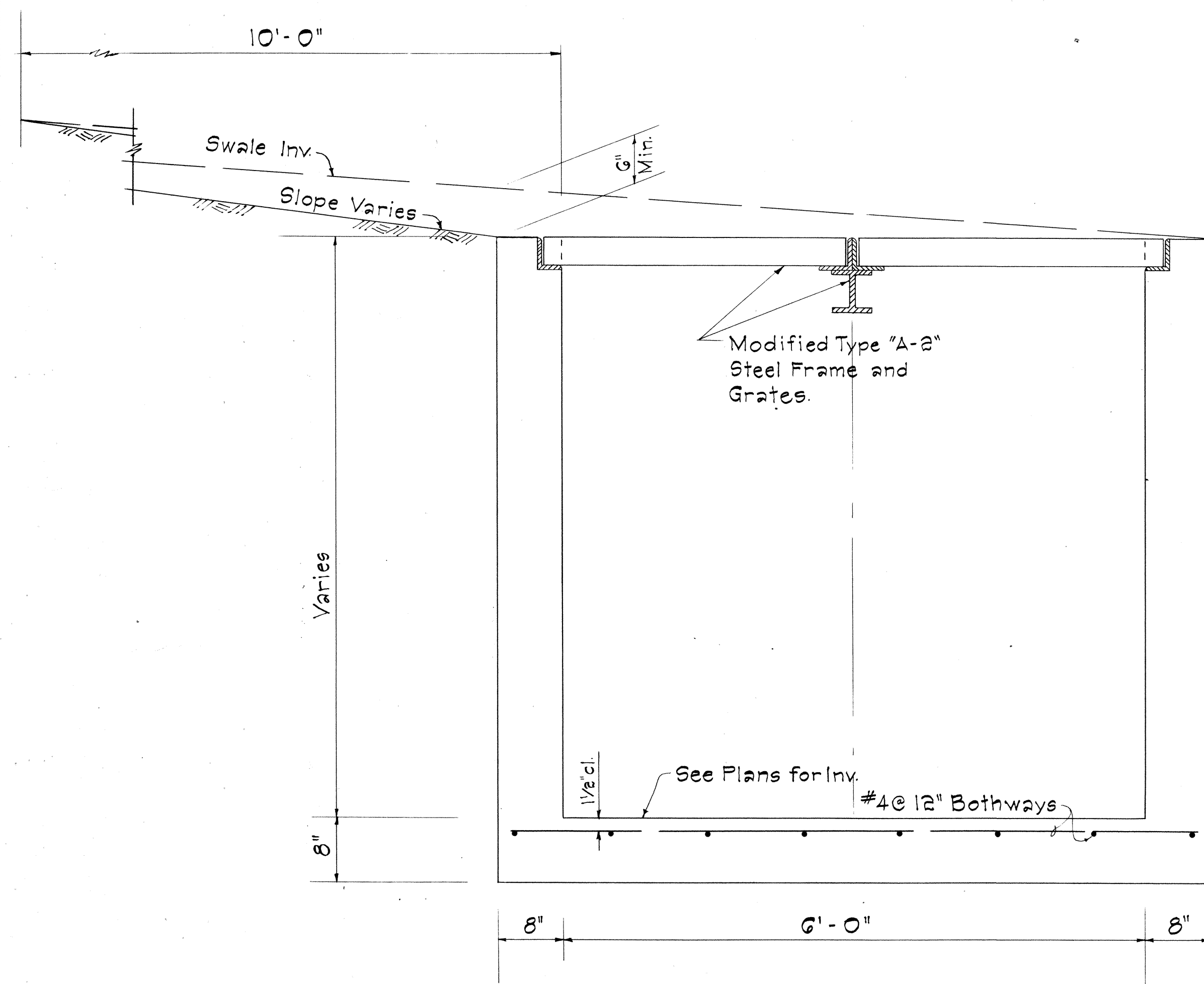
**PLAN**  
Scale: 1/2" = 1' - 0"



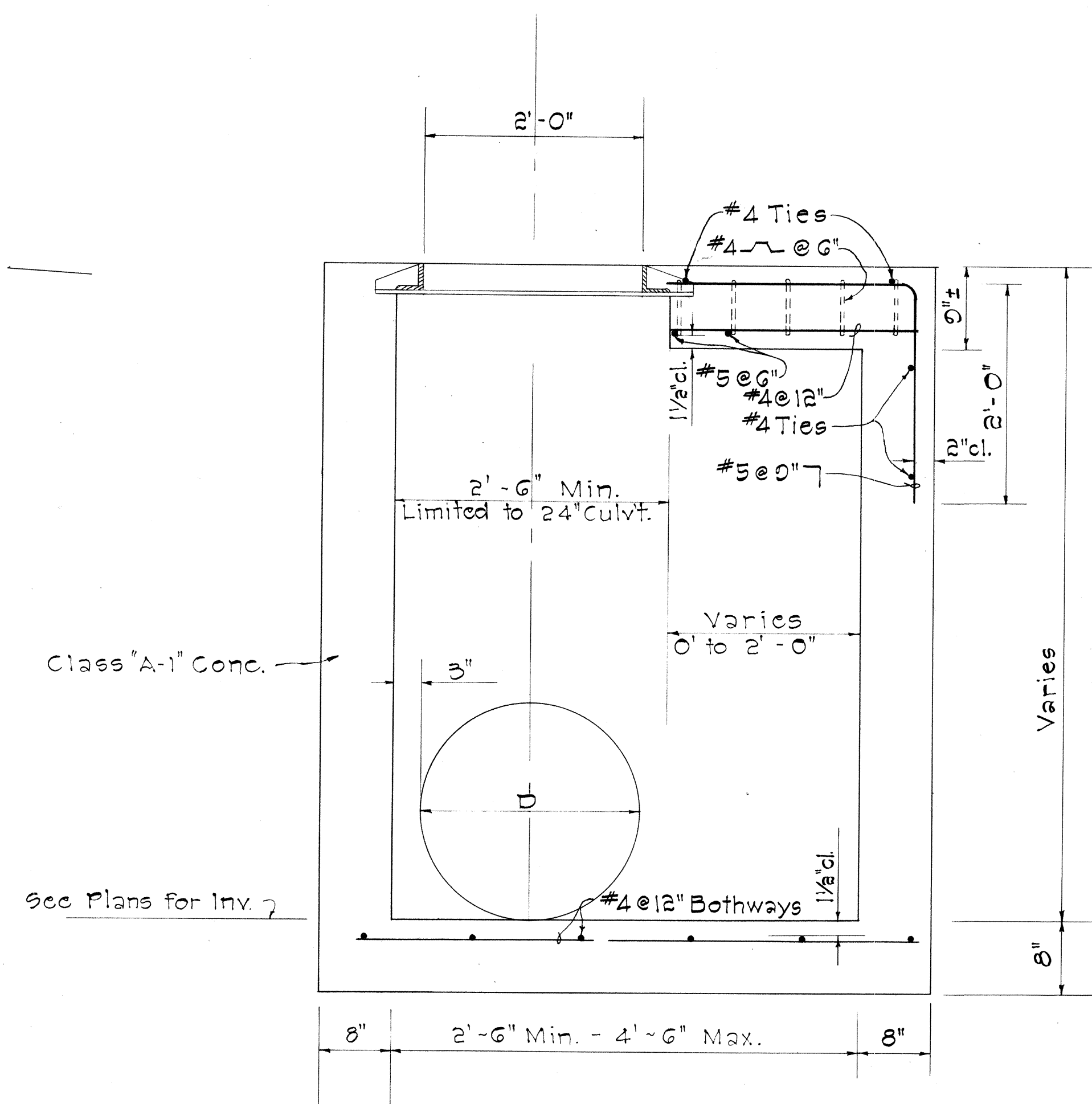
**SECTION B-B**  
Scale: 1" = 1' - 0"



**SECTION D-D**  
Scale: 1" = 1' - 0"



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



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

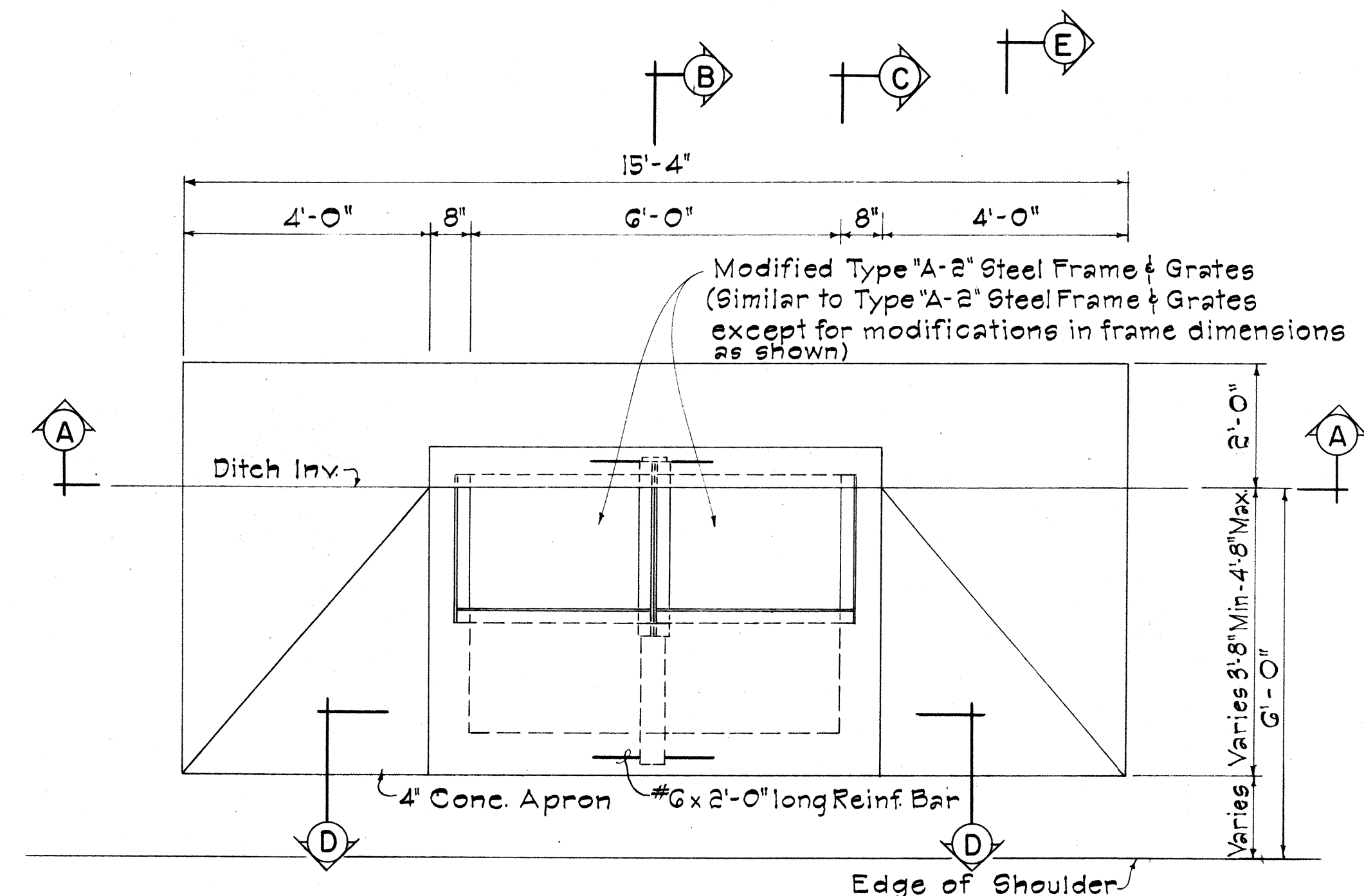
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**DRAINAGE DETAILS**  
**MEDIAN DROP INTAKE**

PROJ. NO. F-080-1(2)

