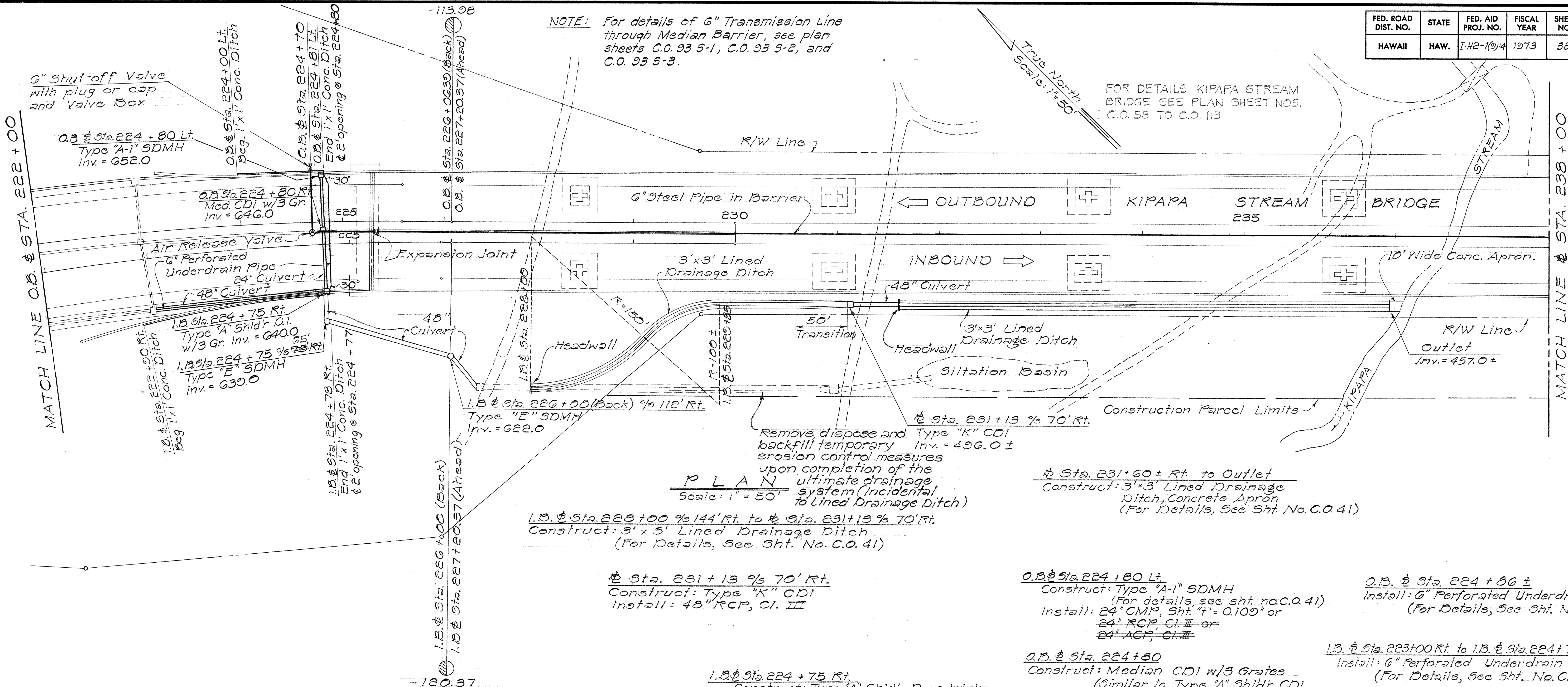


PROJECT: KIPAPA STREAM BRIDGE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H2-1(9)-4	1973	37	122

SHEET NO. 1 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-1(9)4	1973	38	122



NOTE: For details of 6" Transmission Line through Median Barrier, see plan sheets C.O. 93 5-1, C.O. 93 5-2, and C.O. 93 5-3.

FOR DETAILS KIPAPA STREAM BRIDGE SEE PLAN SHEET NOS. C.O. 58 TO C.O. 113

PLAN
Scale: 1" = 50'

1.B. Sta. 228+00 to 144' Rt. to Sta. 231+13 % 70' Rt.
Construct: 3' x 3' Lined Drainage Ditch
(For Details, See Sht. No. C.O. 41)

Sta. 231+13 % 70' Rt.
Construct: Type "K" CDI
Install: 48" RCP, Cl. III

1.B. Sta. 224+75 Rt.
Construct: Type "A" Shld'r Drop Intake w/3 Grates (For details, see sht. no. 40)
Install: 48" CMP, Sht. "I" = 0.109" or 48" RCP, Cl. III

1.B. Sta. 224+75 % 75' Rt.
Construct: Type "E" SDMH
Install: 48" CMP, Sht. "I" = 0.109" or 48" RCP, Cl. III

0.B. Sta. 224+80 Lt.
Construct: Type "A-1" SDMH (For details, see sht. no. C.O. 41)
Install: 24" CMP, Sht. "I" = 0.109" or 24" RCP, Cl. III or 24" ACP, Cl. III

0.B. Sta. 224+80
Construct: Median CDI w/3 Grates (Similar to Type "A" Shld'r CDI except w/o 6' opening. For Details, see Sht. No. 40)
Install: 24" CMP, Sht. "I" = 0.109" or 24" RCP, Cl. III or 24" ACP, Cl. III

1.B. Sta. 226+00 (Back) % 112' Rt.
Construct: Type "E" SDMH
Install: 48" CMP, Sht. "I" = 0.109" or 48" RCP, Cl. III

0.B. Sta. 224+80 ±
Install: 6" Perforated Underdrain Pipe (For Details, See Sht. No. C.O. 41)

1.B. Sta. 223+00 Rt. to 1.B. Sta. 224+75 Rt.
Install: 6" Perforated Underdrain Pipe (For Details, See Sht. No. C.O. 41)

0.B. Sta. 223+00 Lt. to 0.B. Sta. 225+28 ± Lt.
Construct: Gutter Transition
To be paid under Item 609.704 Gutter, Type 7(G1218)

1.B. Sta. 223+00 Rt. to 1.B. Sta. 225+28 ± Rt.
Construct: Gutter Transition
To be paid under Item 609.710 Gutter, Type 7(G161-1E)

7-1-76 Install 6" Irrigation Line - 0.B. Sta. 224+70 to Sta. 246+60. (For details, see sht. no. C.O. 39-5-1)
12-16-74 Revised drainage system in Kipapa Gulch

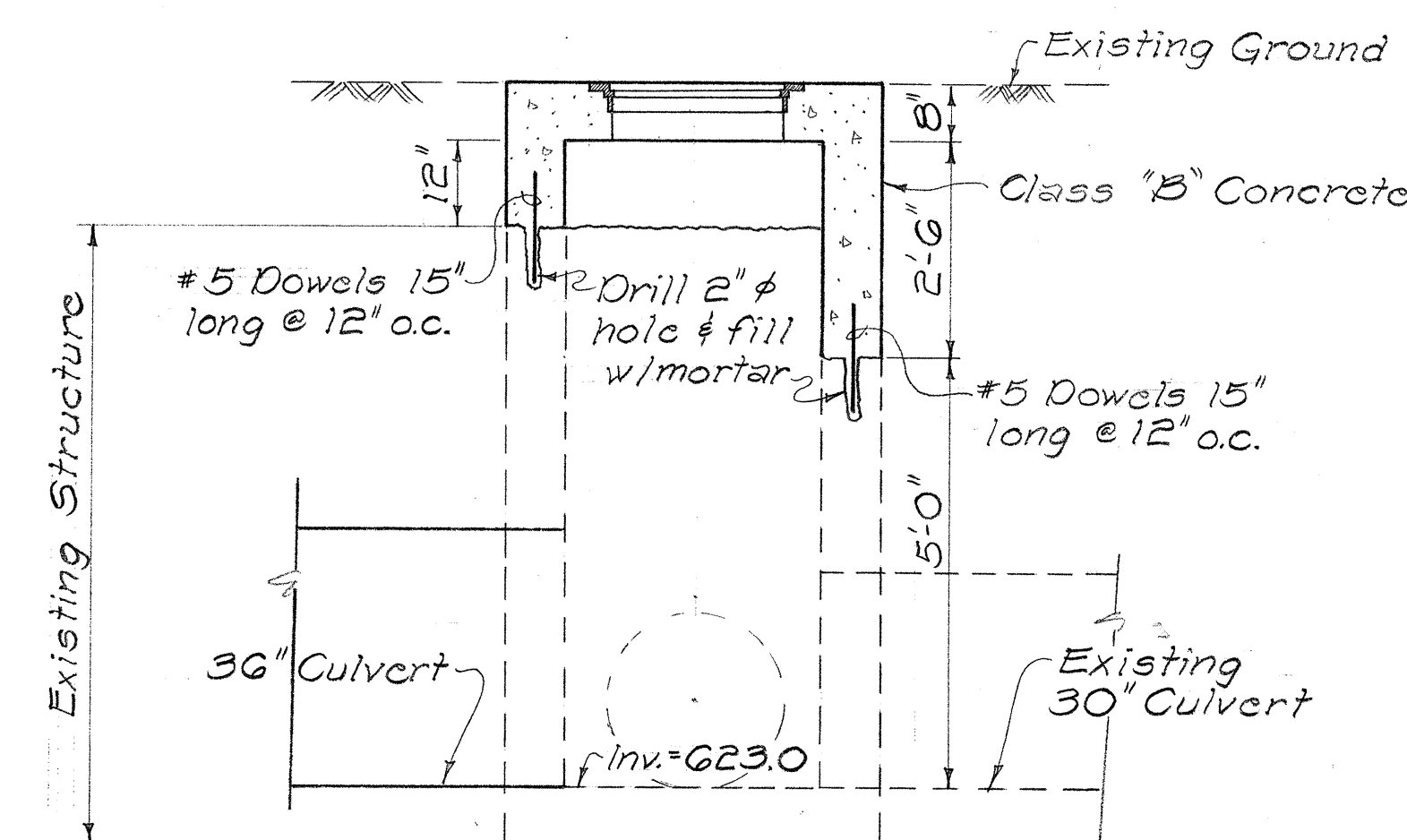
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE PLAN	
INTERSTATE ROUTE H-2 KIPAPA STREAM BRIDGE FAI PROJ. NO. I-H2-1(9)4	
Scale: As Shown Date: May 1973	
SHEET No. 2 OF 10 SHEETS	

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
REVISION	

GENERAL NOTES

-

PLAN



SECTION "A ~ A"

② STA. 246 + 55 % 78' Rt.
TYPE "F" MH

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

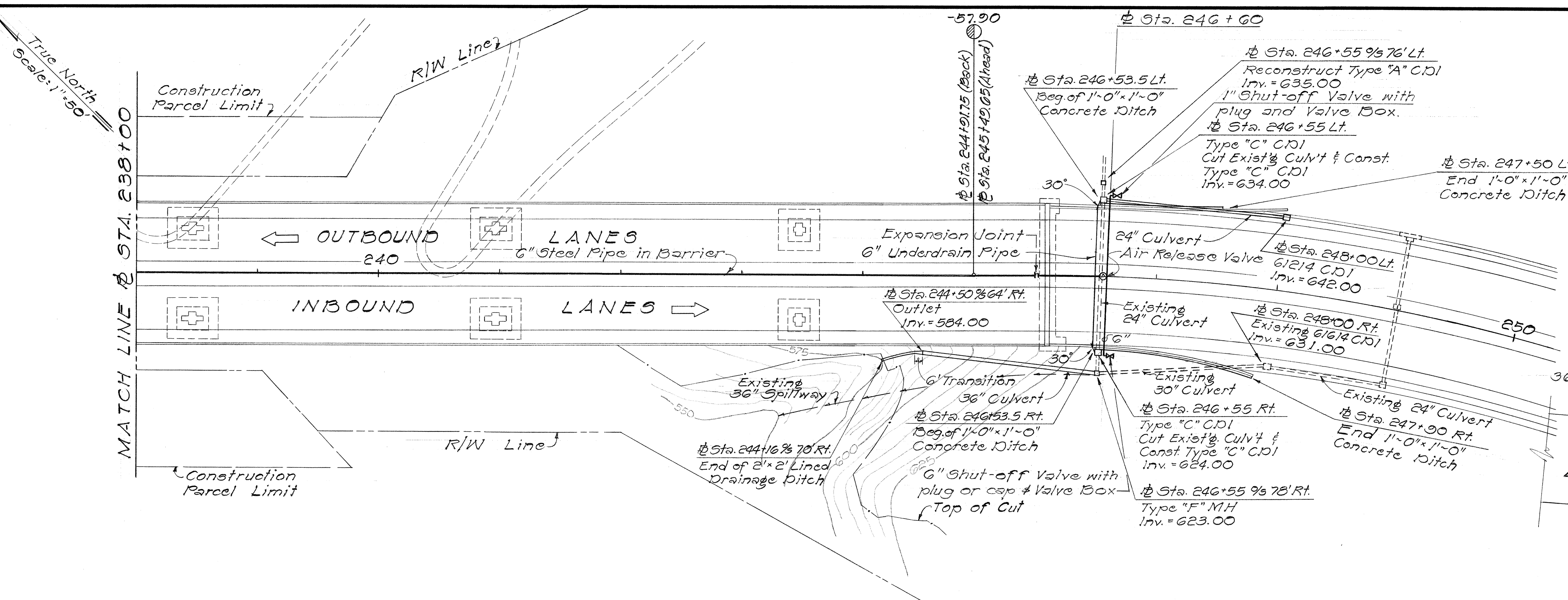
DRAINAGE PLAN

INTERSTATE ROUTE H-2
KIPAPA STREAM BRIDGE
FAI PROJ. NO. I-H2-1(9): 4

Scale: As Shown Date: May 1973

SHEET NO. 3 OF 10 SHEETS

C.O. 39



to Sta. 246+10 ± Lt. to Sta. 248+00 ± Lt.
Construct: Gutter Transition
To be paid under Item 609.704 Gutter, Type 7(61218)

Stn. 240+10 to Rt. to Stn. 240+00 Rt.
Construct: Gutter Transition
To be paid under Item 609.710 Gutter, Type 7 (6/61-12)

Sta. 246+51
Install: 6" Perforated
Underdrain Pipe
(For Detail See Sht. No. 41)

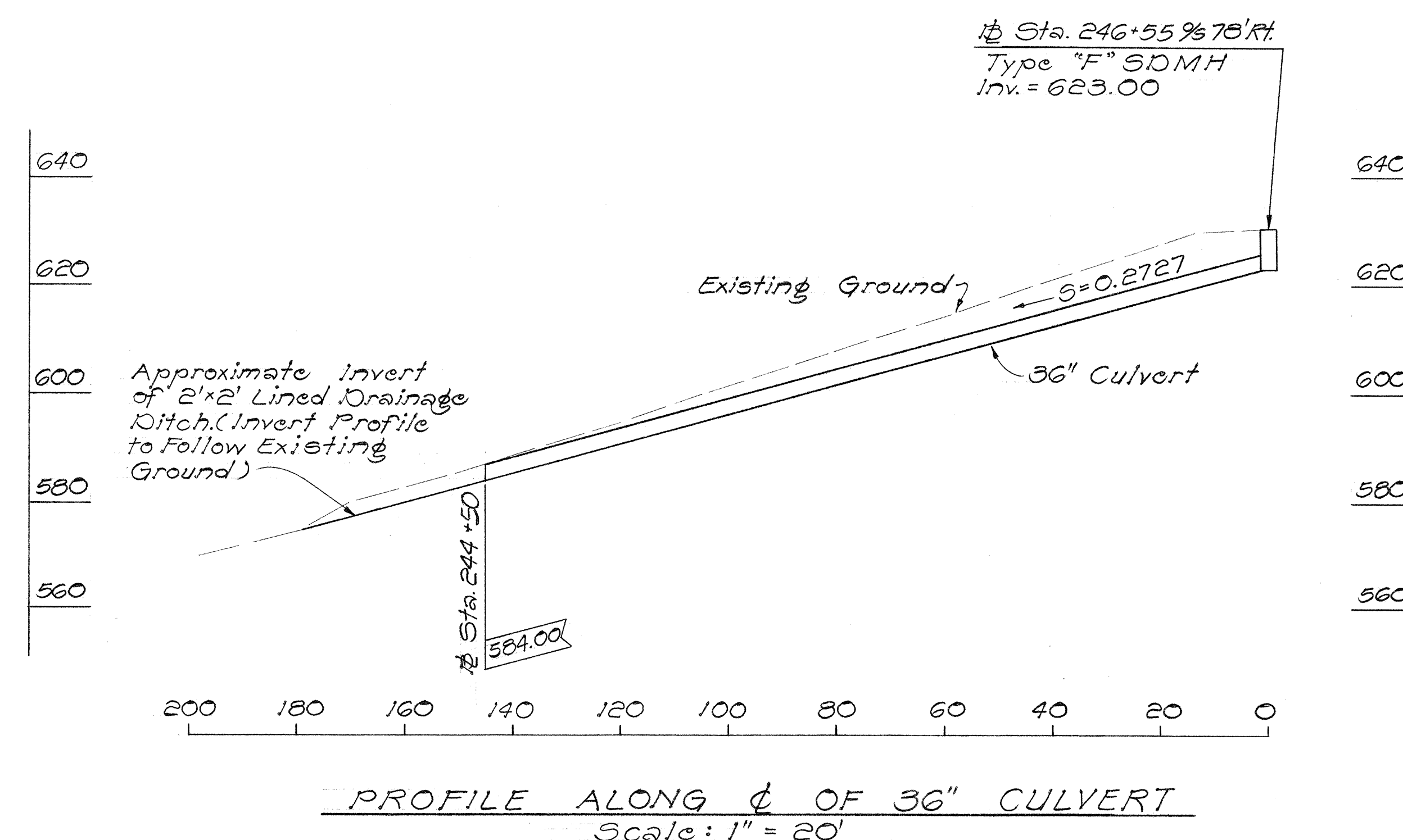
At Sta. 246+55 9/8 76' Lt.
Reconstruct Type "A" C/D
(For Detail See Sht. No. 42)

Sta. 246+55 Lt.
Construct: Type "C" C/D
Reinstall Existing Pipe to
Type "C" C/D
(For Detail See Sht. No. 42)

Sta. 248+00 Lt.
Construct: 61214 CDI
Install: 24" CMP, Sht. "t" = 0.109"

Sta. 246 + 55 Rt.
Construct: Type "C" C/D
Reinstall Existing Pipe to
Type "C" C/D
(For Details See Sht. No. 42)

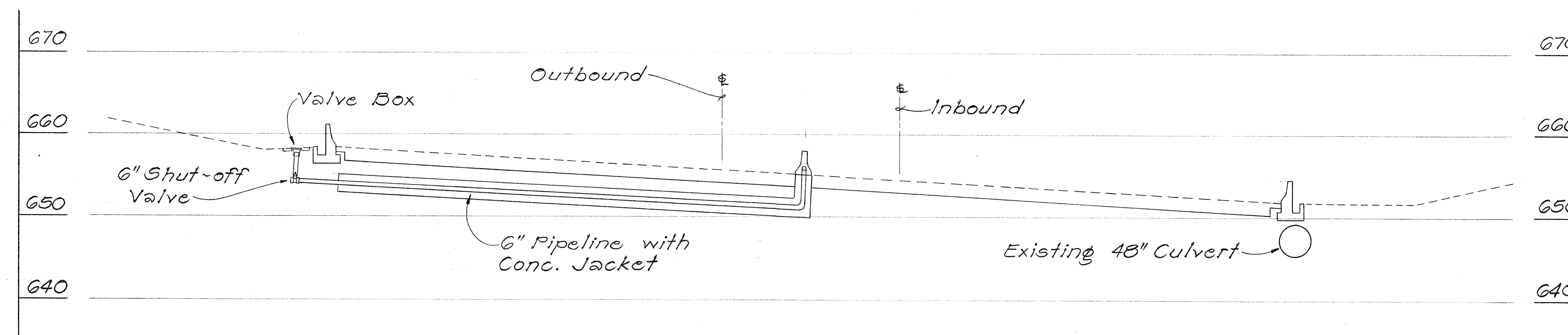
Sta. 246+55 to 78' RT.
Reconstruct Existing Type "A"
Culvert to Type "F" MH
(For Details See This Sheet)
Remove Existing
36" CM Spillway (Incidental to
Structural Excavation - Item No. 206.01)
Provide Connection for 36" Culvert
Install: 36" CMP Sh. "t" = 0.109"



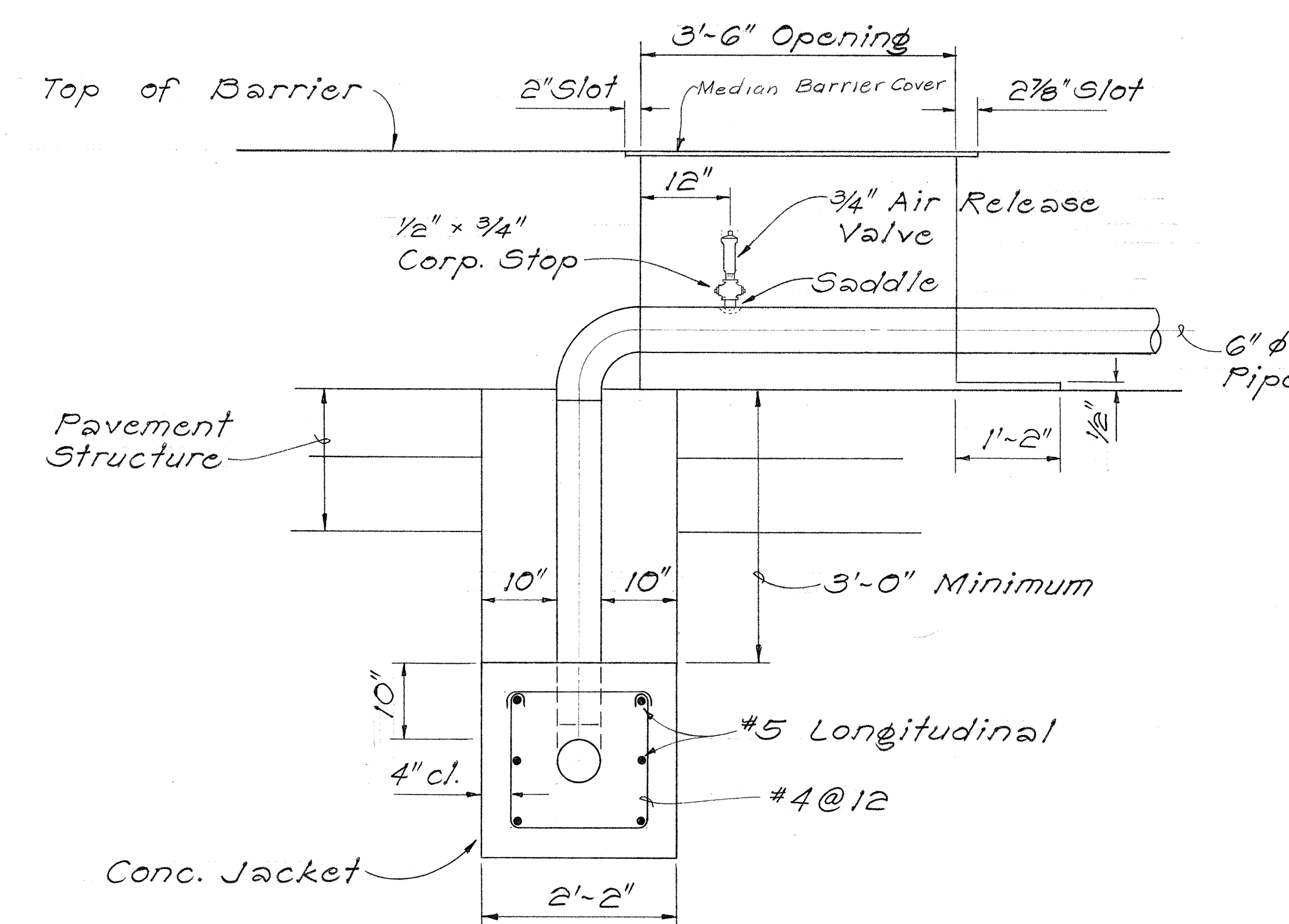
PROFILE ALONG ϕ OF 36" CULVERT
Scale: 1" = 20'

