

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH5-U-092-1(1)	1974	21	141

STA. 148+13 ± LT.
Construct: Type "D" C.B.
Install: 2-12" RCP, Cl. III

ESTIMATED QUANTITIES	
Struct. Exc.	24 C.Y.
Class "A" Conc.	3 C.Y.
Reinf. Steel	77 Lbs.
Type "B" C.I. Fr. & Cover	1 Ea.
12" RCP, Cl. III	62 L.F.

STA. 146+85 ± LT.
Construct: Type "D" C.B.
Install: 12" RCP, Cl. III

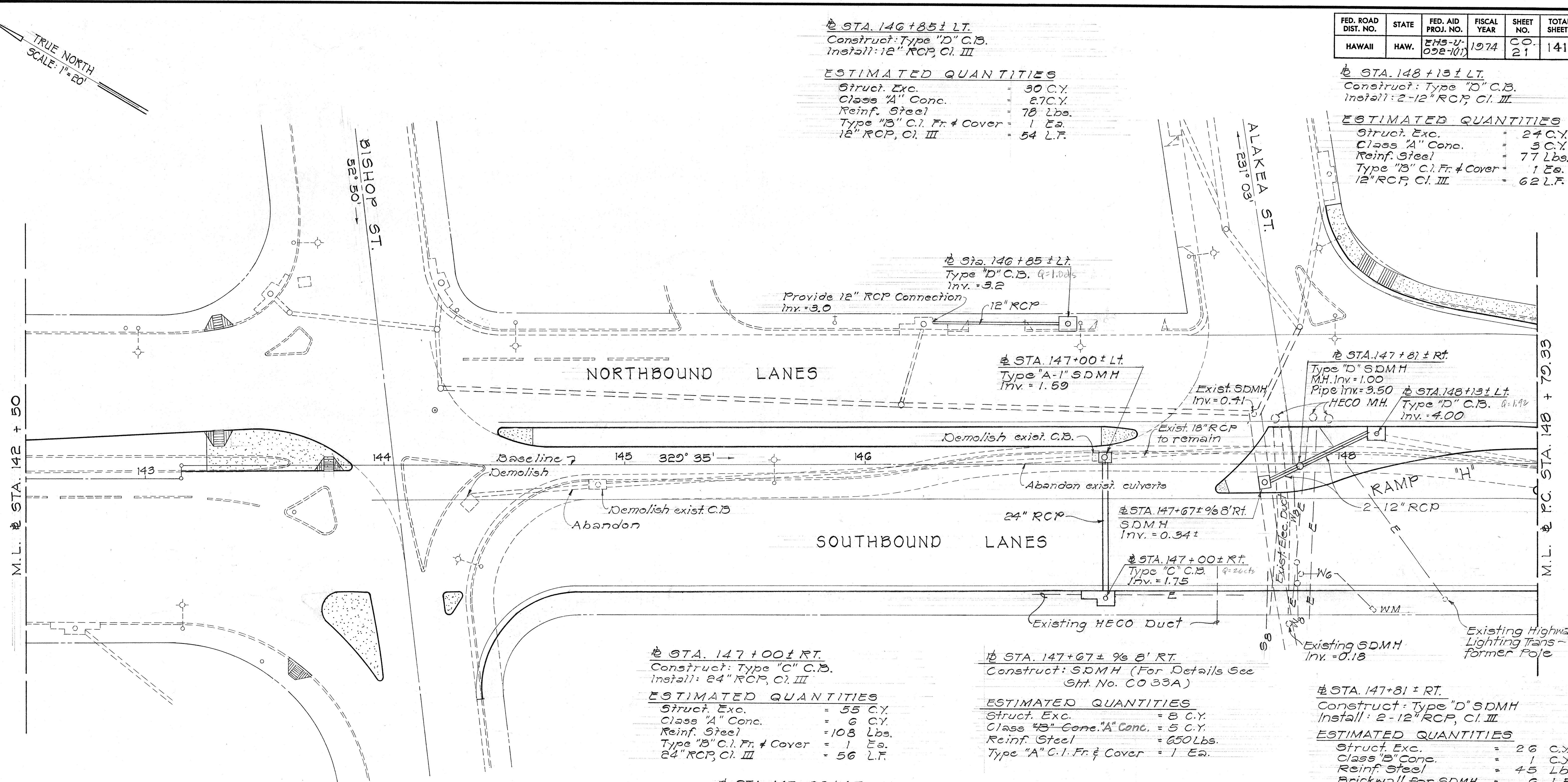
ESTIMATED QUANTITIES	
Struct. Exc.	30 C.Y.
Class "A" Conc.	2.7 C.Y.
Reinf. Steel	78 Lbs.
Type "B" C.I. Fr. & Cover	1 Ea.
12" RCP, Cl. III	54 L.F.

ALAKEA ST.
-E31° 03'

BISHOP ST.
-S5° 50'

M.L. ± STA. 142 + 50

M.L. ± P.C. STA. 148 + 79.33



STA. 147+00 ± RT.
Construct: Type "C" C.B.
Install: 24" RCP, Cl. III

ESTIMATED QUANTITIES	
Struct. Exc.	55 C.Y.
Class "A" Conc.	6 C.Y.
Reinf. Steel	108 Lbs.
Type "B" C.I. Fr. & Cover	1 Ea.
24" RCP, Cl. III	56 L.F.

STA. 147+67 ± 9/16 8' RT.
Construct: SDMH (For Details See Sht. No. CO 33A)

ESTIMATED QUANTITIES	
Struct. Exc.	8 C.Y.
Class "B" Conc. "A" Conc.	5 C.Y.
Reinf. Steel	650 Lbs.
Type "A" C.I. Fr. & Cover	1 Ea.

STA. 147+81 ± RT.
Construct: Type "D" SDMH
Install: 2-12" RCP, Cl. III

ESTIMATED QUANTITIES	
Struct. Exc.	26 C.Y.
Class "B" Conc.	1 C.Y.
Reinf. Steel	45 Lbs.
Brickwall for SDMH	6 L.F.
Type "A" C.I. Fr. & Cover	1 Ea.
12" RCP, Cl. III	26 L.F.

STA. 147+00 ± LT.
Demolish Existing C.B.
Construct: Type "A-1" SDMH
and connect to existing 18" RCP

ESTIMATED QUANTITIES	
Struct. Exc.	7 C.Y.
Class "A" Conc.	3 C.Y.
Reinf. Steel	170 Lbs.
Type "A" C.I. Fr. and Cover	1 Ea.

7-11-75 Deleted SDMH @ Sta. 147+80 ± 9/16 8' RT. & SDMH @ Sta. 147+81 ± 9/16 8' LT.
Added Type "A-1" SDMH @ Sta. 147+00 ± LT, SDMH @ Sta. 147+67 ± 9/16 8' RT. & Type "D" SDMH @ Sta. 147+81 ± RT.
Corrected Location of SDMH and Alignment of Culverts @ Sta. 147+78 ± 9/16 20' LT. and Location of Utility Lines.

DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE PLAN
NIMITZ HIGHWAY
Punchbowl St. to Bishop St.
Proj. No. EH5-U-092-1(1)

Scale: 1"=20' Date: Jan., 1974

SHEET No. 1 OF 13 SHEETS

CO. 21

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

@ STA. 149+92± RT.
 Construct: Type "D" C.B.
 Cut & Remove exist. 2-12" RCP
 For Details, see sh. no. 27

ESTIMATED QUANTITIES

Struct. Exc. = 15 C.Y.
 Class "A" Conc. = 25 C.Y.
 Reinf. Steel = 79 Lbs.
 Type "B" C.I. Fr. & Cover = 1 Ea.

"HALE" STA. 4+58±

Demolish: Brick portion of
 exist. SDMH
 Modify: Exist. 8'x4' Box
 Drain
 For Details, see sh. no. 28

ESTIMATED QUANTITIES

Struct. Exc. = 6 C.Y.
 Class "A" Conc. = 1.4 C.Y.
 Reinf. Steel = 231 Lbs.

"HALE" STA. 4+65±, 7/8 5' LT.
 SDMH
 Inv. = -2.0

"HALE" STA. 4+58±
 Modification of exist.
 8'x4' Box Drain.

"HALE" STA. 4+65±, 7/8 5' LT.
 Modify: Exist. 8'x4' Box Drain
 Construct: Brick SDMH
 For Details, see sh. no. 28

ESTIMATED QUANTITIES

Struct. Exc. = 14 C.Y.
 Class "A" Conc. = 2.6 C.Y.
 Reinf. Steel = 493 Lbs.
 Brick Wall for SDMH = 3 L.F.
 Type "A" C.I. Fr. & Cover = 1 Ea.

@ STA. 153+25±, 7/8 63'± LT.
 Modify: Exist. 8'x4' Box Drain
 Provide 24" RCP Connection
 For Details, see sh. no. 29

ESTIMATED QUANTITIES

Struct. Exc. = 5 C.Y.
 Class "A" Conc. = 0.4 C.Y.
 Reinf. Steel = 88 Lbs.

@ STA. 153+25± 7/8 63'± LT.
 24" RCP Connection
 Inv. = -1.0

8'x4' Existing Box Drain

M.L. @ P.C. STA. 148+76.6±
 149 RAMP "H"
 Demolish exist. C.B.
 @ STA. 149+92± RT.
 Type "D" C.B. Q=1.74±
 Inv. = 2.3

Existing 2-12" RCP
 151
 152
 RAMP "K"
 153
 154
 24" RCP
 @ STA. 151+83± RT.
 Type "D" C.B. Q=1.92±
 Inv. = 3.22±
 Existing 12" RCP to remain
 DELETE
 @ STA. 151+04± RT.
 Type "A-1" SDMH
 Inv. = 1.60±
 57'04" 30"
 24" RCP
 PICHAROS ST.
 57'04" 30"
 24" RCP
 "ID"
 @ STA. 150+60± RT.
 Type "B" C.B. Q=1.69±
 Inv. = 1.58±
 @ STA. 150+60± RT. "ID"
 Construct: Type "B" C.B.
 Install: 24" RCP, Cl. III
 ESTIMATED QUANTITIES
 Struct. Exc. = 37 C.Y.
 Class "A" Conc. = 3 C.Y.
 Reinf. Steel = 77 Lbs.
 Type "B" C.I. Fr. & Cover = 1 Ea.
 24" RCP, Cl. III = 32 L.F.

NORTHBOUND LANES
 SOUTHBOUND LANES

@ STA. 153+25± RT.
 Construct: Type "C" C.B.
 Install: 24" RCP, Cl. III
 For Details, see sh. no. 33

ESTIMATED QUANTITIES

Struct. Exc. = 94 C.Y.
 Class "A" Conc. = 5.5 C.Y.
 Reinf. Steel = 96 Lbs.
 Type "B" C.I. Fr. & Cover = 1 Ea.
 24" RCP, Cl. III = 68 L.F.

ESTIMATED QUANTITIES

Struct. Exc. = 10 C.Y.
 Class "A" Conc. = 3 C.Y.
 Reinf. Steel = 77 Lbs.
 Type "B" C.I. Fr. & Cover = 1 Ea.

@ STA. 151+04± RT.
 Construct: Type "A-1" SDMH
 Connect to existing 30" RCP

ESTIMATED QUANTITIES

Struct. Exc. = 10 C.Y.
 Class "A" Conc. = 3 C.Y.
 Reinf. Steel = 170 Lbs.
 Type "A" C.I. Fr. & Cover = 1 Ea.

7-11-75 Deleted Type "D" C.B. @ STA. 149+02± RT. Added Type "D" C.B. @ STA. 150+60± RT. Type "A-1" SDMH @ STA. 151+04± RT. & Type "D" C.B. @ STA. 151+28± RT.

DATE REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE PLAN

NIMITZ HIGHWAY
 Punchbowl St. to Bishop St.
 Proj. No. EHS-U-098-1(11)

Scale: 1"=20' Date: Jan., 1974
 SHEET No. 2 OF 13 SHEETS

DATE	*****
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-U-092-1(11)	1974	23	141

TRUE NORTH
SCALE: 1"=20'

± STA. 155+50 ±, % 0.3 LT.
Modify: Exist. 8'x4' Box Drain
Provide 24" RCP Connection
For Details, see sh. no. 29

ESTIMATED QUANTITIES
Struct. Exc. = 4 C.Y.
Class "A" Conc. = 0.4 C.Y.
Reinf. Steel = 88 Lbs.

± STA. 157+00 ±, % 2.5 RT.
Demolish: Brick Portion
of exist. 5DMH
Construct: Brick 5DMH
For Details, see sh. no. 27

ESTIMATED QUANTITIES
Struct. Exc. = 2 C.Y.
Brick Wall for 5DMH = 5 L.F.
Type "A" C.I. Fr. & Cover = 1 Ea.

± STA. 157+65 ±
Demolish: Exist. C.B.
Construct: Type "A" 5DMH
Install: 21" RCP, Cl. III
For Details, see sh. no. 32

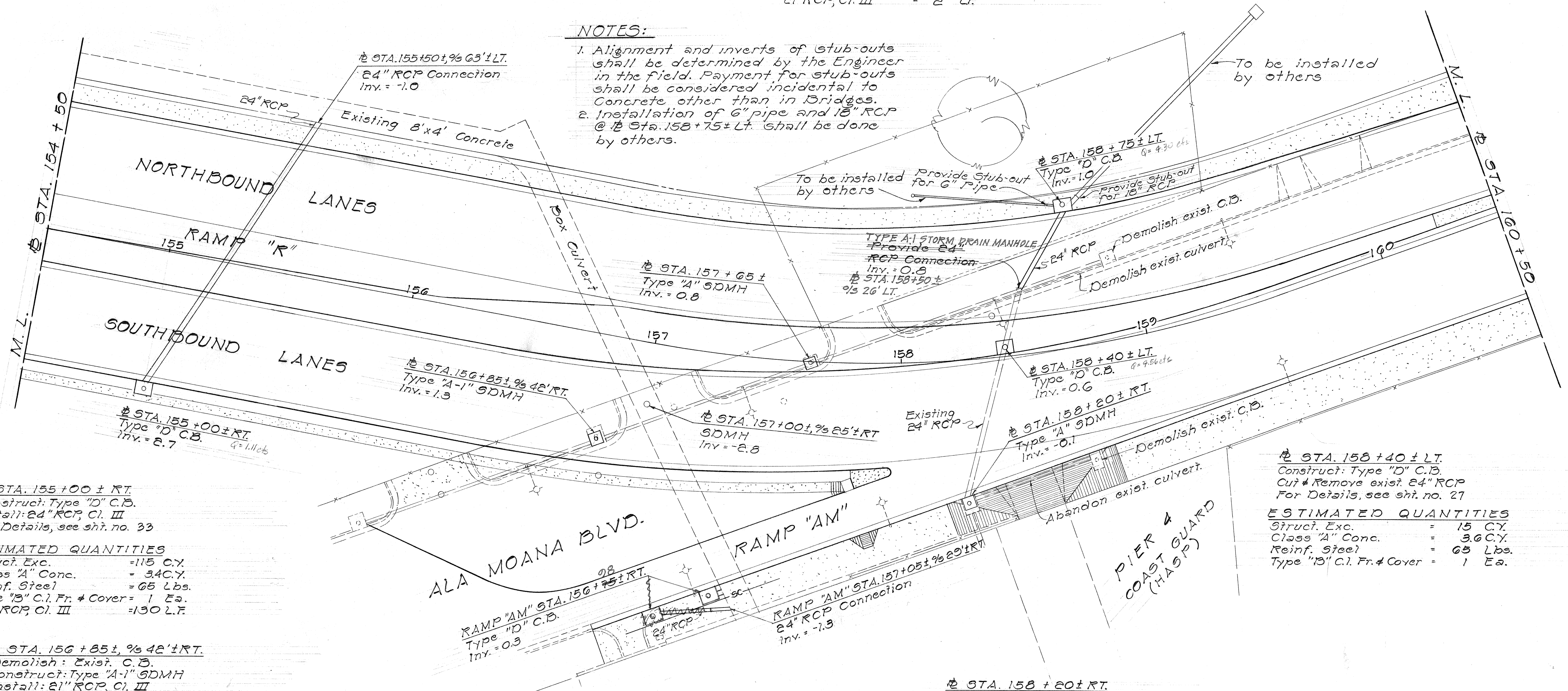
ESTIMATED QUANTITIES
Struct. Exc. = 3 C.Y.
Class "A" Conc. = 2.3 C.Y.
Reinf. Steel = 100 Lbs.
Type "A" C.I. Fr. & Cover = 1 Ea.
21" RCP, Cl. III = 2 L.F.

± STA. 158+75 ± LT.
Construct: Type "D" C.B.
Install: 24" RCP, Cl. III

ESTIMATED QUANTITIES
Struct. Exc. = 41 C.Y.
Class "A" Conc. = 3.8 C.Y.
Reinf. Steel = 65 Lbs.
Type "B" C.I. Fr. & Cover = 1 Ea.
24" RCP, Cl. III = 36 L.F.

NOTES:

1. Alignment and inverts of stub-outs shall be determined by the Engineer in the field. Payment for stub-outs shall be considered incidental to concrete other than in Bridges.
2. Installation of 6" pipe and 18" RCP @ ± Sta. 158+75 ± Lt. shall be done by others.



± STA. 155+00 ± RT.
Construct: Type "D" C.B.
Install: 24" RCP, Cl. III
For Details, see sh. no. 33

ESTIMATED QUANTITIES
Struct. Exc. = 115 C.Y.
Class "A" Conc. = 3.4 C.Y.
Reinf. Steel = 65 Lbs.
Type "B" C.I. Fr. & Cover = 1 Ea.
24" RCP, Cl. III = 130 L.F.

± STA. 156+85 ±, % 4.2 RT.
Demolish: Exist. C.B.
Construct: Type "A-1" 5DMH
Install: 21" RCP, Cl. III
For Details, see sh. no. 32

ESTIMATED QUANTITIES
Struct. Exc. = 2 C.Y.
Class "A" Conc. = 3.0 C.Y.
Reinf. Steel = 179 Lbs.
Type "A" C.I. Fr. & Cover = 1 Ea.
21" RCP, Class III = 2 L.F.

RAMP "AM" STA. 156+75 ± RT.
Construct: Type "D" C.B.
Install: 24" RCP, Cl. III

ESTIMATED QUANTITIES
Struct. Exc. = 41 C.Y.
Class "A" Conc. = 4.0 C.Y.
Reinf. Steel = 77 Lbs.
Type "B" C.I. Fr. & Cover = 1 Ea.
24" RCP, Cl. III = 30 L.F.

Ramp "AM" STA. 157+05 ±, % 2.9 RT.
Modify: Exist. 8'x4' Box Drain
Provide 24" RCP Connection
For Details, see sh. no. 29

ESTIMATED QUANTITIES
Struct. Exc. = 4 C.Y.
Class "A" Conc. = 0.5 C.Y.
Reinf. Steel = 92 Lbs.