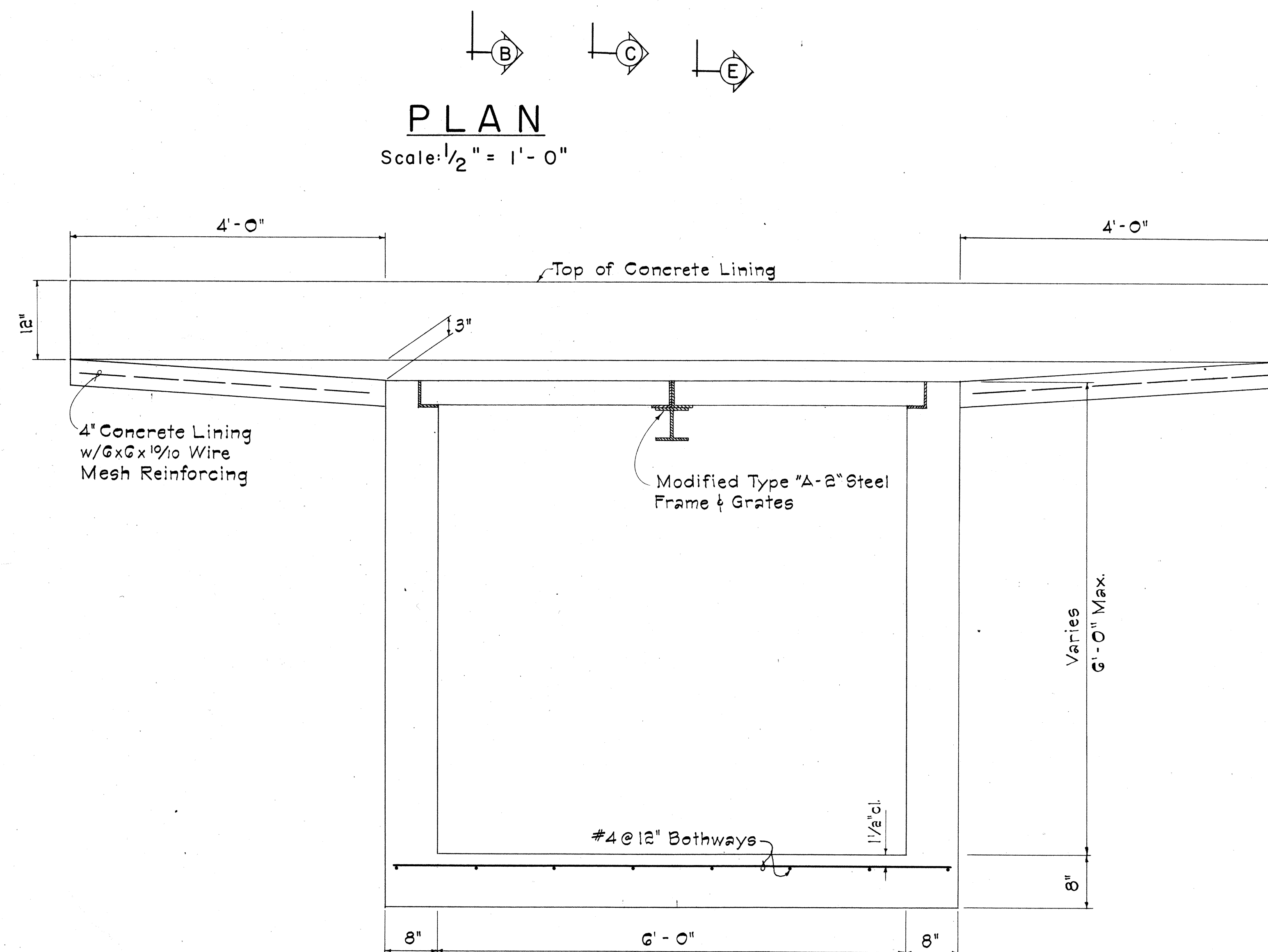
SHEET No. 2 OF 5 SHEETS

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DRAWN BY      |      |
| CHECKED BY    |      |
| NOTED BY      |      |
| QUANTITIES BY |      |
| CHECKED BY    |      |
| No.           |      |

| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | F-080-1(2)            | 1968           | 8            | 19              |

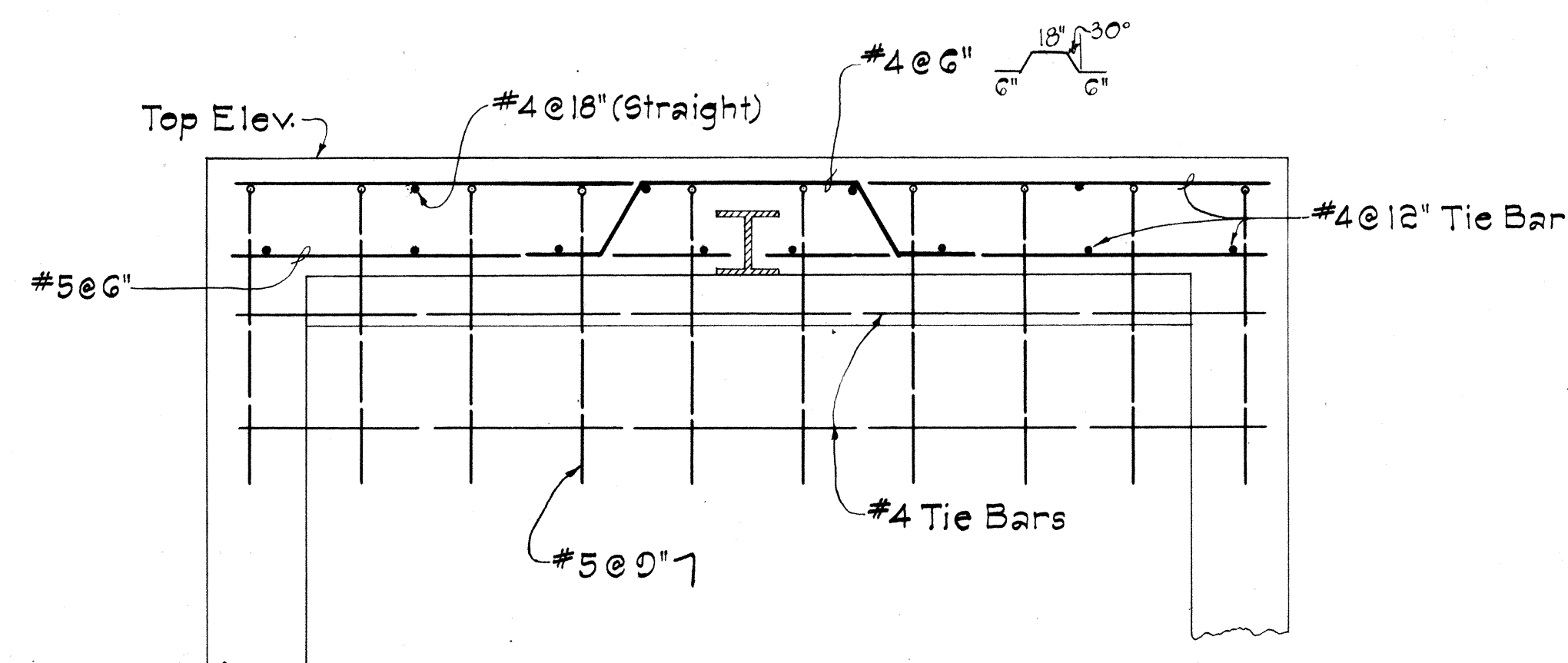


PLAN  
Scale:  $\frac{1}{2}" = 1' - 0"$

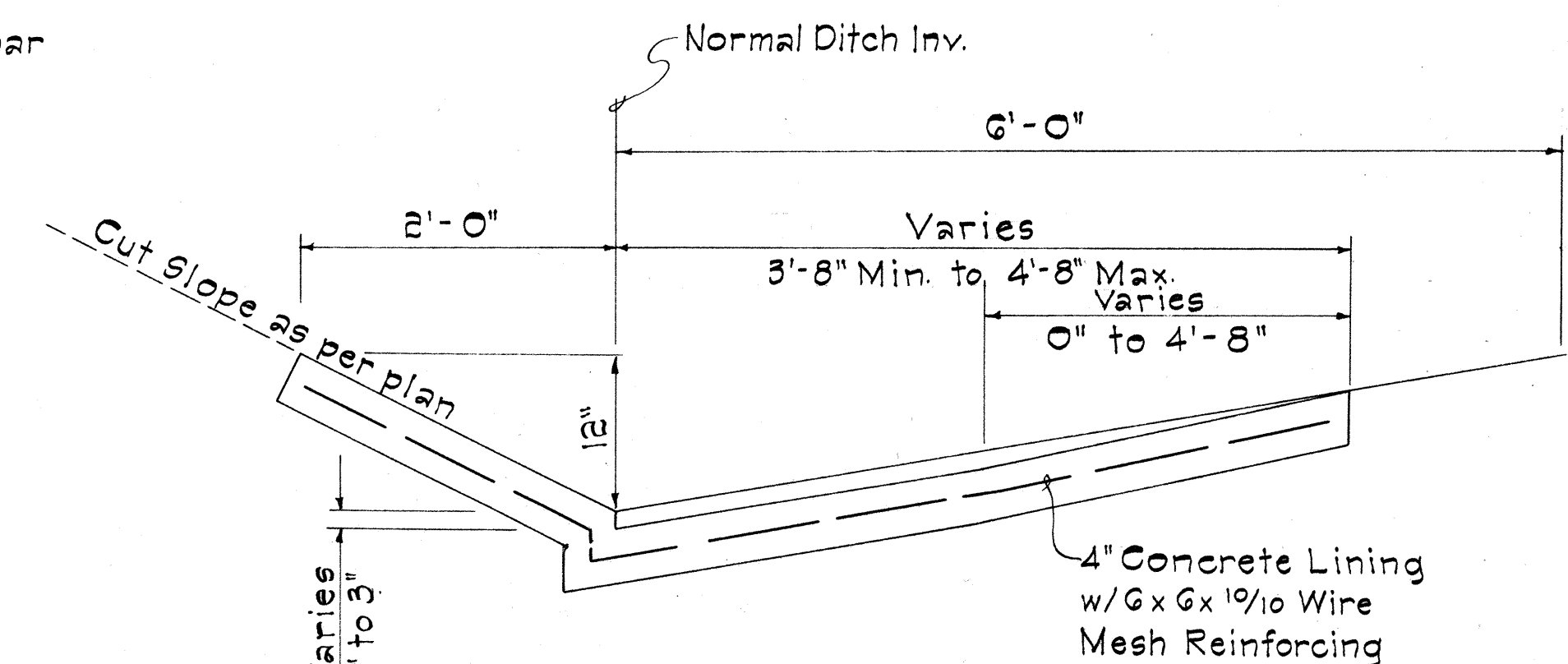


SECTION A-A

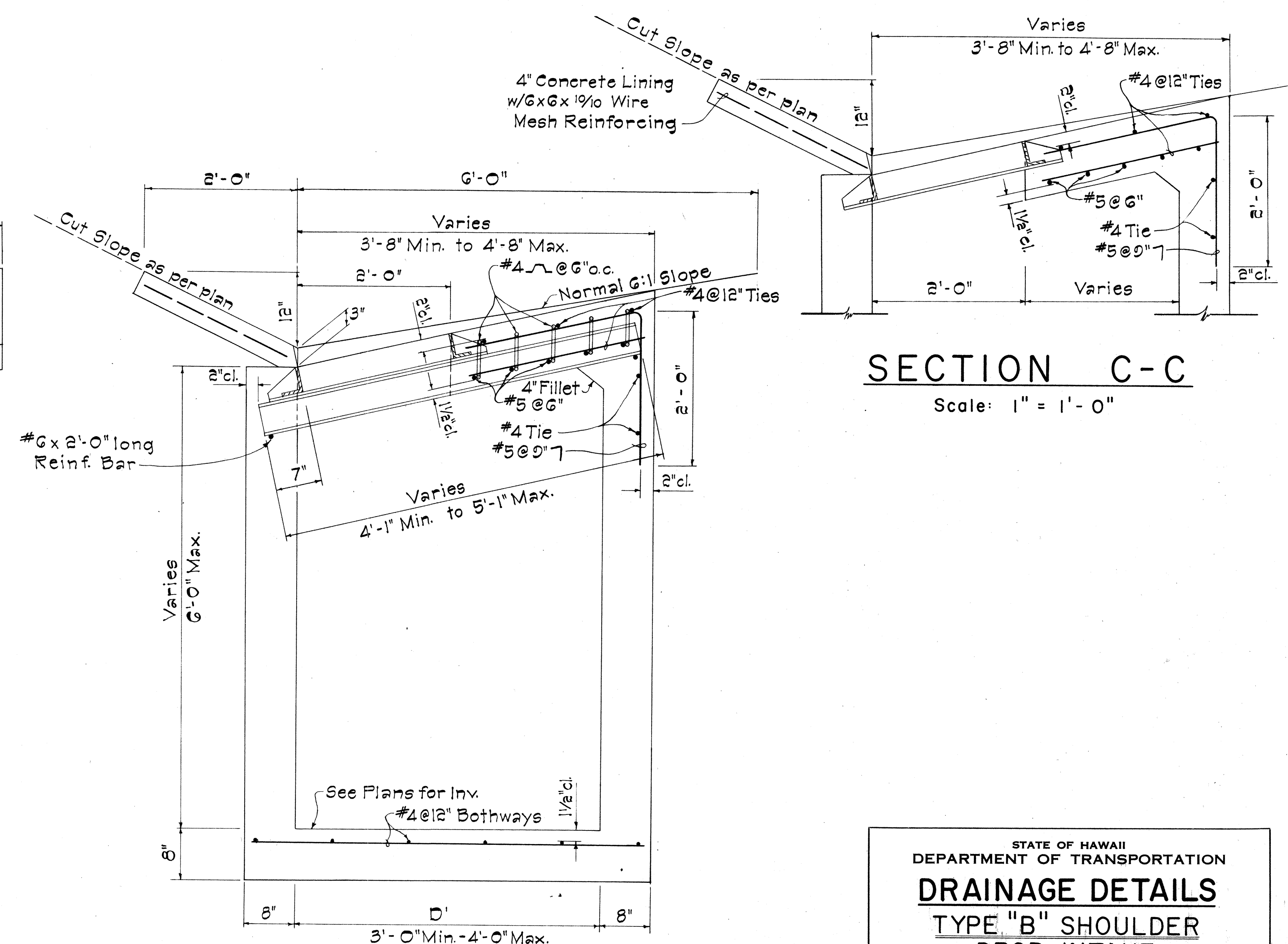
Scale: 1" = 1' - 0"