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	" _____
	TRACED BY _____	" _____
NOTE BOOK	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
	CHECKED BY _____	" _____
No. _____		

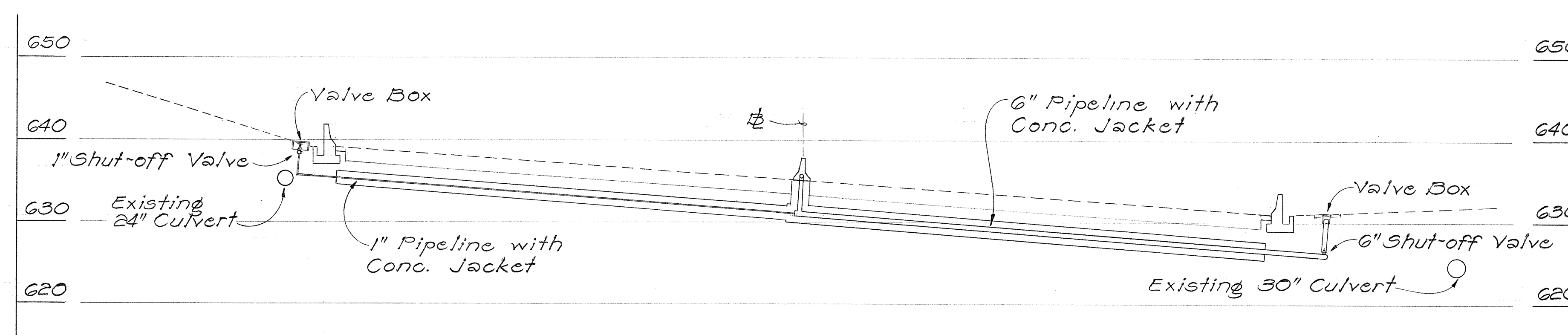
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-1(9)4	1976	C.O.39S-1	122



§ 224 + 70 O.B.
 Scale: Vert. = 1" = 10'
 Horiz. = 1" = 10'



SECTIONAL VIEW @ BARRIER
 Scale: 3/4" = 1' - 0"

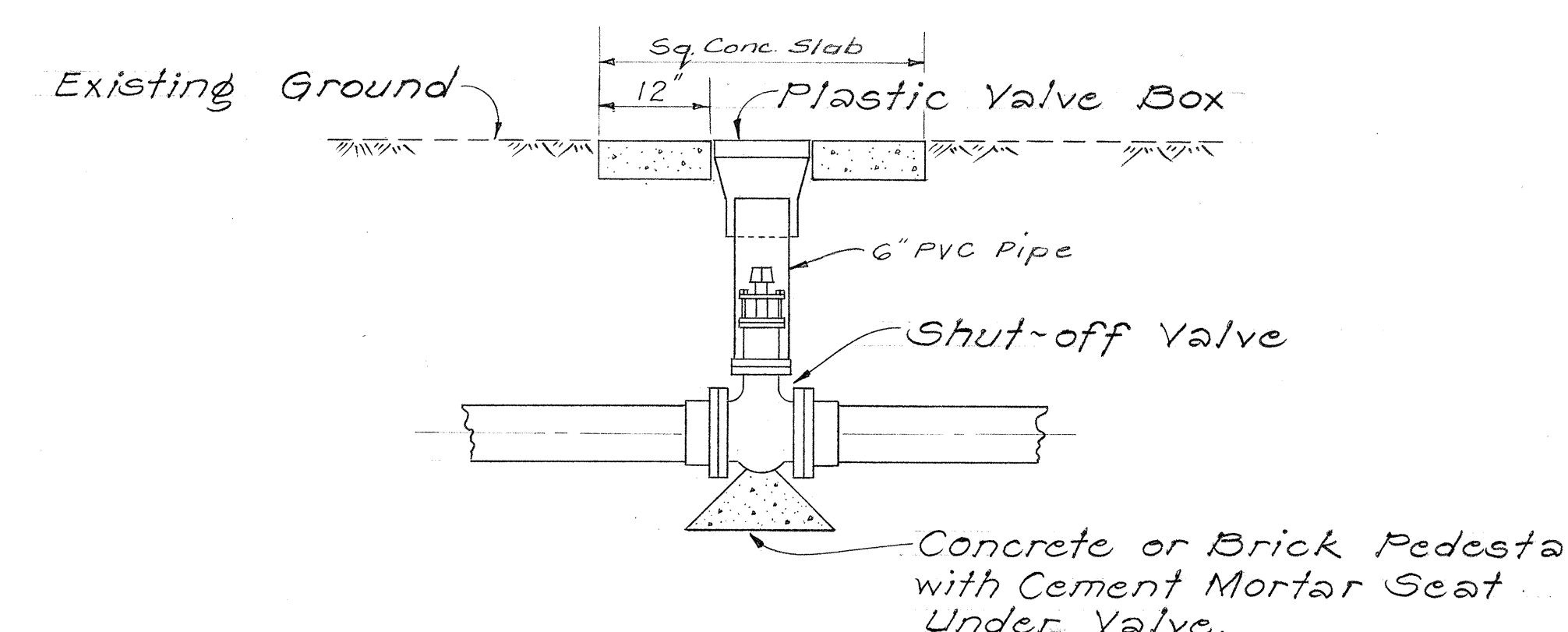


§ 246 + 60
 Scale: Vert. = 1" = 10'
 Horiz. = 1" = 10'

NOTE:

Steel pipe outside of concrete jacket shall have coal tar enamel protective coating.

ESTIMATED QUANTITIES		
Excavation	= 71	C.Y.
Cl. B Conc. for Conc. Jacket	= 29	C.Y.
Reinforcing Steel	= 2260	LBS.
6" Steel Pipe	= 2260	L.F.
1" Steel Pipe	= 80	L.F.
3/4" Air Release Valve & Appr.	= 2	EA.
6" Shut-off Valve with Cap and Valve Box	= 2	EA.
1" Shut-off Valve with Plug and Valve Box	= 1	EA.
6" Pipe Expansion Joint	= 2	EA.
Restore Conc. Pavement	= 8.2	C.Y.
Restore A.C. Pavement	= 100	S.F.
Median Barrier Steel Cover	= 4	EA.



TYPICAL INSTALLATION DETAIL
 FOR VALVE BOX AND SHUT-OFF VALVE
 Scale: 3/4" = 1' - 0"

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
KIPAPA STRM. BRIDGE
6" TRANSMISSION LINE
FOR SPRINKLER SYSTEM THRU MEDIAN BARRIER
INTERSTATE ROUTE H-2 F.A.I. PROJ. NO. I-42-1(9)4
SCALE: AS SHOWN DATE: JULY '76
SHEET No. 3a OF 10 SHEETS

C.O. 39 S-1

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
No.	_____

Reference Sta. Line

10'-8"

8" 6'-0" 8" 8"

1'x1' Concrete Ditch

Limit of Railing

8" 3'-0" 8" 8" 8"

8"

Install Type "A-12" Frames and Grates (See Std. Details)

Technical drawing of a bridge deck cross-section. The drawing shows a central roadway with a 6'-0" width, flanked by 8" wide shoulders on each side. A 1'x1' concrete ditch is located on the left side. The total width of the bridge deck is 10'-8". The drawing also shows the installation of Type "A-12" frames and grates, and the limit of railing. Dimensions are given in feet and inches.

Hand-drawn structural drawing of a concrete curb and railing assembly. The drawing shows a cross-section of a concrete curb with a railing on top. The curb has a top width of 2'-0" and a base width of 3'-0". The railing is labeled "Type 'A-12' Frame & Grate" and has a height of 2'-0". The curb is reinforced with #4 bars and stirrups. The drawing includes dimensions for the curb, railing, and reinforcement, as well as notes for concrete class and reinforcement details.

Key dimensions and components:

- Front Face of Railing:** 2'-0" height.
- Top of Curb:** 2'-0" width.
- Base of Curb:** 3'-0" width.
- Reinforcement:** #4 cl. Stirrups @ 12" o.c., #4 bars @ hole 4'-0" 19. each face.
- Concrete:** Class "A" Concrete.
- Notes:** #4 cont., #4 @ 8", #4 @ 6" both ways, S.E. as req'd.

Additional bent bar

Bend #4 bar add 1-#4 J bent

8" Opening

Front Face of Railing

Guardrail Ditch Wall

Toe

8"

#4 @ 8"

6"

1'-0" Wall

1'-0" Footing

Bend #4 bar
add 1-#4 J Bent

Additional bent bar

Technical drawing of a manhole structure showing dimensions and components:

- Dimensions:**
 - Overall width: 6'-0"
 - Overall height: 8'-0"
 - Top width: 8"
 - Bottom width: 8"
 - Side wall thickness: 8"
 - Top flange thickness: 1"
 - Top flange width: 18"
 - Top flange height: 1'-6"
 - Manhole Rungs: @ 16" o.c. as req'd.
 - Reinforcement: #4 @ 12" Bothways
 - Invert (See Plans)
- Components and Notes:**
 - Conform to Finish Grade
 - Grate Bar
 - Center Support Assembly
 - Slope 1:12
 - 1" Chamfer Finish Grade
 - Class "A" Concrete

1. Culvert shall enter and leave CDI from any position and in the direction indicated by the plans or ordered by the Engineer.
2. Manhole Rungs (18"o.c.) are required when "H" is greater than 4-feet 6-inches. Only one rung (12 inches from the bottom) is required when "H" is 4-feet 6-inches or less. Manhole Rungs may be placed at any location as ordered by the Engineer.
3. For Shoulder Drop Intakes located in the Concrete Railing Flare Area, the location shall be nearly parallel to the flare. In all cases, the final location must permit removal of the grates.
4. Only additional reinforcing at ditch section and at opening are shown. See typical railing section for regular reinforcing.

#5 @ 8" end bars at holes

#5 @ 8"

8" d.l.

8" d.l.

4'0" Opening

#4 bars 2'0" long each face

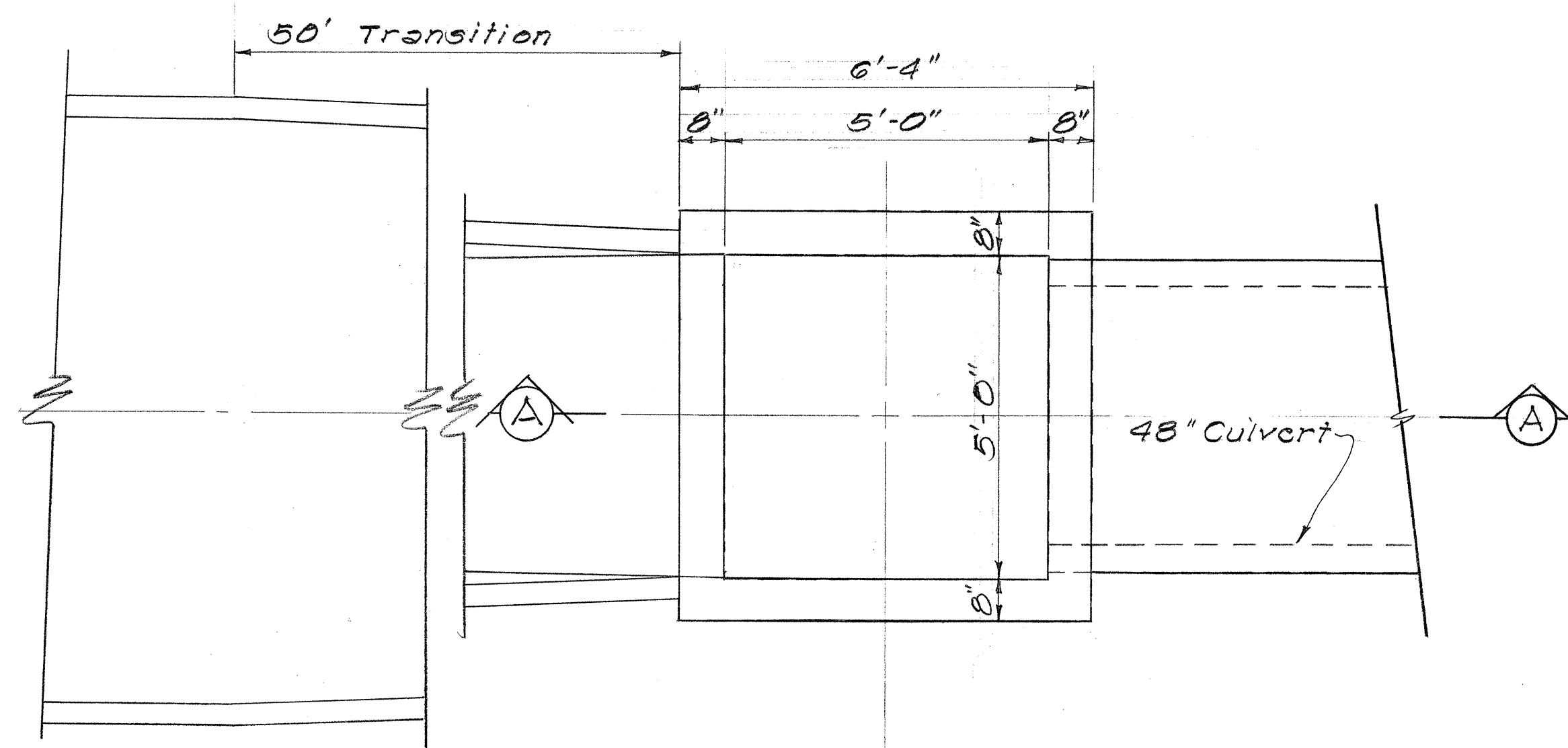
#4 bars @ hole 4'0" long each face

DETAILS OF CONCRETE DITCH AND TYPE "A" SHOULDER CDD
AT CONCRETE RAILING

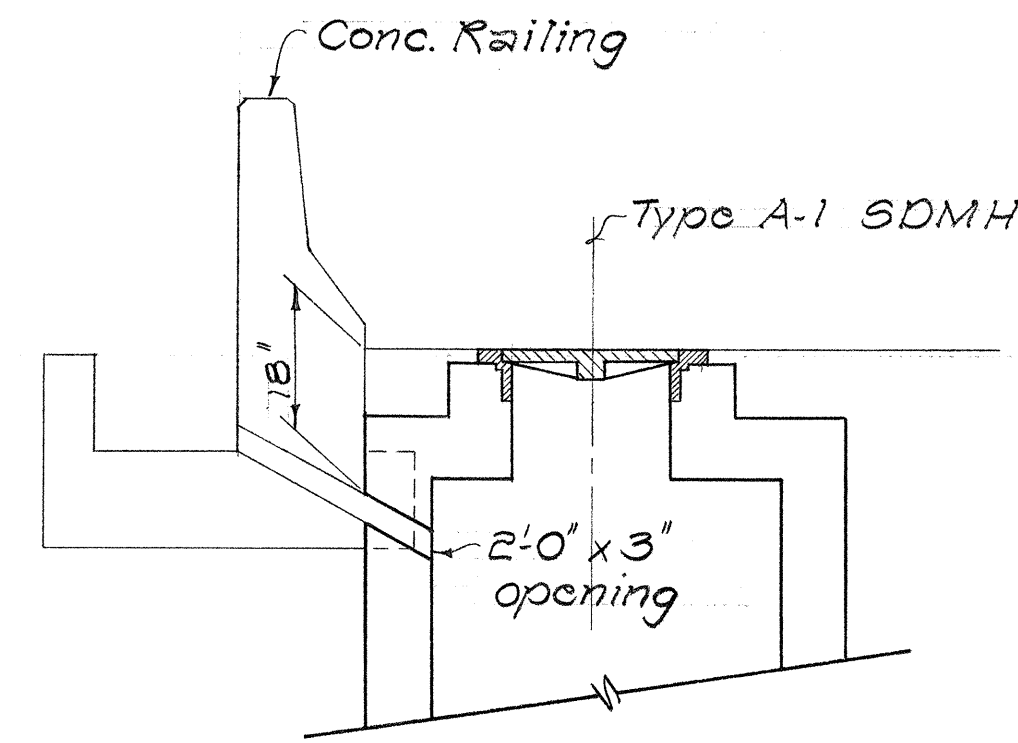
INTERSTATE ROUTE H-2
KIPAPA STREAM BRIDGE
F.A.I. PROJ. NO. I-H2-1(9):4

40

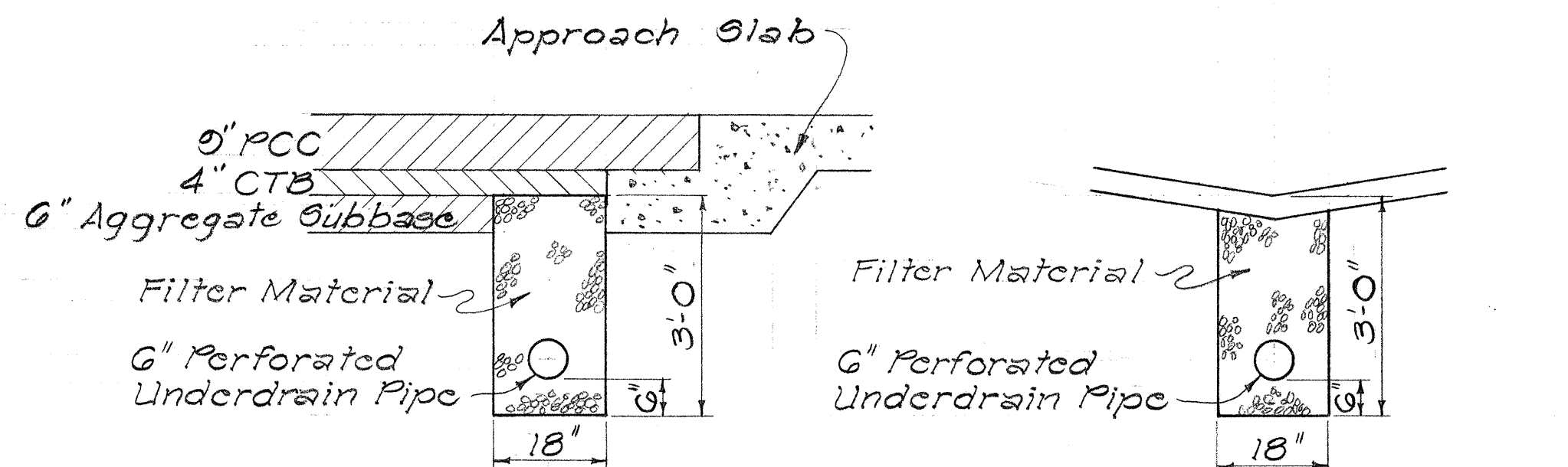
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-1(9):4	1973	41	122



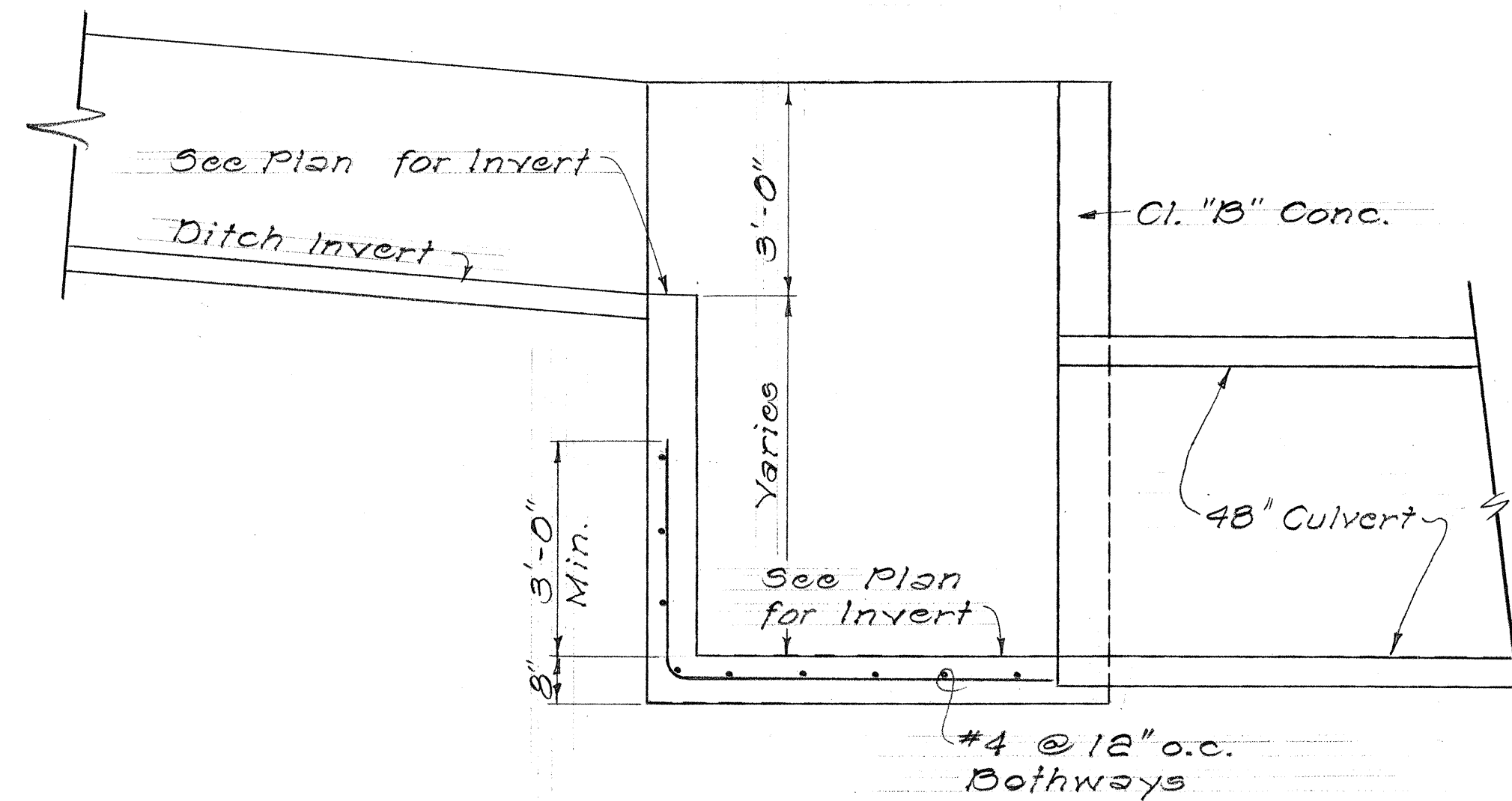
PLAN



DETAIL OF TYPE "A-1" SDMH
@ O.B. @ STA. 224 + 80 LT.
Scale: 1/2" = 1'-0"