± STA. 158+20 ± RT.
Demolish: Exist. C.B.
Construct: Type "A" 5DMH
Install: 24" RCP, Cl. III
For Details, see sh. no. 32

ESTIMATED QUANTITIES
Struct. Exc. = 2 C.Y.
Class "A" Conc. = 3.0 C.Y.
Reinf. Steel = 100 Lbs.
Type "A" C.I. Fr. & Cover = 1 Ea.
24" RCP, Cl. III = 4 L.F.

± STA. 158+40 ± LT.
Construct: Type "D" C.B.
Cut & Remove exist. 24" RCP
For Details, see sh. no. 27

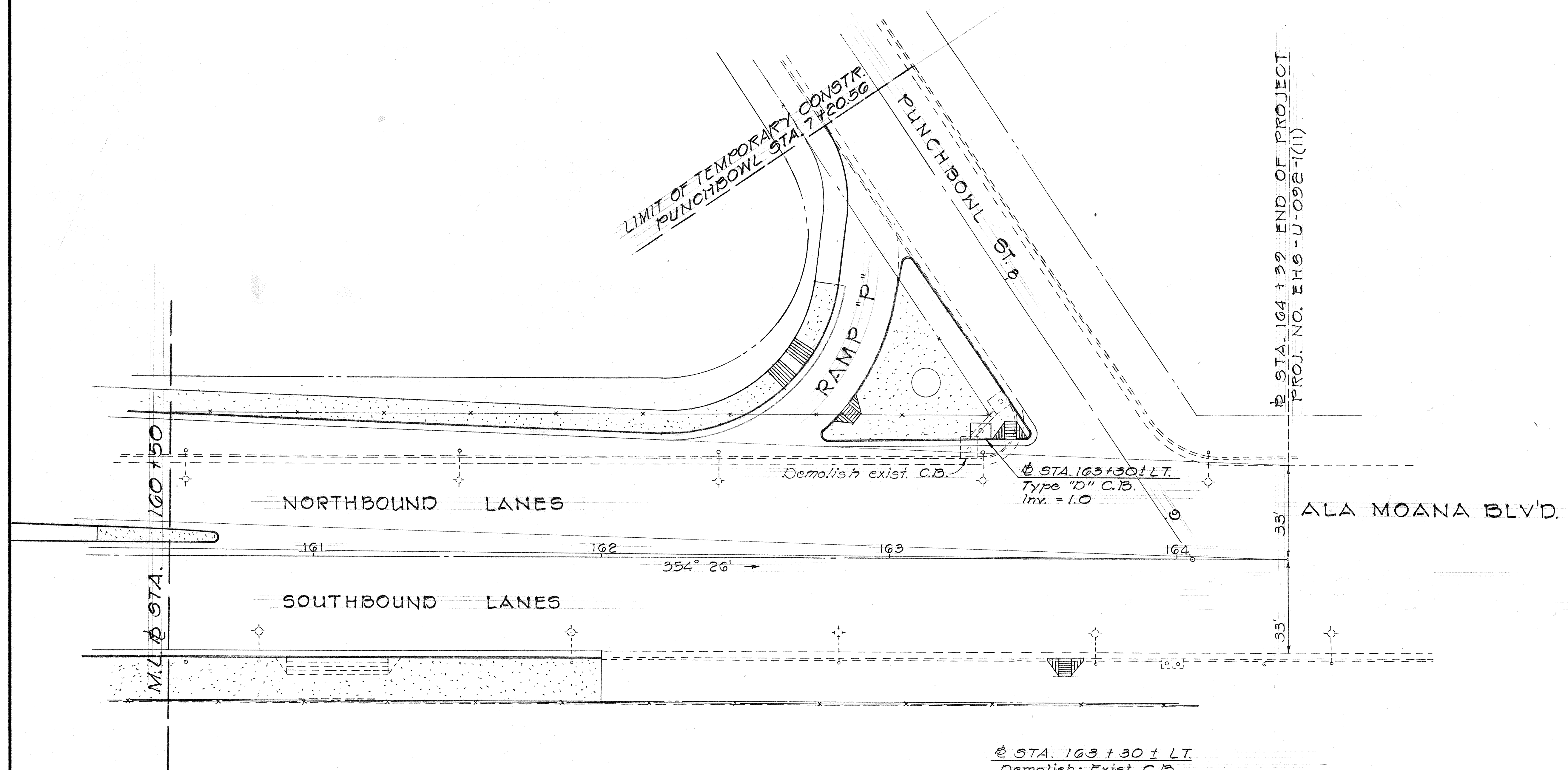
ESTIMATED QUANTITIES
Struct. Exc. = 15 C.Y.
Class "A" Conc. = 3.6 C.Y.
Reinf. Steel = 65 Lbs.
Type "B" C.I. Fr. & Cover = 1 Ea.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE PLAN
NIMITZ HIGHWAY
Punchbowl St. to Bishop St.
Proj. No. EHS-U-092-1(11)

Scale: 1"=20' Date: Jan., 1974
SHEET No. 3 OF 13 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH3-U-092-1(11)	1974	24	141



TRUE NORTH
Scale: 1" = 80'

STA. 163+30 ± LT.
Demolish: Exist. C.B.
Construct: Type "D" C.B.
Cut & Remove exist. 18" RCP
For Details, see sh. no. 30

ESTIMATED QUANTITIES
Struct. Exc. = 11 C.Y.
Class "A" Conc. = 32 C.Y.
Reinf. Steel = 65 Lbs.
Type "B" C.I. Fr. & Cover = 1 Ea.

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

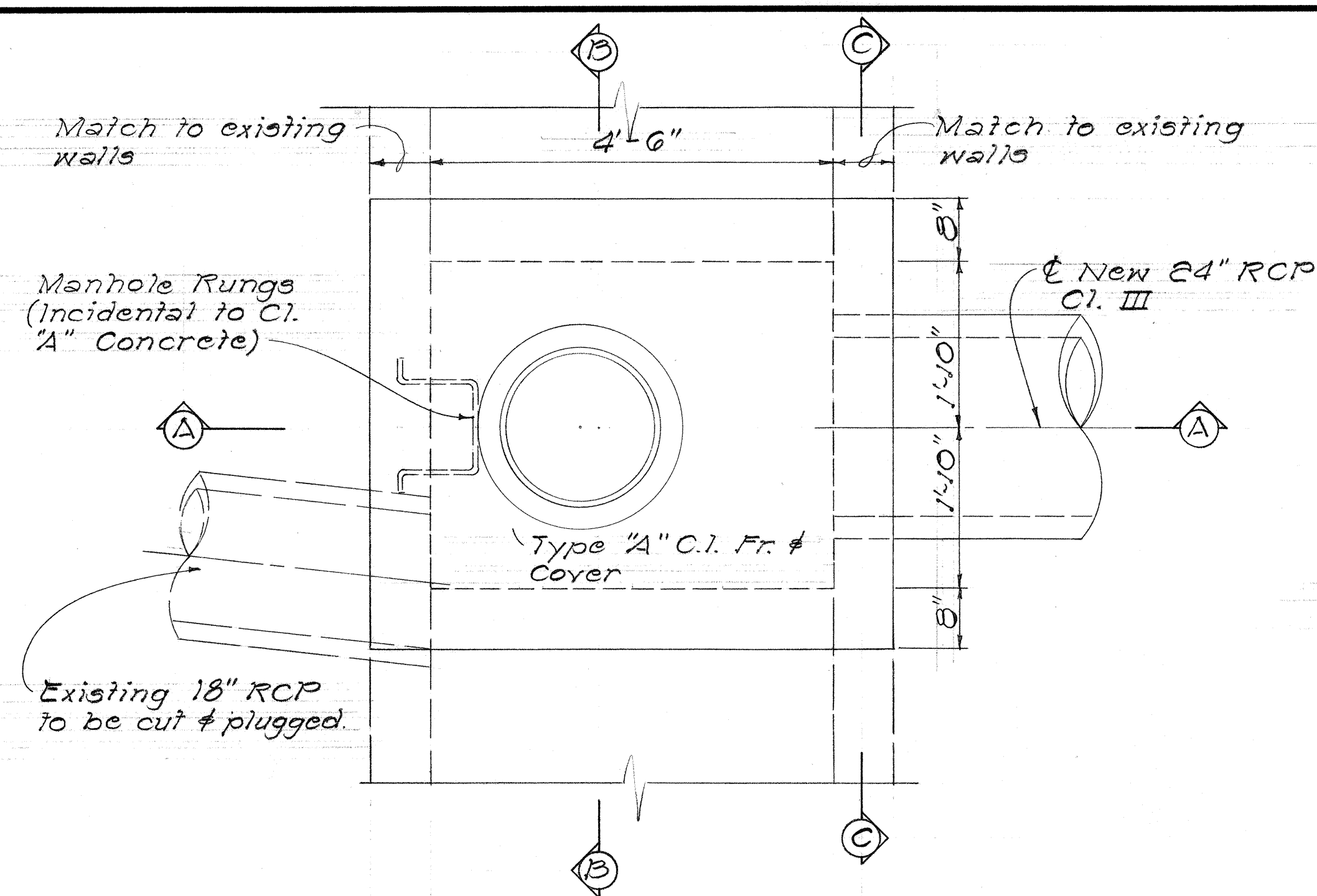
DRAINAGE PLAN

NIMITZ HIGHWAY
Punchbowl St. to Bishop St.
Proj. No. EH3-U-092-1(11)

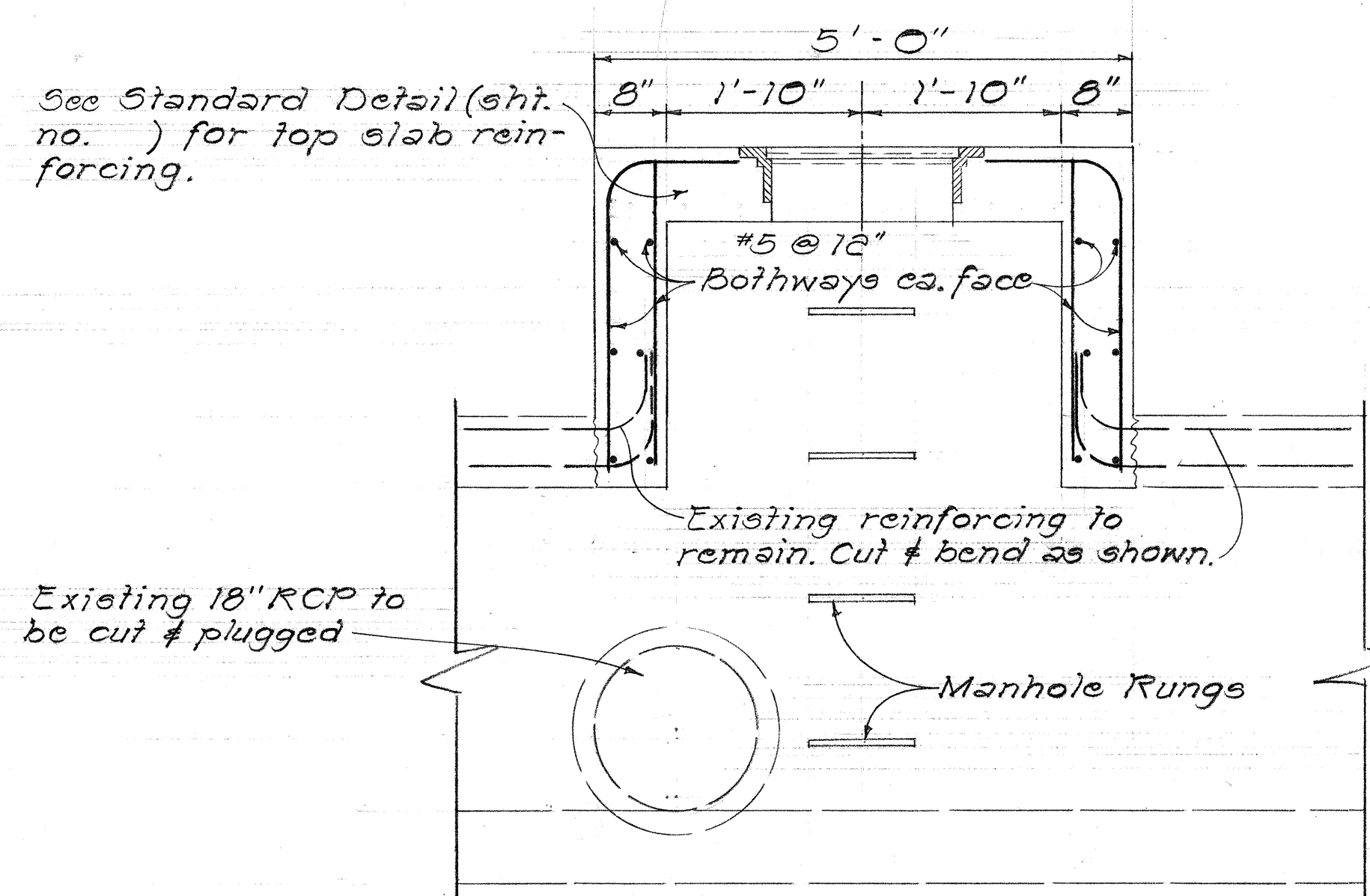
Scale: 1" = 80' Date: Jan., 1974

SHEET No. 4 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-U-092-1(1)	1974	25	141

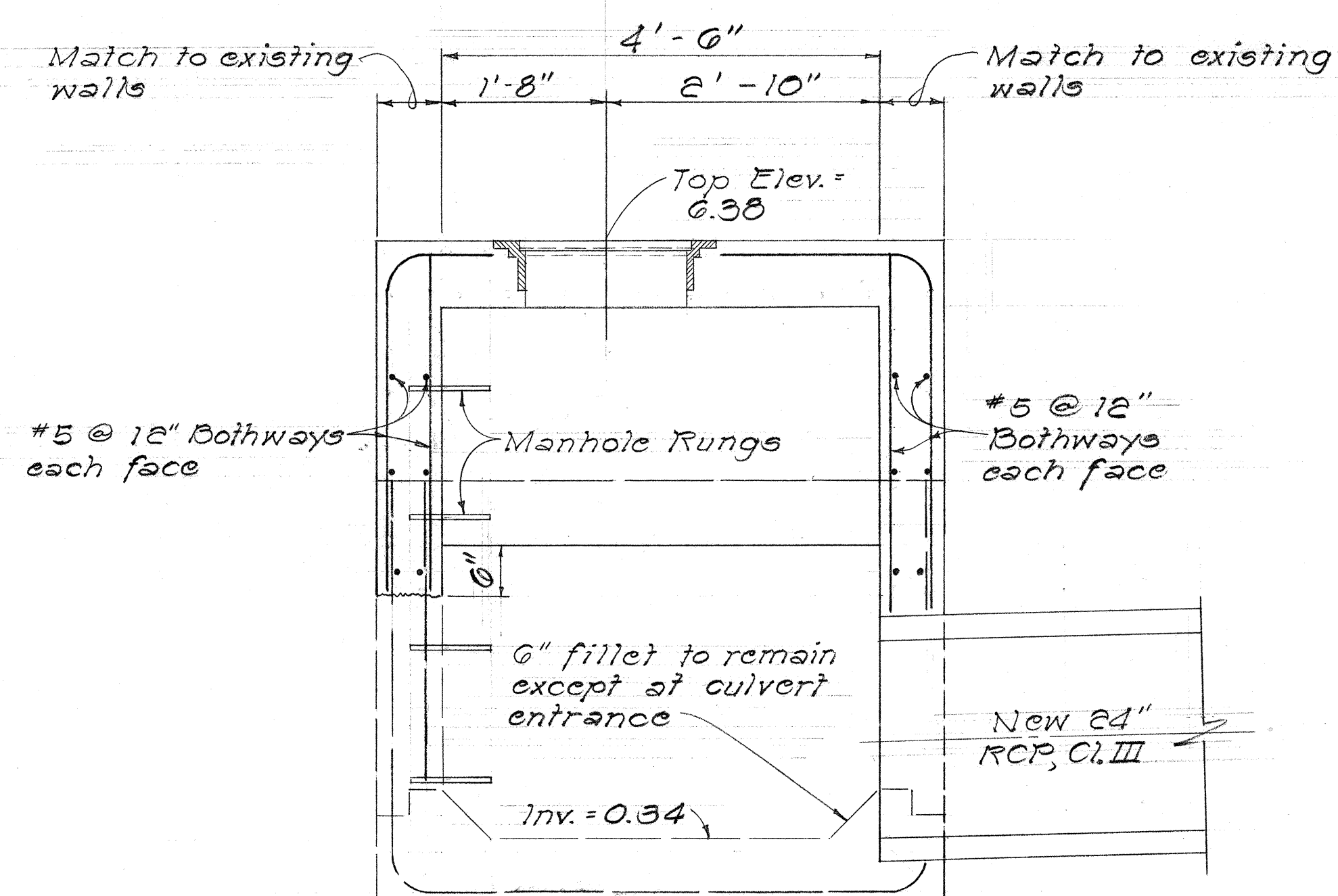


PLAN

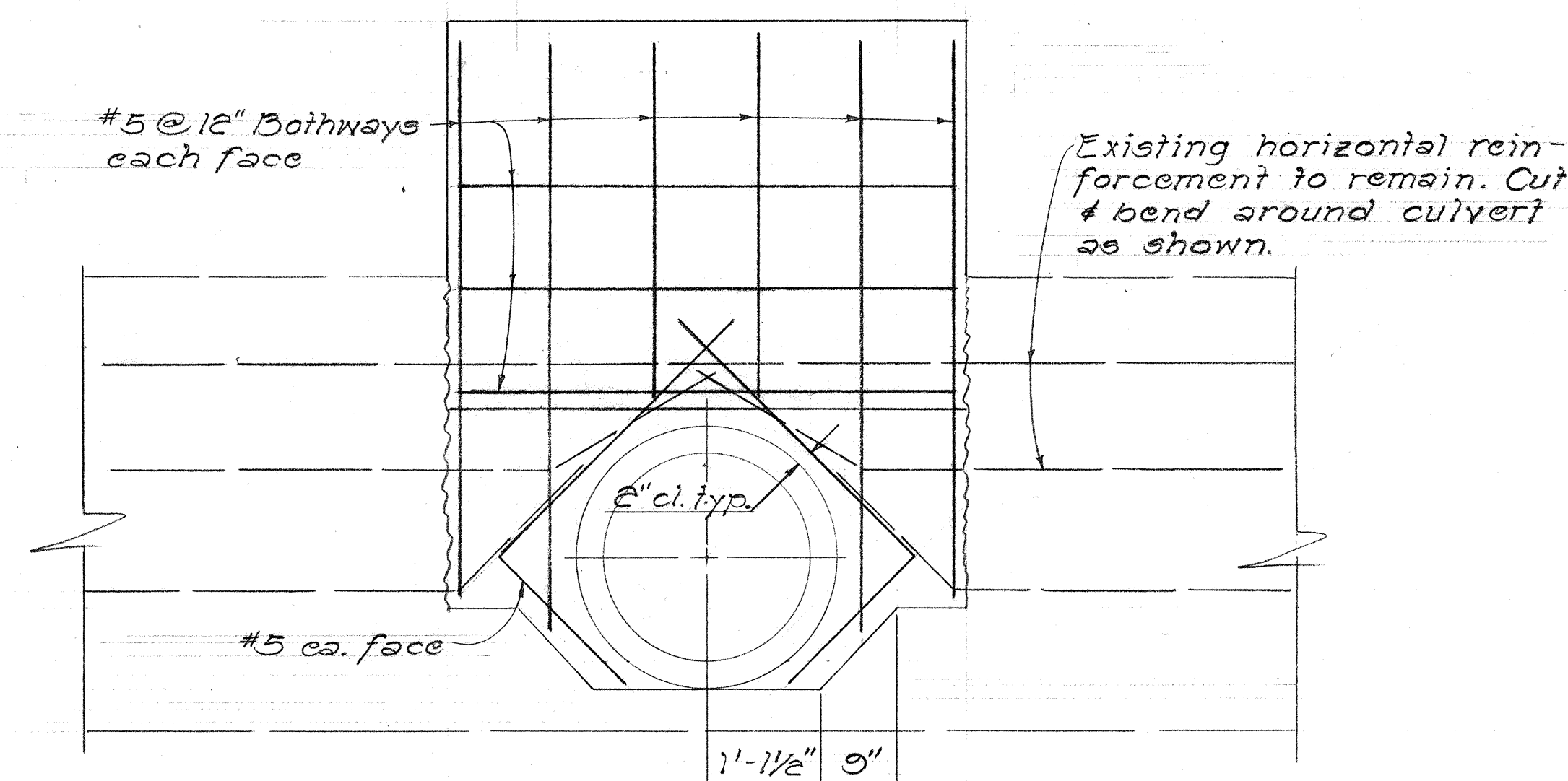


SECTION "B-B"

SHEET DELETED



SECTION A-A



SECTION "C-C"

SDMH AND 24" CONCRETE CULVERT CONNECTION
AT STA. 147 + 81 ±, 9s 8' ± LT.