SECTION D-D  
Scale: 1" = 1' - 0"



SECTION E-E  
Scale: 1" = 1'-0"



SECTION B-B

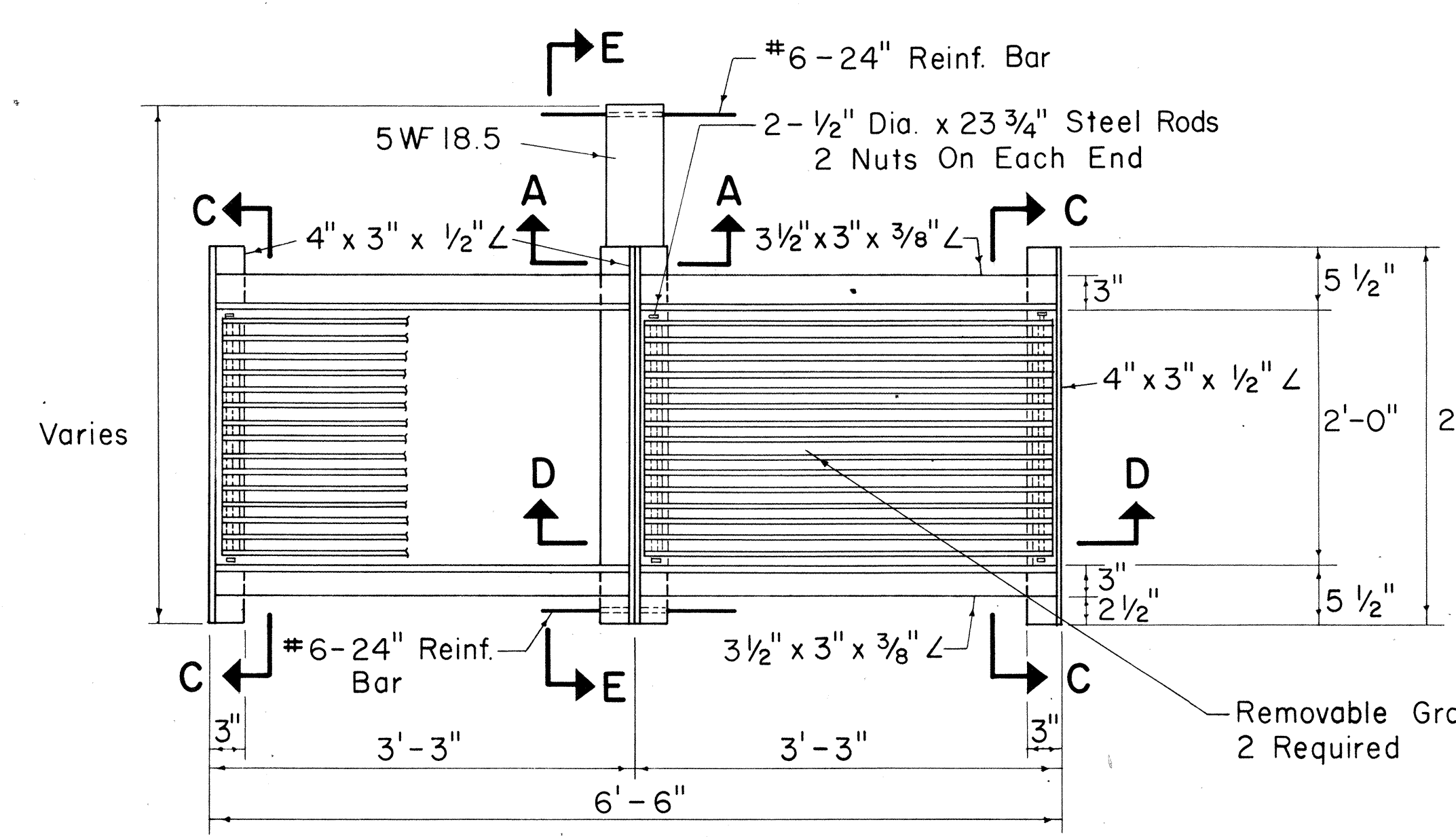
Scale: 1" = 1'-0"

SECTION C-C  
Scale: 1" = 1' - 0"

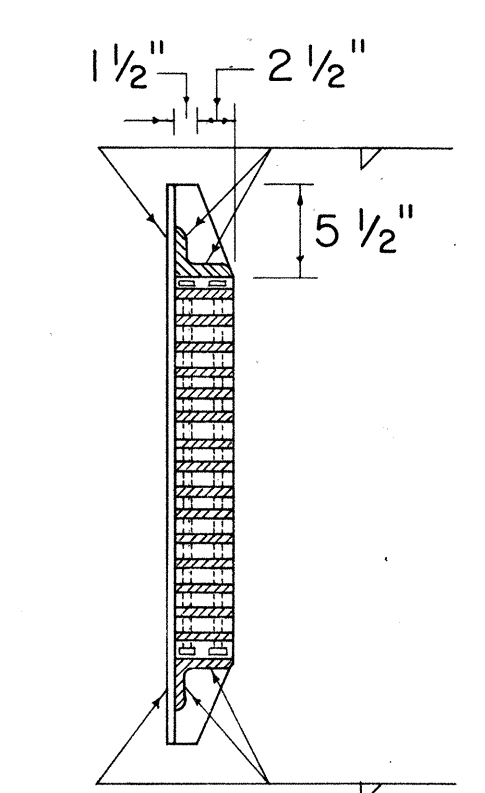
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
**DRAINAGE DETAILS**  
**TYPE "B" SHOULDER**  
**DROP INTAKE**  
PROJECT No. F-080-1(2)  
Date: As Noted Sept., 1966  
SHEET No. 3 OF 5 SHEETS

Revised: Jan.25,1967

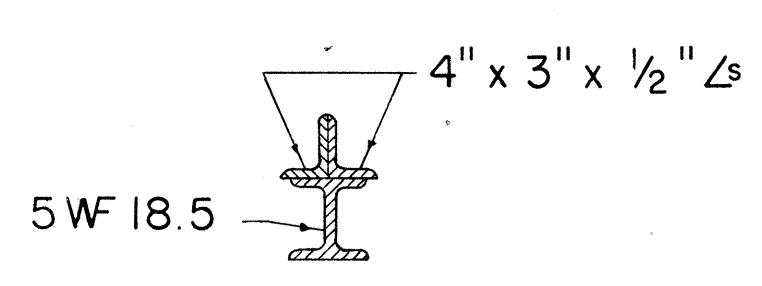
- NOTE:
1. All welds  $\frac{3}{8}$ " unless otherwise noted.
  2. All steel shall be structural grade.
  3. Grates and Frame shall be hot dip galvanized after fabrication in accordance with Section 44(H) of the Standard Specifications.
  4. Detail of Types "A-1" and "A-2" Steel Frame and Grates are identical except for the thickness of end spacers and number of grate bars. See Table of End Spacer Thickness.



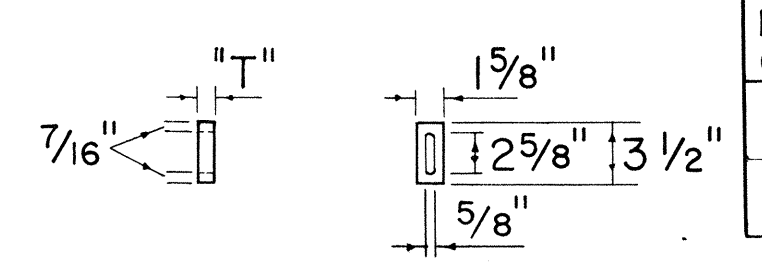
PLAN



SECTION C-C



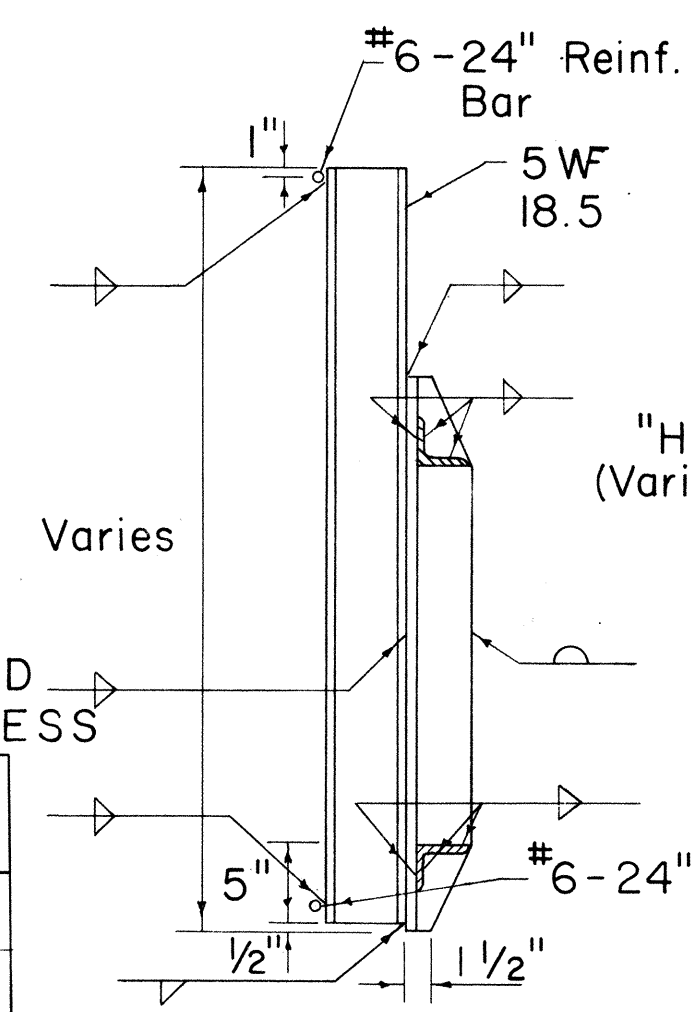
SECTION A-A



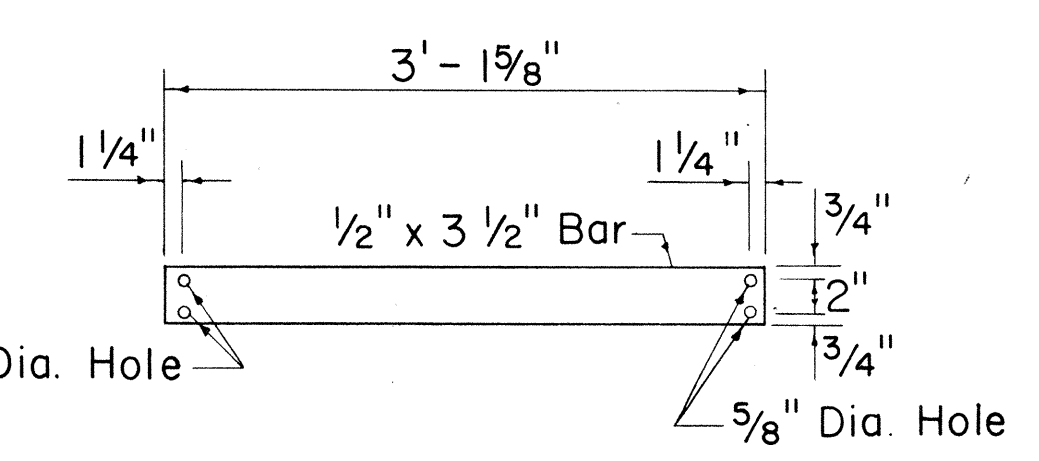
END SPACER

| TYPE FRAME & GRATES | "T" (in.) |
|---------------------|-----------|
| A - 1               | 1         |
| A - 2               | 1 3/8     |