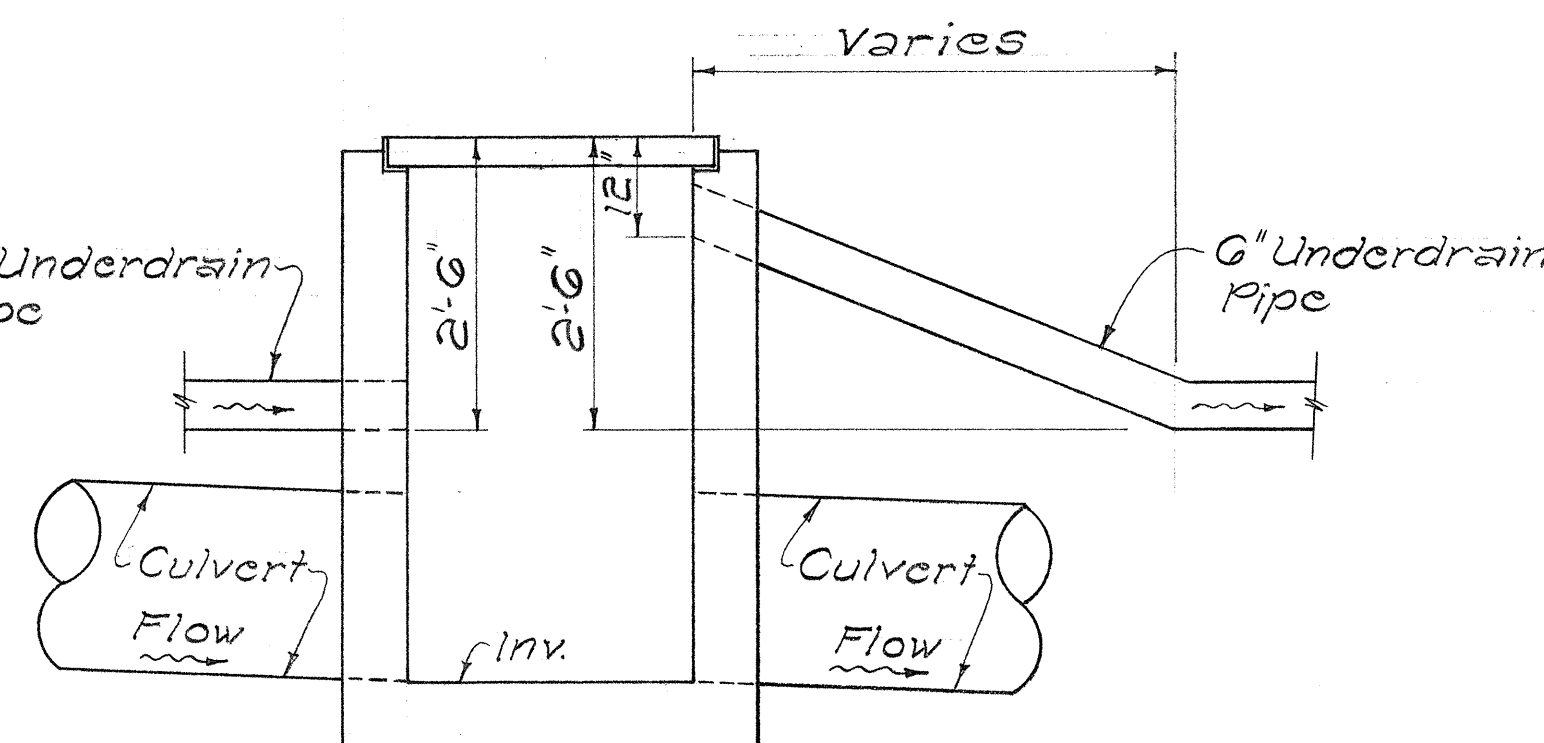


TRANSVERSE TRENCH LONGITUDINAL TRENCH
TRENCH DETAILS FOR 6" UNDERDRAIN PIPE
Scale: 1/2" = 1'-0"

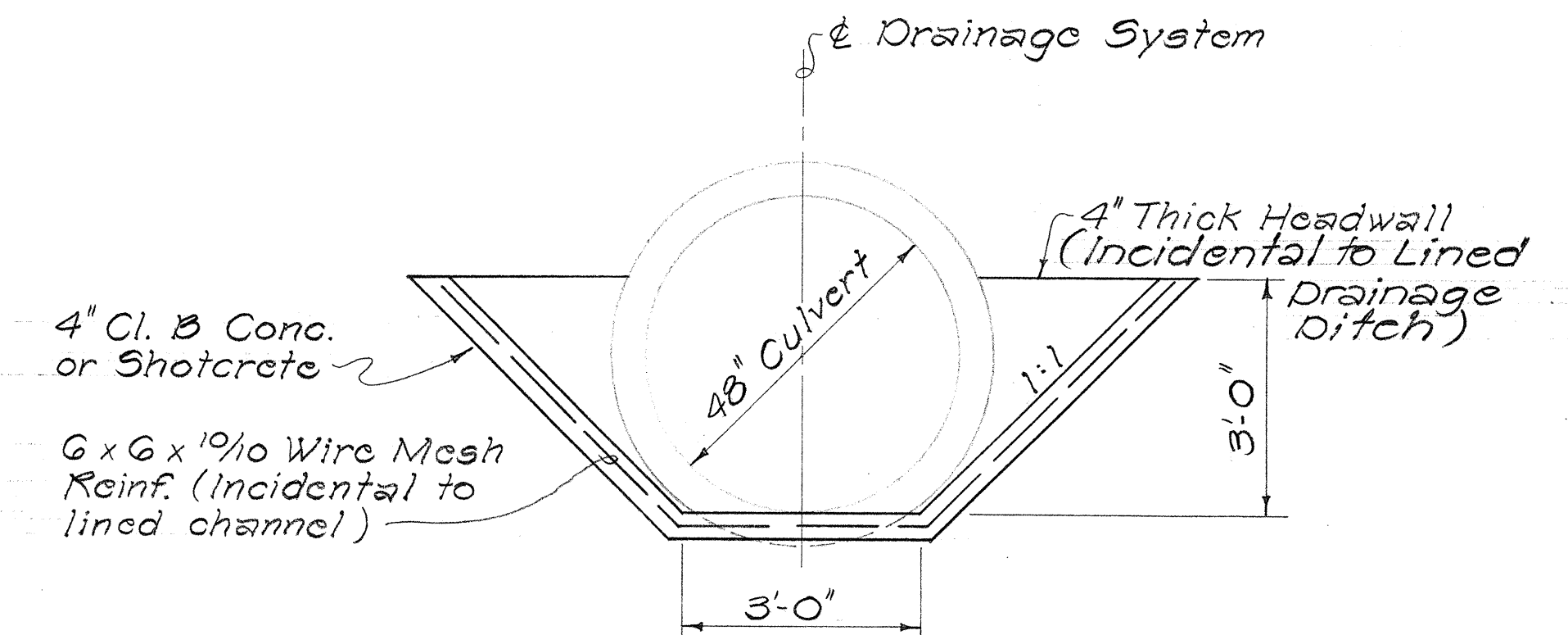


SECTION "A-A"

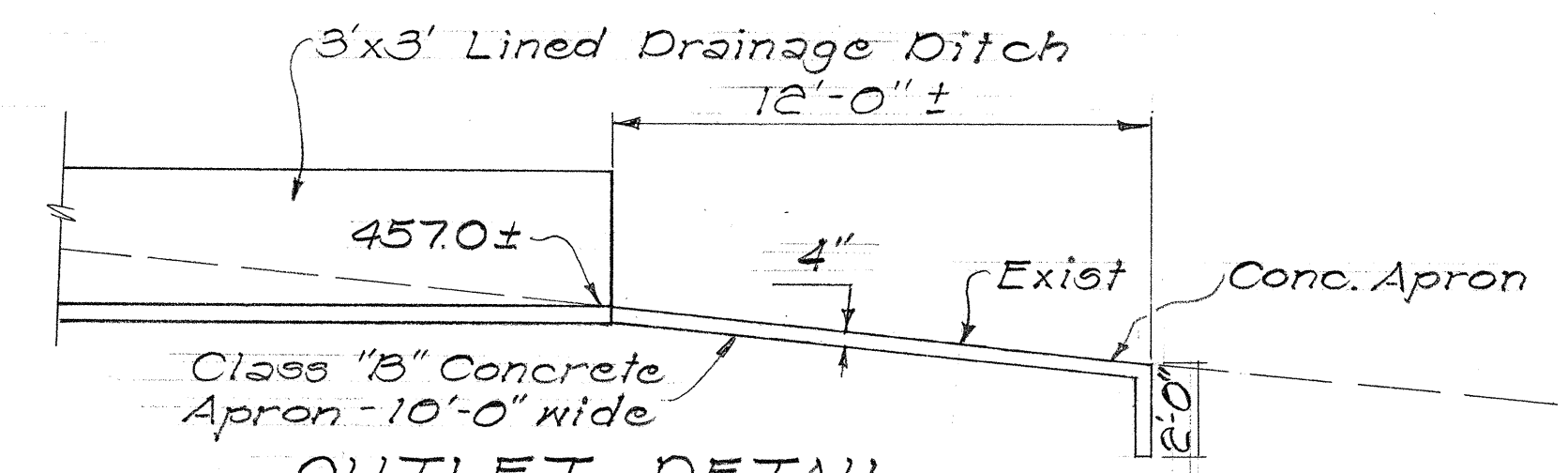
DETAIL OF CONNECTION TO EXISTING CDI
@ I.B. @ STA. 231 + 13, 9/70' RT.
Scale: 1/2" = 1'-0"



DETAILS OF 6" UNDERDRAIN
PIPE AT CDI'S AND SDMH
Scale: 1/2" = 1'-0"



DETAIL OF 3' x 3'
LINED DRAINAGE DITCH
Scale: 1/2" = 1'-0"



OUTLET DETAIL
Scale: 1/4" = 1'-0"

DATE	REVISION
12-16-74	Revised detail of Type "K" CDI and revised outlet detail

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS

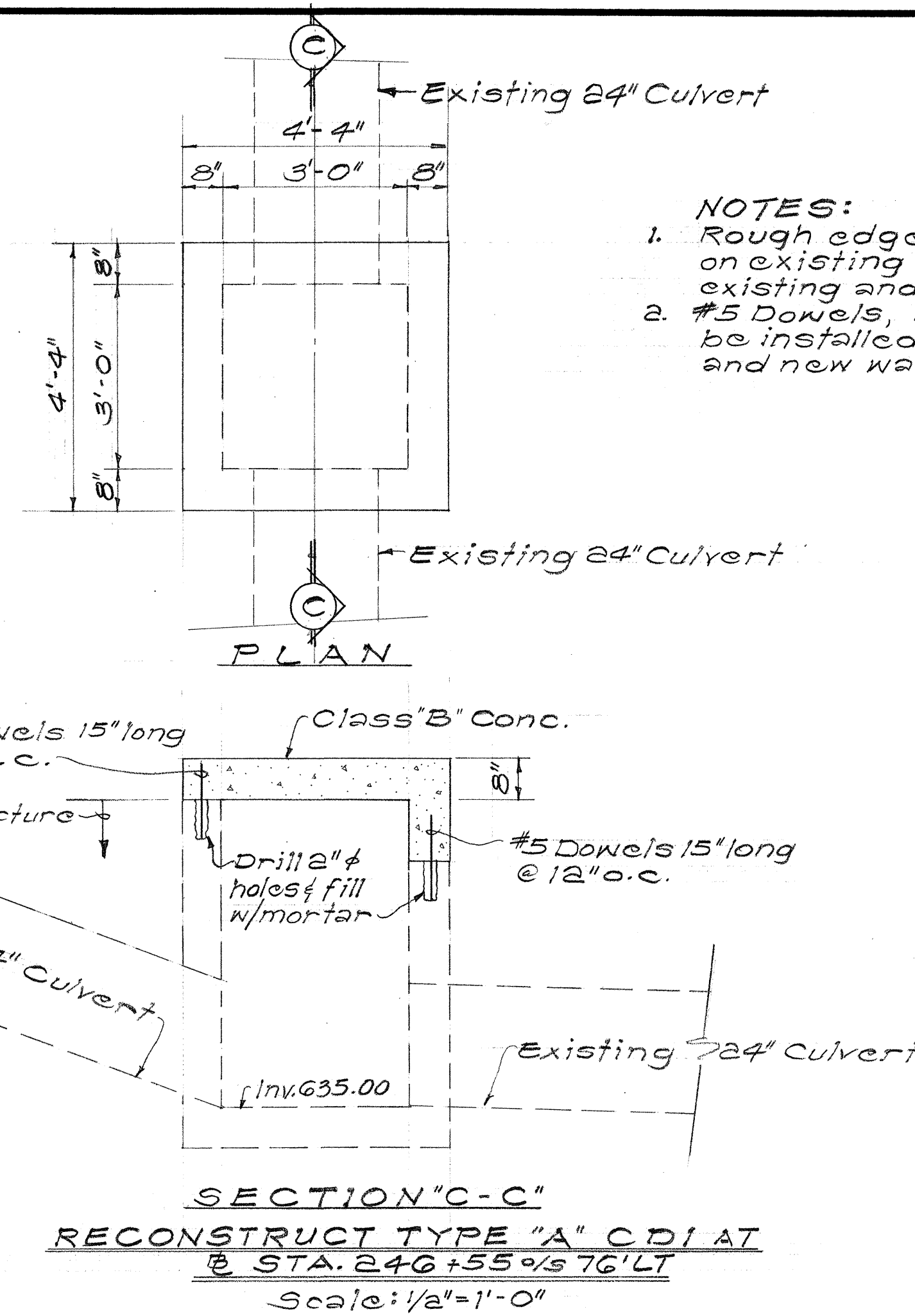
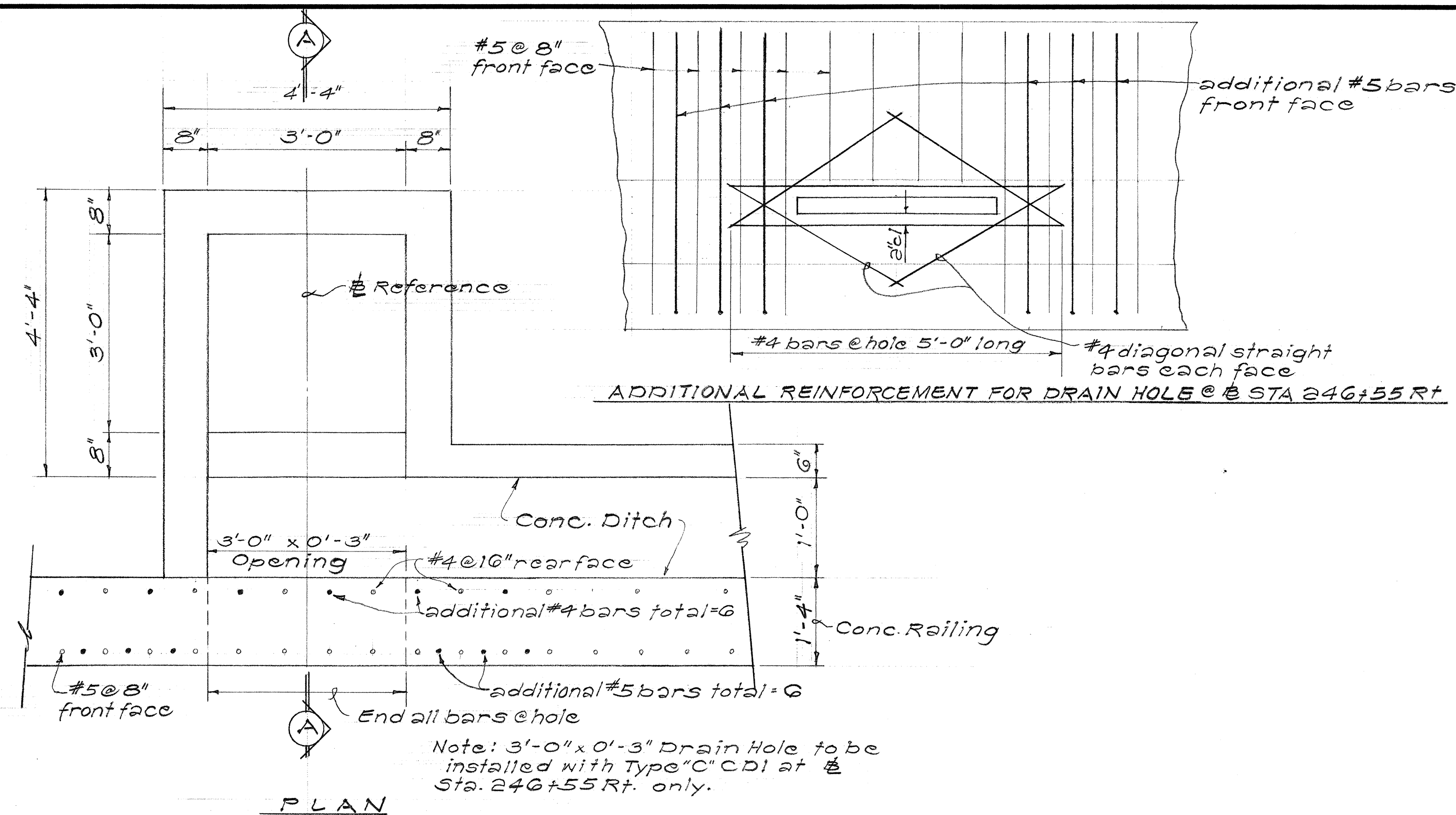
INTERSTATE ROUTE H-2
KIPAPA STREAM BRIDGE
FAI PROJ. NO. I-H2-1(9):4

Scale: As Shown Date: May 1973
SHEET No. 5 OF 10 SHEETS

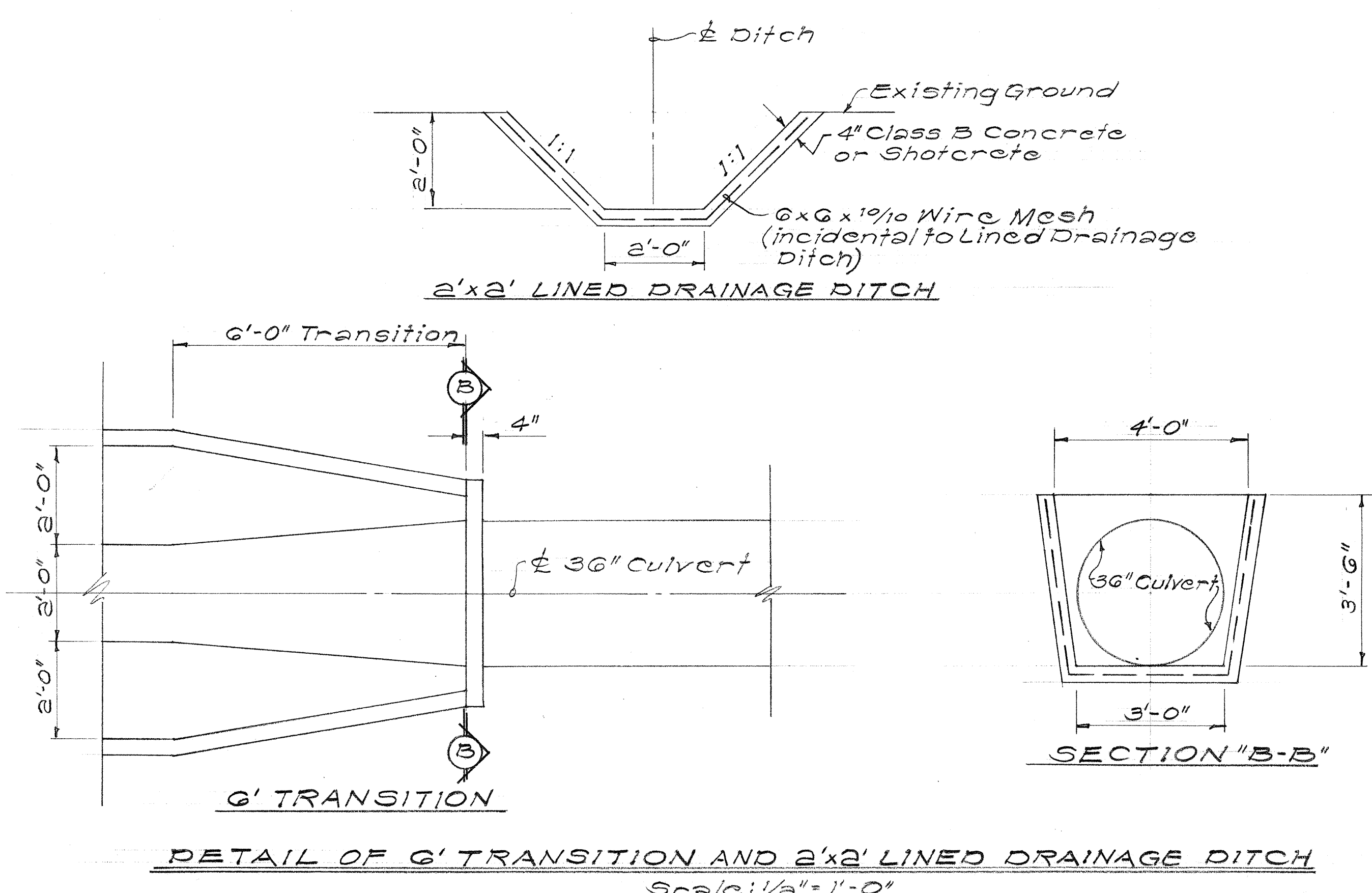
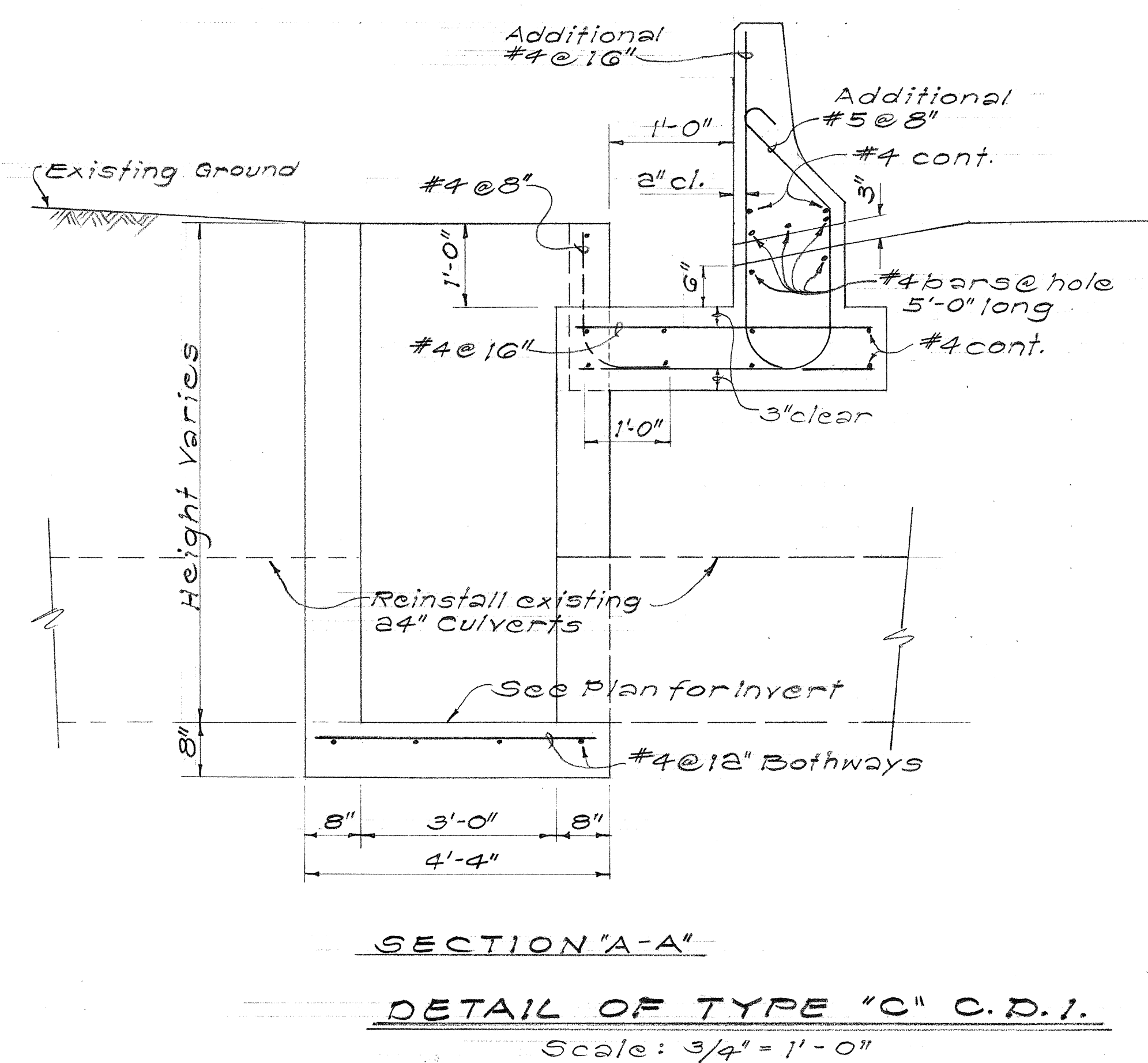
C.O. 41

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-1(9)4	1973	42	122



- NOTES:
1. Rough edges shall be made on existing structure wherever existing and new walls meet.
 2. #5 Dowels, 15" long @ 12" o.c. shall be installed wherever existing and new walls meet.