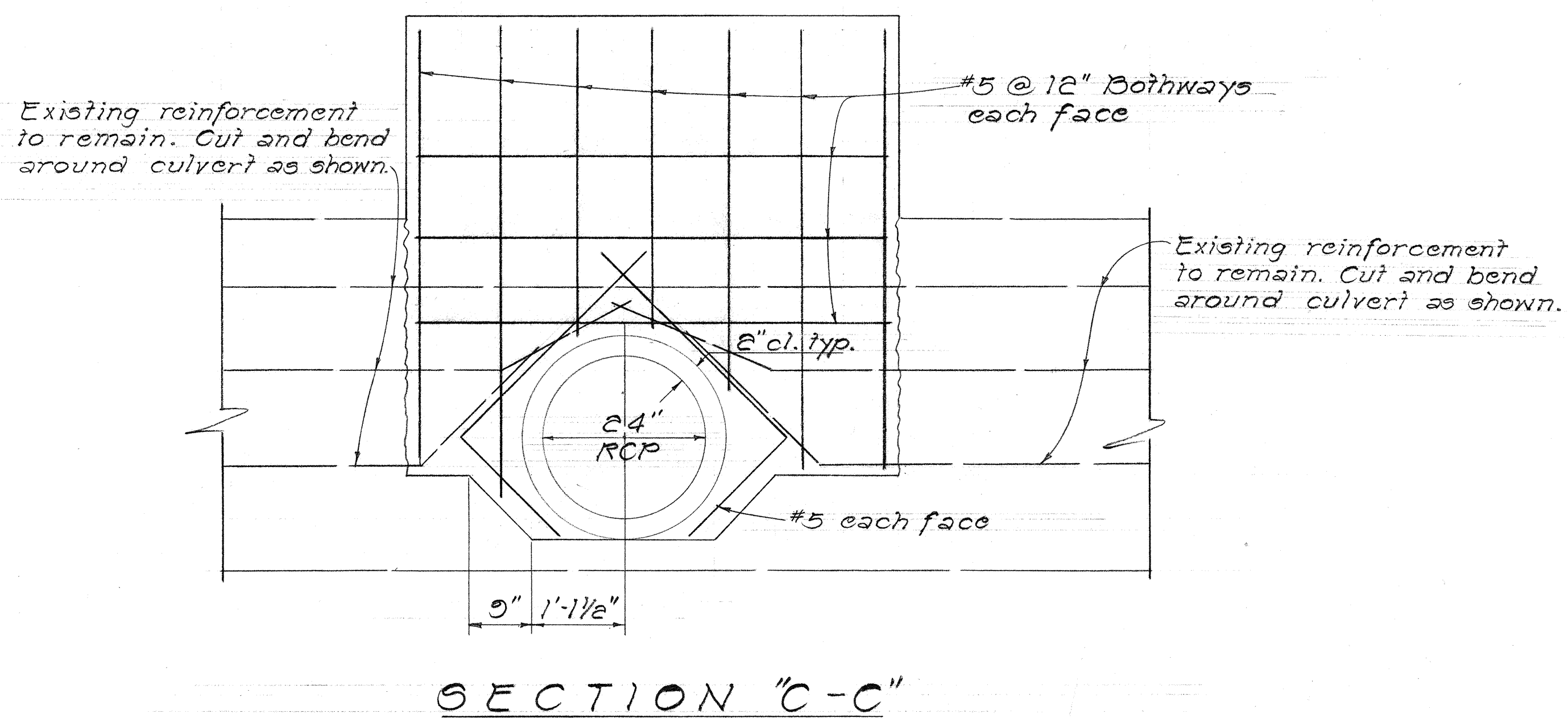
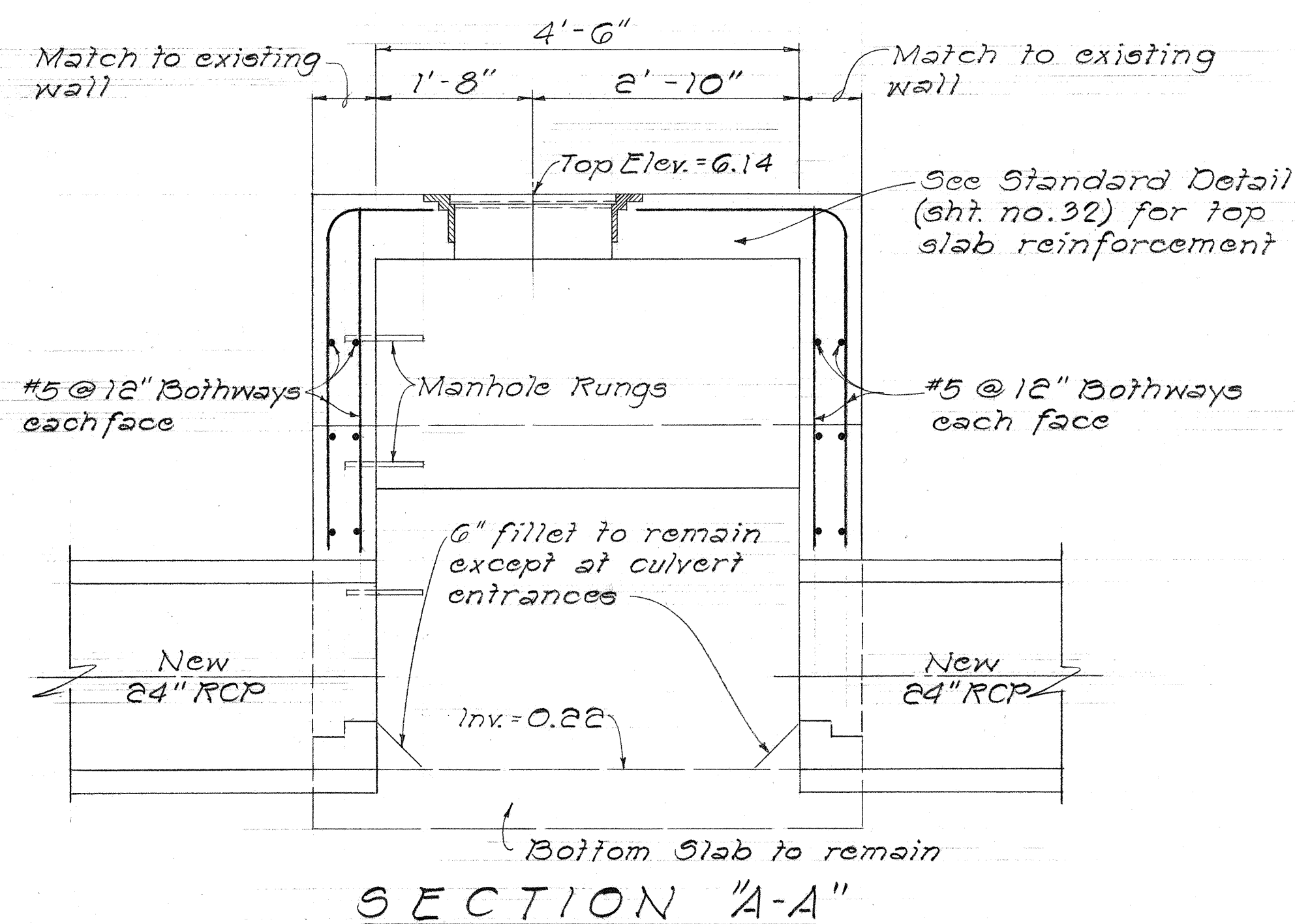
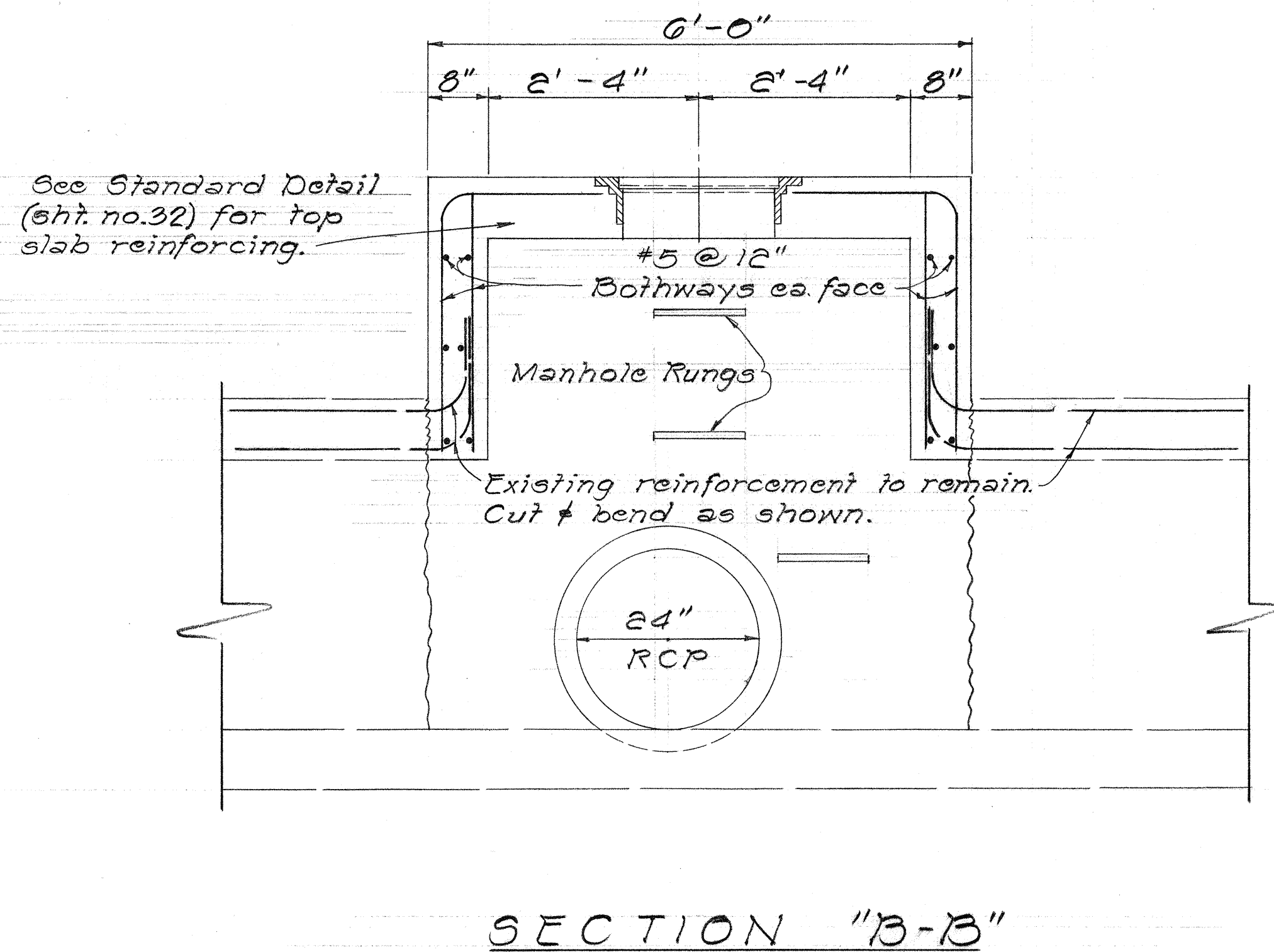
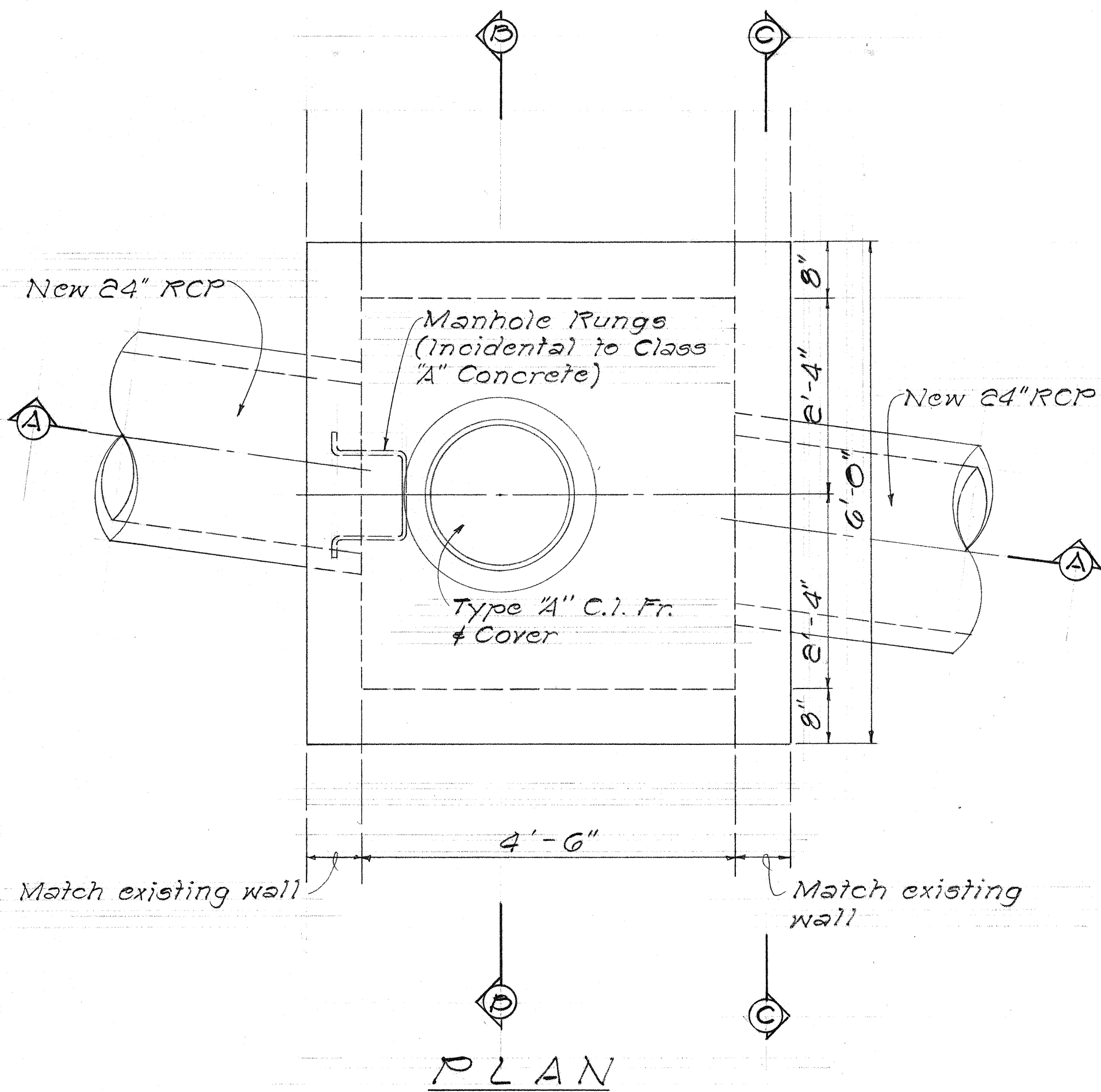
Scale: 3/4" = 1'-0"

7-11-75 Sheet Deleted
 DATE REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
DRAINAGE DETAIL
SDMH AND 24" Concrete
CULVERT CONNECTION AT
STA. 147 + 81 ±, 9s 8' ± LT.
 NIMITZ HIGHWAY
 PUNCHBOWL ST. TO BISHOP ST.
 PROJ. NO. EHS-U-092-1(1)
 Scale: As Noted Date: Jan., 1974
 SHEET No. 5 OF 13 SHEETS

25

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH5-U-092-1(11)	1974	26	141



SDMIT AND 24" CONCRETE CULVERT CONNECTION
AT STA. 147 + 89 ±, 1/2 56 ± RT.
 Scale: 3/4" = 1'-0"

SHEET
DELETED

DATE	
SURVEY PLATTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

7-11-75 Sheet Deleted
 DATE REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