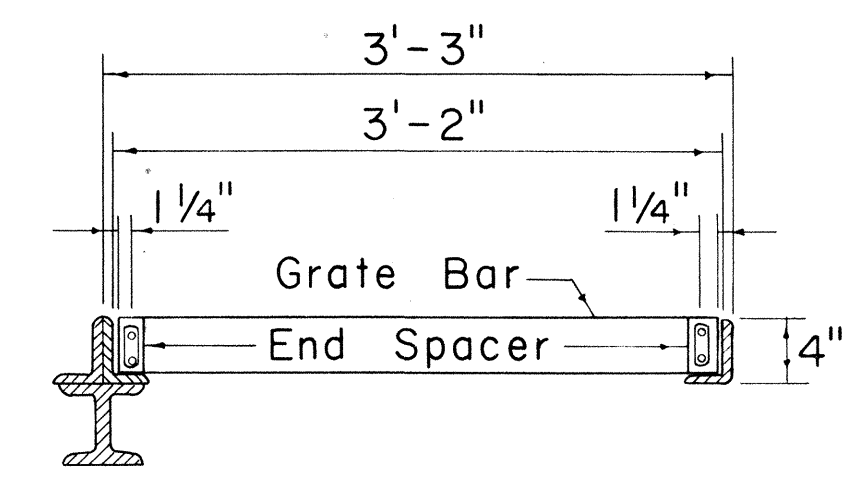
TABLE OF END SPACER THICKNESS



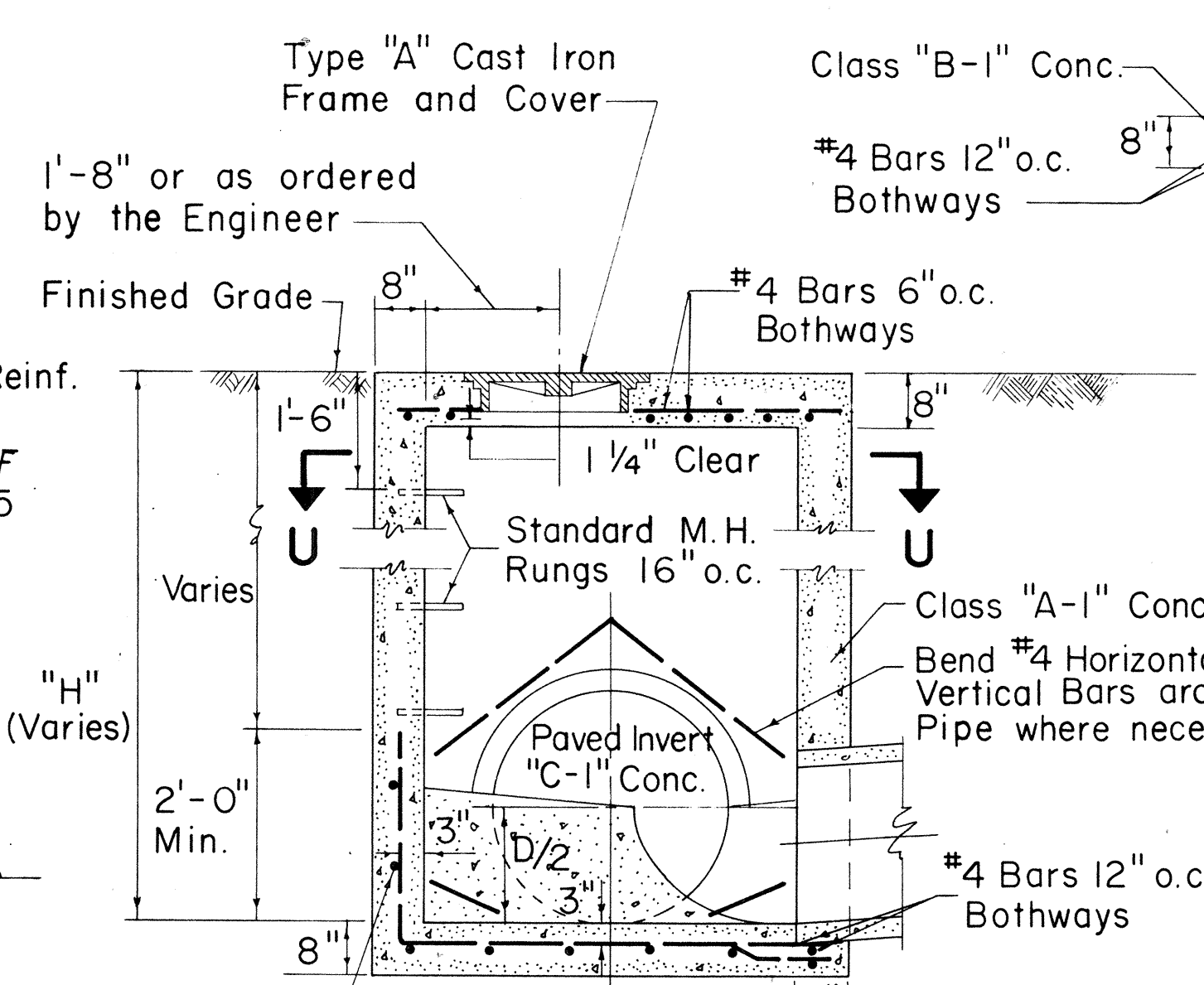
SECTION E-E



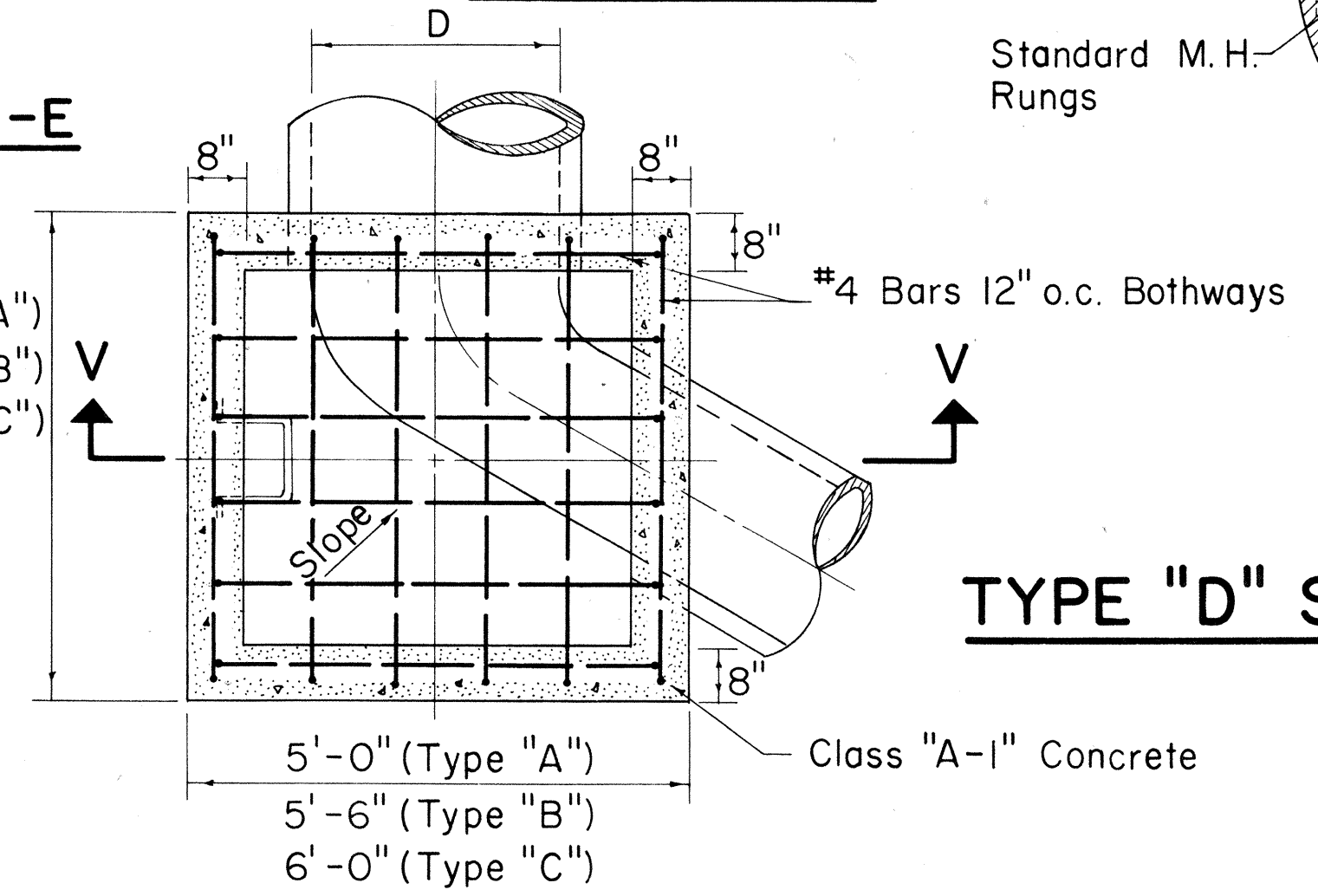
GRATE BARS



SECTION D-D



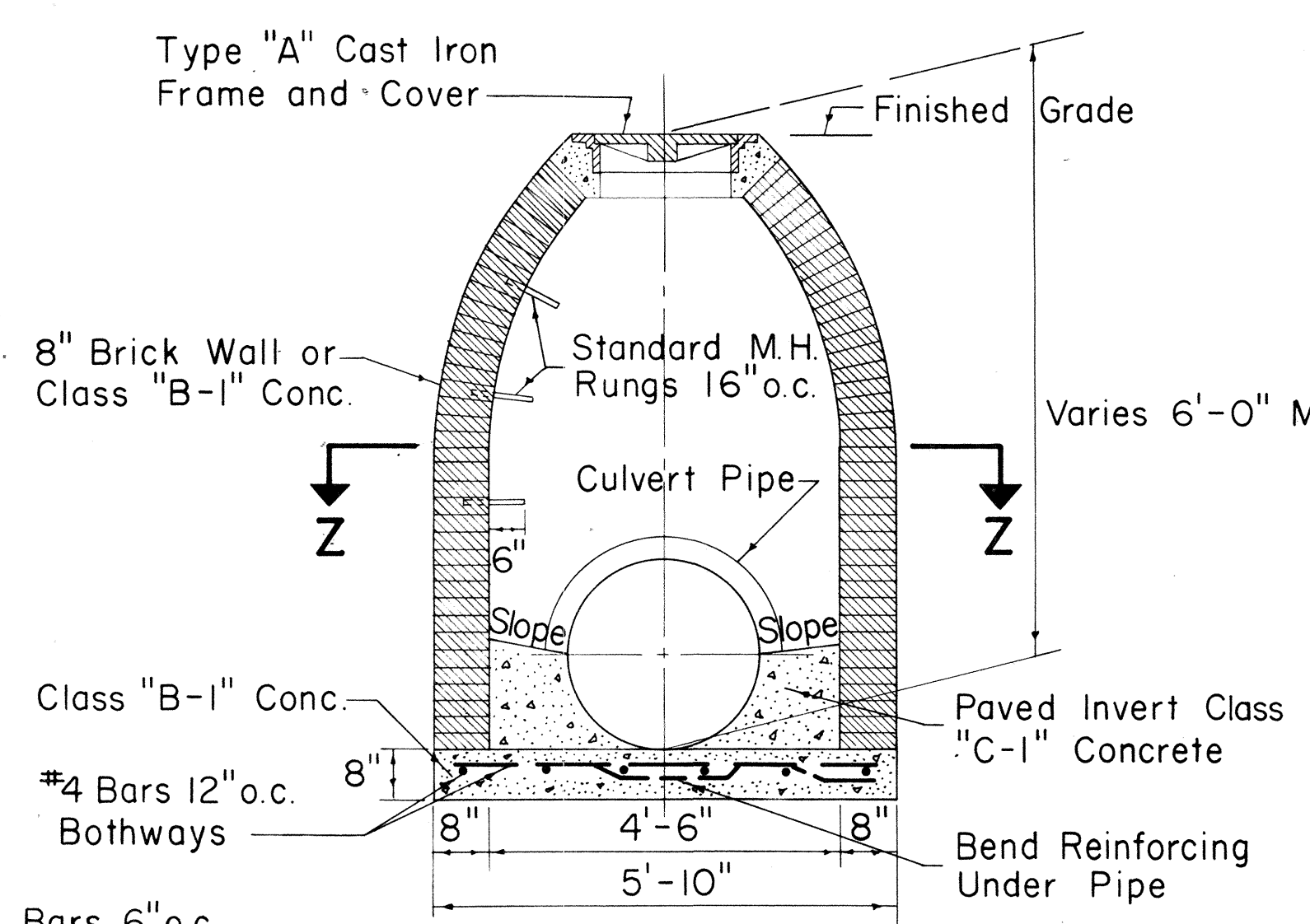
SECTION V-V



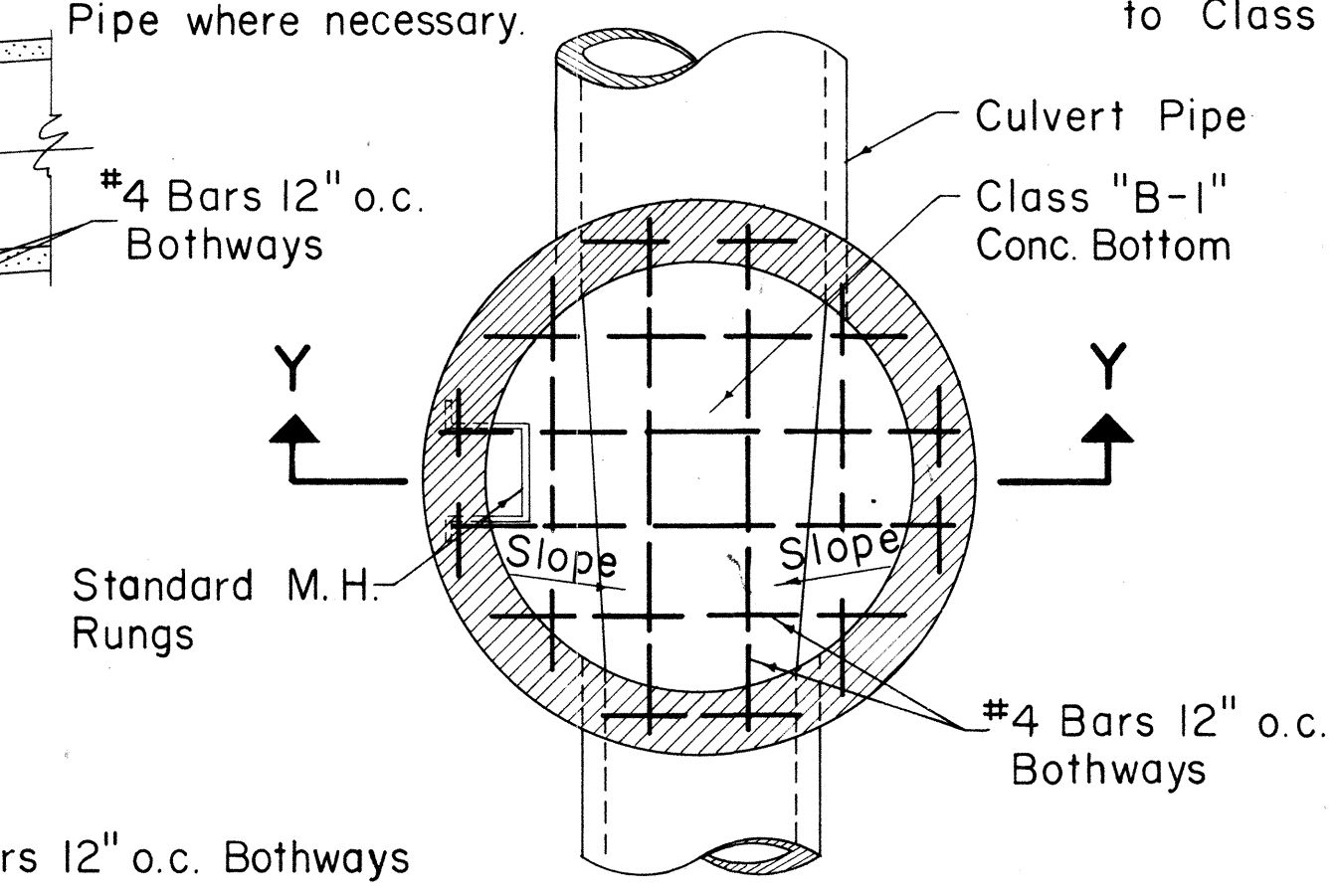
SECTION U-U  
TYPE "A", "B", & "C"

S.D.M.H.