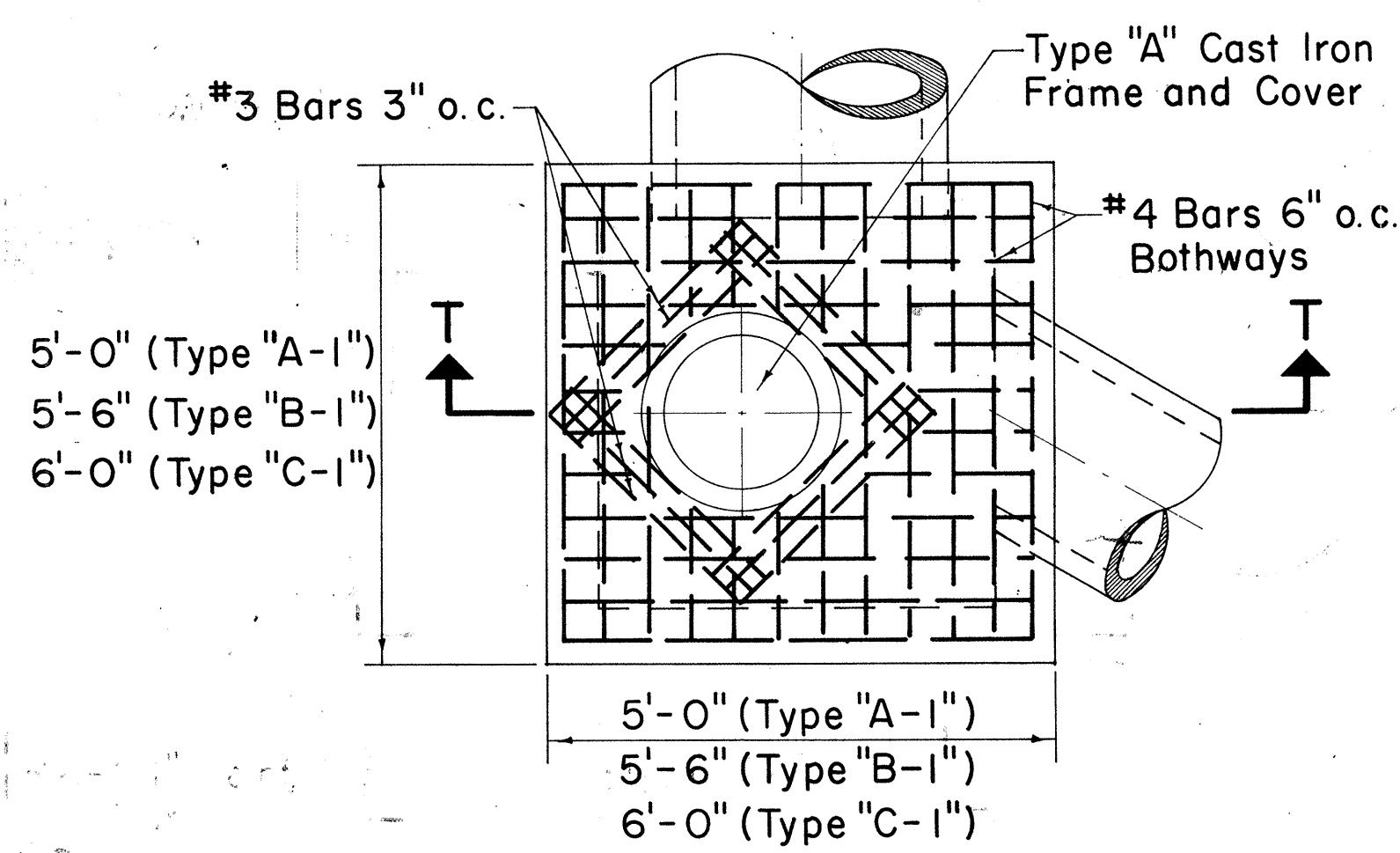
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

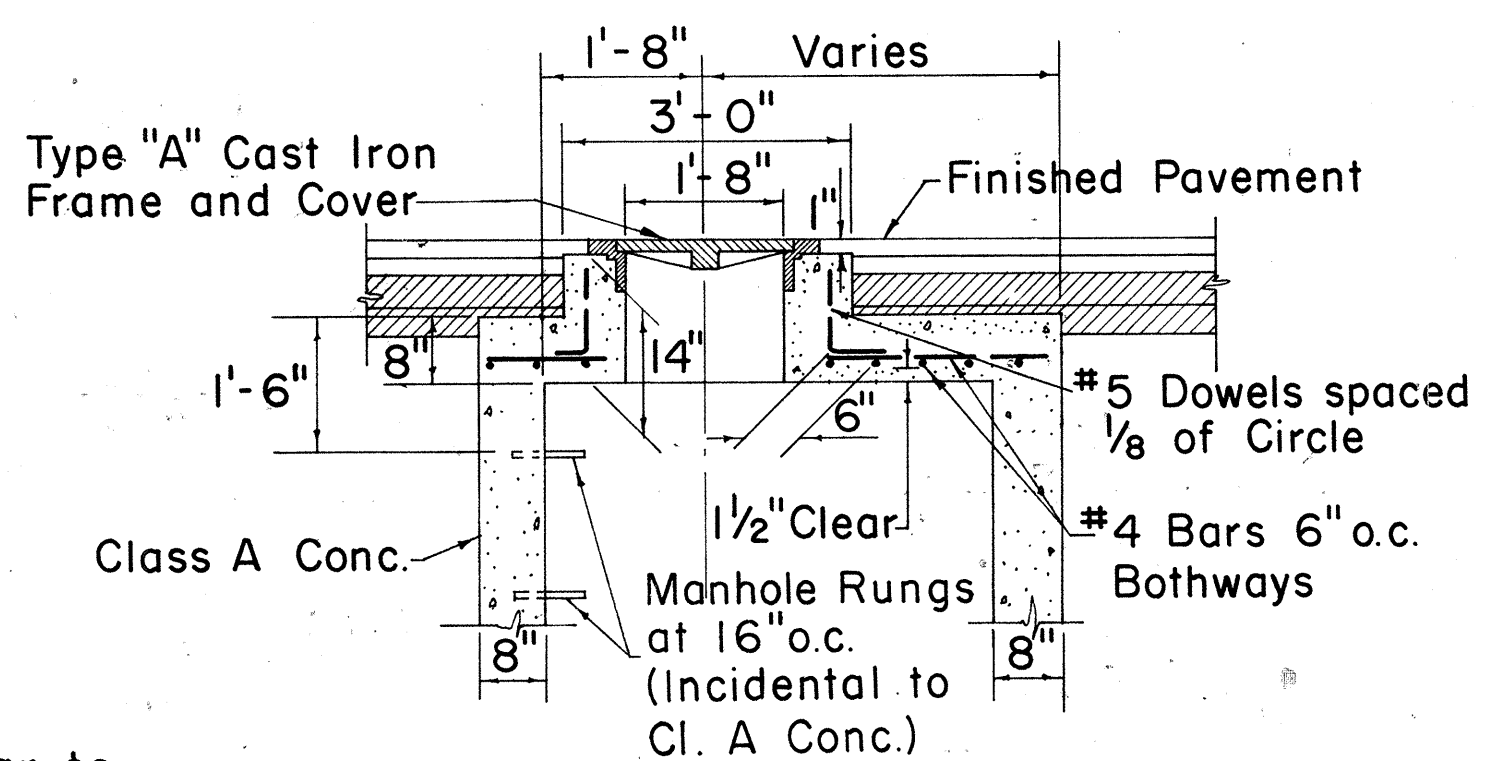
INTERSTATE ROUTE H-2
KIPAPA STREAM BRIDGE
FAI PROJ. NO. I-H2-1(9):4
Scale: As Shown Date: May 1973

SHEET No. 6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-12-1(9)-4	1973	43	122



PLAN



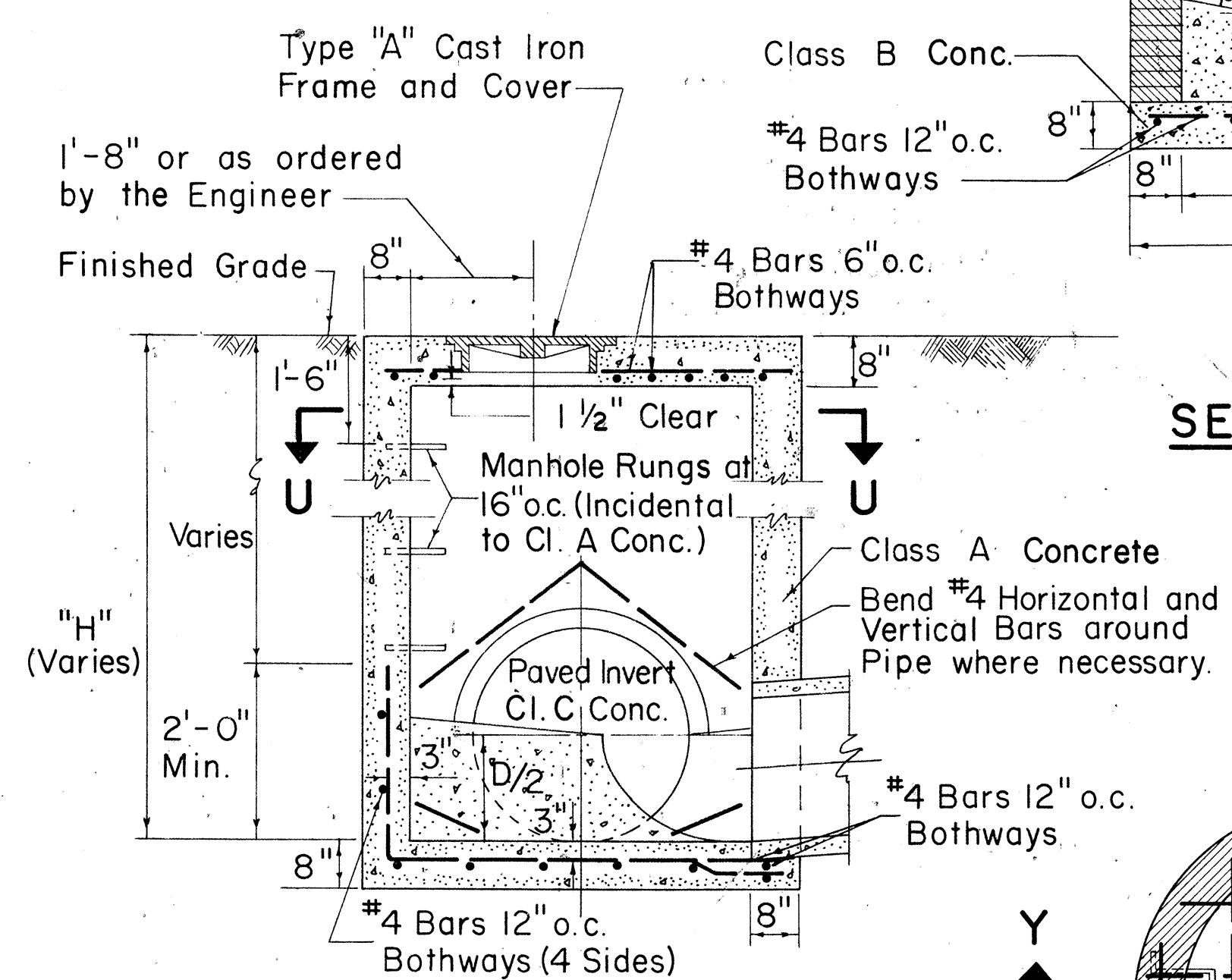
SECTION T-T

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

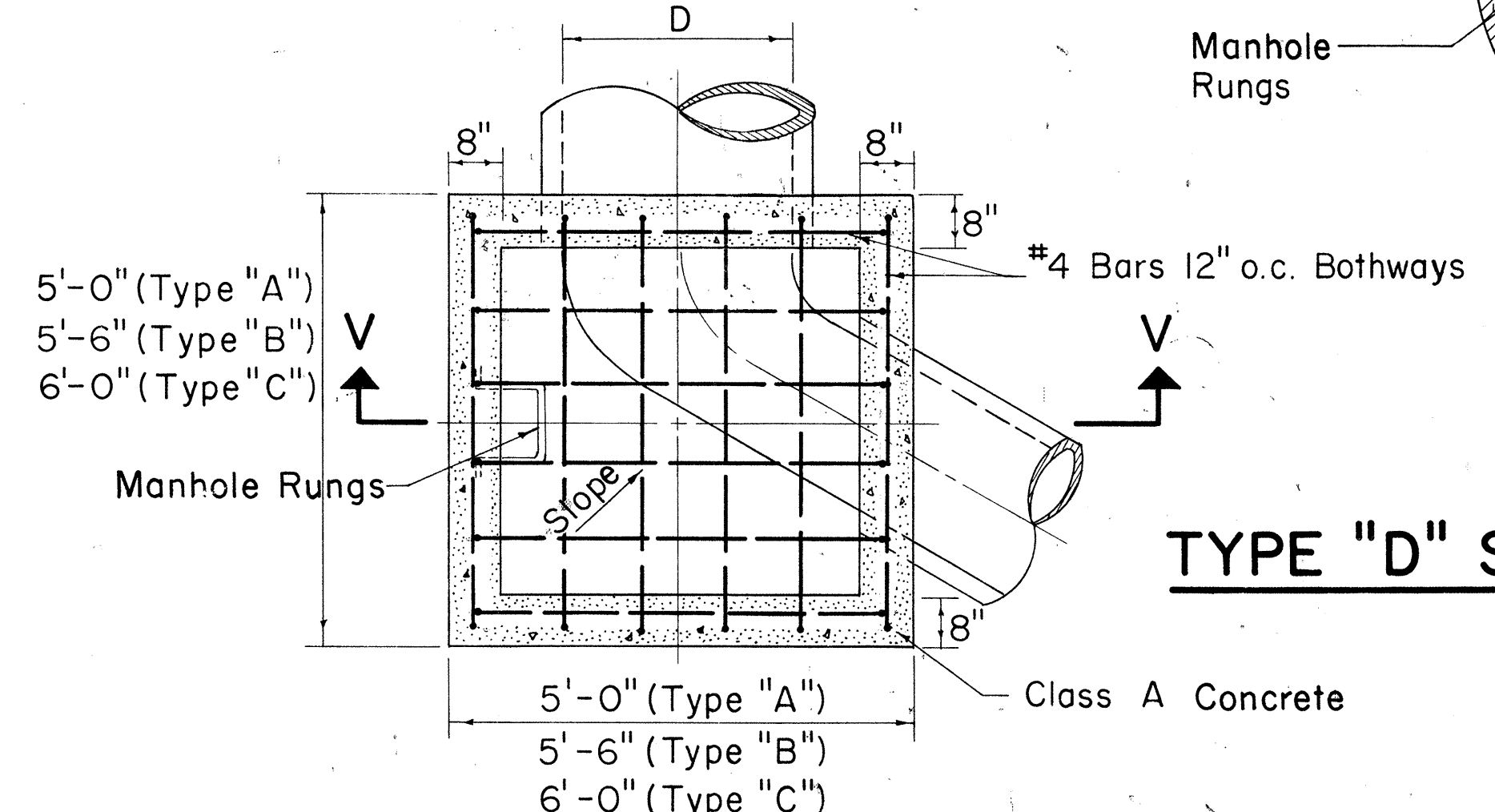
Note:
Bottom detail similar to
Type "A", "B", & "C".

GENERAL NOTES

1. 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.
2. 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.