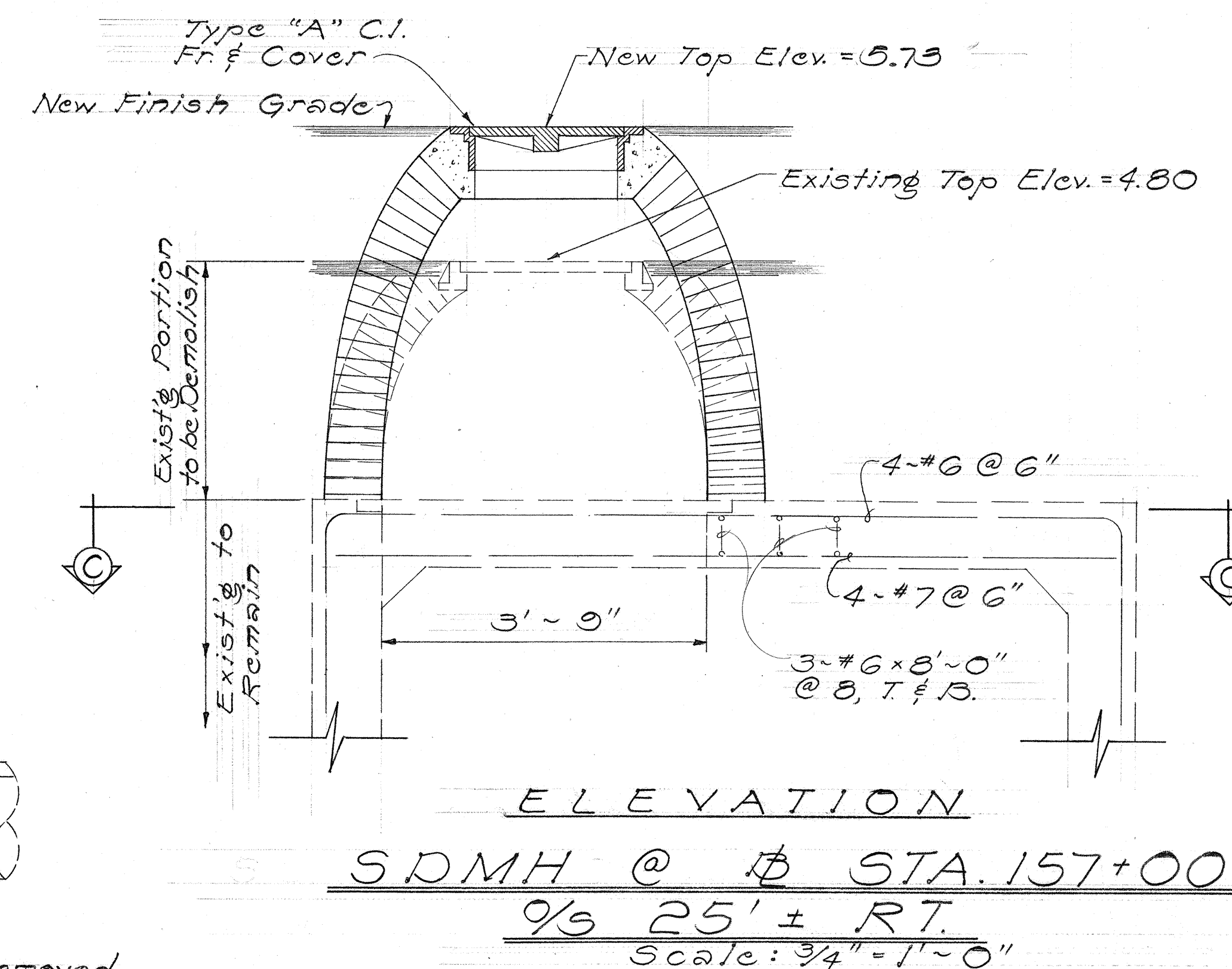
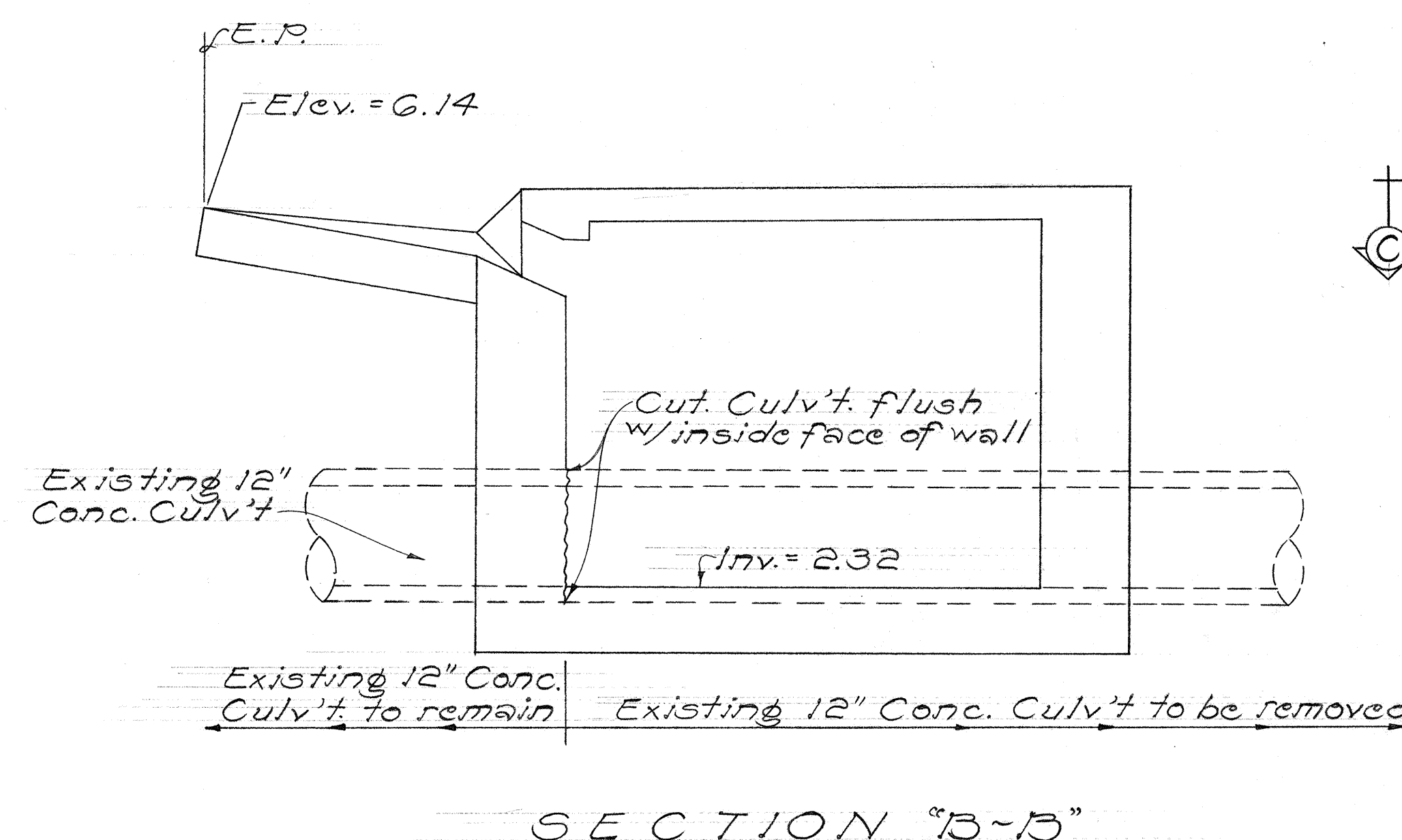
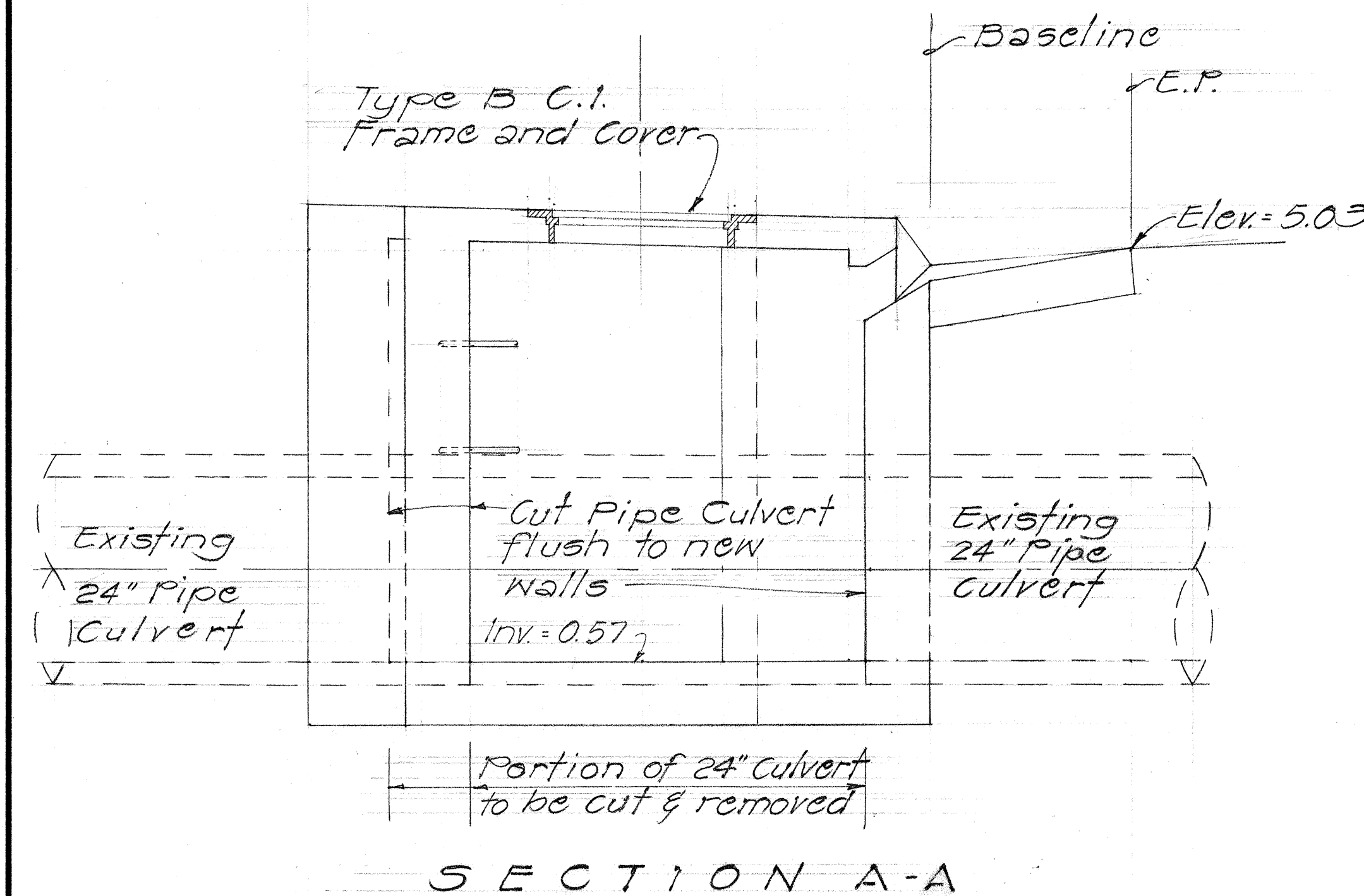
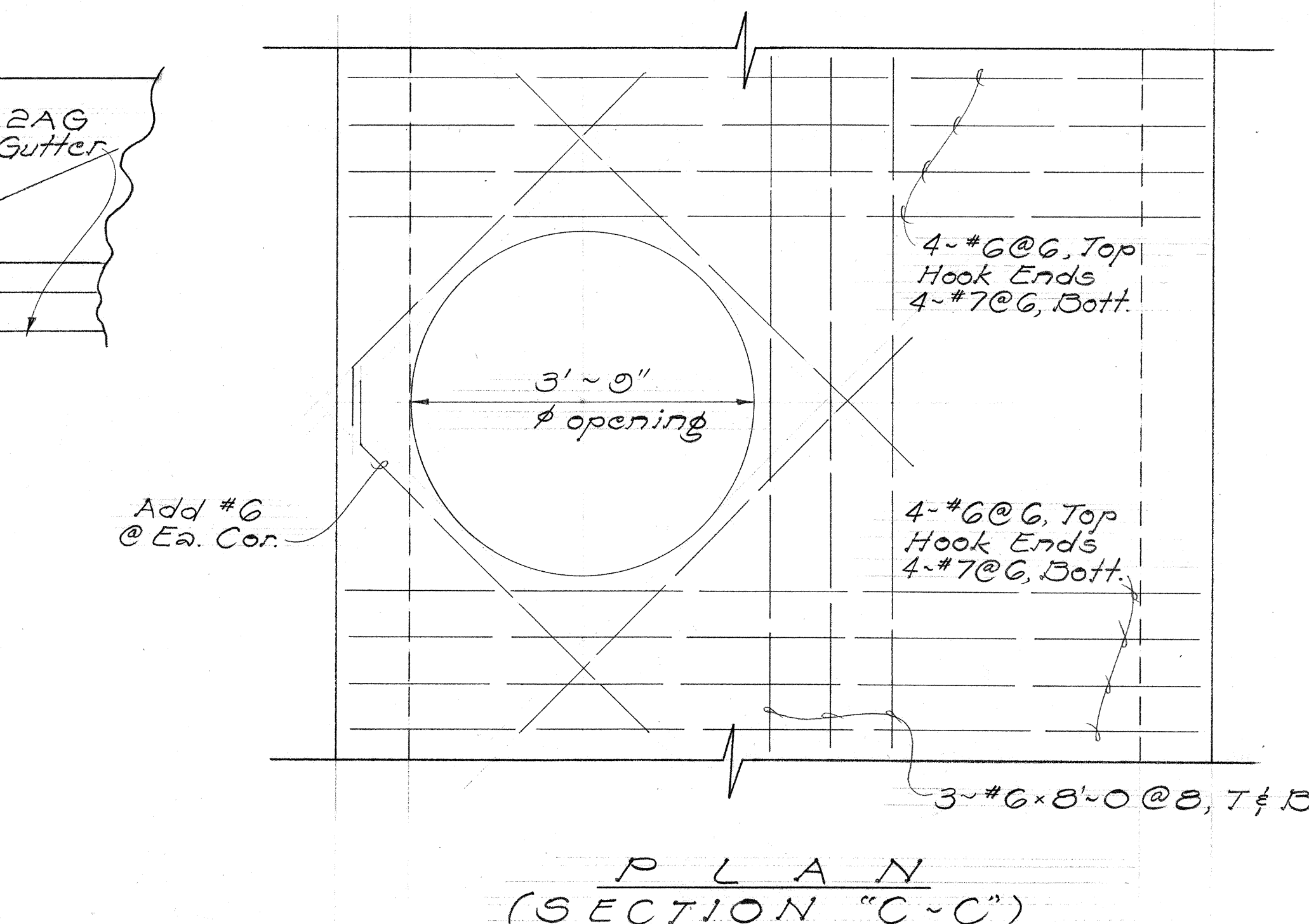
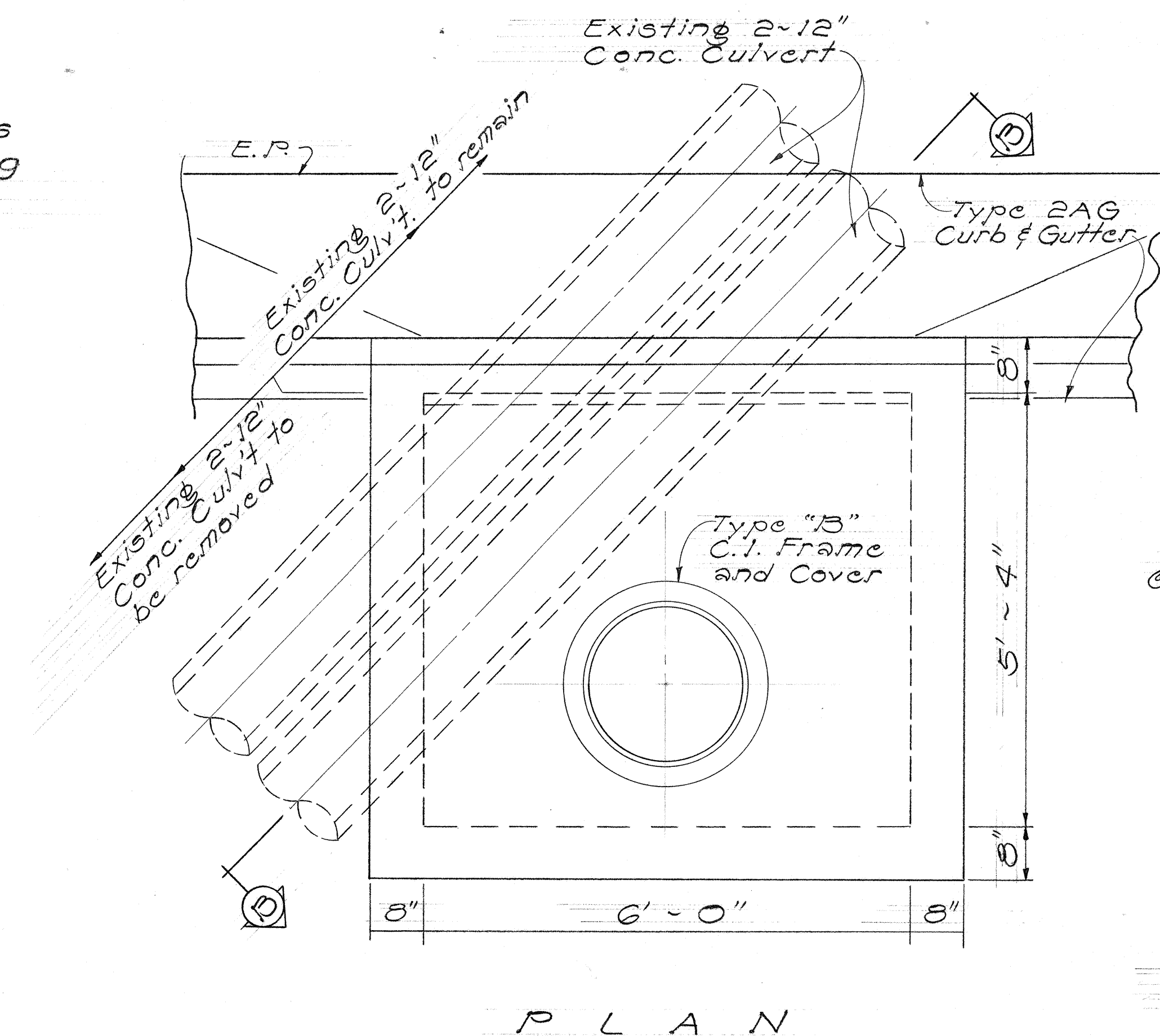
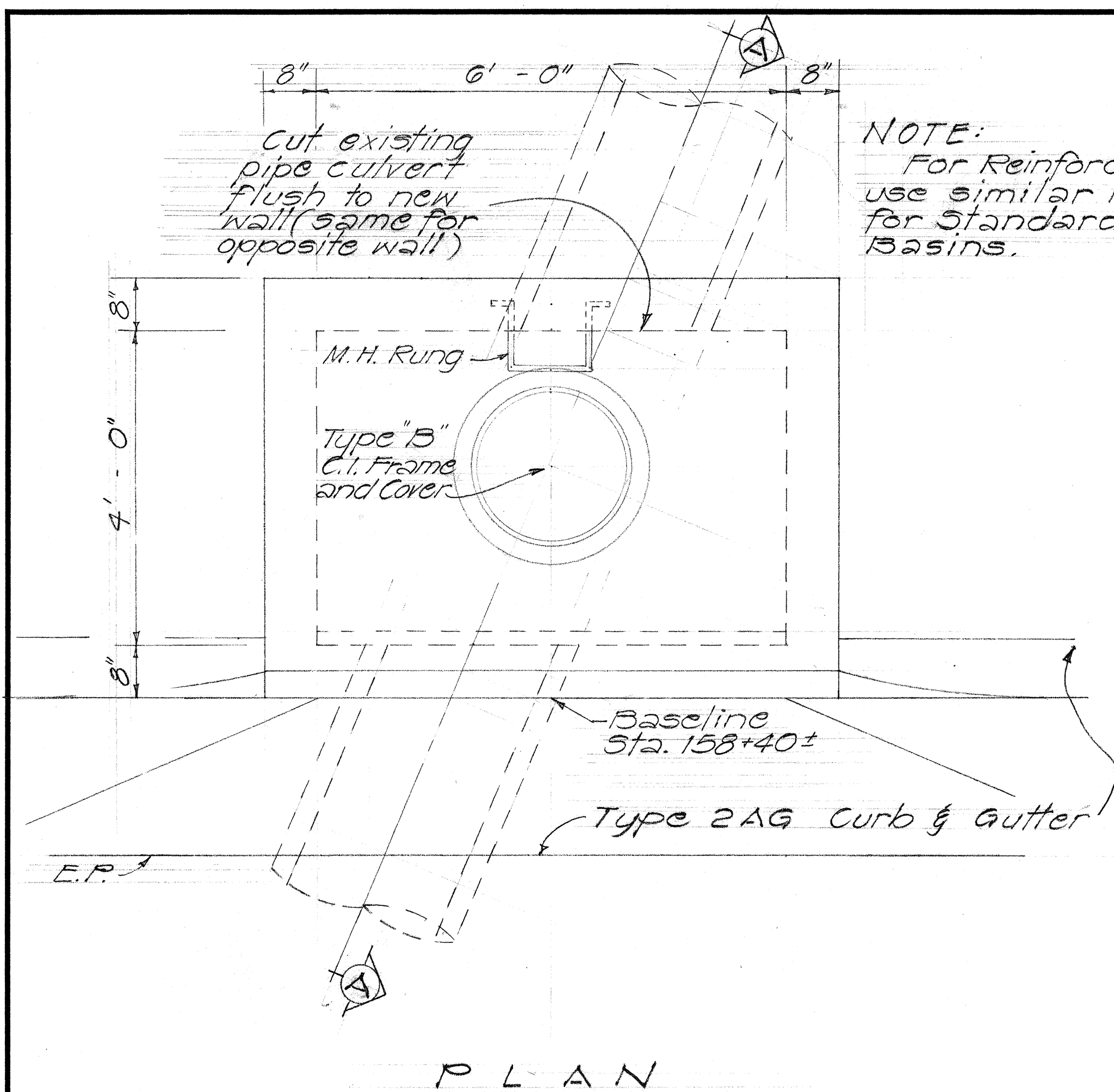
DRAINAGE DETAILS