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



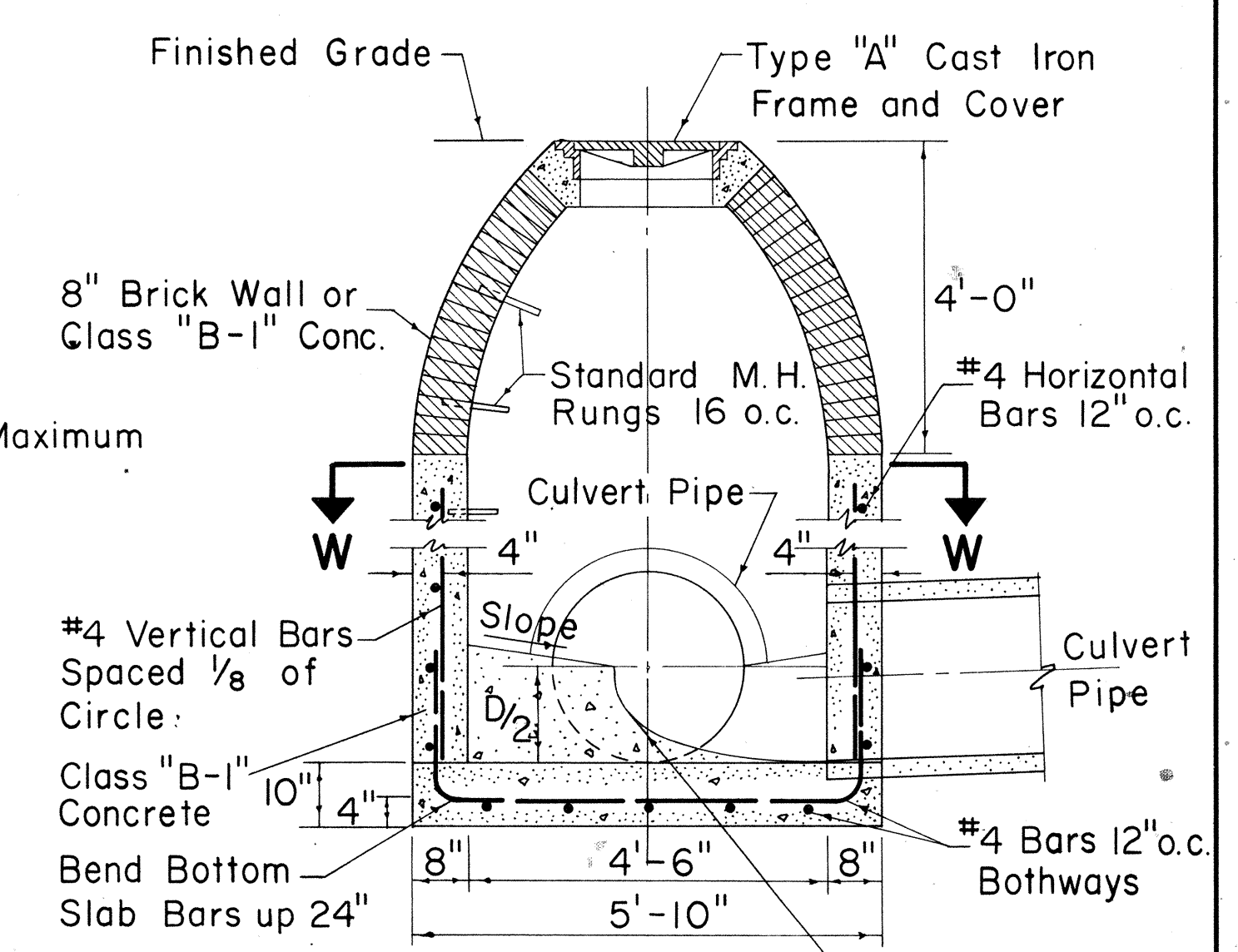
SECTION Y-Y



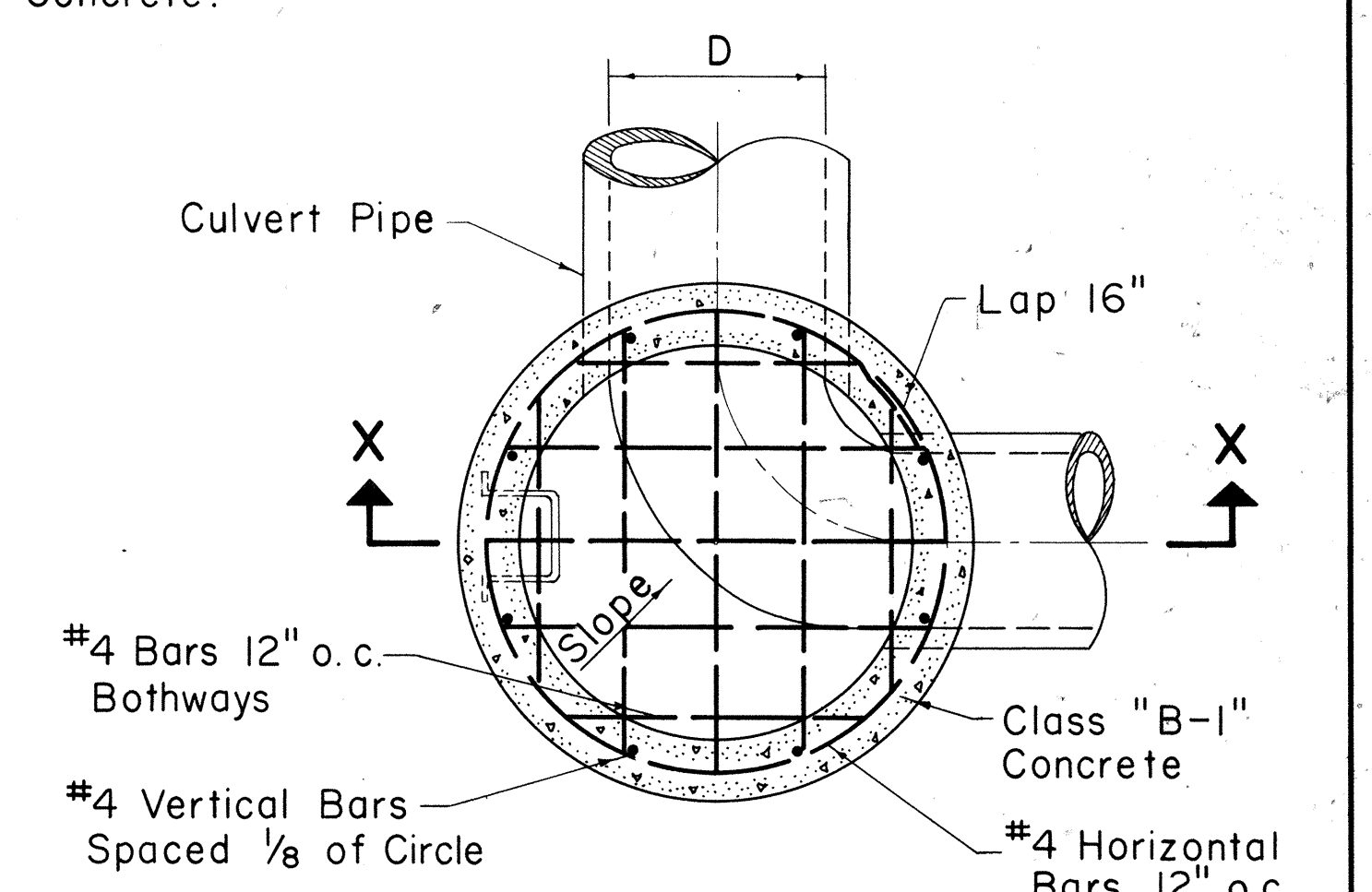
SECTION Z-Z

TYPE "D" STORM DRAIN MANHOLE

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



SECTION X-X



SECTION W-W

TYPE "E" STORM DRAIN MANHOLE

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