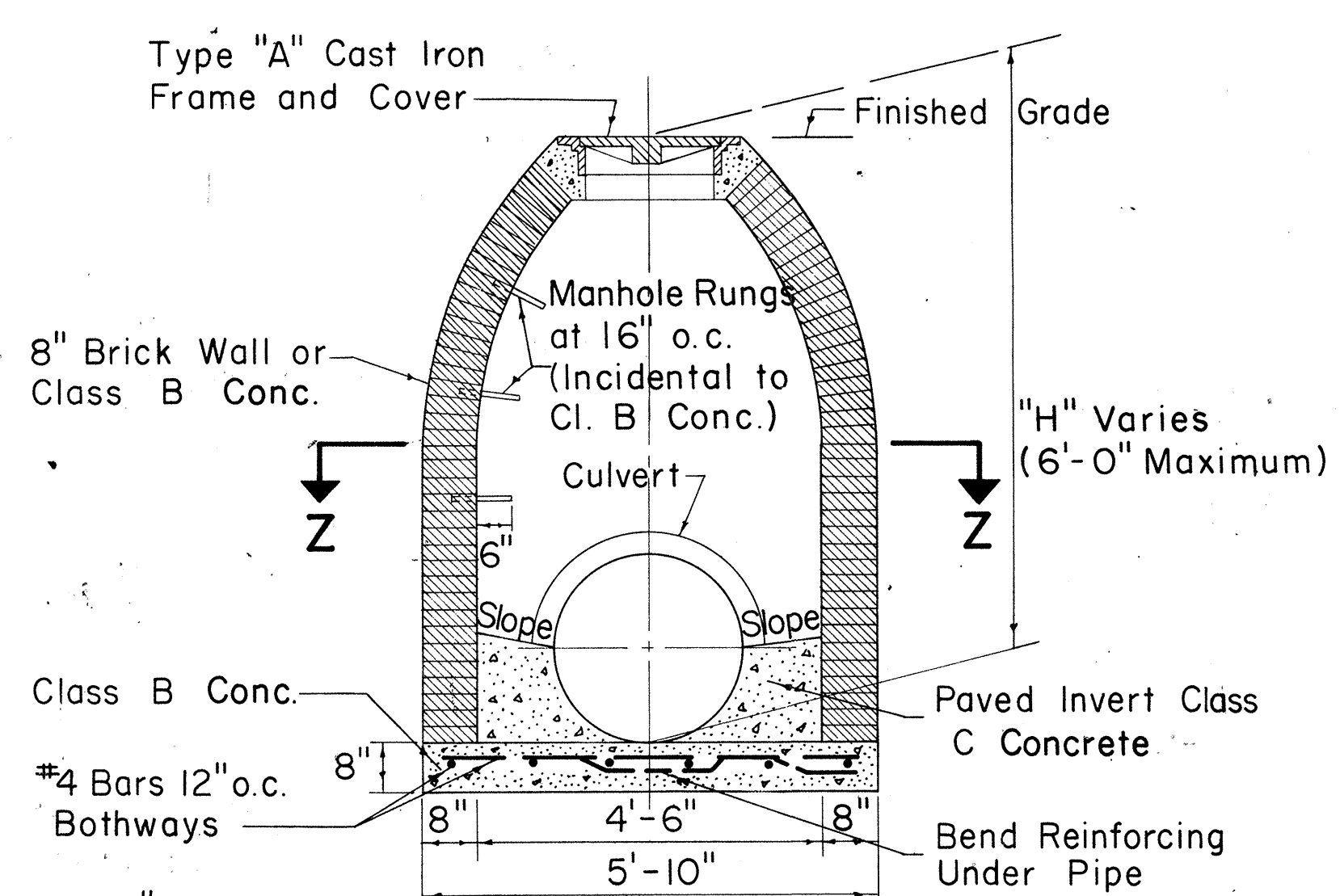


SECTION V-V

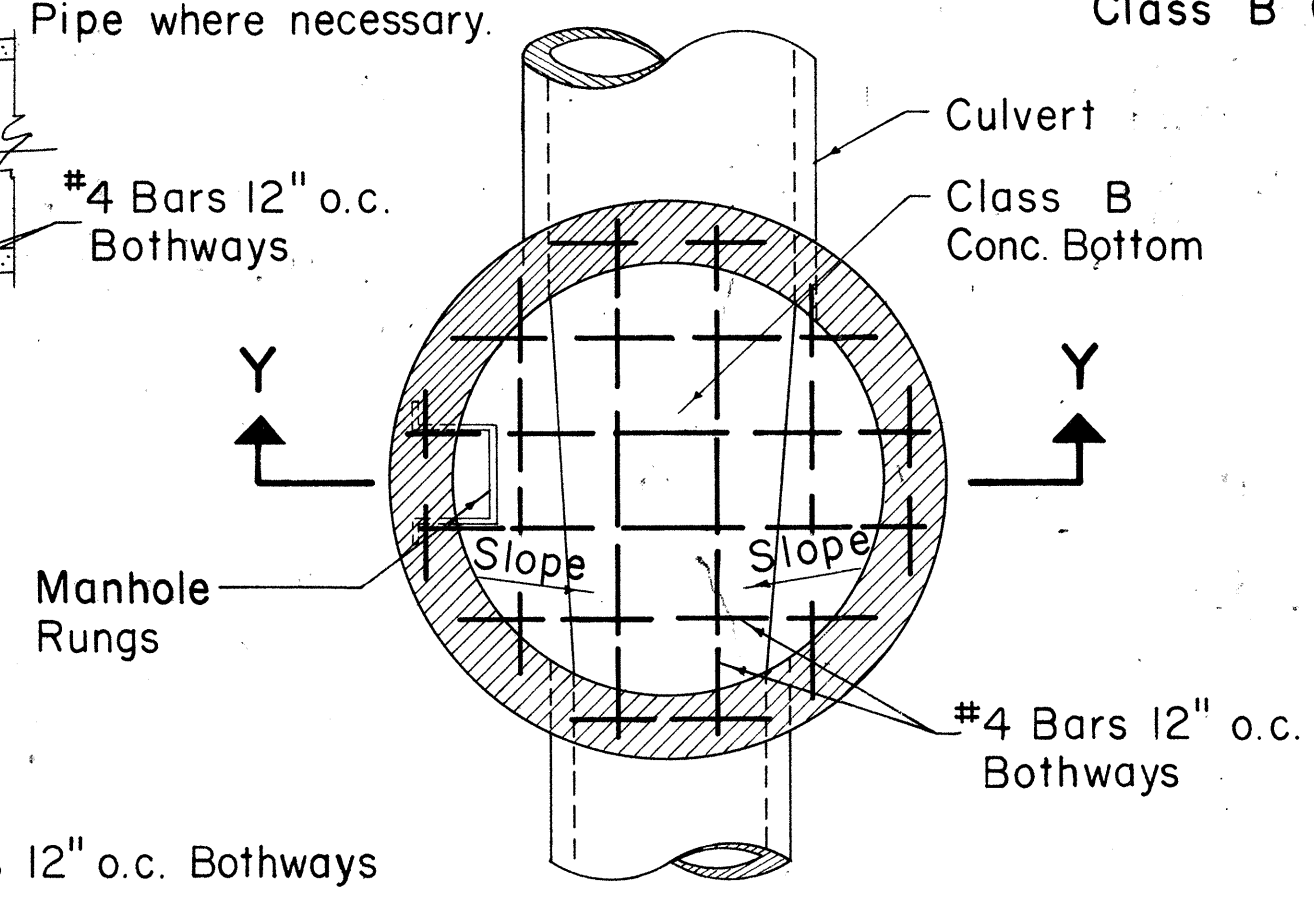


SECTION U-U

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

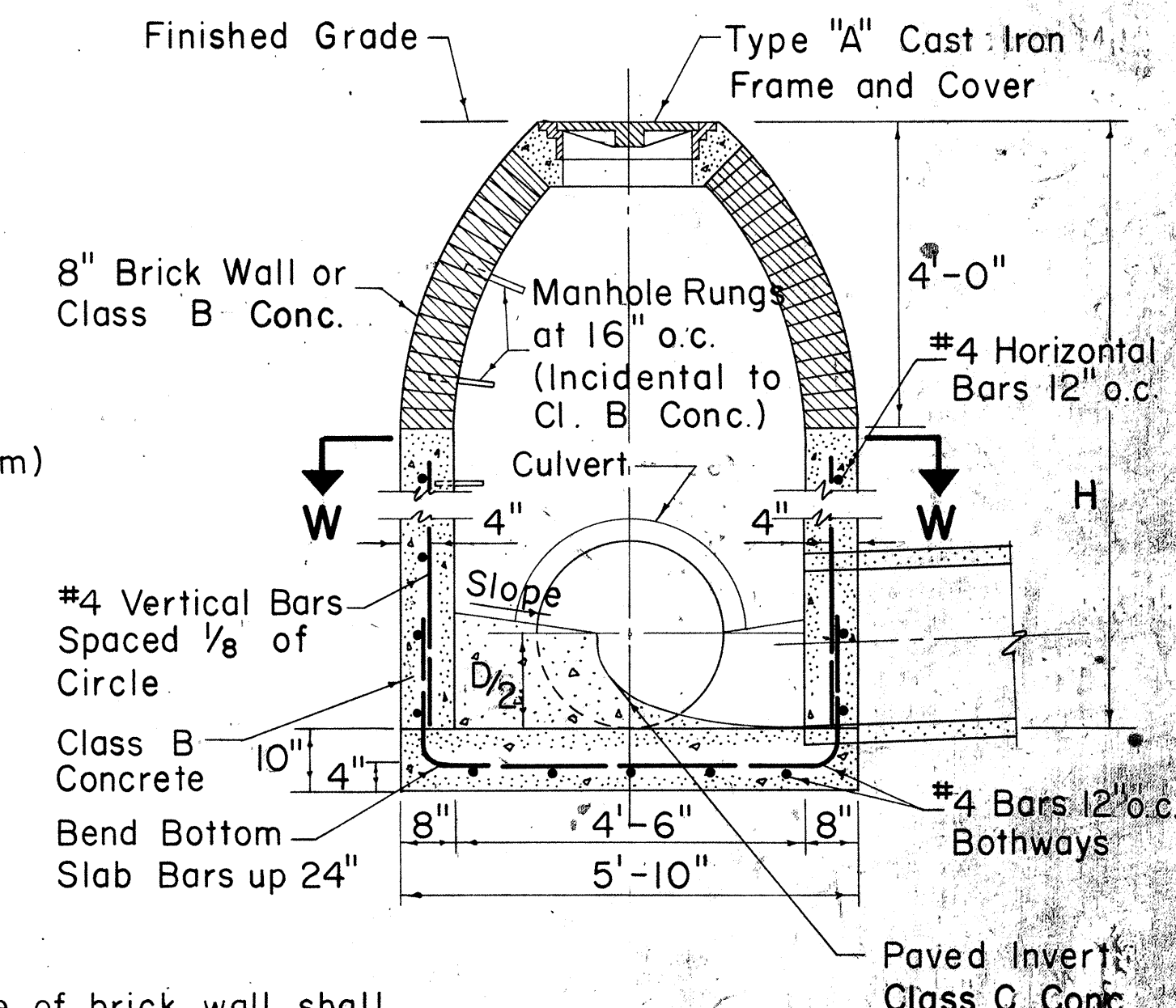


SECTION Y-Y

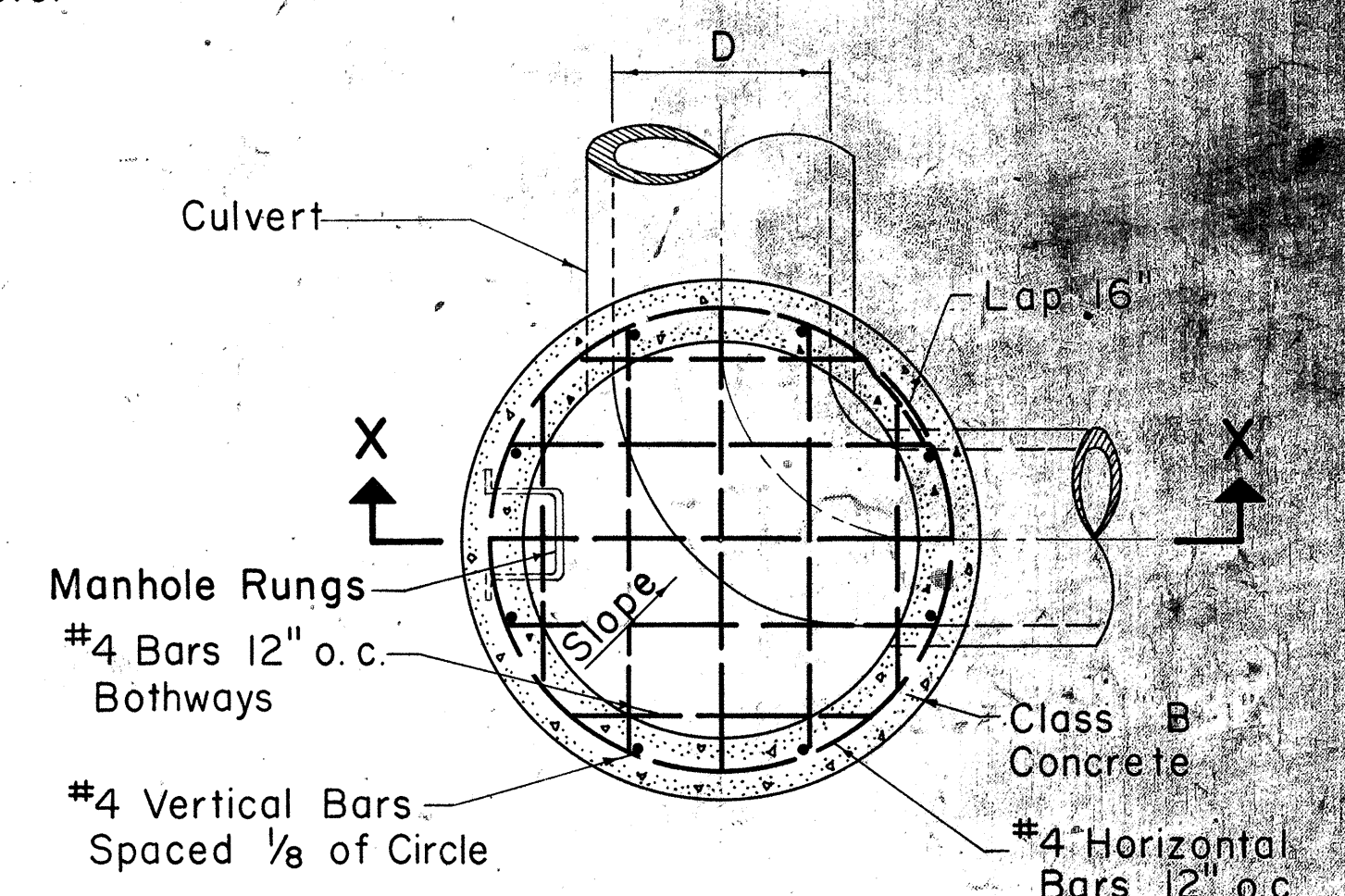


SECTION Z-Z

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"

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

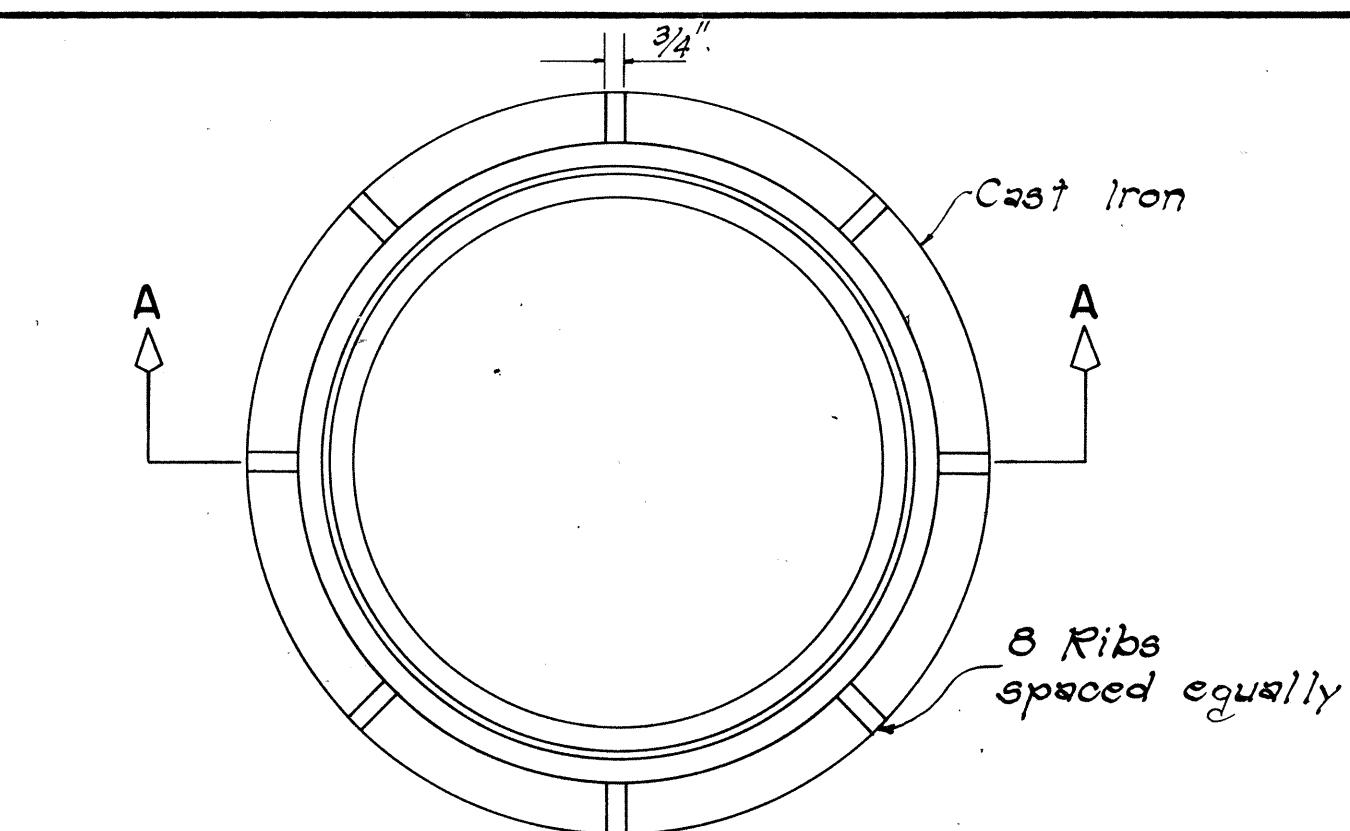
STANDARD DETAILS
STORM DRAIN MANHOLES

Scales: As Noted Date: July, 1969

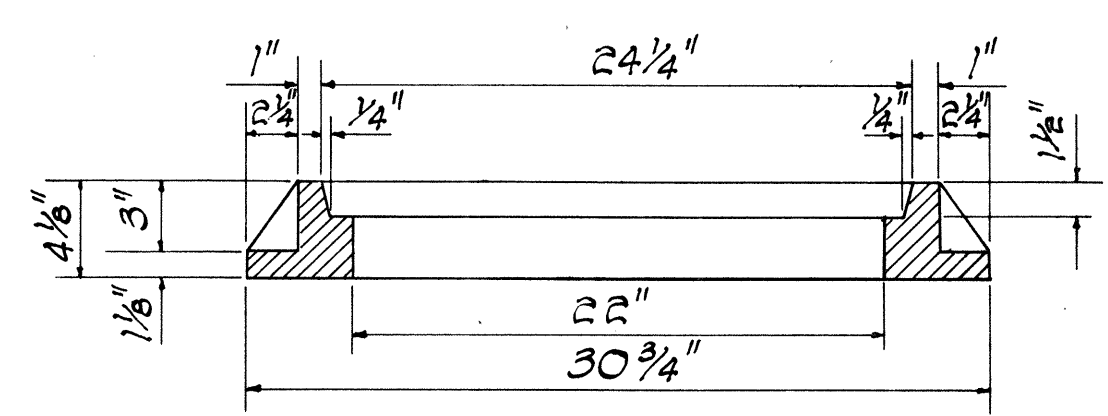
APPROVAL RECOMMENDED:
[Signature]
HYDRAULIC DESIGN ENGINEER 12-17-69
DATE

APPROVED:
[Signature]
ASST. CHIEF, ENGINEERING 12-17-69
DATE

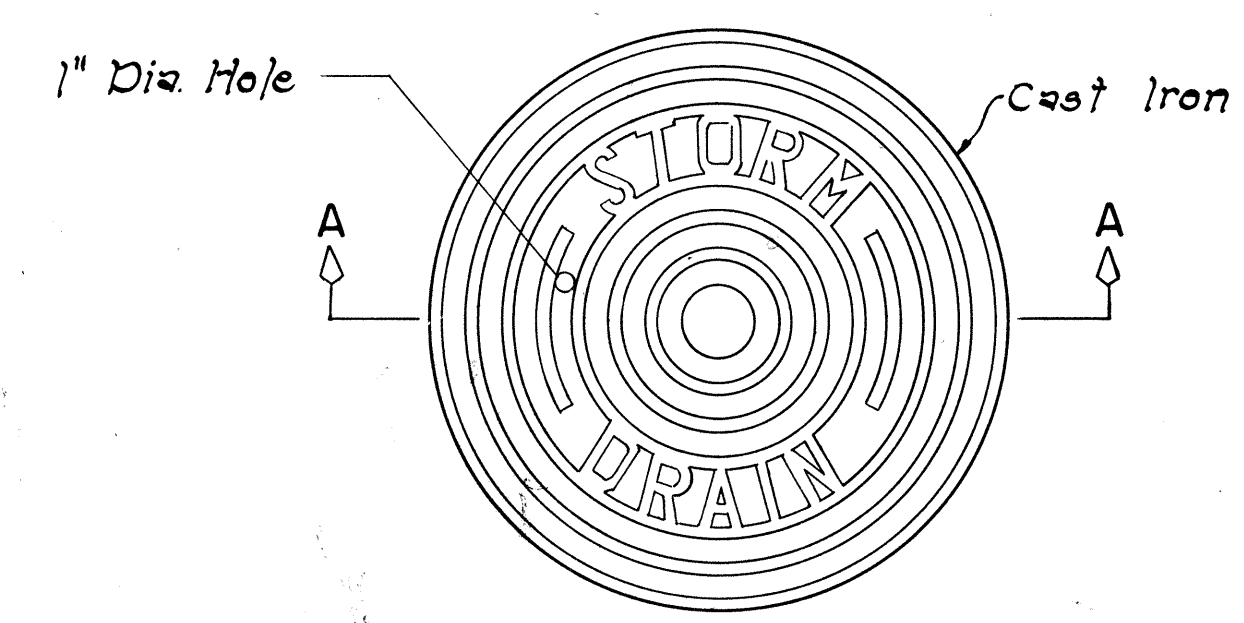
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-1(2)-4	1973	44	122