NIMITZ HIGHWAY
 PUNCHBOWL ST. TO BISHOP ST.
 PROJ. NO. EH5-U-002-1(11)

Scale: As Noted Date: Jan., 1974

SHEET No. 6 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-U-022-1(1)	1974	27	141



DETAILS OF TYPE D C.B.
@ STA. 158+40± LT.
Scale: 3/4" = 1'-0"

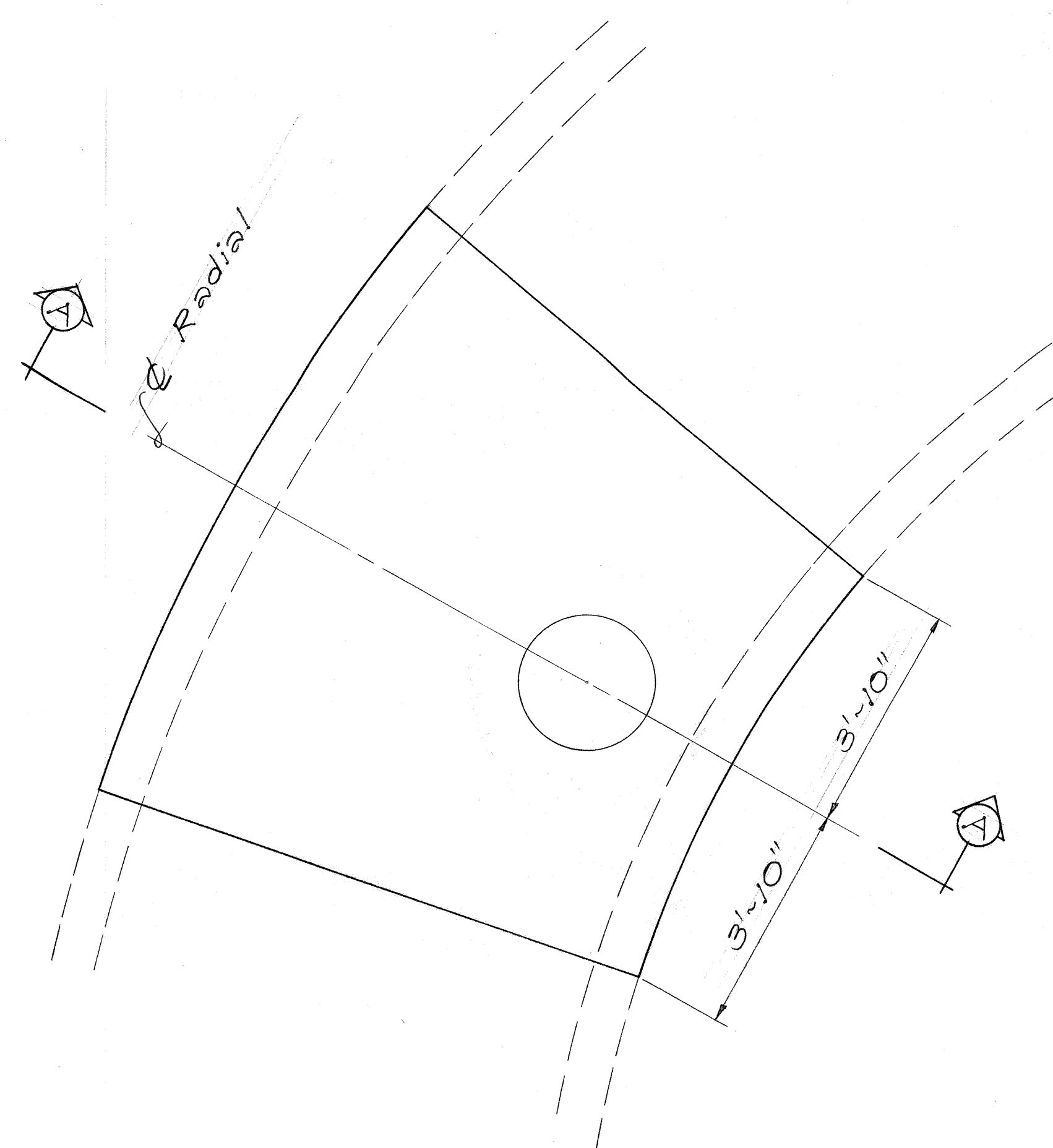
DETAILS OF TYPE "D" C.B.
@ STA. 149+92± LT.
Scale: 3/4" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
NIMITZ HIGHWAY
PUNCHBOWL ST. TO BISHOP ST.
PROJ. NO. EHS-U-022-1(1)
Scale: As Noted Date: Jan. 1974

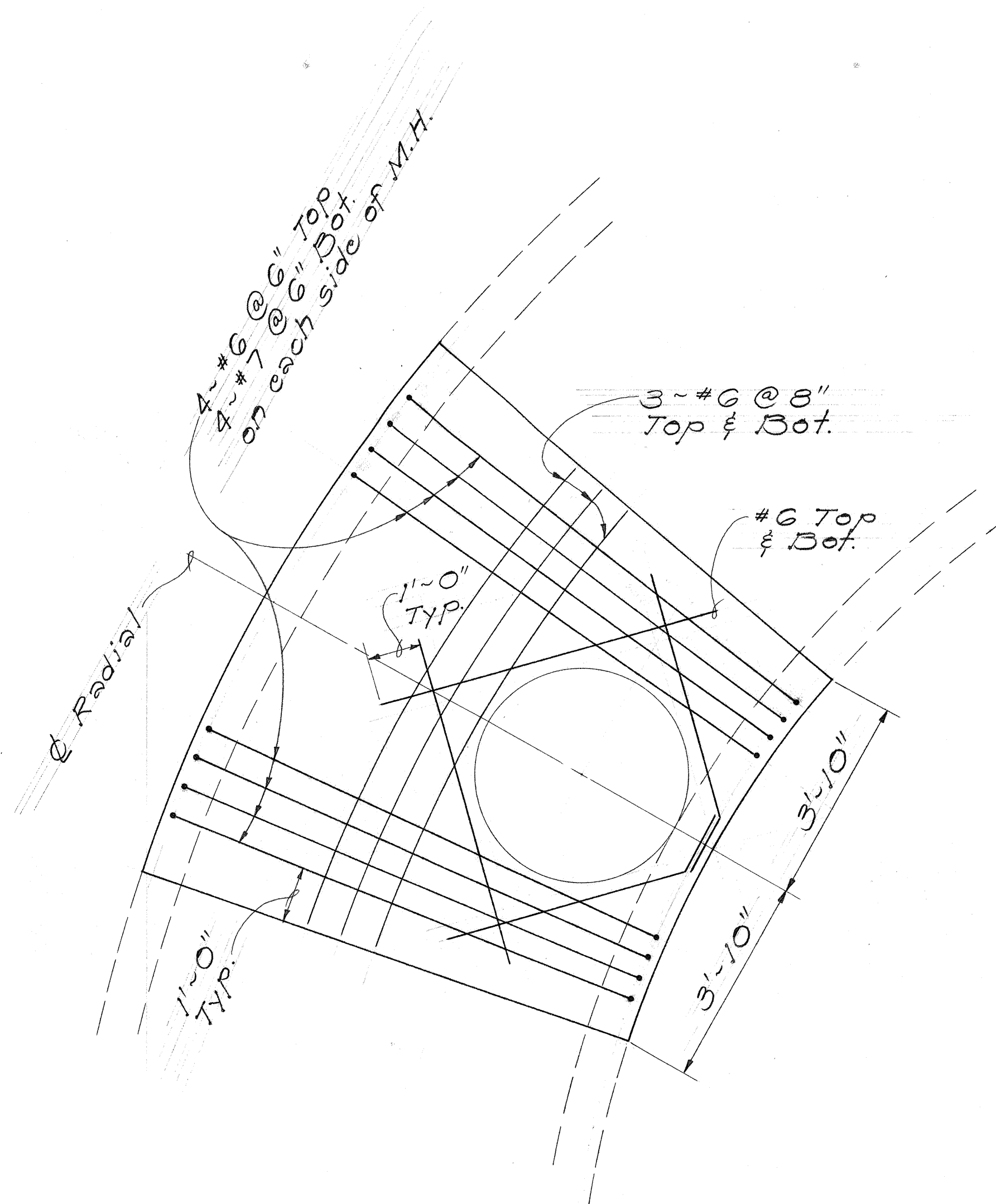
SHEET No. 7 OF 13 SHEETS

DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTED BY: _____
NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-4092-1(1)	1974	28	41



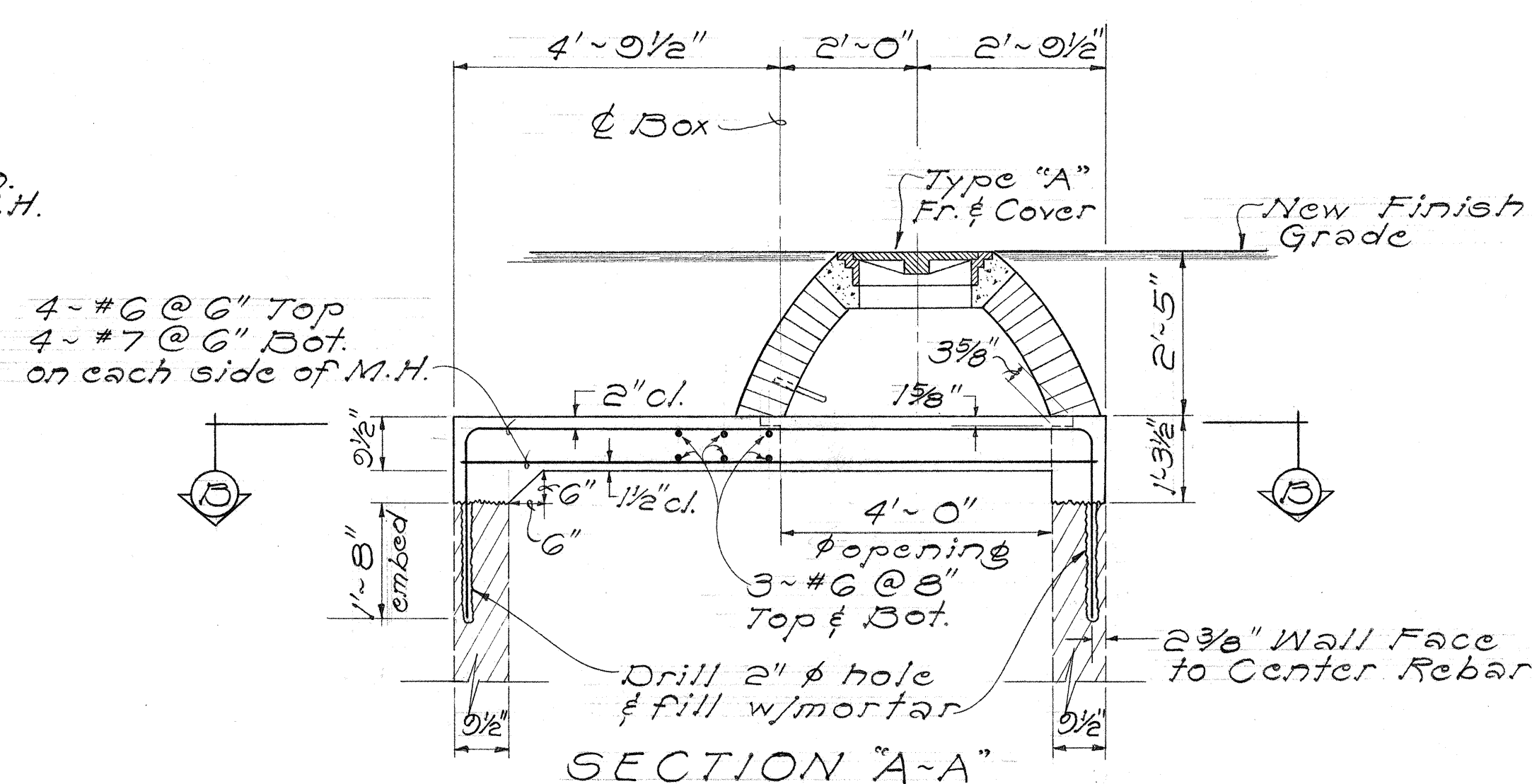
PLAN



SECTION "B-B"

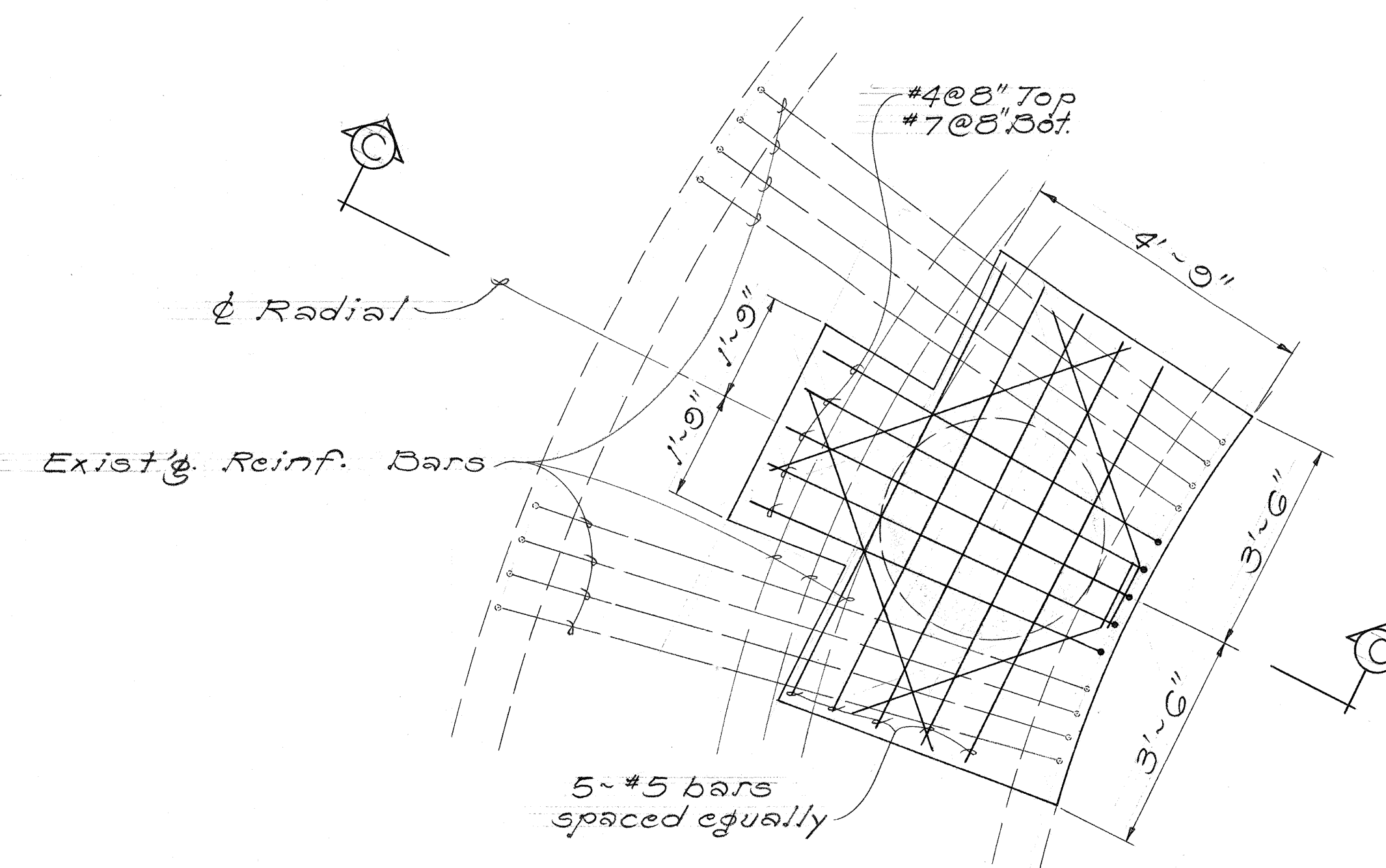
NOTES:

1. Reinf. shall be placed radially with spacing of bars measured at the centerline.
2. Match slab & wall with existing.
3. Remove portion slab & wall as shown. Existing reinf. to remain except at M.H.