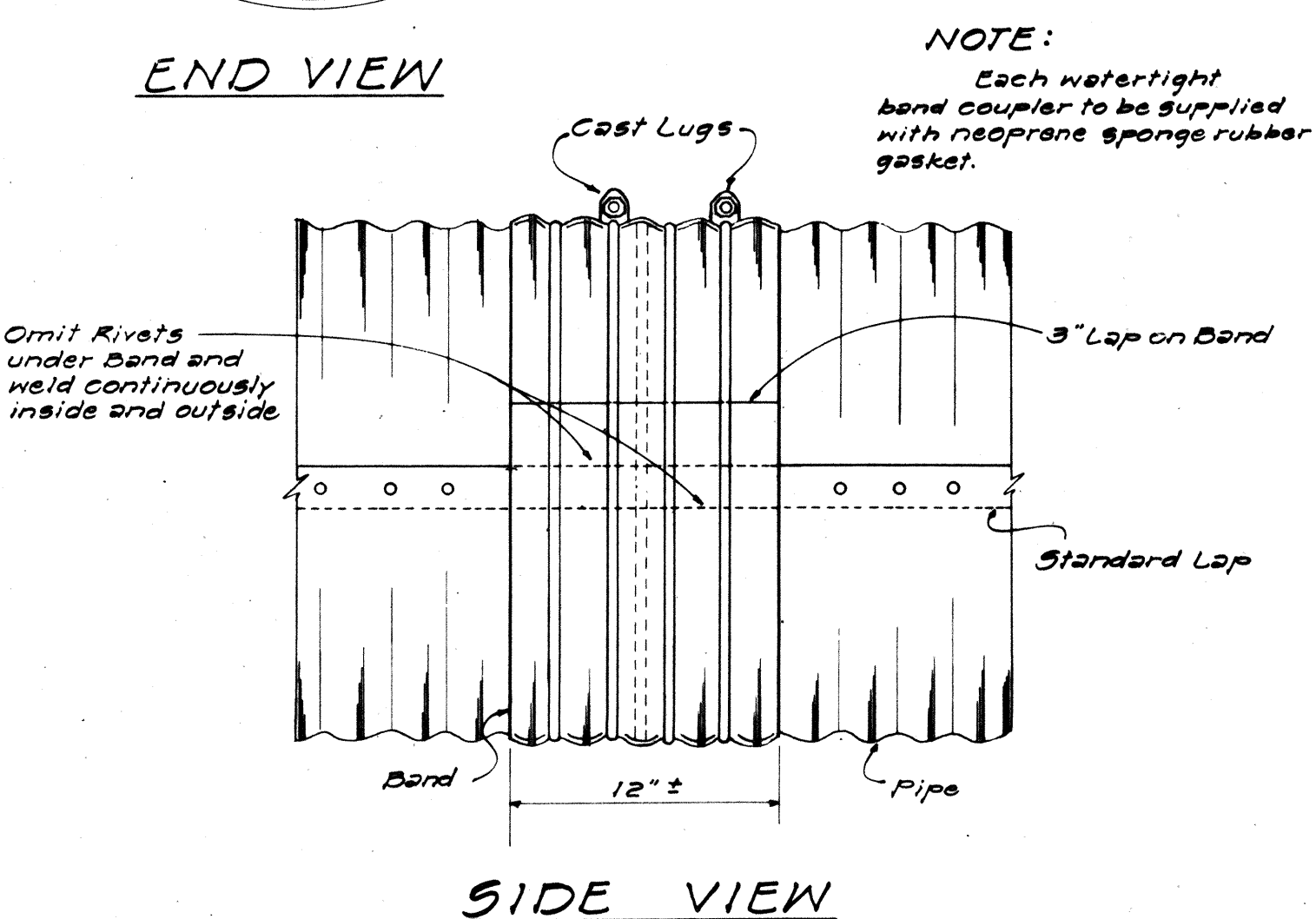
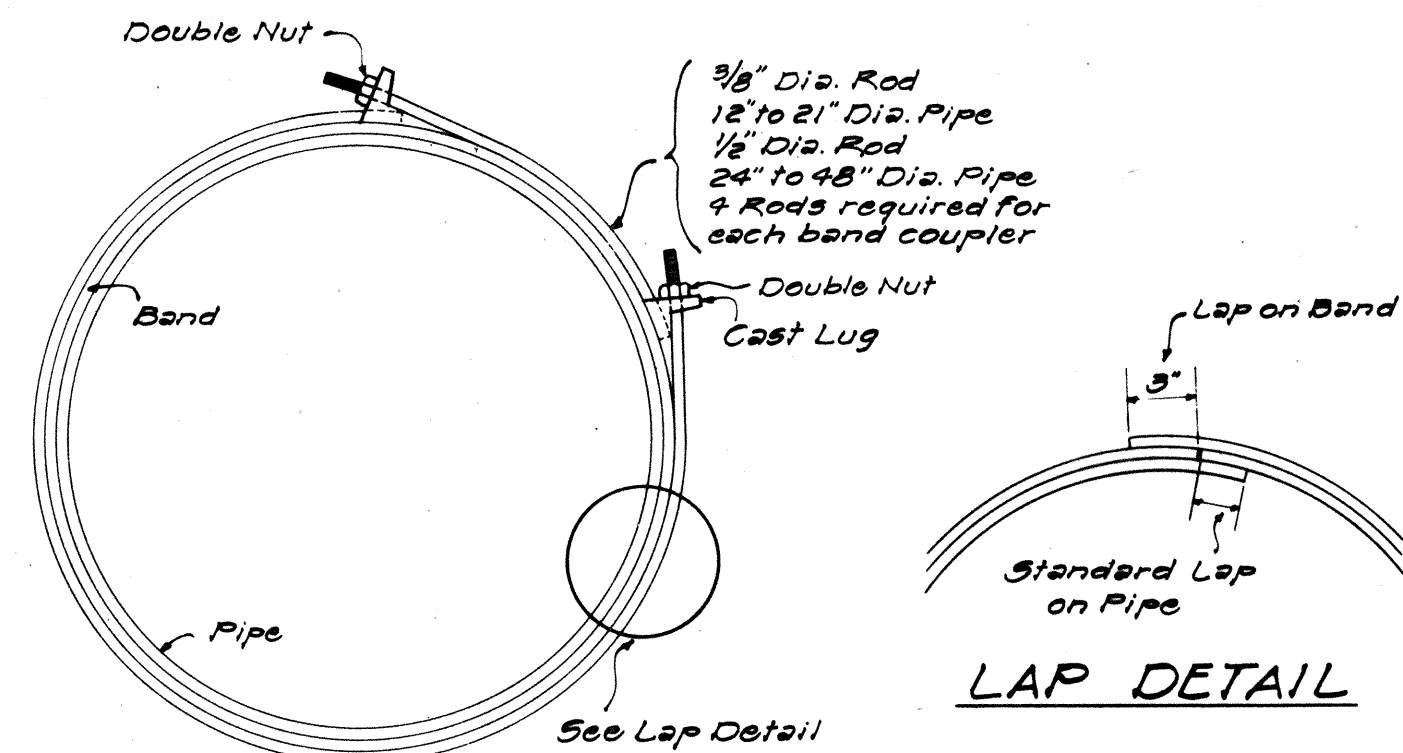
NOTE:

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

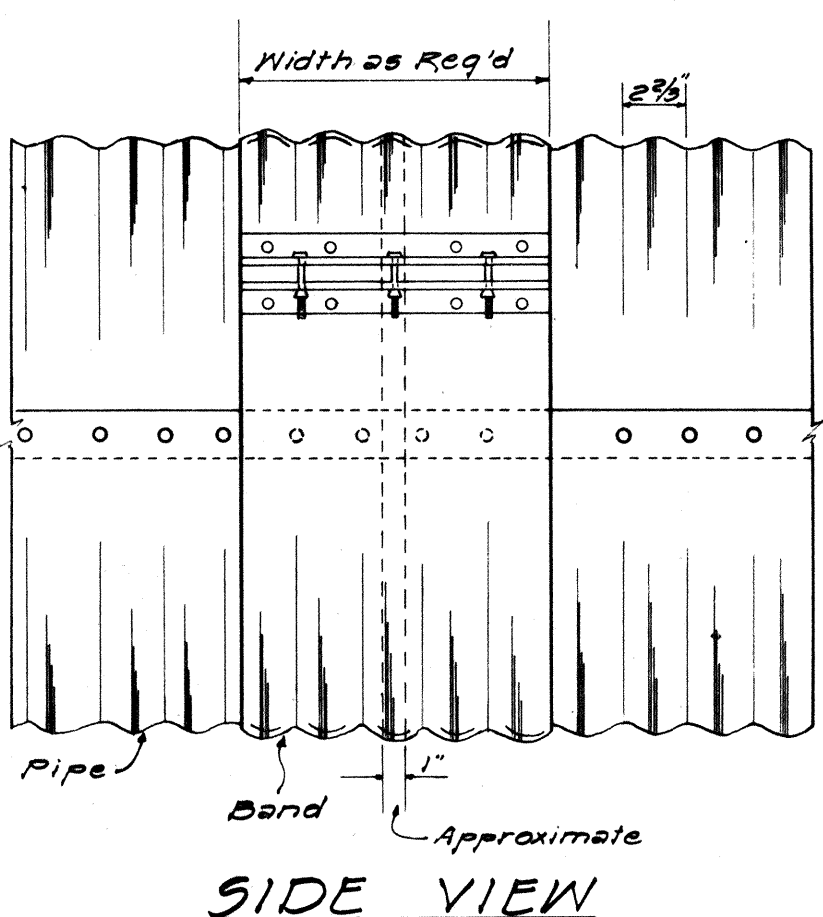
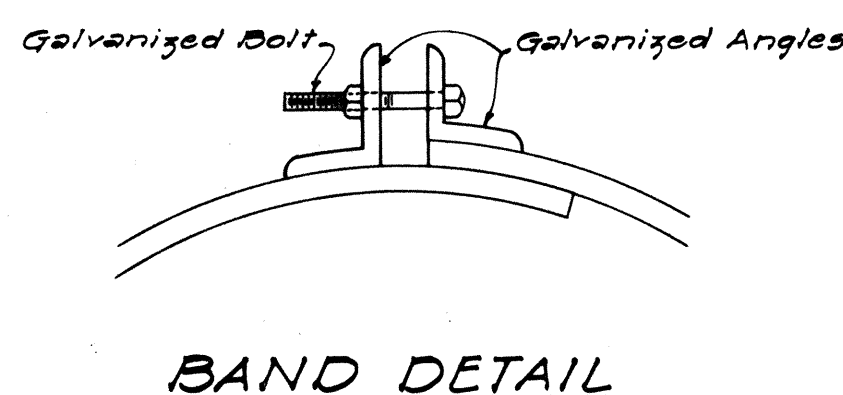
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STANDARD DETAILS  
STEEL FRAME AND GRATES  
AND STORM DRAIN MANHOLES