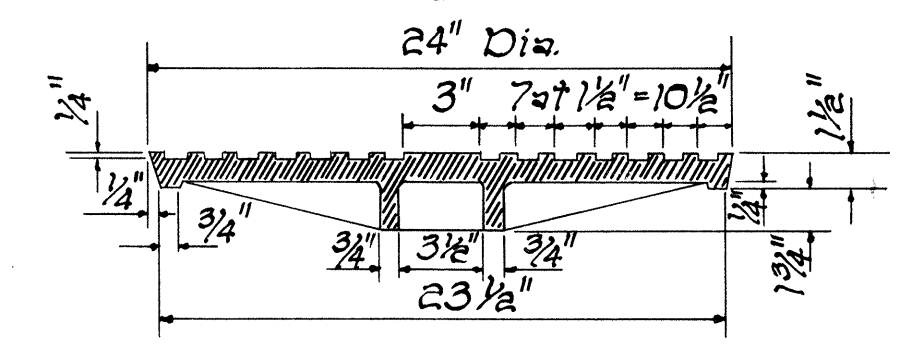
PLAN



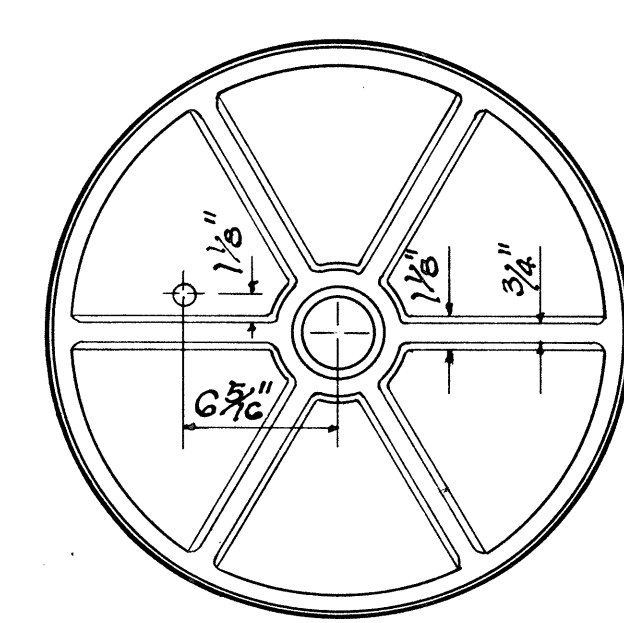
SECTION A-A



PLAN



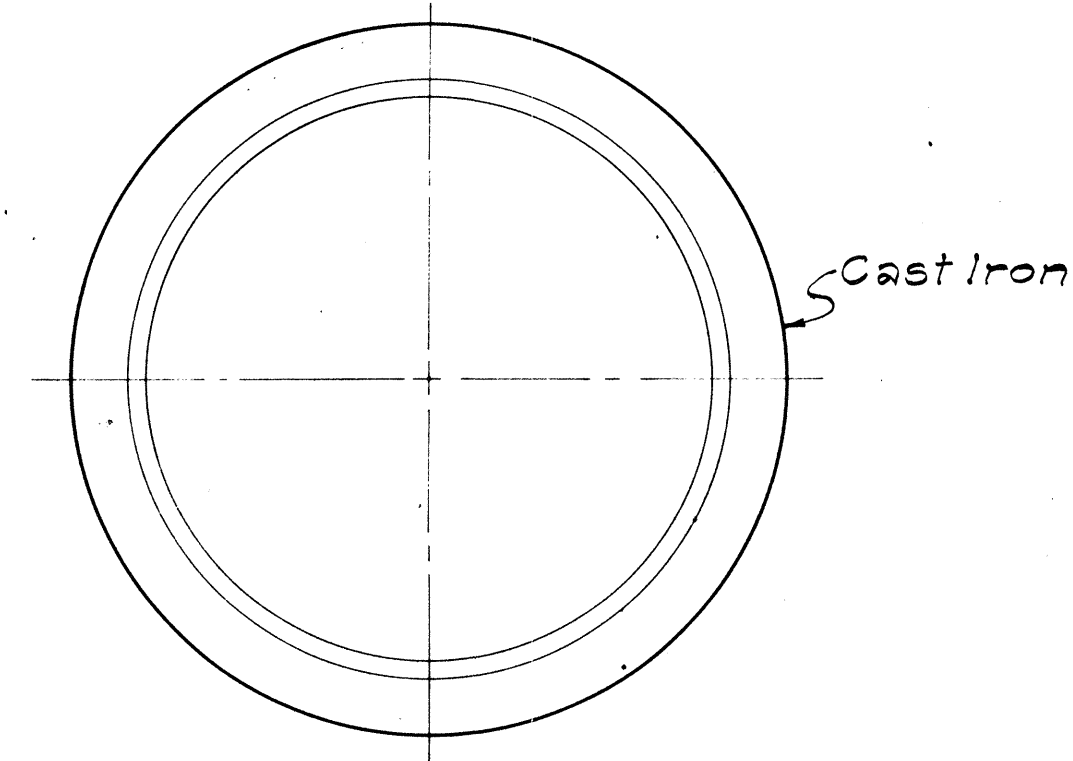
SECTION A-A



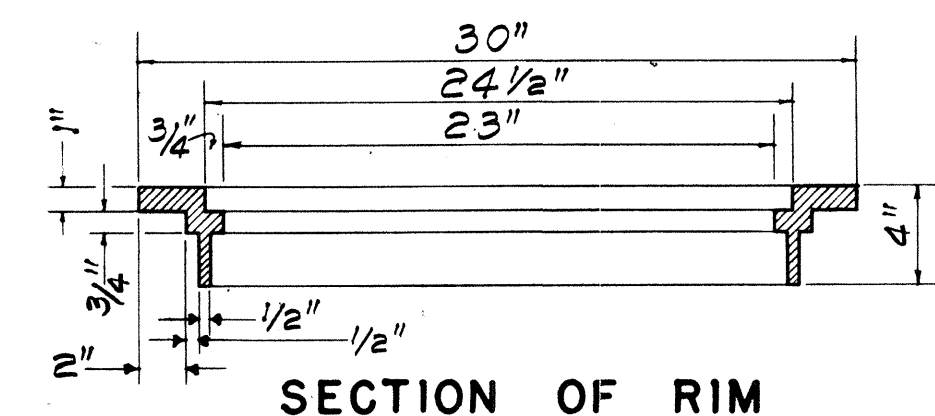
BOTTOM VIEW OF COVER

DETAILS OF TYPE "P"
CAST IRON FRAME AND COVER

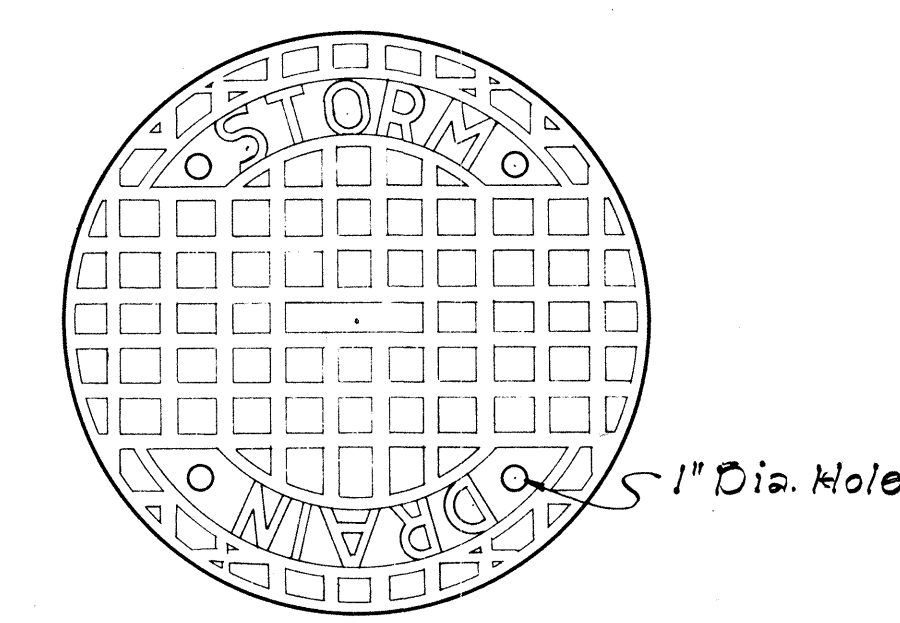
SCALE: 1-1/2" = 1'-0"



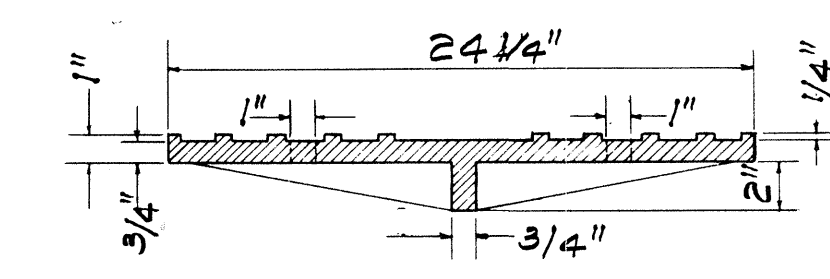
PLAN OF RIM



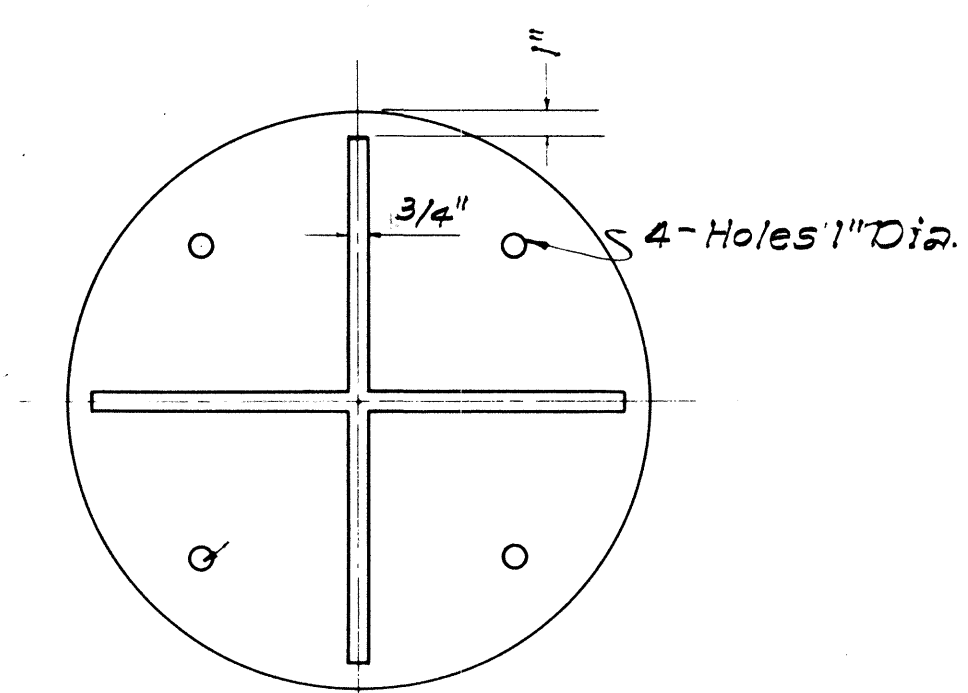
SECTION OF RIM



TOP VIEW OF COVER



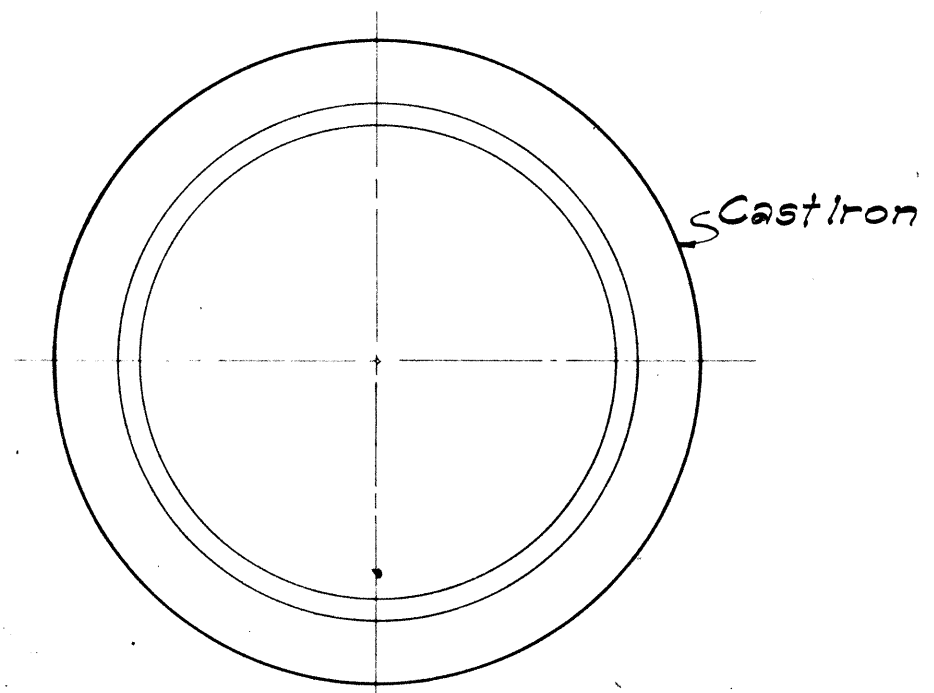
SECTION



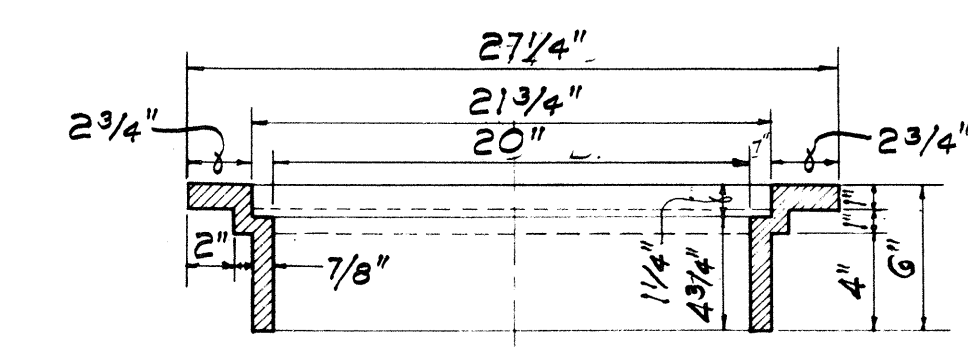
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B"
CAST IRON FRAME AND COVER

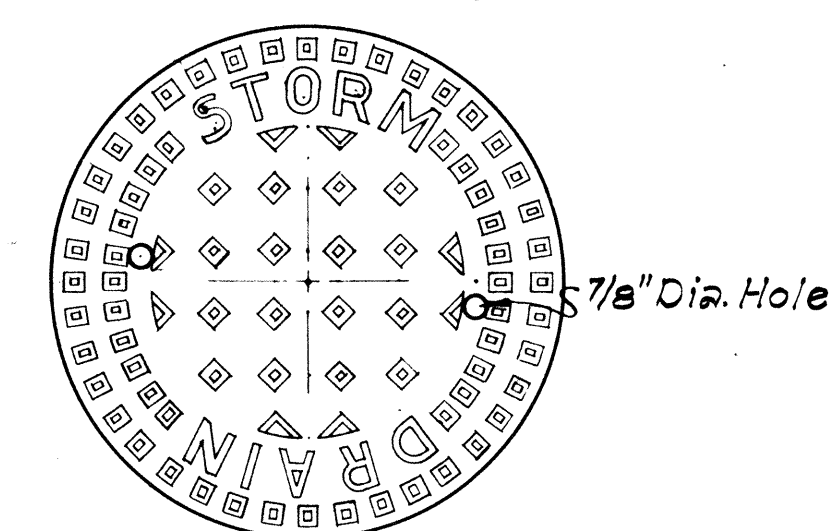
SCALE: 1-1/2" = 1'-0"



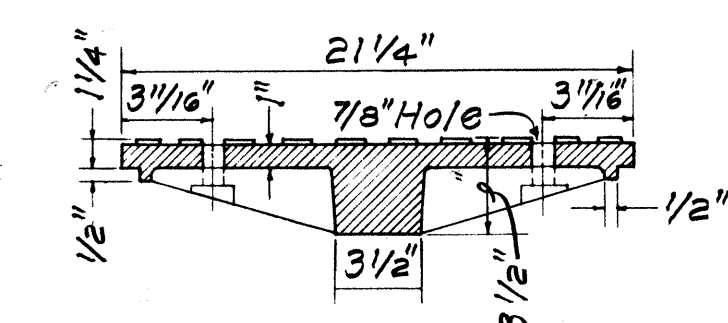
PLAN OF RIM



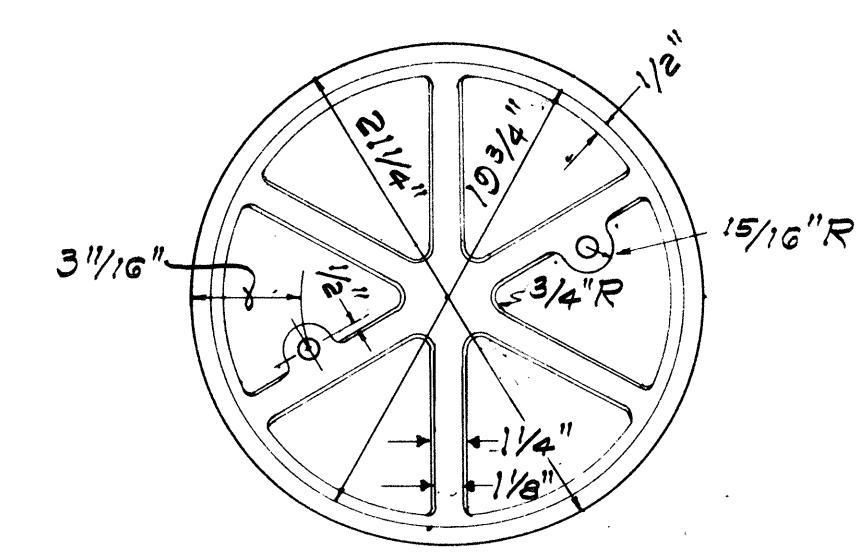
SECTION OF RIM



TOP VIEW OF COVER



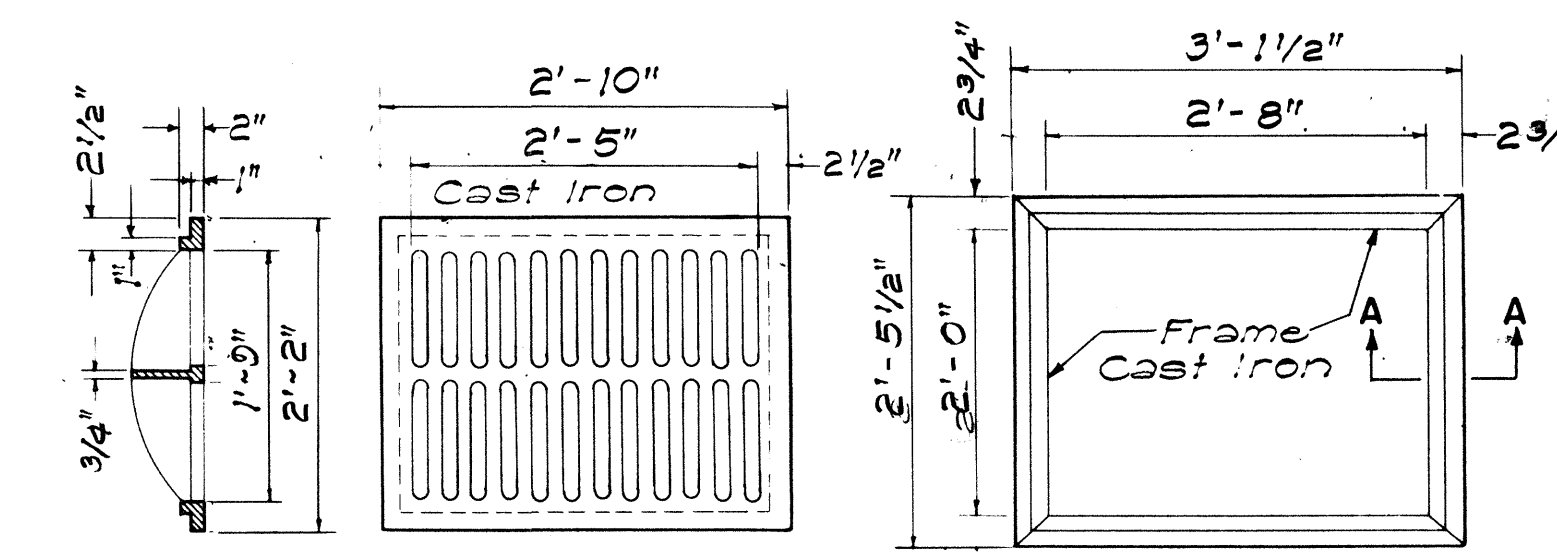
SECTION



BOTTOM VIEW OF COVER

DETAILS OF TYPE "A"
CAST IRON FRAME AND COVER

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



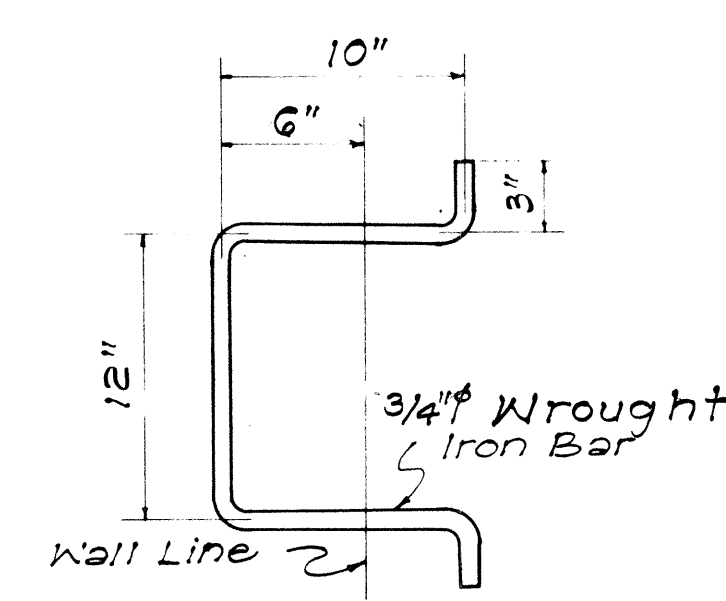
SECTION

TOP VIEW

TOP VIEW

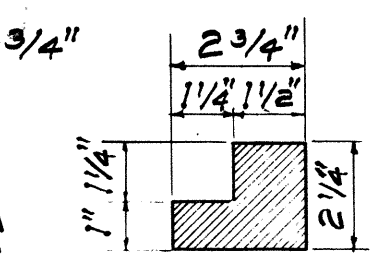
TYPE C C.I. FRAME AND GRATE

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



MANHOLE RUNG

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



SECTION "A-A"
SCALE 3" = 1'-0"

APPROVAL RECOMMENDED:
[Signature]
HYDRAULIC DESIGN ENGINEER
12-17-67
DATE

APPROVED:
[Signature]
ASSISTANT CHIEF, ENGINEERING
12-17-67
DATE

NO.	REVISION	APPROVED BY	DATE
1.	Detail of Type "P" Cast Iron Frame and Cover	HT.	1-6-71

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CATCH BASIN AND
MANHOLE CASTINGS

Scale: As Noted
SHEET NO 8 OF 10 SHEETS

Date: July, 1969
DH 6

SURVEY PLOTTED BY: _____
 DESIGNED BY: _____
 TRACED BY: _____
 NOTE BOOK: _____
 QUANTITIES BY: _____
 CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	T-H2-1(2)-4	1973	45	122

GENERAL NOTES

- Contractor has the option of using cast malleable iron, cast steel, welded, bolted, cast malleable iron end block or cast steel end block grate.
- Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
- All welds $\frac{3}{8}$ " unless otherwise noted.
- Center support assembly shall be used when two or more grates are specified. Incidental to Types A-9 or A-12 Frame and Grates.
- Refer to "Grate Bar Spacing Table" for Types A-9 and A-12 Grate dimensions.
- The various materials shall conform to the specifications of ASTM as listed in the following tabulation and the Std. Specifications.

Material	ASTM Designation
Structural Steel	A283, Grade D
Cast Steel	A27, Grade 65-35
Malleable Iron Casting	A47, Gr. No. 35018

GRATE BAR SPACING TABLE

TYPE	NO. BARS	CLEAR BAR SPACING - W	X
A-9	9	2"	$1\frac{9}{16}$ "
A-12	12	$1\frac{3}{8}$ "	$1\frac{1}{4}$ "

NOTE:

- Type A-9 - Use in locations off the roadbed on all types of highways.
- Type A-12 - Use within the roadbed on all types of highways.