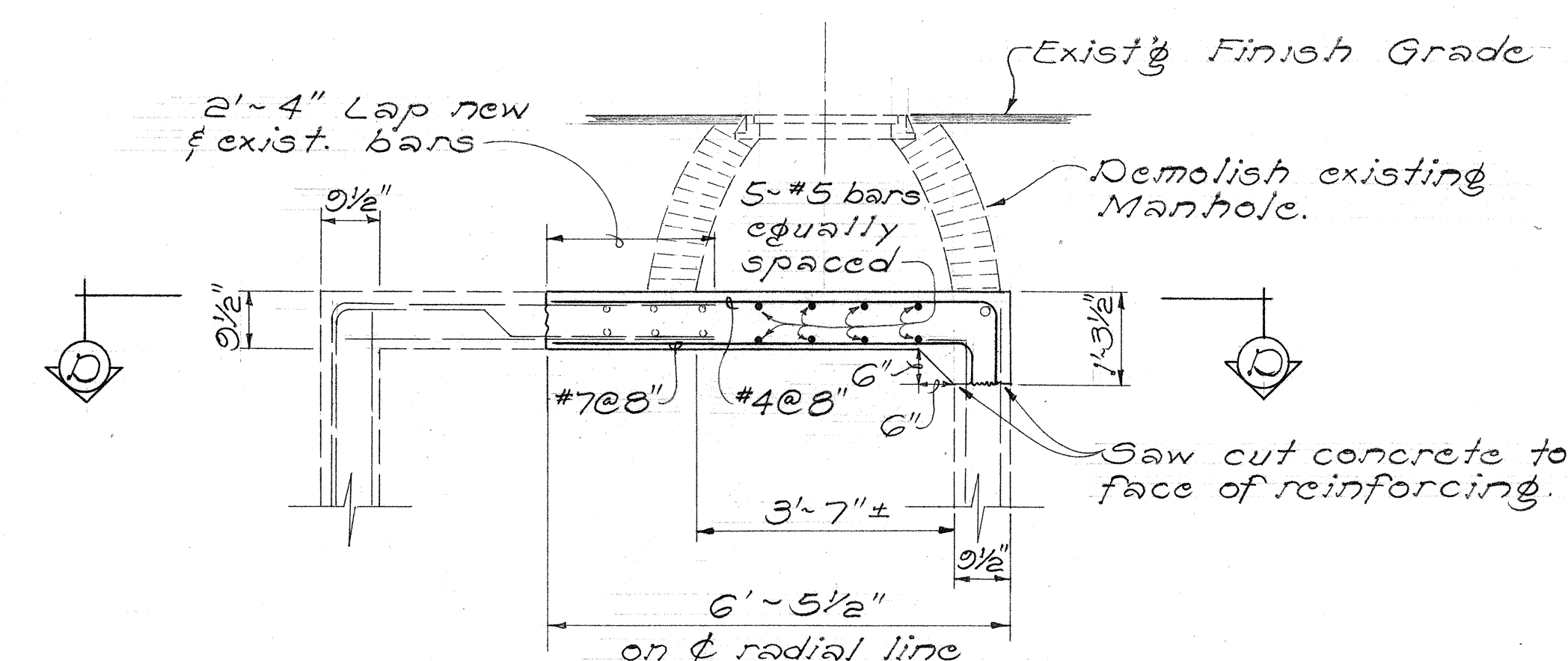


SECTION "A-A"

SDMH @ "HALE" STA. 4 + 65 ± ½ 5' ± LT.
Scale: ½" = 1' - 0"



PLAN
(SECTION "D-D")



SECTION "C-C"

MODIFICATION OF 8'x4' BOX DRAIN
@ "HALE" STA. 4 + 58 ±
Scale: ½" = 1' - 0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

NIMITZ HIGHWAY
PUNCHBOWL ST. TO BISHOP ST.
PROJ. NO. EHS-U-092-1(1)

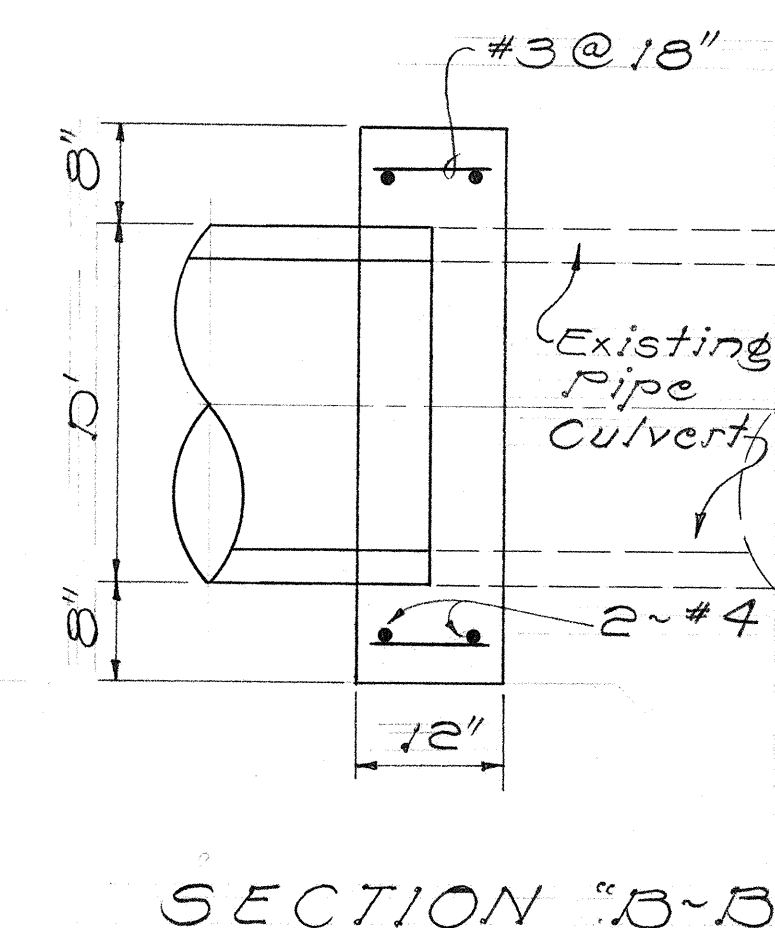
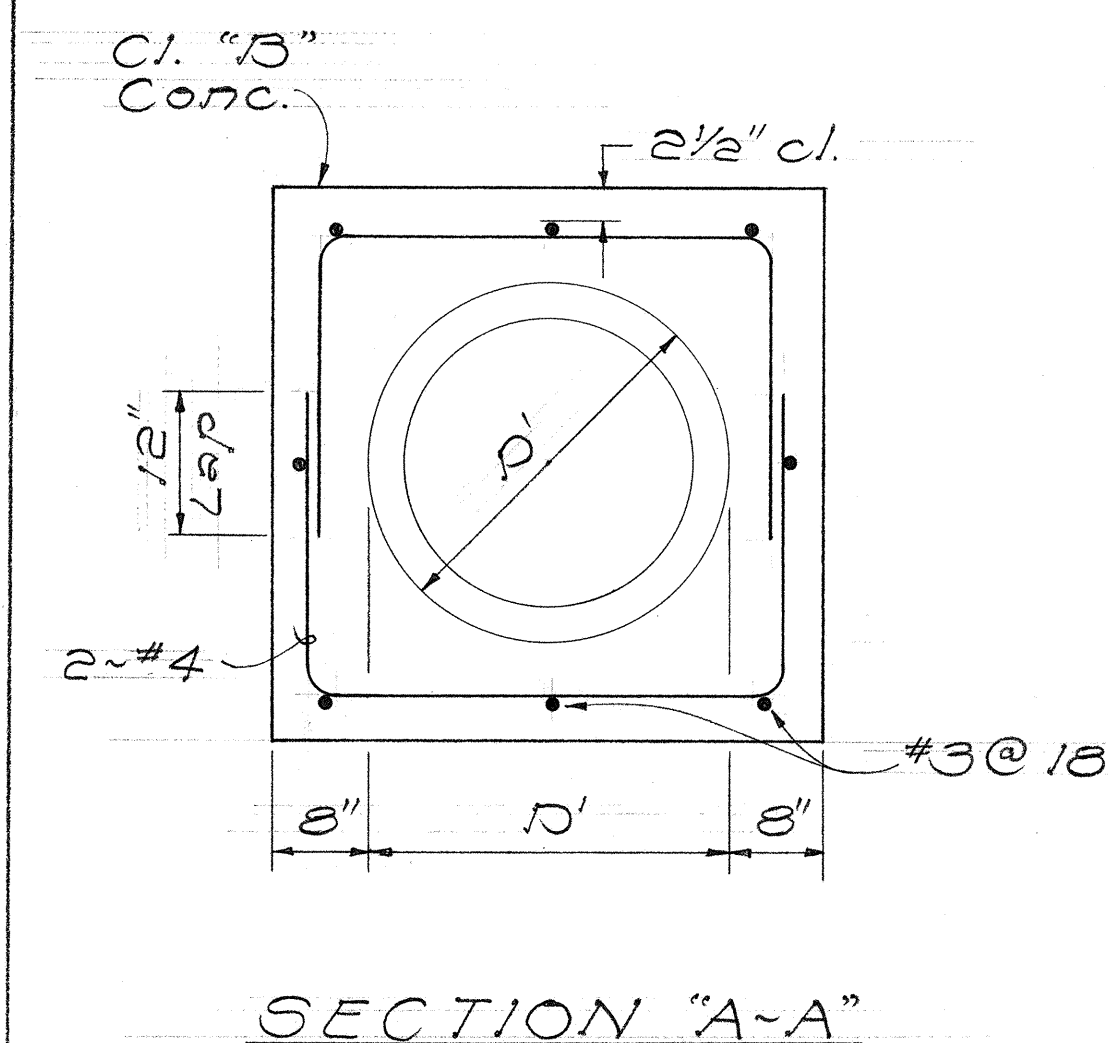
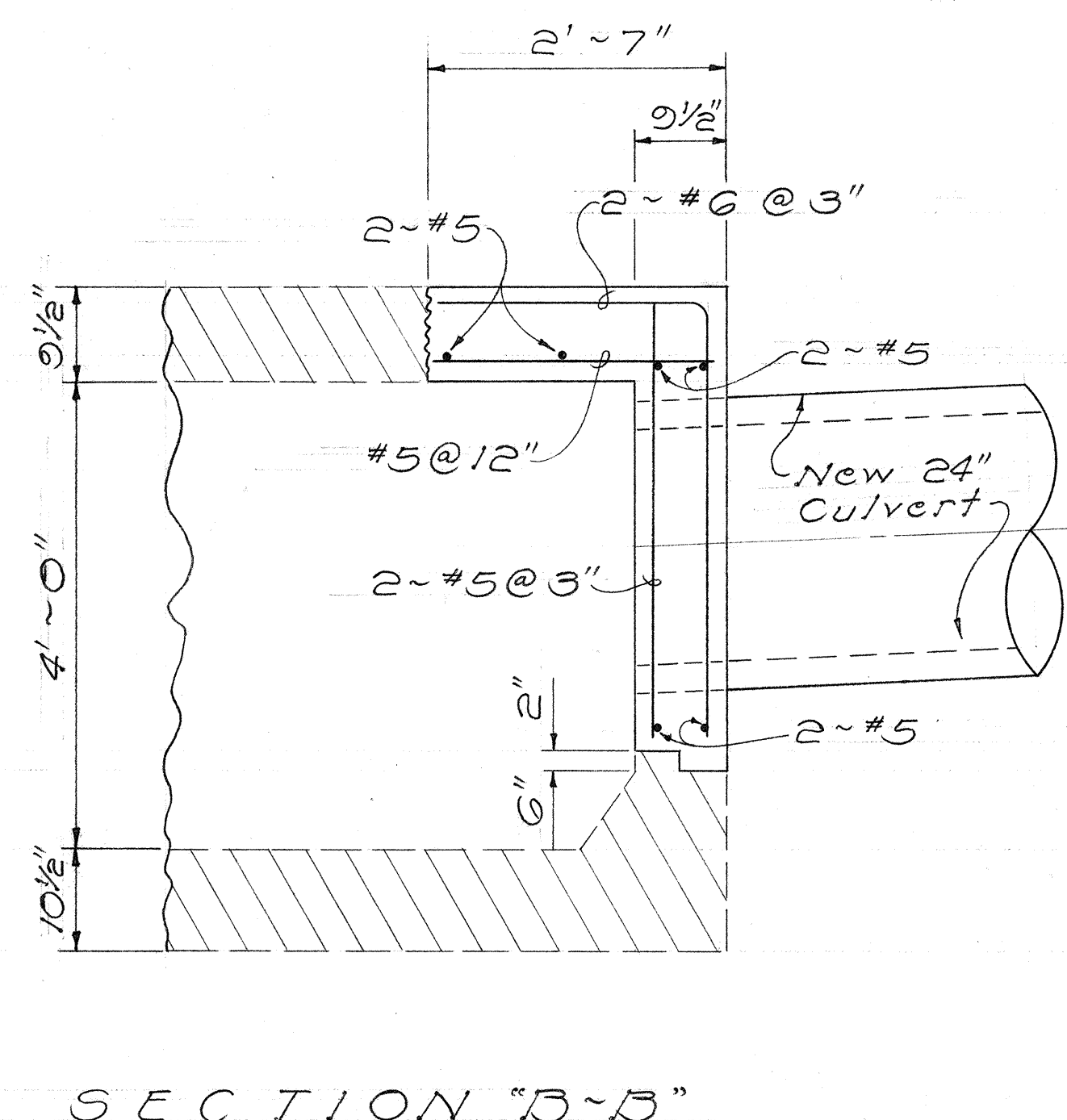
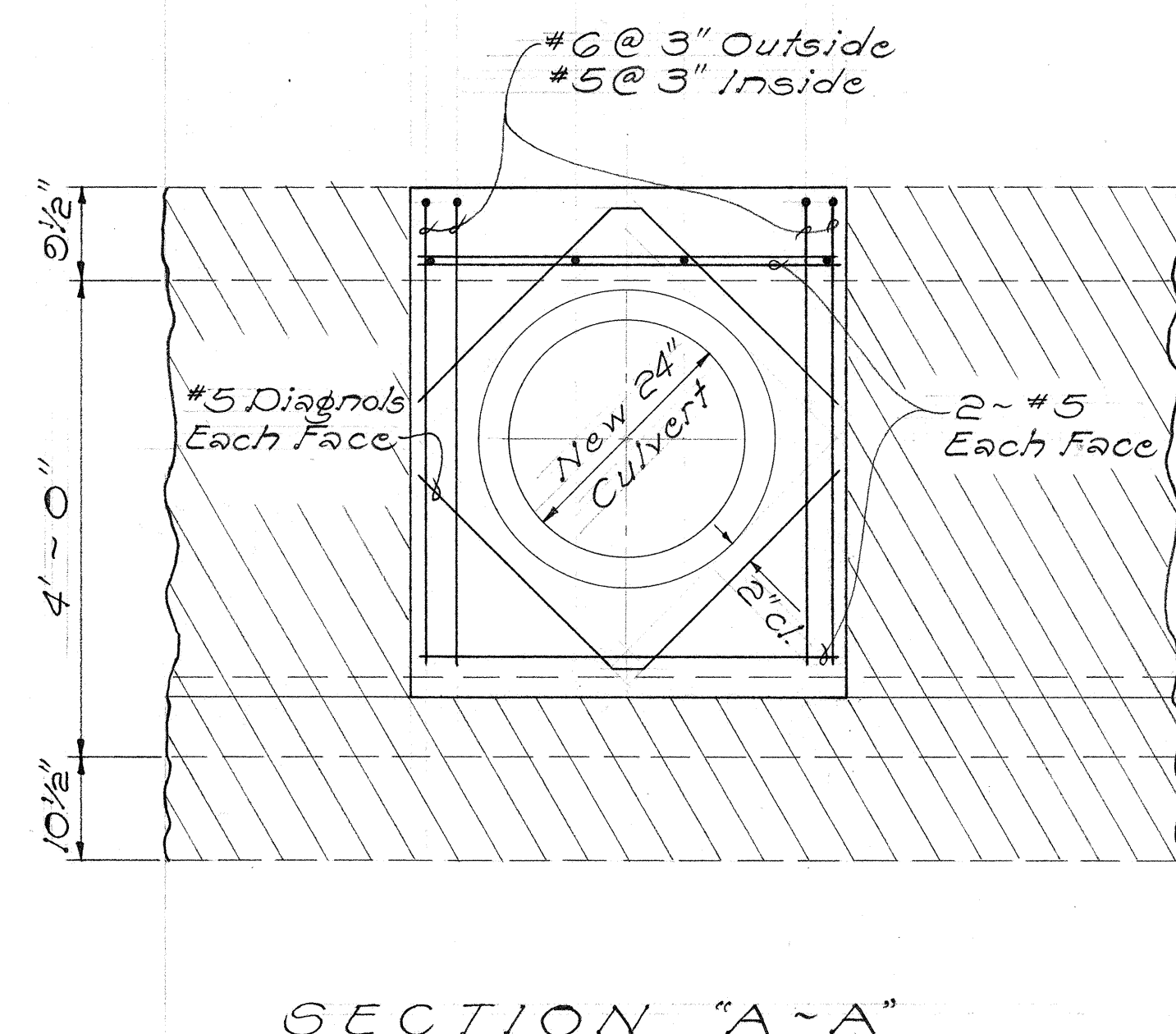
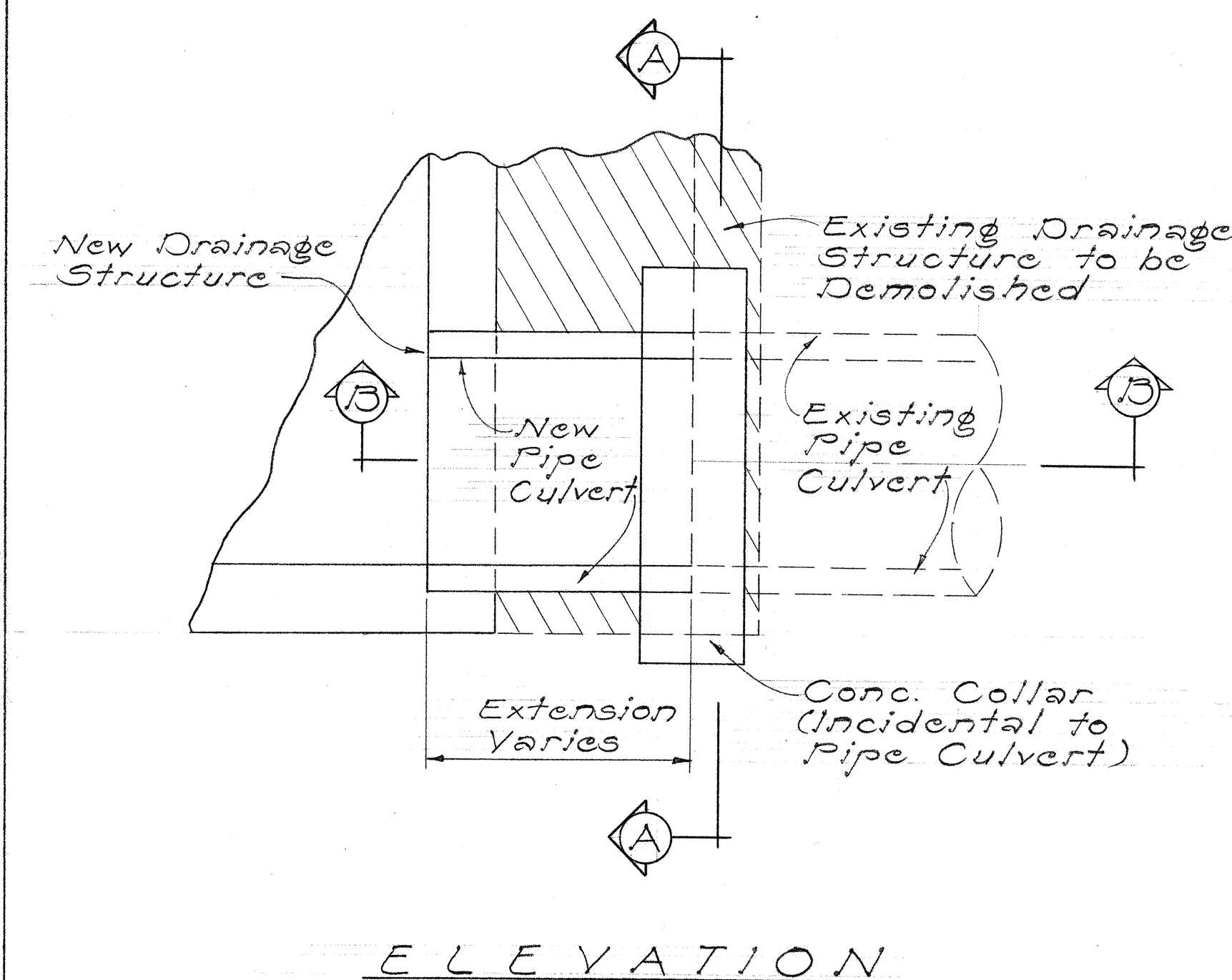
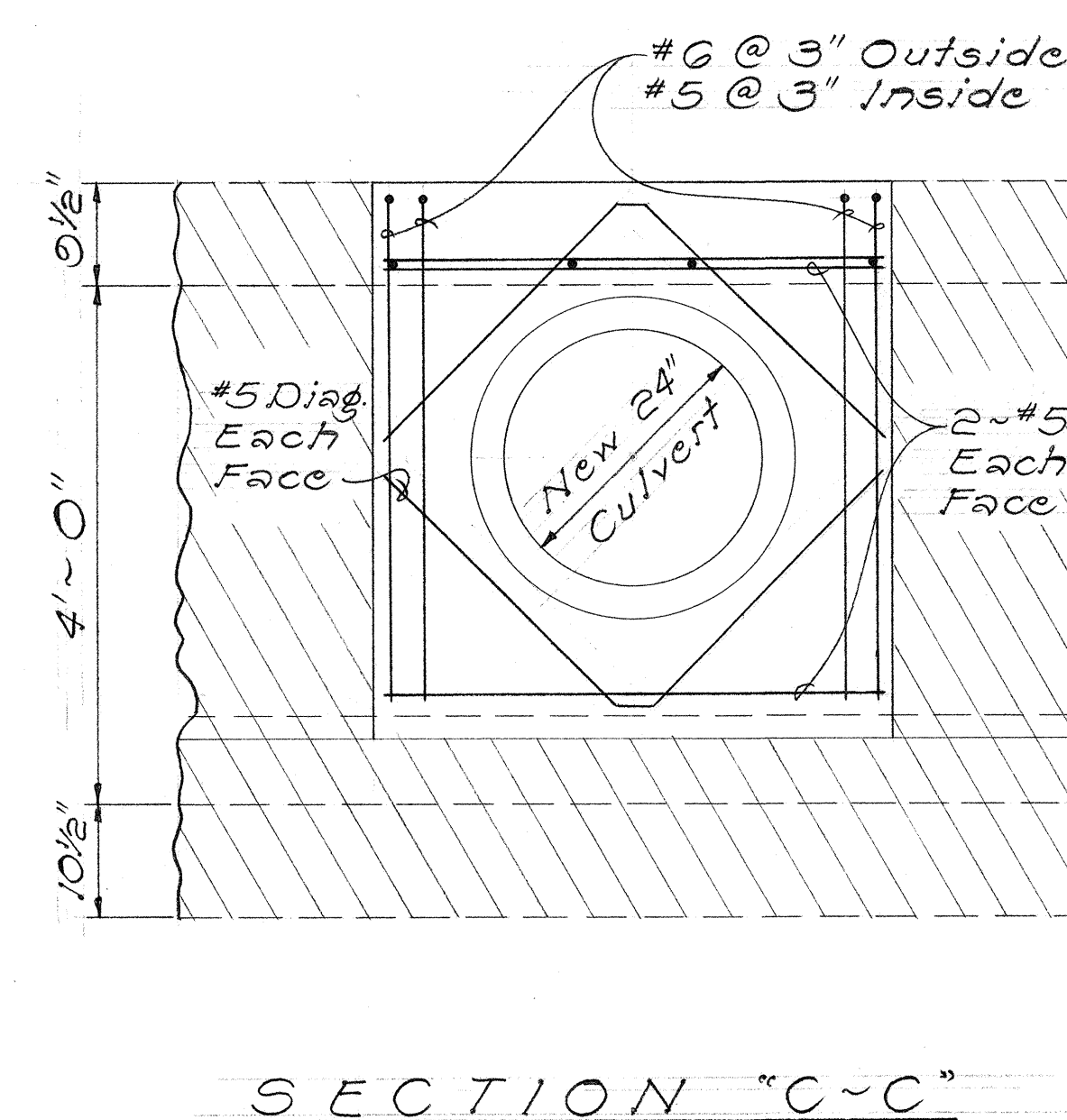
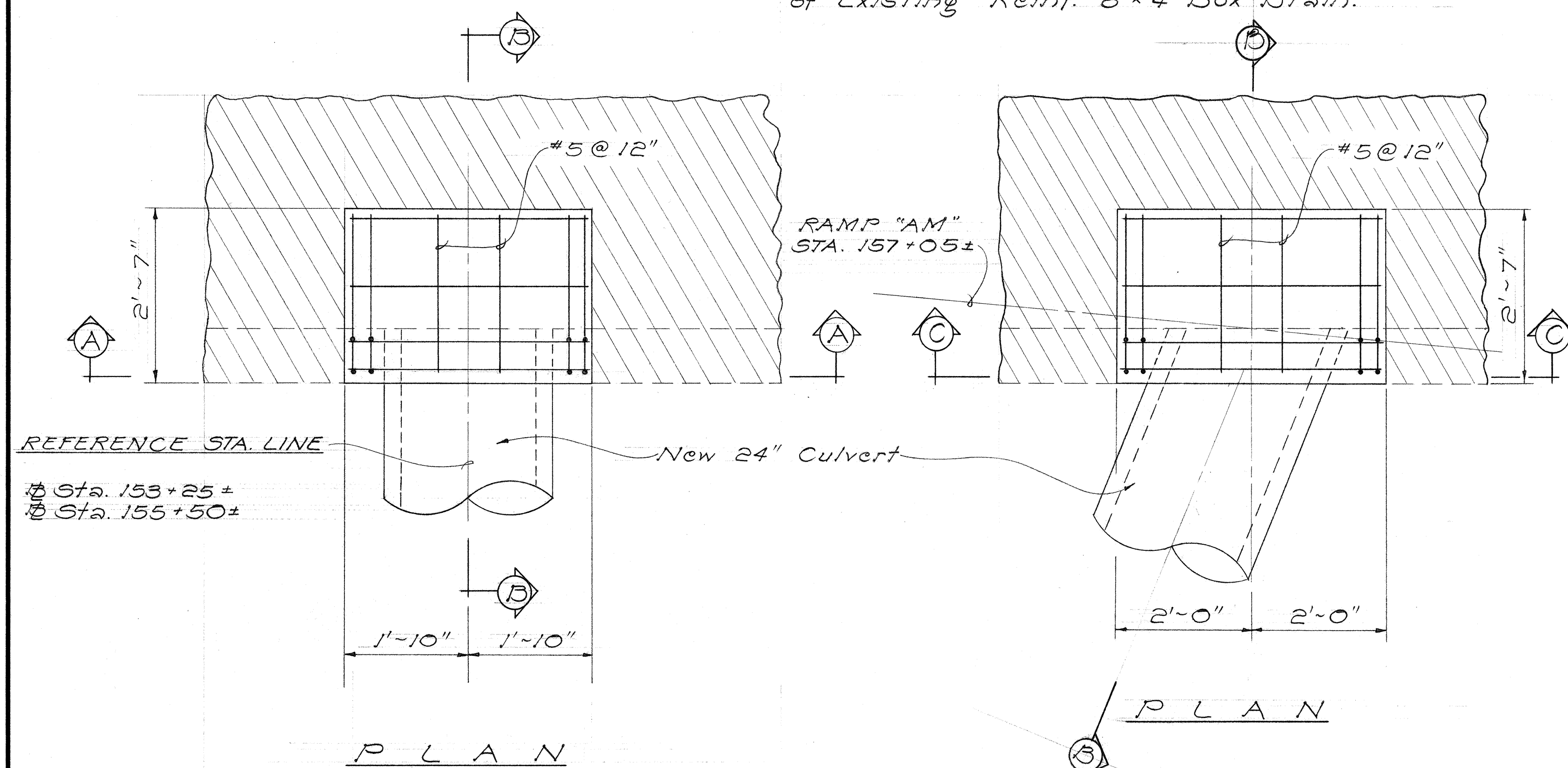
Scale: As Noted Date: Jan., 1974