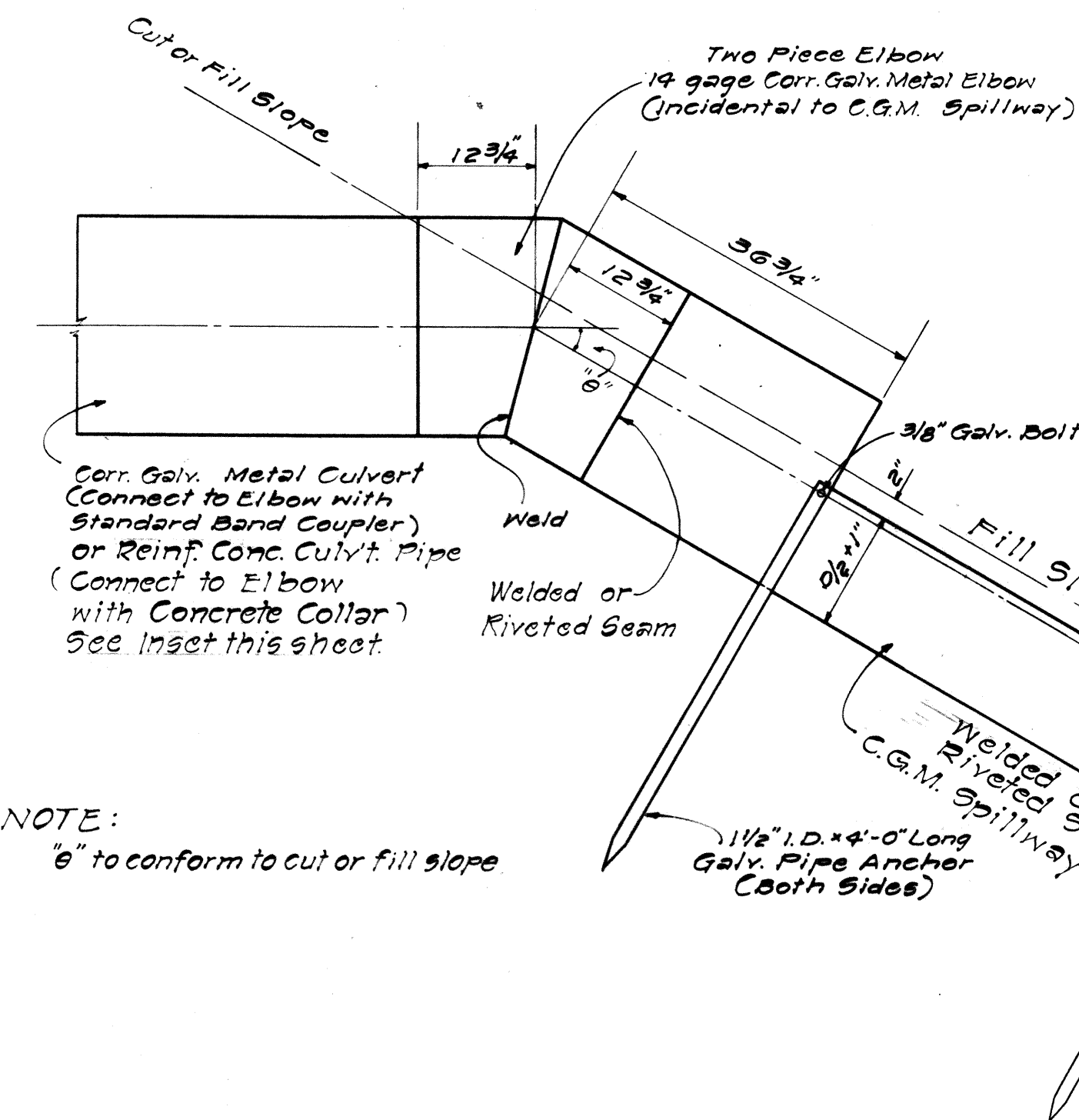
Scales: As Noted  
Date Dec., 1967



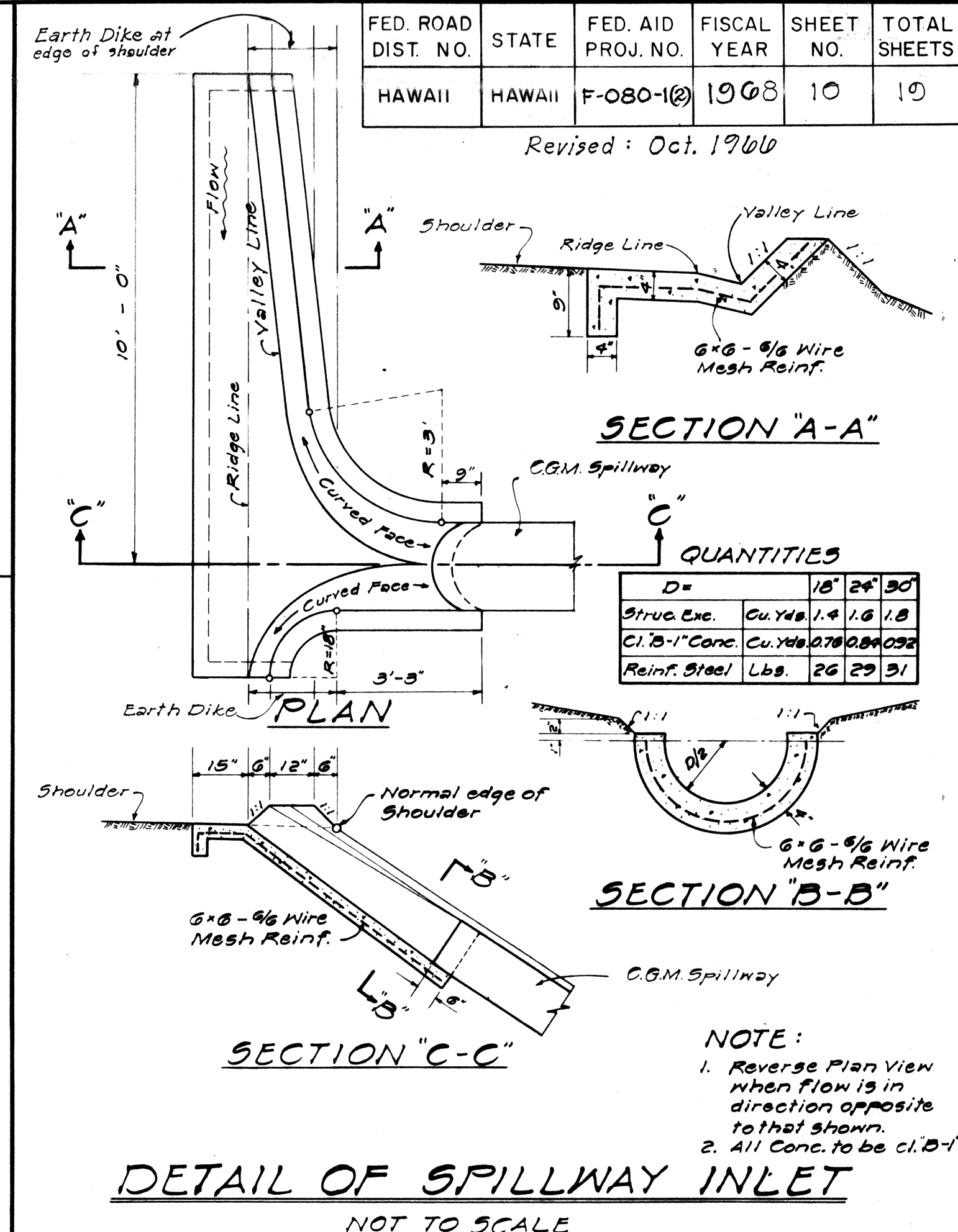
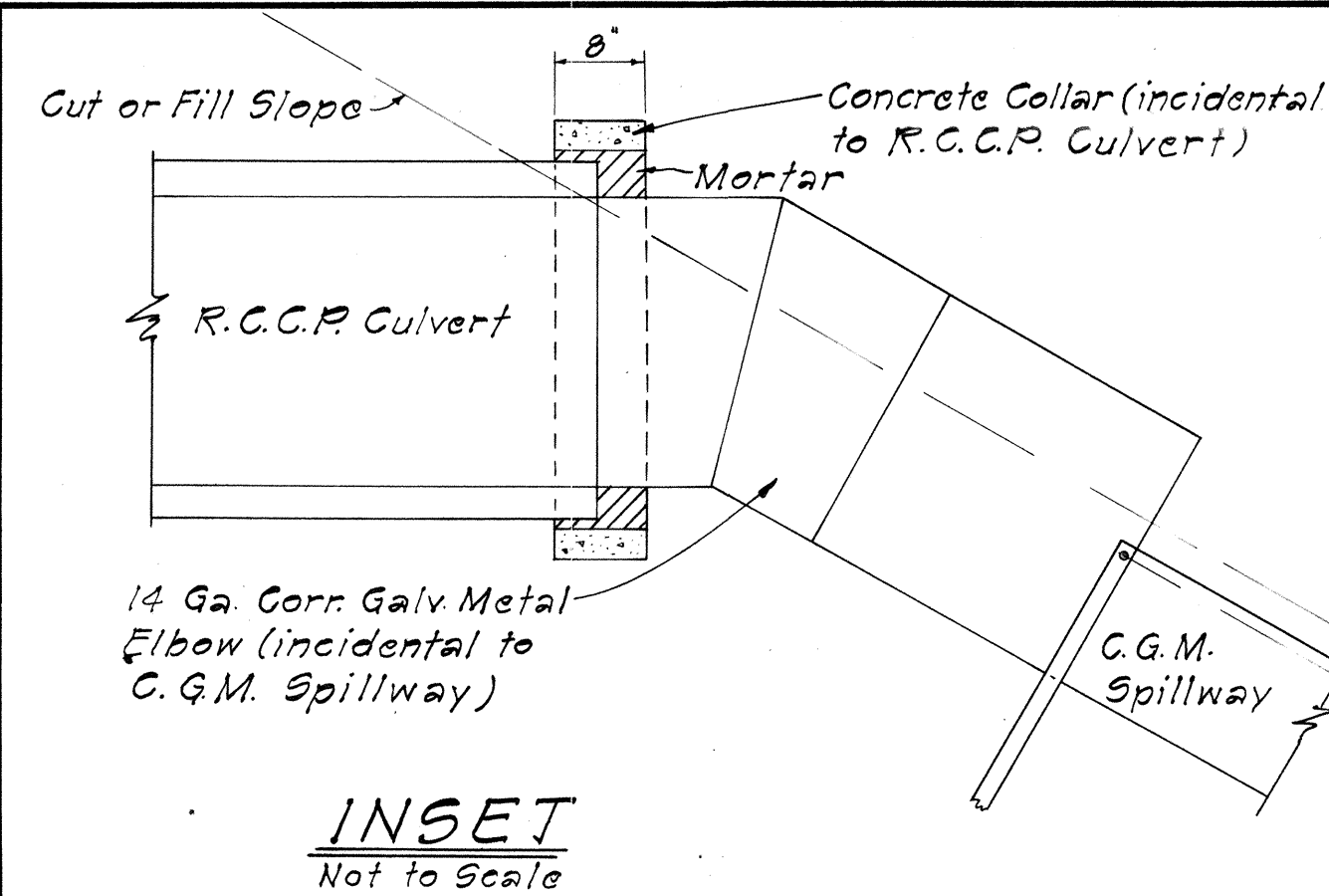
DETAIL OF WATERTIGHT BAND COUPLER  
NOT TO SCALE



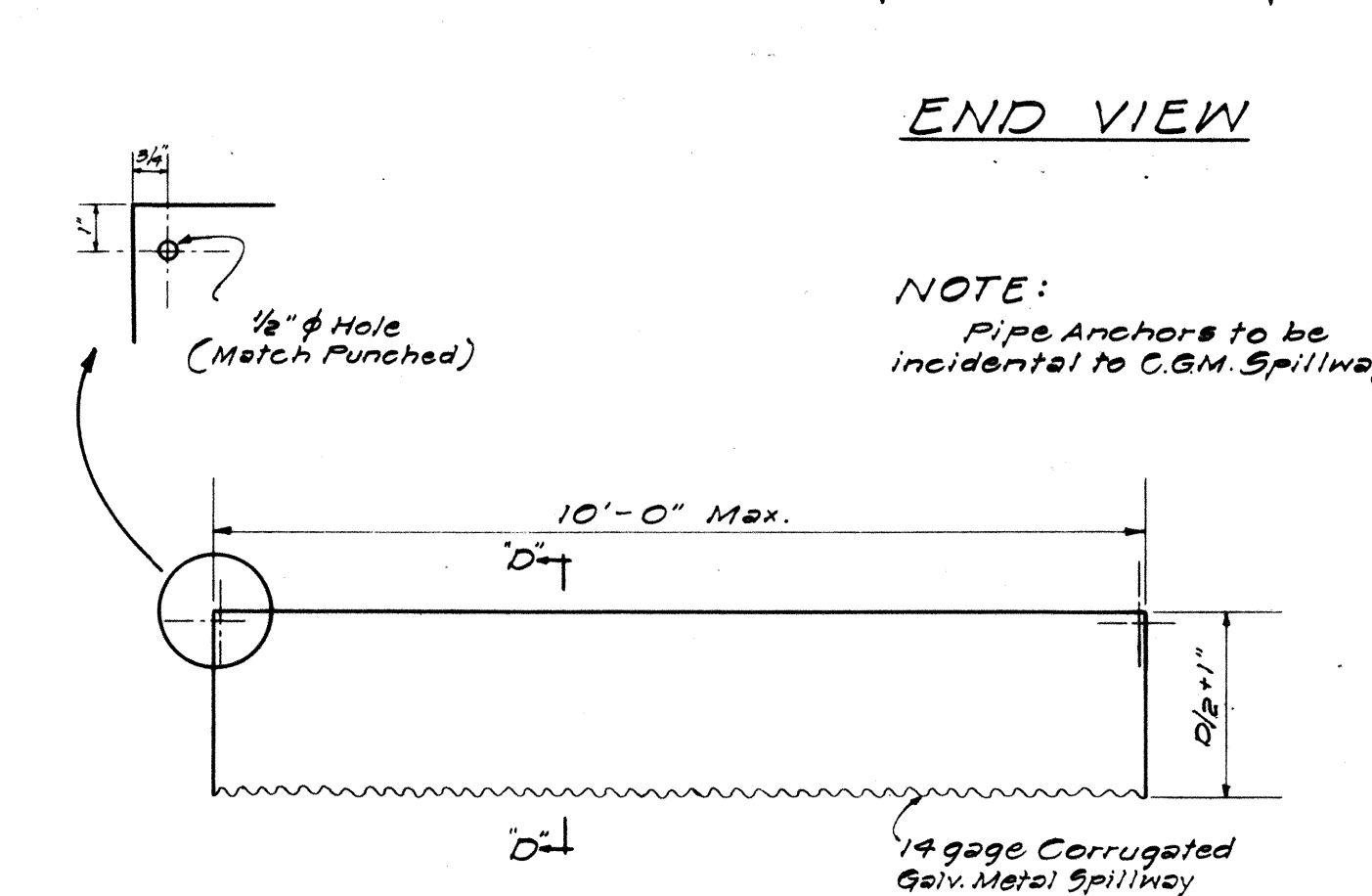
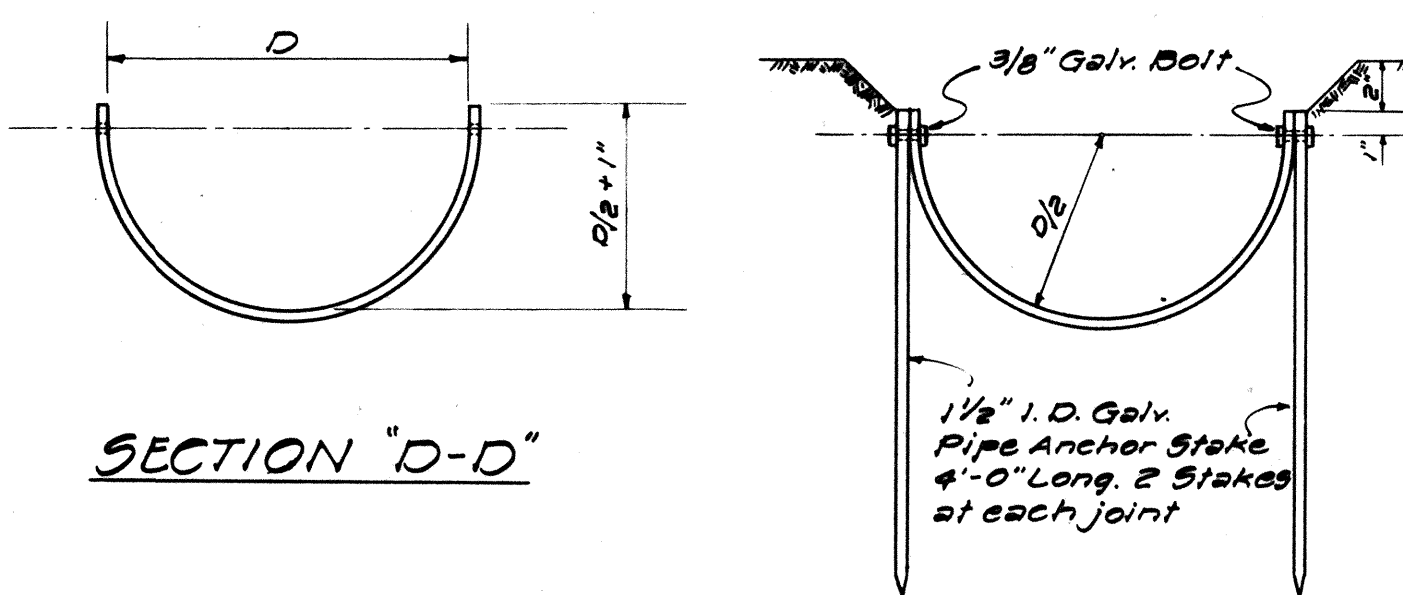
DETAIL OF STANDARD BAND COUPLER  
NOT TO SCALE