APPROVAL RECOMMENDED:

[Signature] 12-17-69
HYDRAULIC DESIGN ENGINEER DATE

APPROVED:

[Signature] 12-11-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

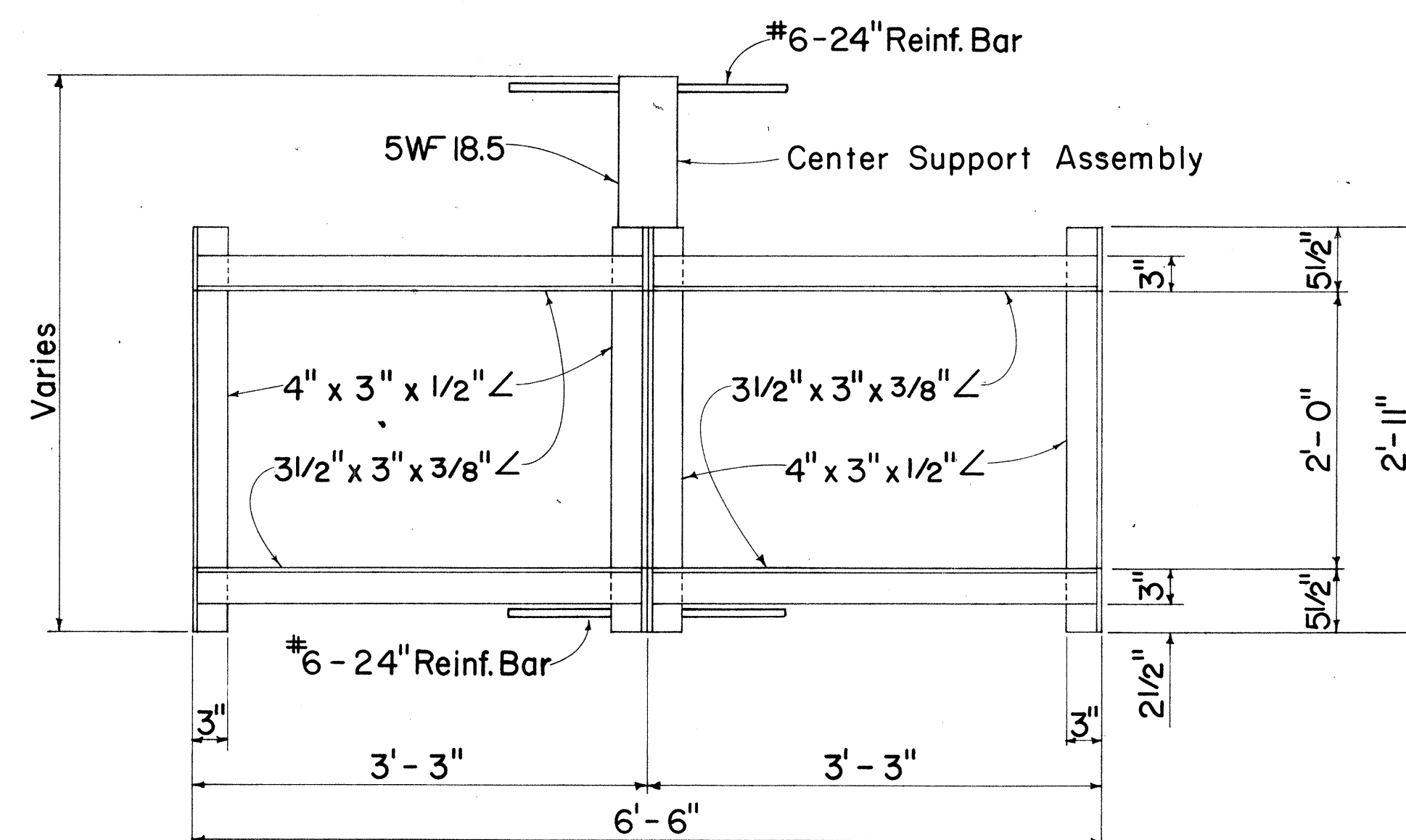
STANDARD DETAILS

TYPE A-9 AND A-12
FRAMES AND GRATES

Scales: As Noted

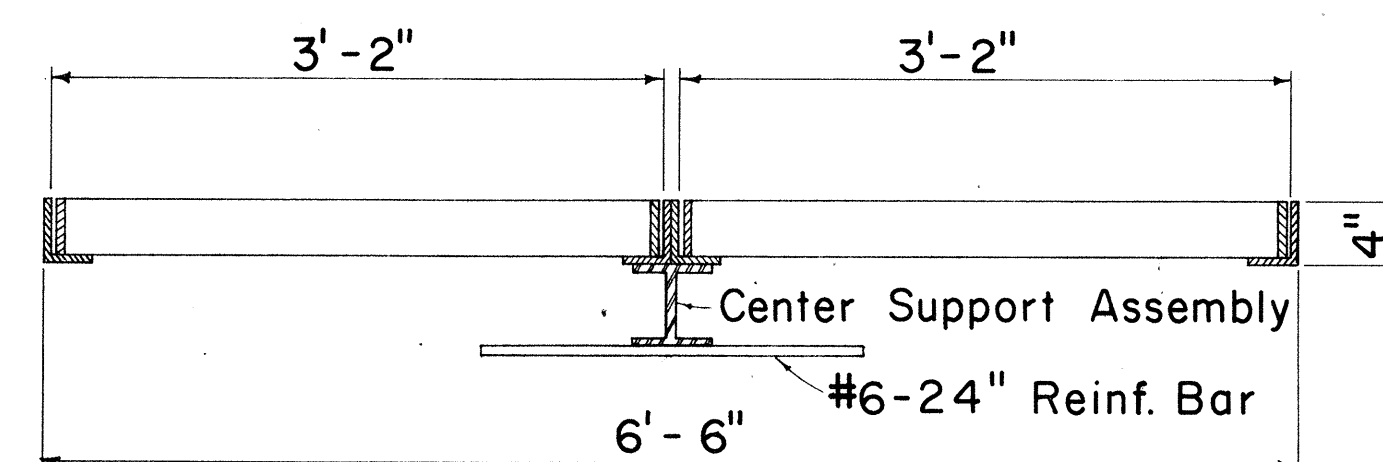
Date: Aug. 1968

SHEET No. 9 OF 10 SHEETS DH-7



PLAN

(Two or More Grates)

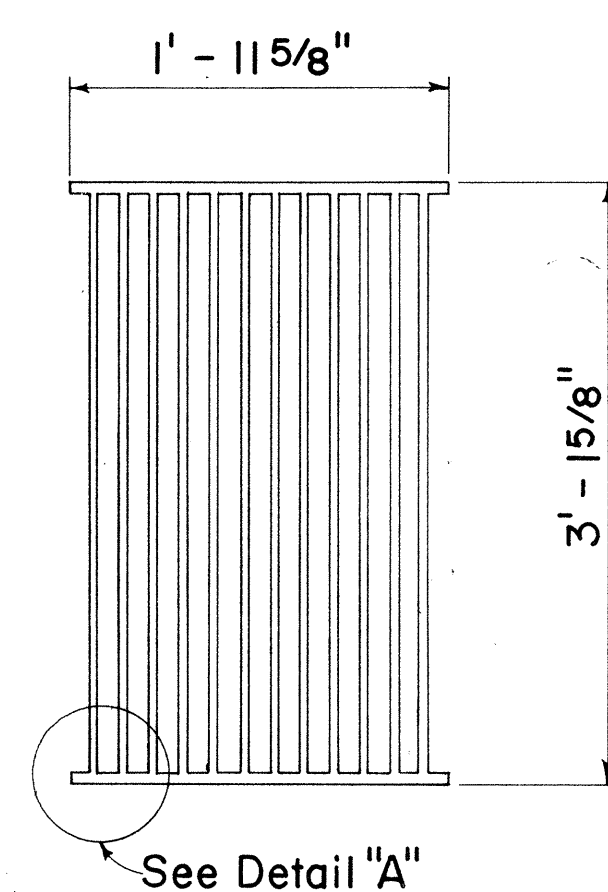


LONGITUDINAL SECTION

(Thru Frame & Grate)

FRAME DETAILS

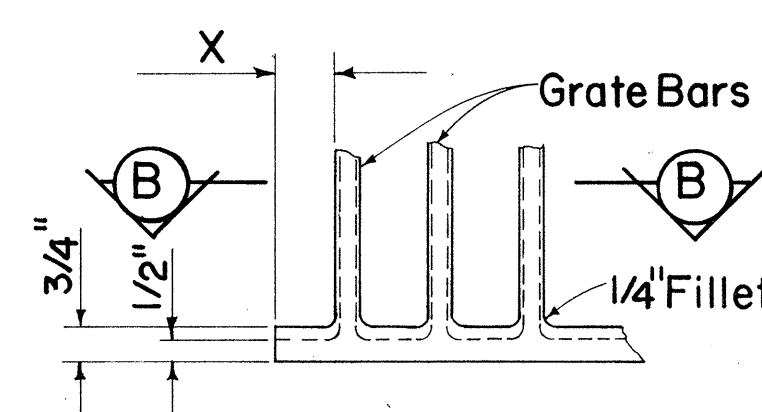
Scale: 1" = 1' - 0"



PLAN

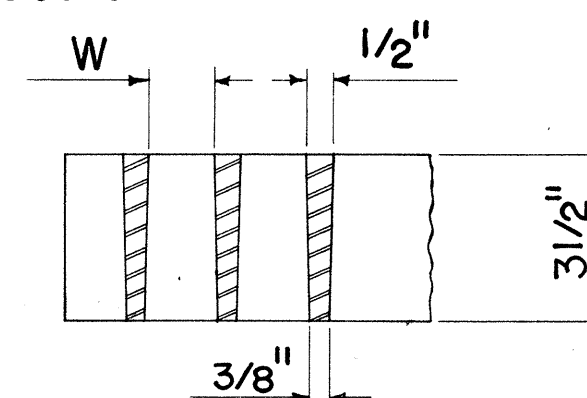
Scale: 1" = 1' - 0"

ALTERNATIVE CAST MALLEABLE IRON OR CAST STEEL GRATE



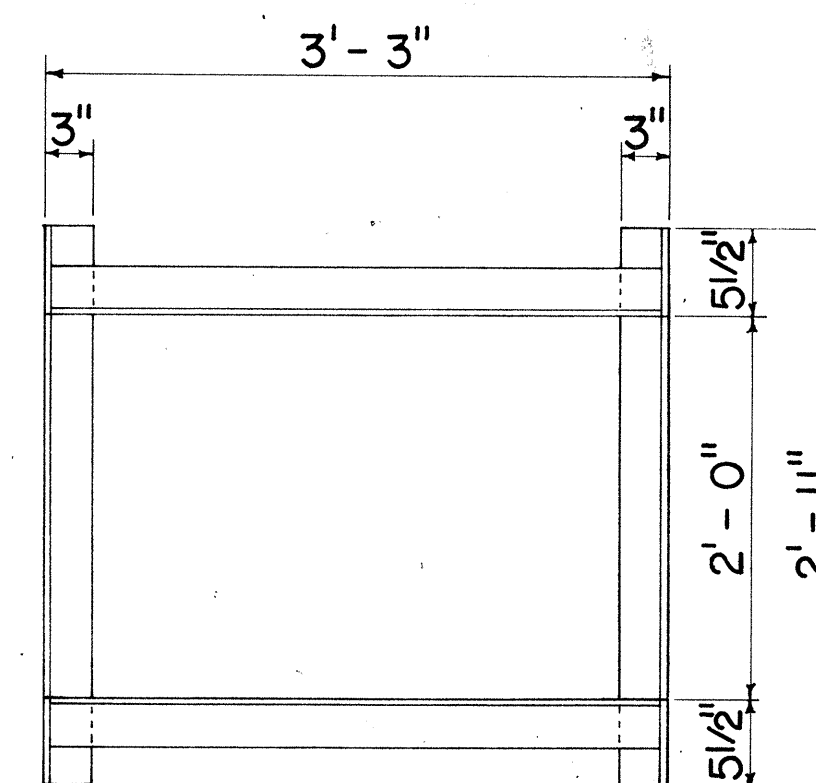
DETAIL "A"

Scale: 3" = 1' - 0"



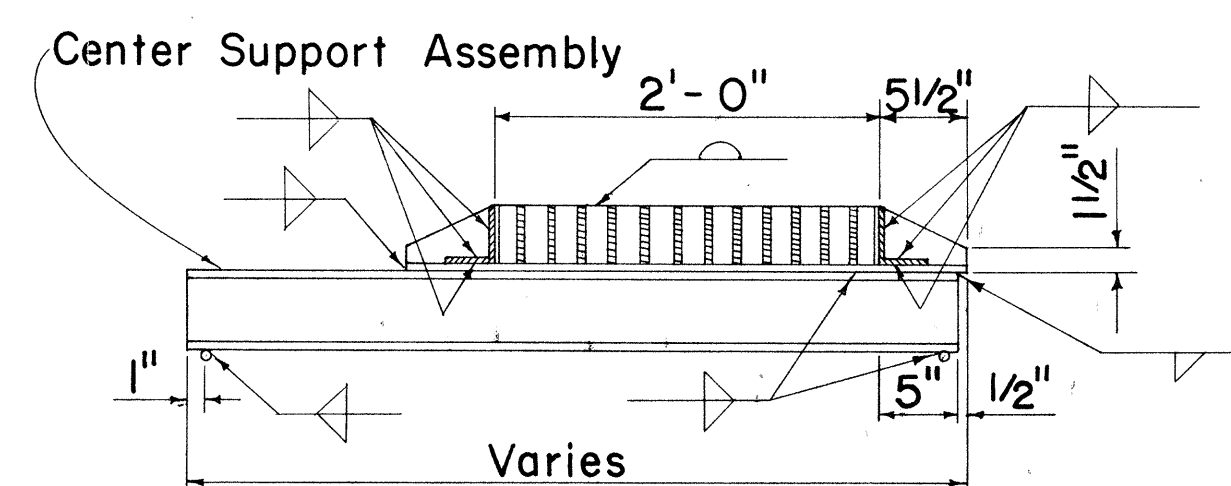
SECTION "B-B"

Scale: 3" = 1' - 0"



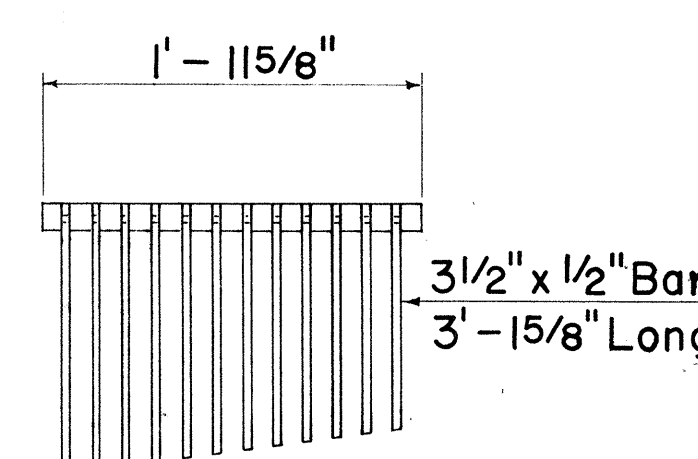
PLAN

(Single Grate)



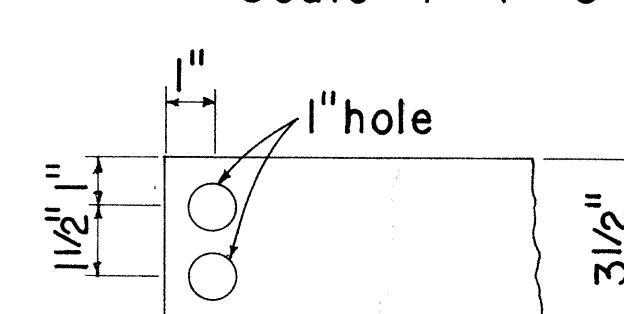
CROSS SECTION

(Thru Frame & Grate)



CAST END BLOCK

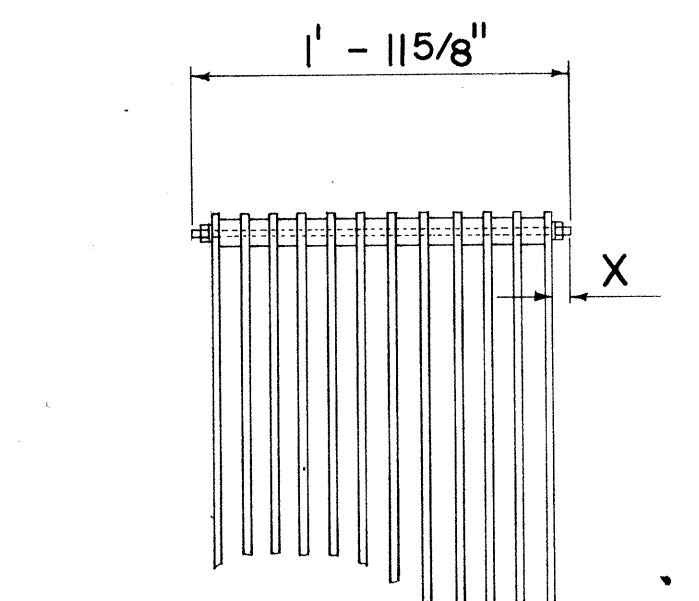
Scale: 1" = 1' - 0"



END OF BAR

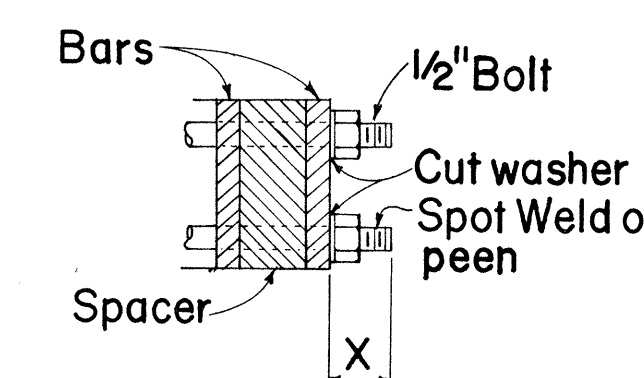
Scale: 3" = 1' - 0"

ALTERNATIVE CAST MALLEABLE IRON OR CAST STEEL END BLOCK GRATE



BOLTED END BLOCK

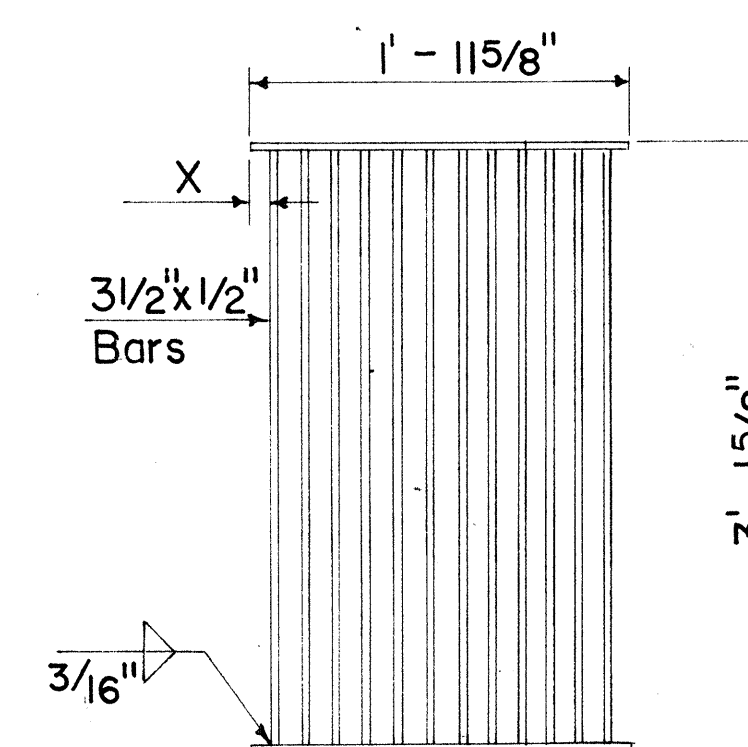
Scale: 1" = 1' - 0"



BOLTING DETAIL

Scale: 3" = 1' - 0"

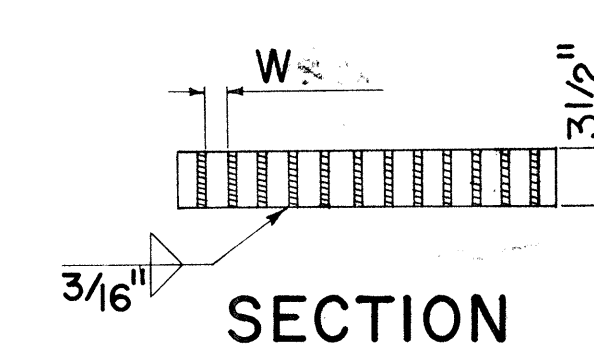
ALTERNATIVE BOLTED GRATE



PLAN

ALTERNATIVE WELDED GRATE

Scale: 1" = 1' - 0"



SECTION

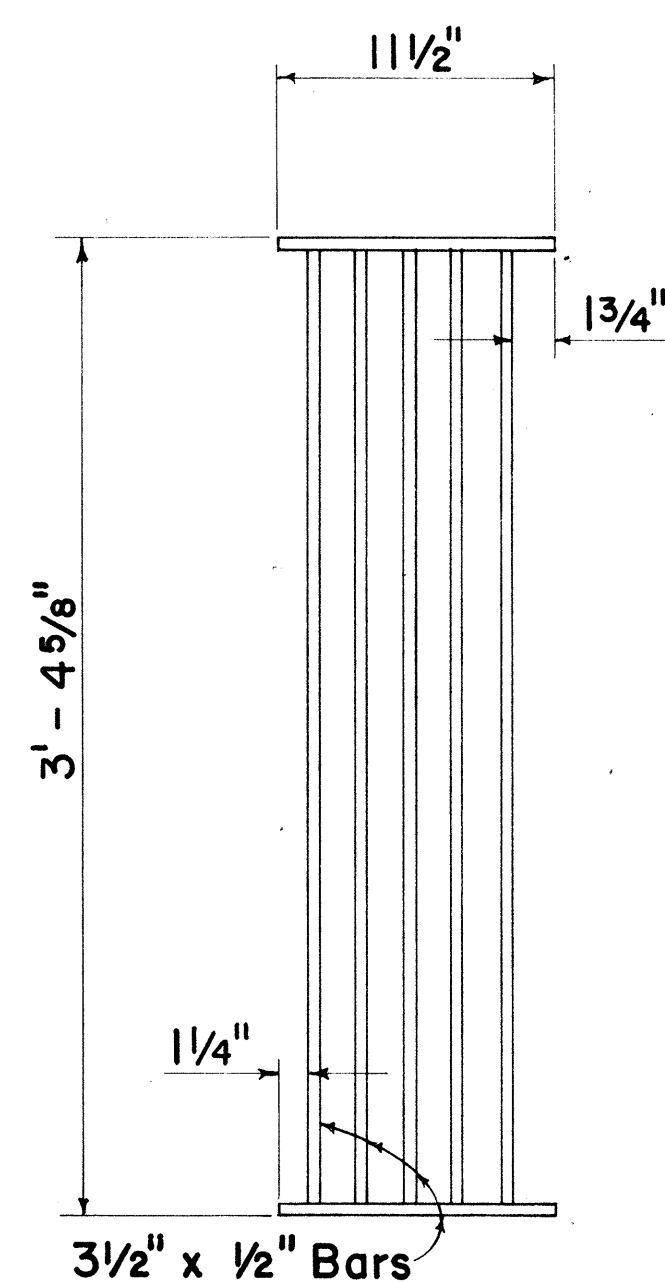
NO.	REVISION	APPROVED BY	DATE

PLAN	7/68
DRAWN BY	J.C.A.T.
DESIGNED BY	J.C.A.T.
CHECKED BY	J.C.A.T.
DATE	7/68

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-112-1(9):4	1973	46	122

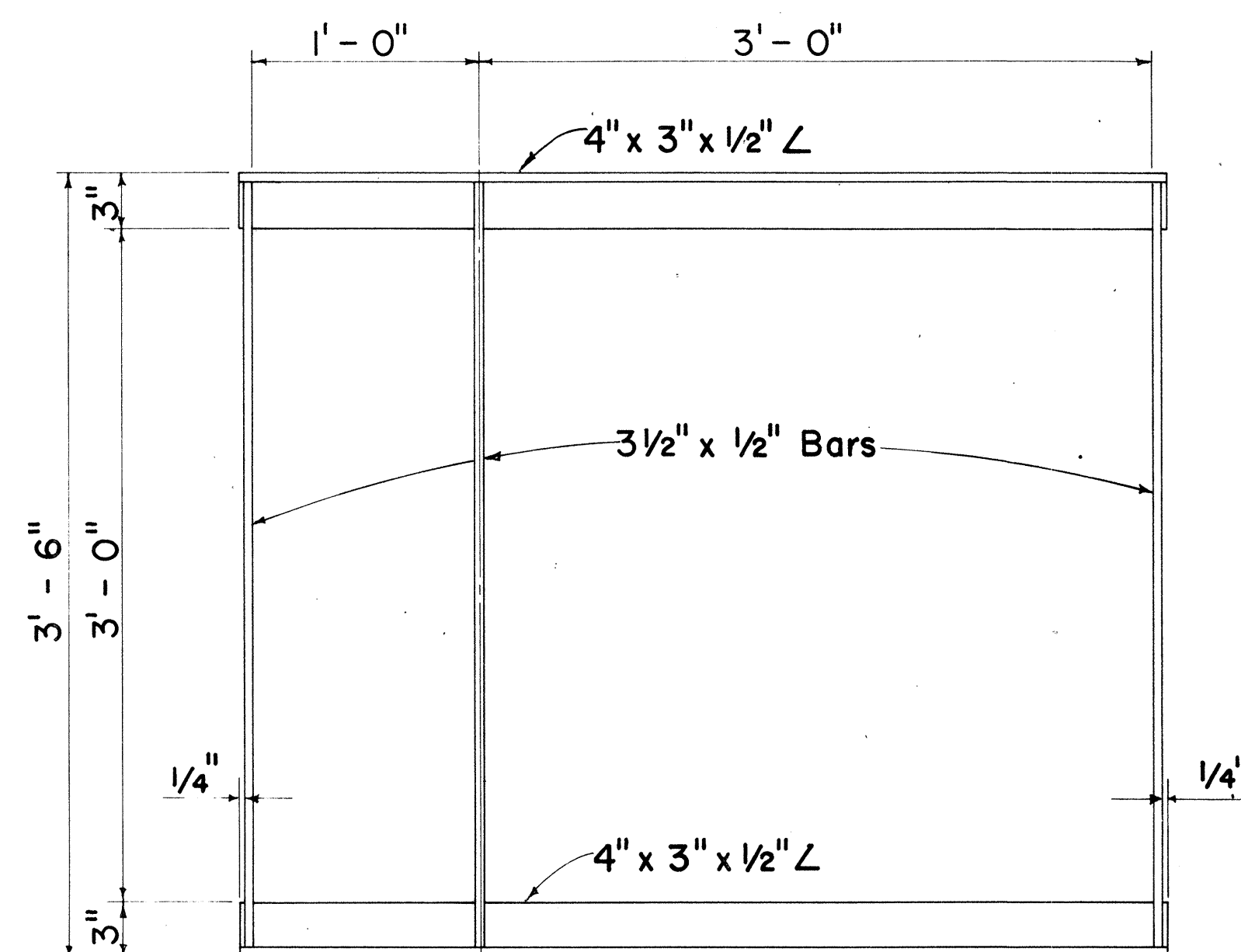
GENERAL NOTES

- Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
- All welds $\frac{3}{8}$ " unless otherwise noted.
- The Frame & Grate materials shall conform to the specifications of ASTM Designation Structural Steel A283, Grade D and the Standard Specifications.
- Culvert shall leave Drop Intake from any position and any direction indicated by plans or ordered by the Engineer. Culverts may both enter and leave Drop Intake so that Drop Intake will act as manhole.
- Manhole Rungs (16" o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (12 inches from the bottom) is required if "H" is 4 feet 6 inches or less. The Manhole Rungs may be placed at any location as ordered by the Engineer.