SHEET No. 8 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-U-092-1(11)	1974	29	141

NOTE:

Cross Hatched Area Denotes Portion of Existing Reinf. 8' x 4' Box Drain.



TYPICAL REINF. CONCRETE COLLAR FOR PIPE CULVERT CONNECTION
Scale: 3/4" = 1'-0"

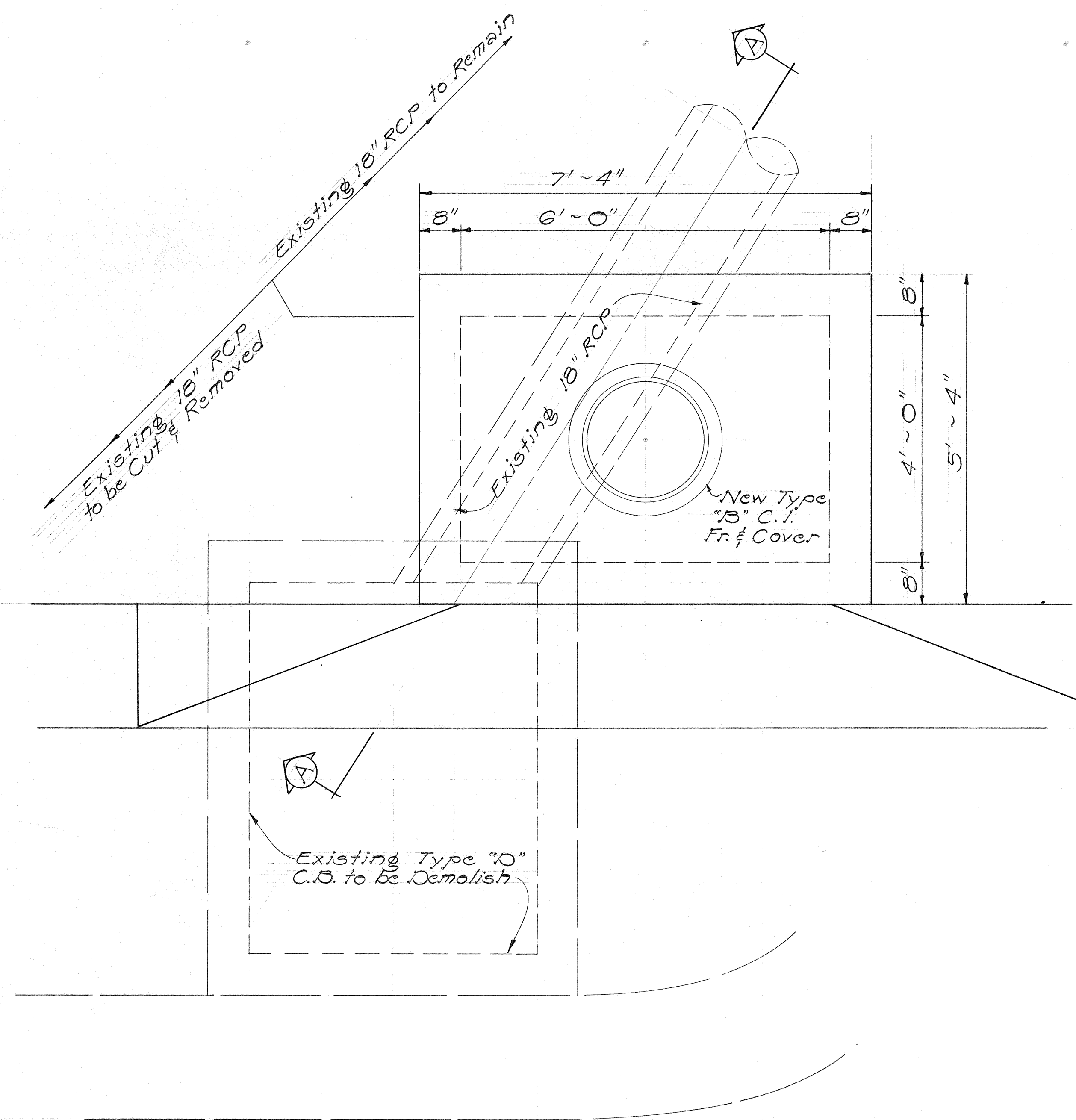
PIPE CULVERT CONNECTIONS TO REINF. 8' x 4' BOX DRAIN
Scale: 3/4" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
NIMITZ HIGHWAY
PUNCHBOWL ST. TO BISHOP ST.
PROJ. NO. EHS-U-092-1(11)
Scale: As Noted Date: Jan., 1974

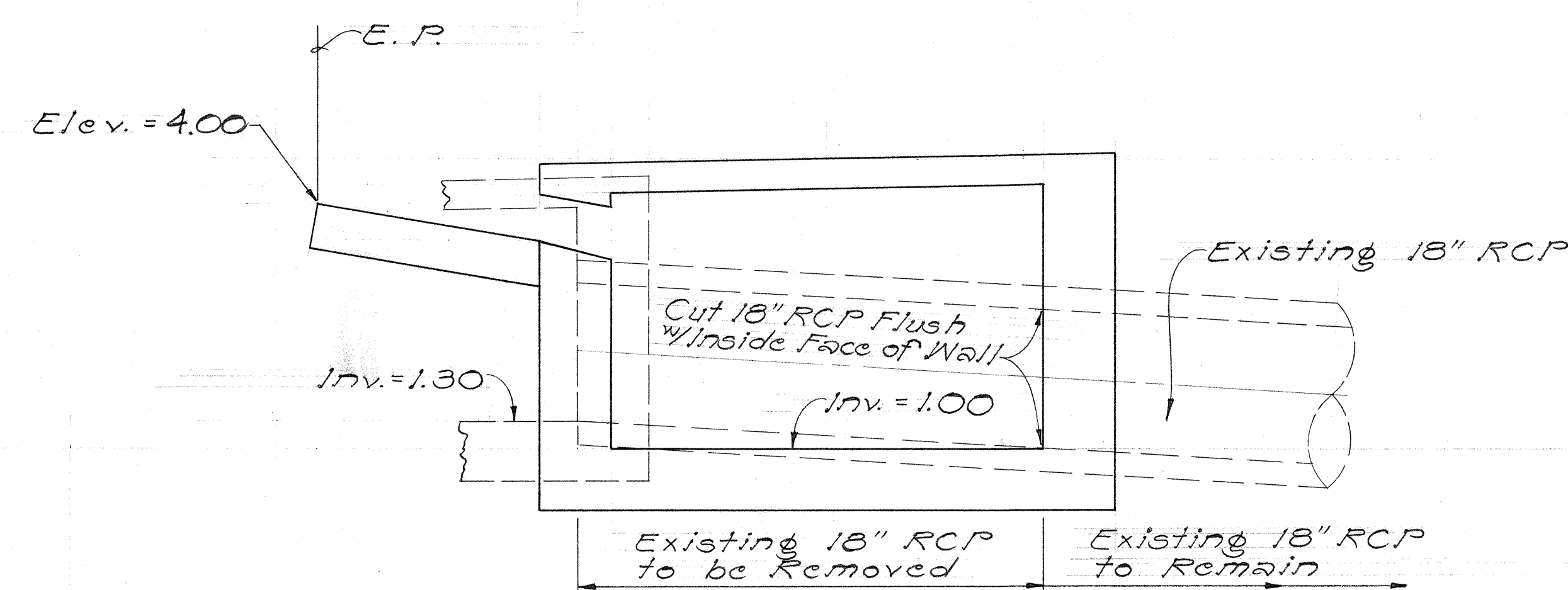
SHEET No. 9 OF 13 SHEETS

DATE
SERVED BY
DRAWN BY
DESIGNED BY
NOTED BY
CHECKED BY
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHS-U-012-1(1)	1974	30	141