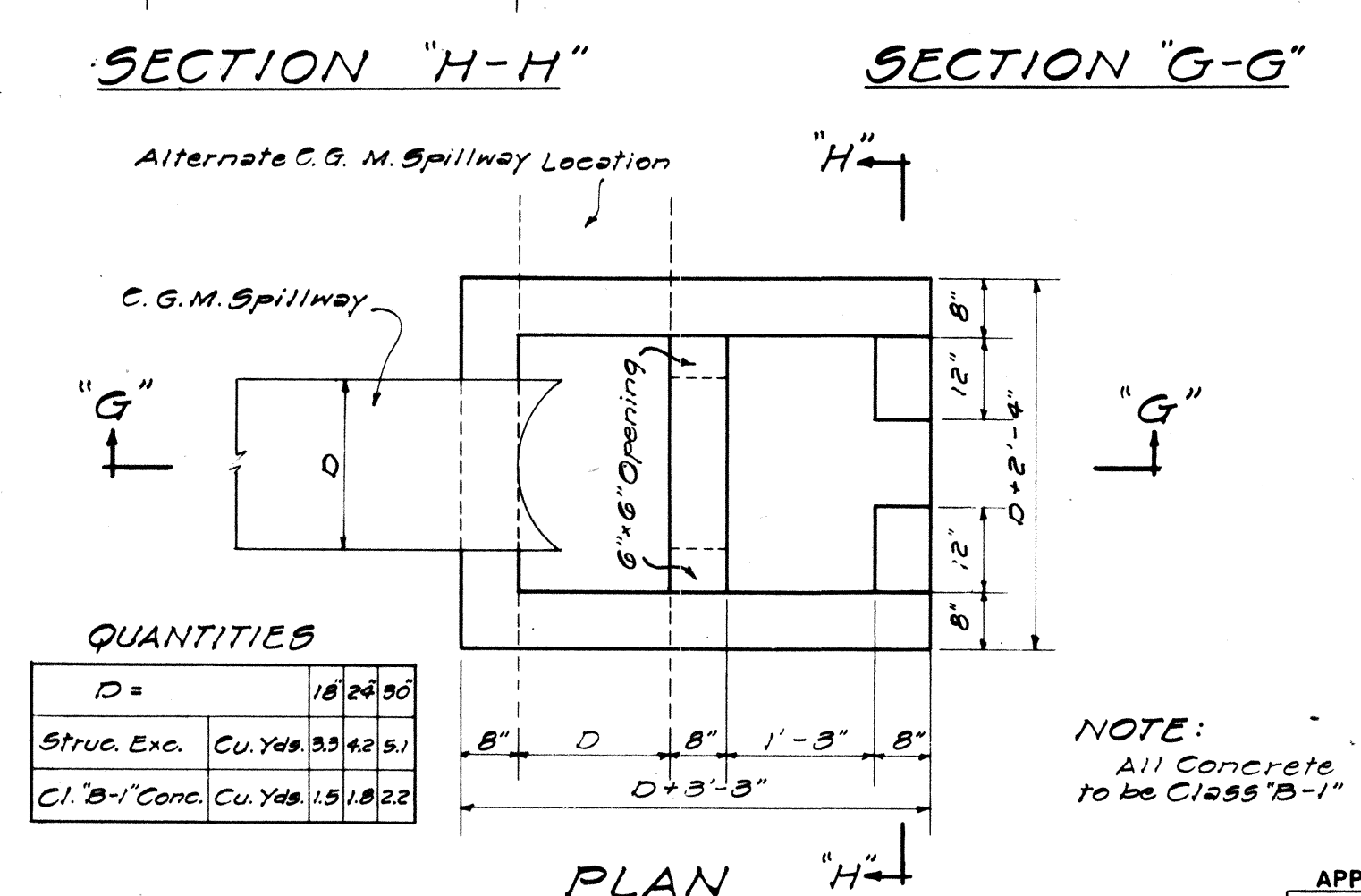
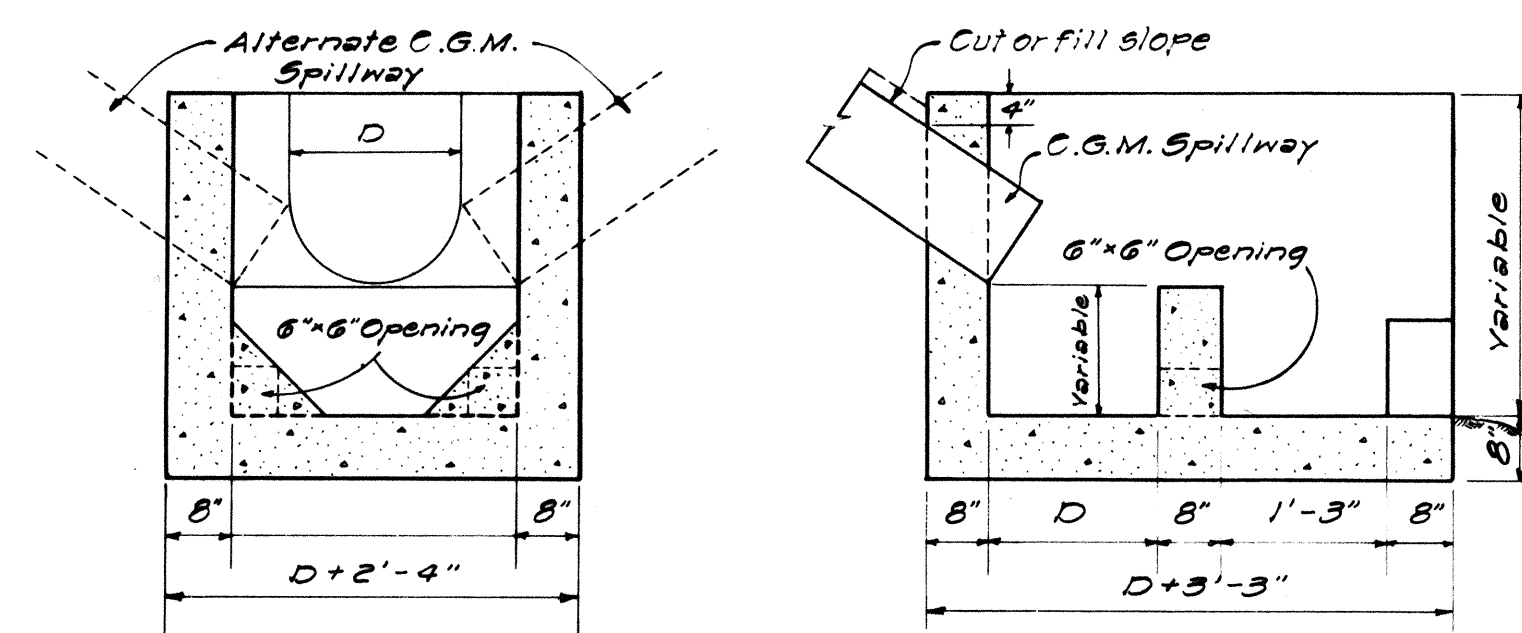
DETAIL OF CULVERT TO SPILLWAY CONNECTION  
NOT TO SCALE



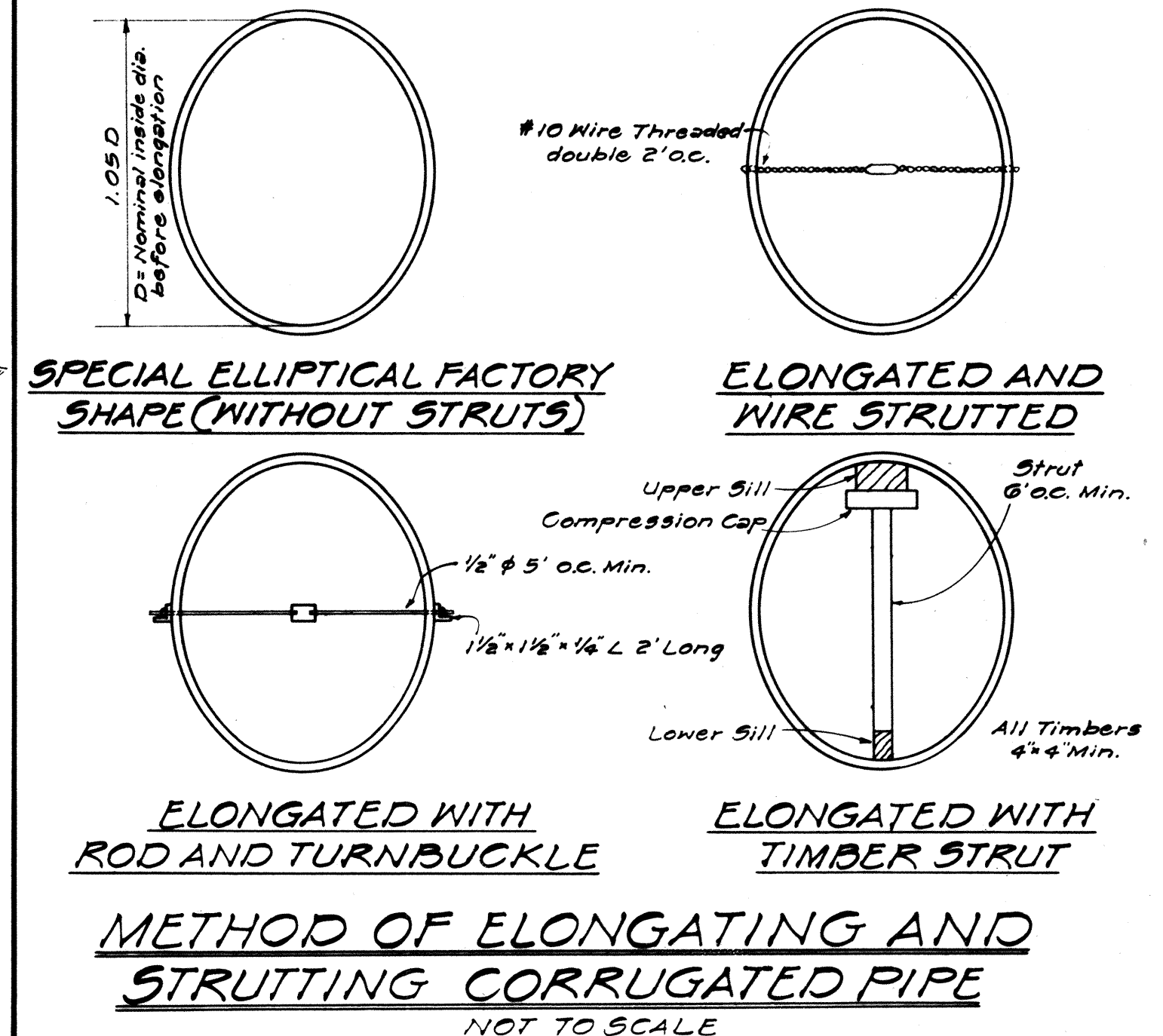
DETAIL OF SPILLWAY INLET  
NOT TO SCALE



C G.M. SPILLWAY  
NOT TO SCALE



DETAILS OF CONC. DROP BOX AT OUTLET OF C.G.M. SPILLWAY  
NOT TO SCALE



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
STANDARD DETAILS  
CORRUGATED GALVANIZED METAL CULVERTS, SPILLWAYS, AND SPECIAL DETAILS  
SCALES AS NOTED  
SHEET NO. 5 OF 5 SHEETS

|                   |          |
|-------------------|----------|
| SURVEY PLOTTED BY | DATE     |
| DRAWN BY          | 3-24-64  |
| DESIGNED BY       | R. M. Y. |
| NOTED BY          | G. M. Y. |
| CHECKED BY        |          |
| NO.               |          |