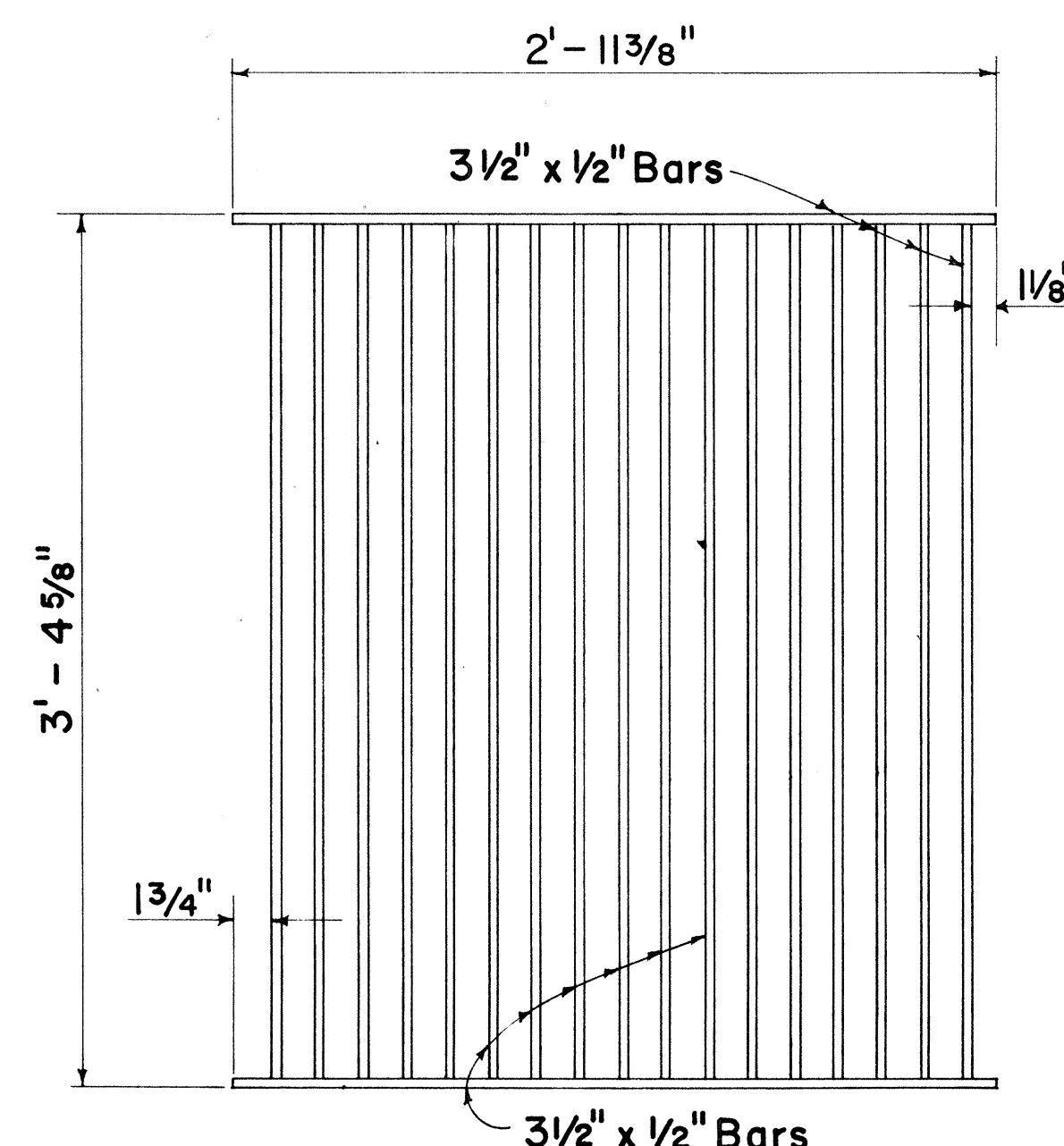
PLAN

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



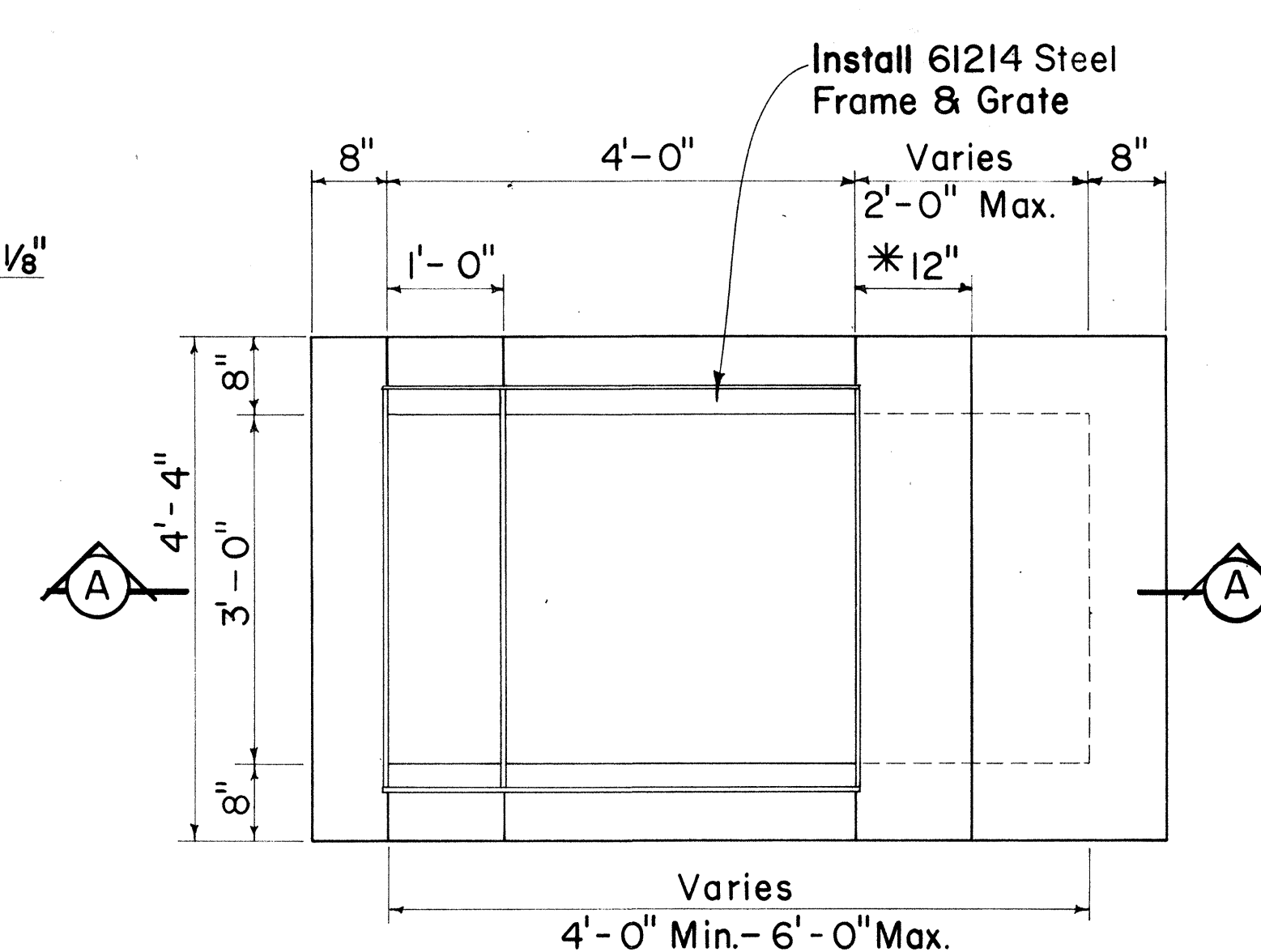
PLAN

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

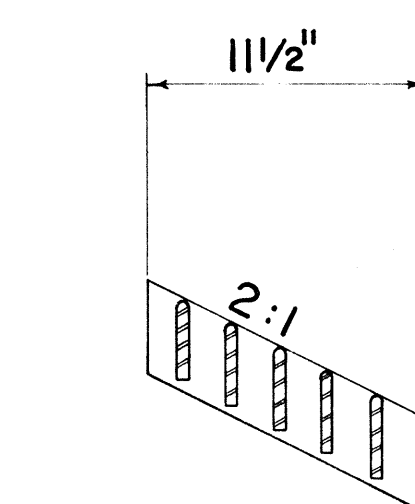


PLAN

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

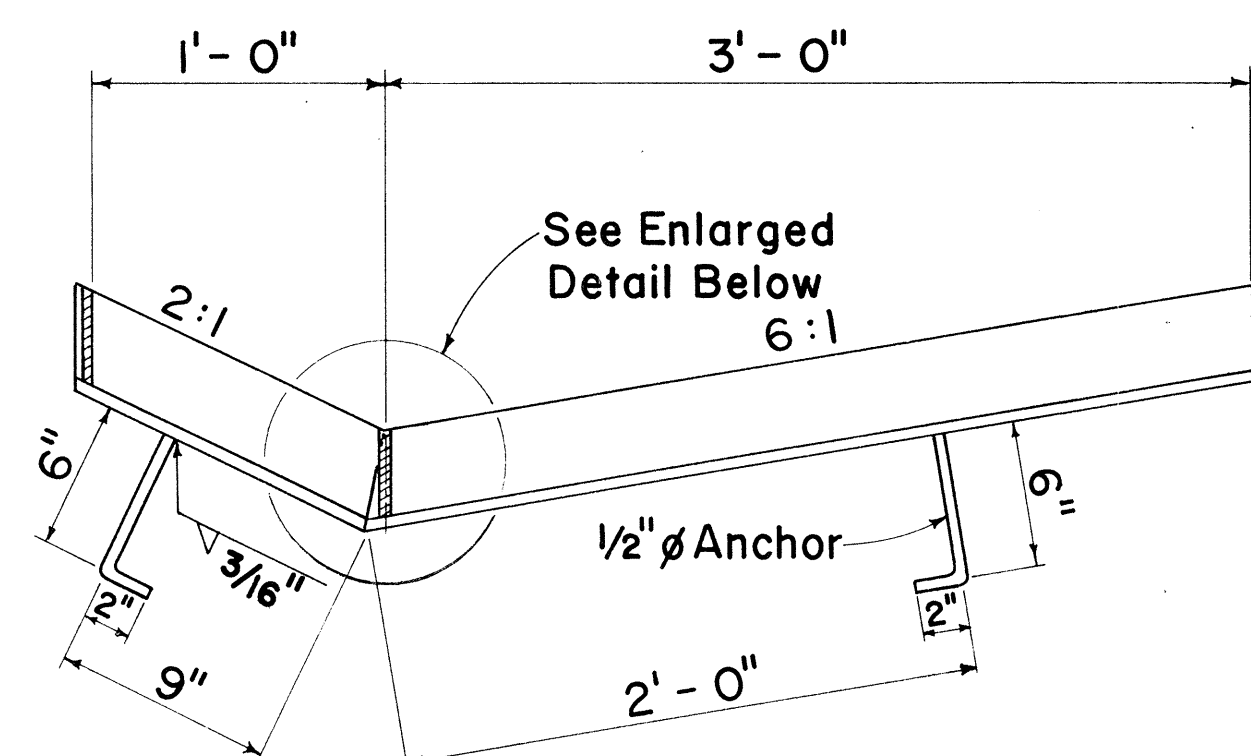


PLAN



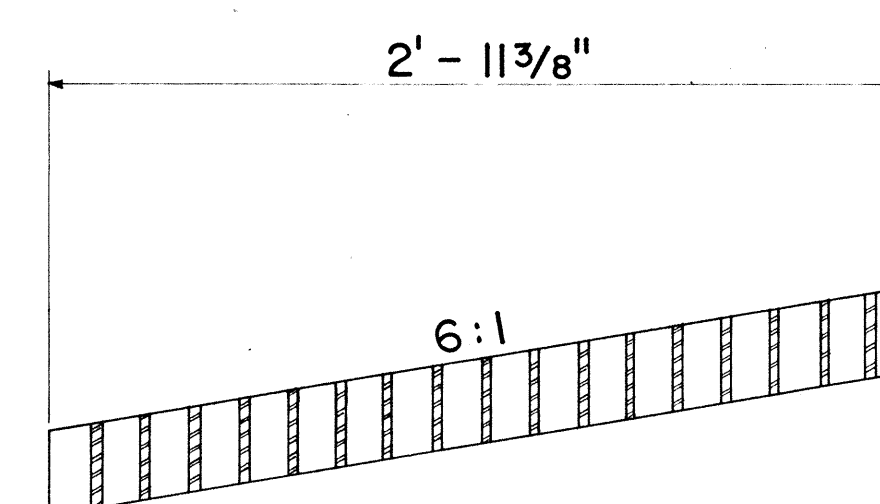
SECTION

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



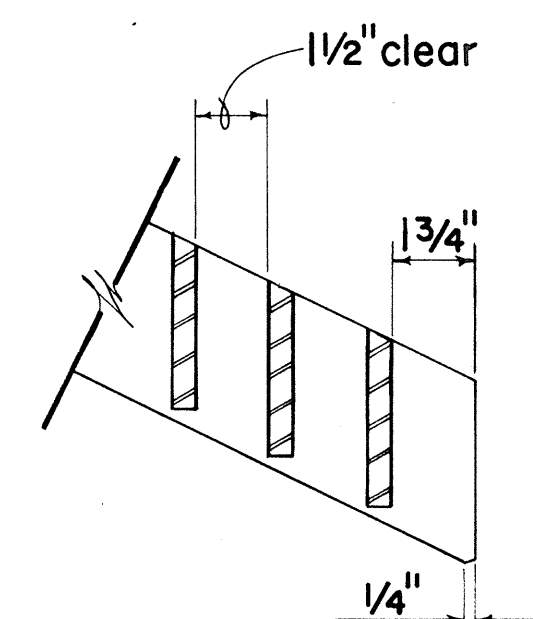
SECTION

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



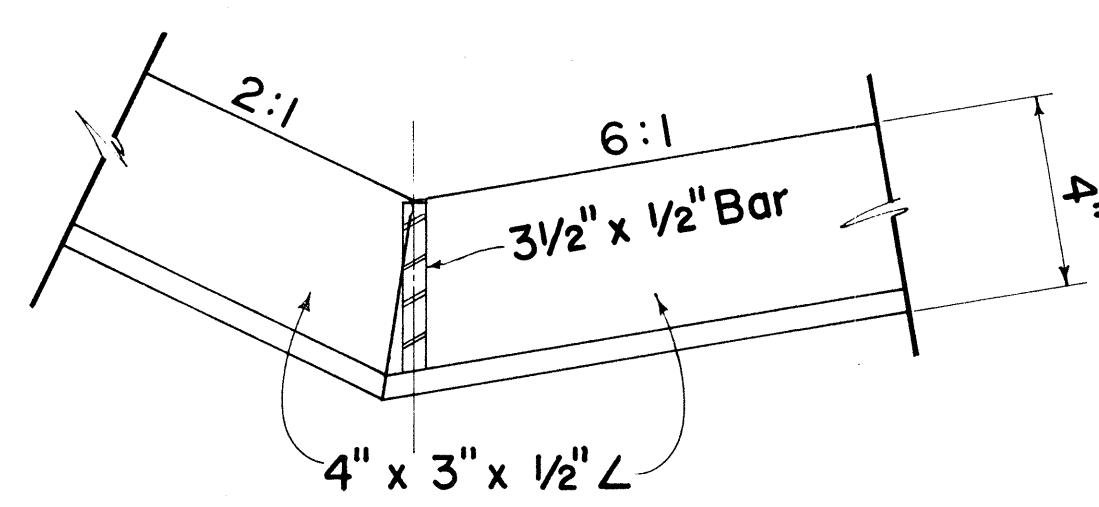
SECTION

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



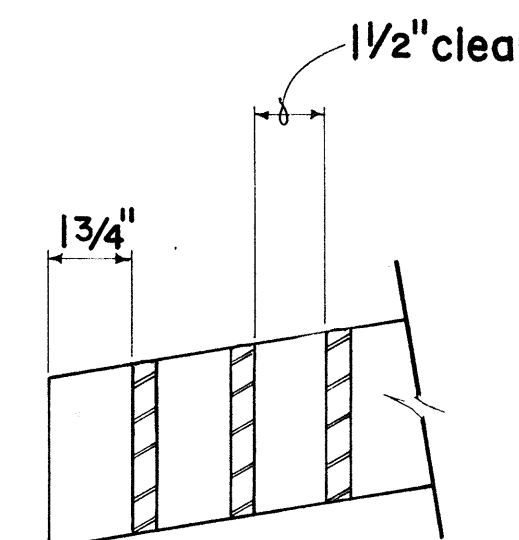
GRATE

Scale: $3" = 1' - 0"$



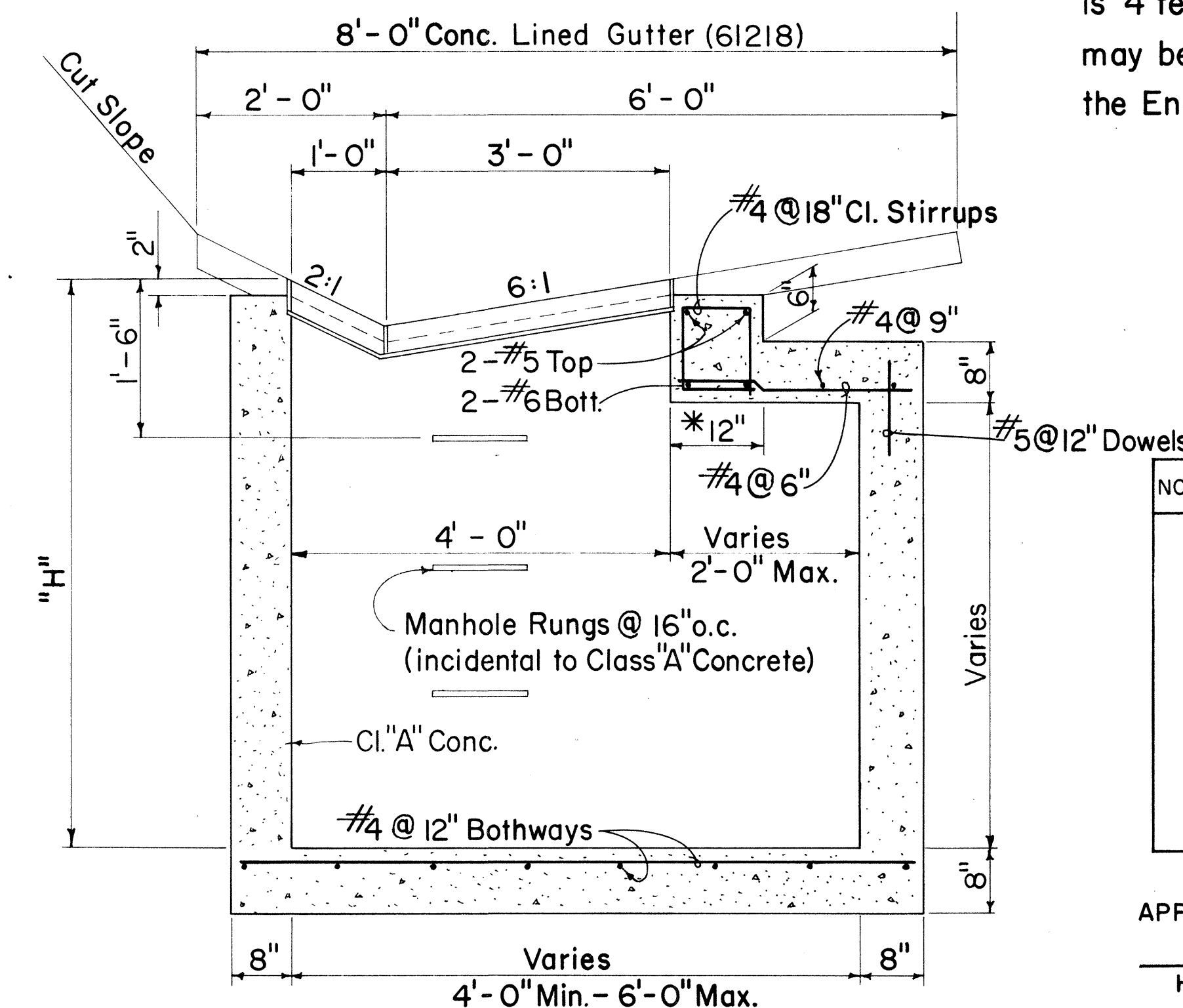
FRAME

Scale: $3" = 1' - 0"$



GRATE

Scale: $3" = 1' - 0"$



SECTION A - A

DETAIL OF 61214 DROP INTAKE

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

*For Minimum size box of 4' - 0" only, use 8" and eliminate reinforcing steel shown in top portion.

NO.	REVISION	APPROVED BY	DATE

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

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 STANDARD DETAILS
 TYPE 61214
 GRATED DROP INTAKE

Scales: As Noted Date: July 1969

SHEET No. 10 OF 10 SHEETS DH 9