P L A N



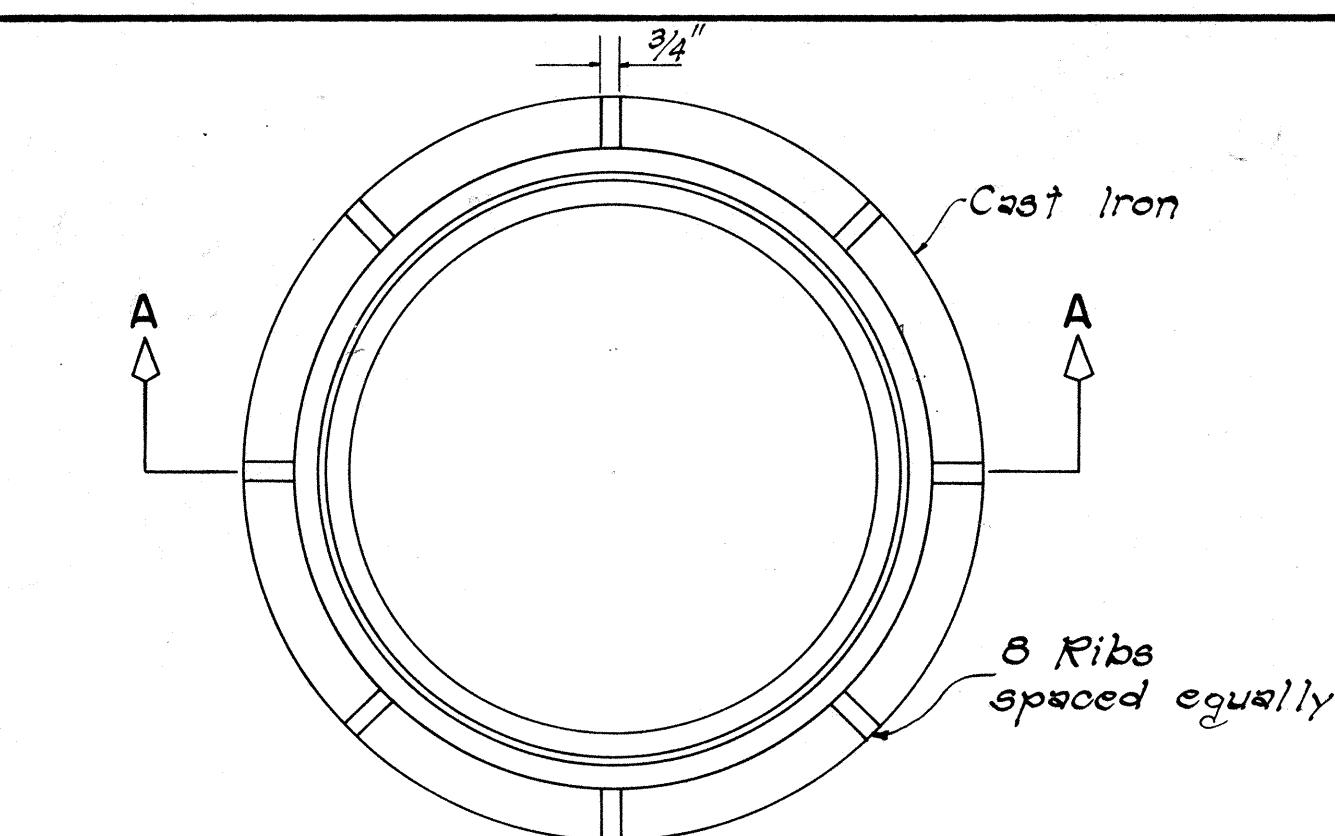
SECTION "A-A"

DETAILS OF TYPE "D" C.B. @ STA. 163+30± LT.
Scale: 3/4" = 1'-0"

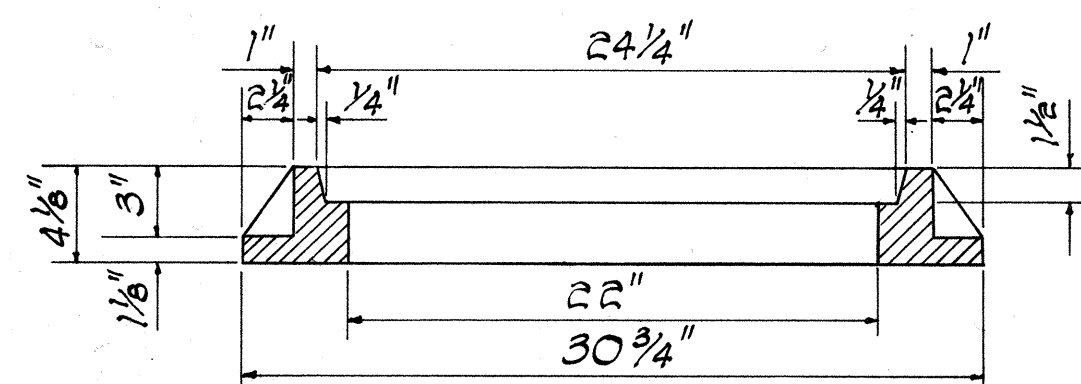
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAIL
TYPE "D" C.B. @ STA. 163+30± LT.
NIMITZ HIGHWAY PUNCHBOWL ST. TO BISHOP ST. PROJ. NO. EHS-U-002-1(11) Scale: As Noted Date: Jan., 1974
SHEET No. 10 OF 13 SHEETS

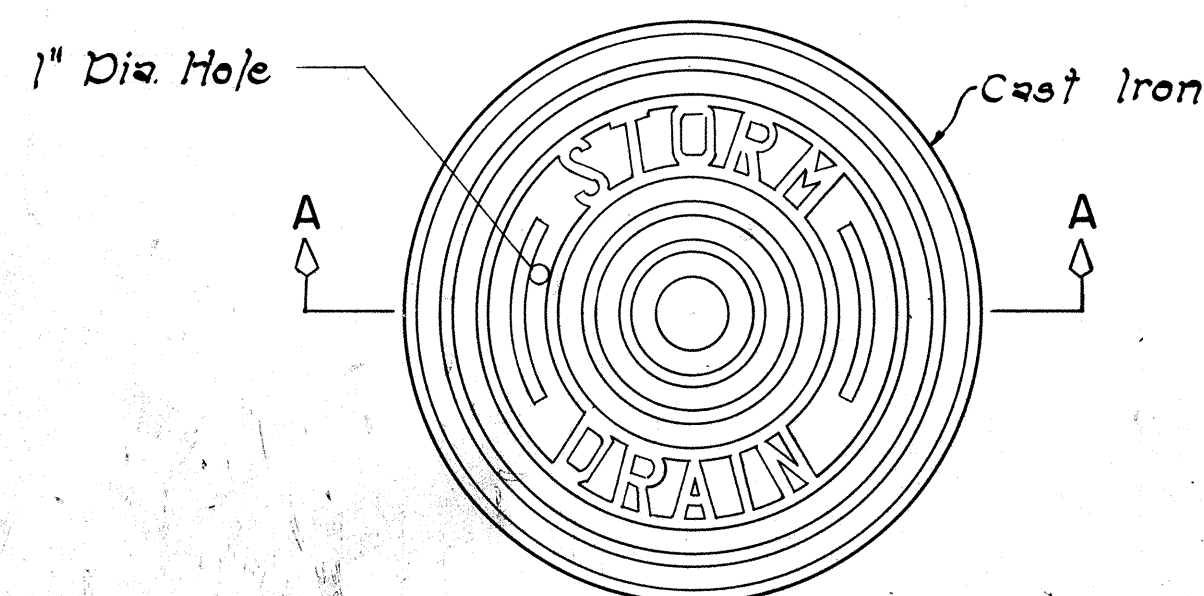
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	245-1-002-1(11)	1974	31	141



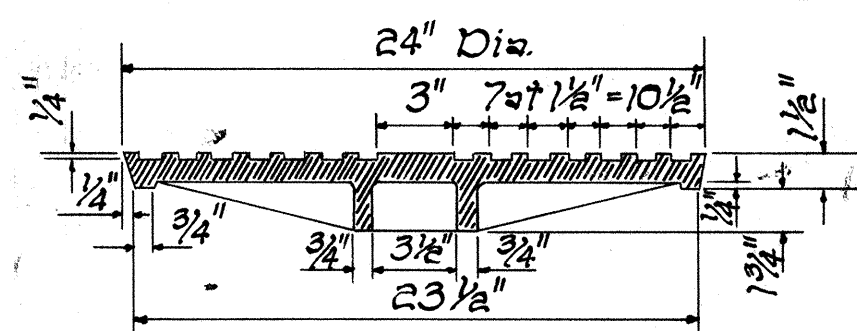
PLAN



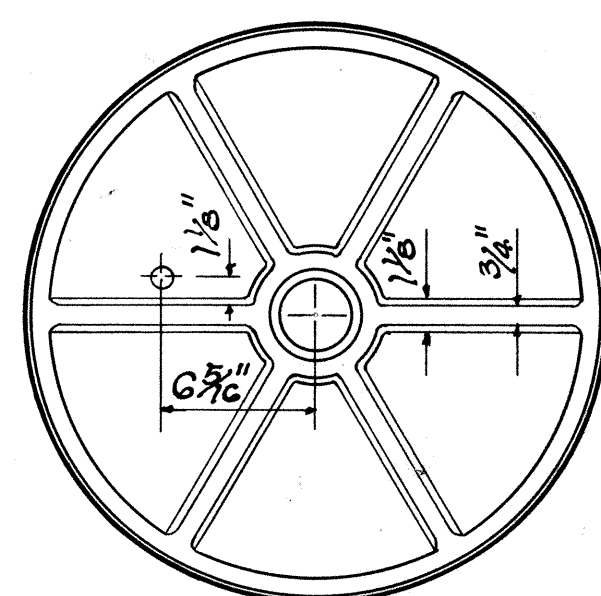
SECTION A-A



PLAN



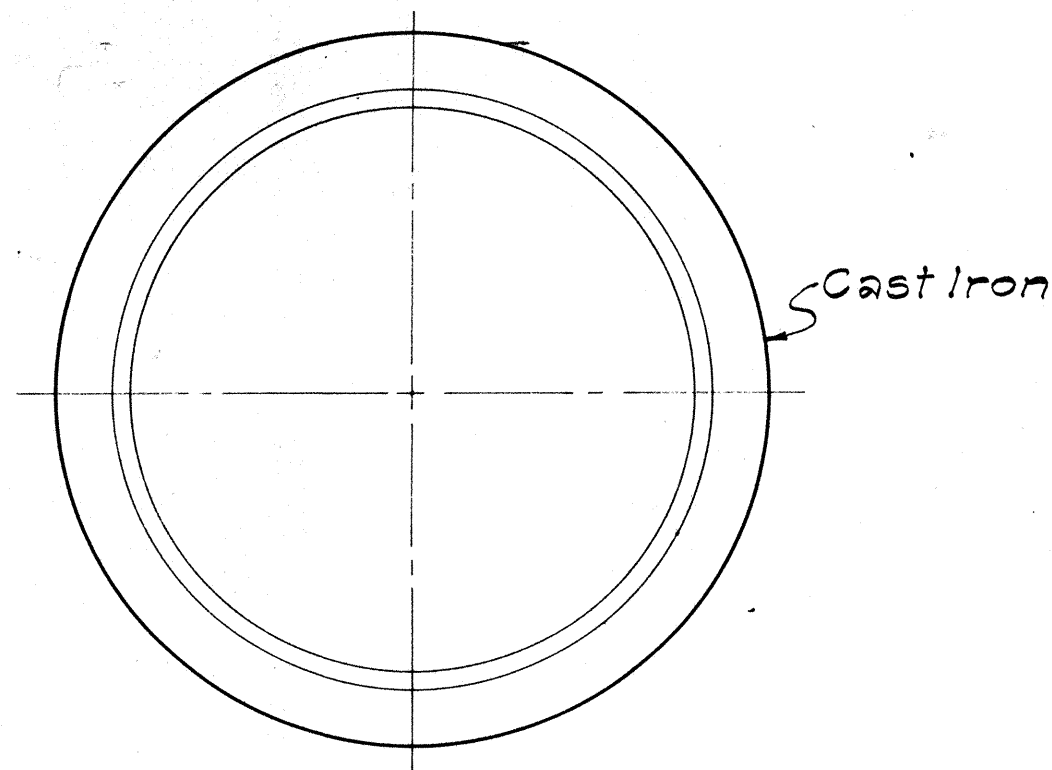
SECTION A-A



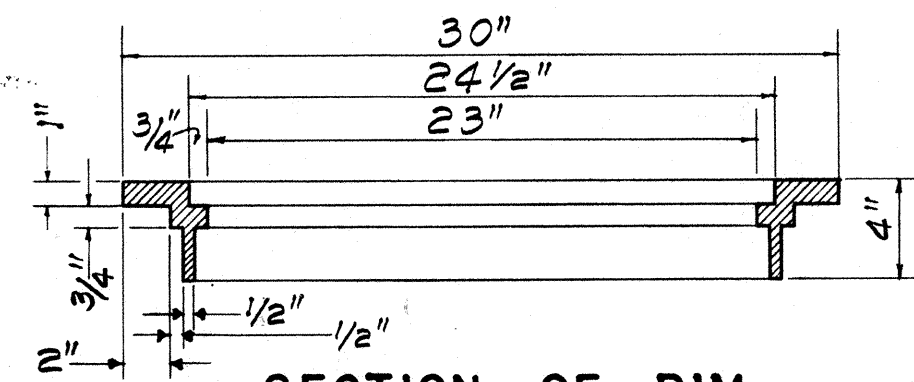
BOTTOM VIEW OF COVER

DETAILS OF TYPE "P"
CAST IRON FRAME AND COVER

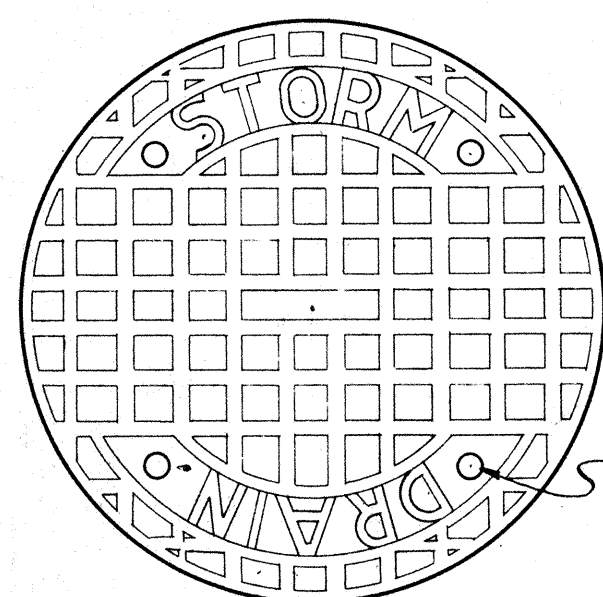
SCALE: 1-1/2" = 1'-0"



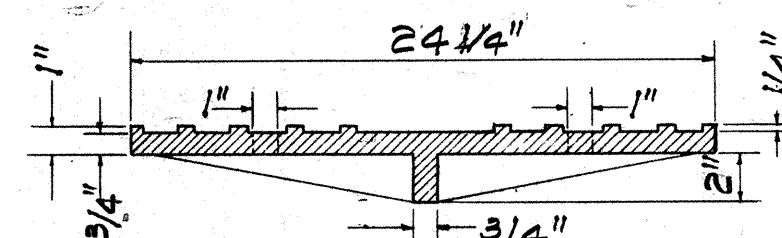
PLAN OF RIM



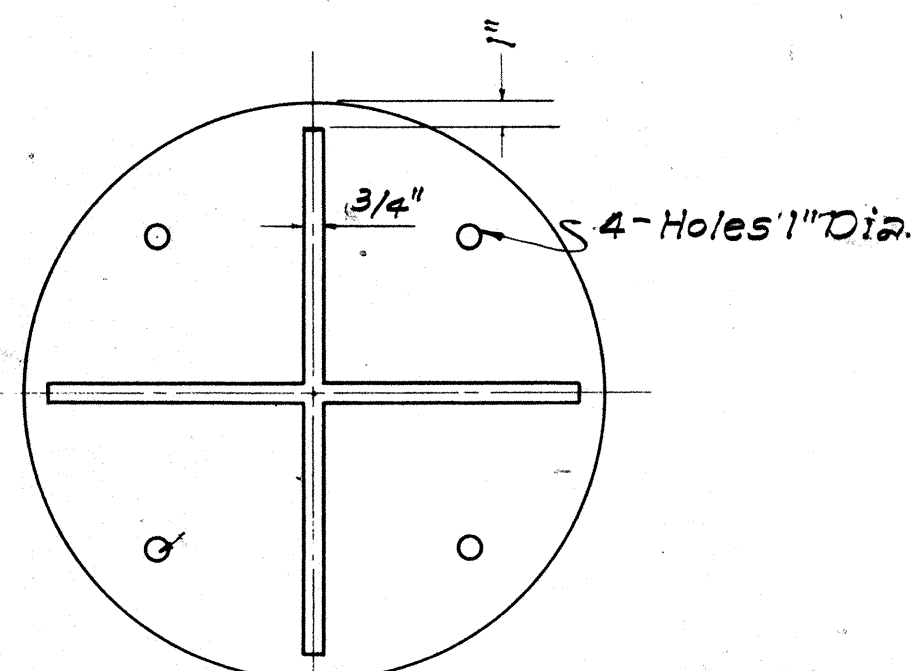
SECTION OF RIM



TOP VIEW OF COVER



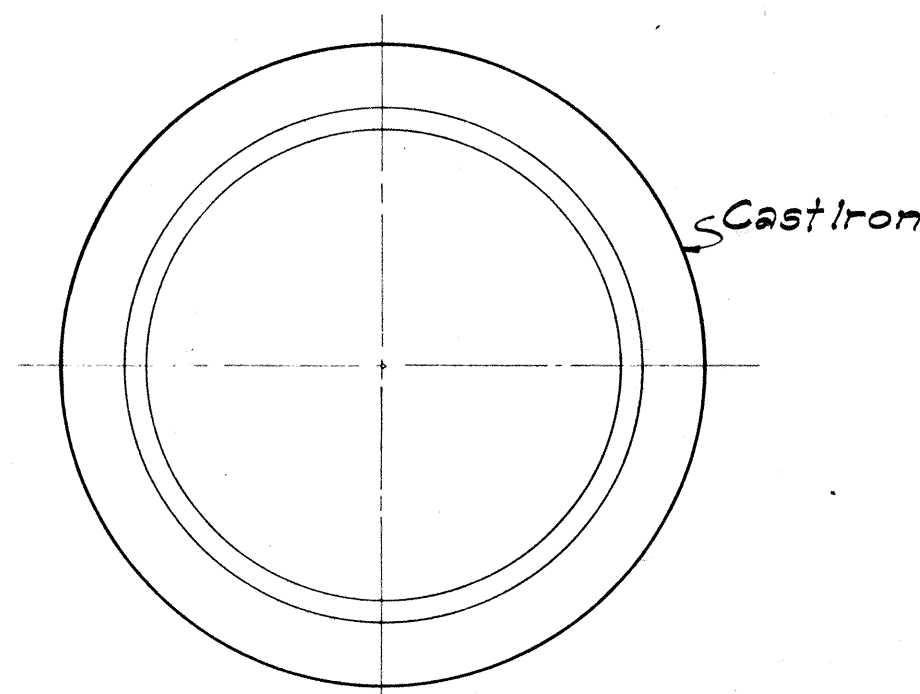
SECTION



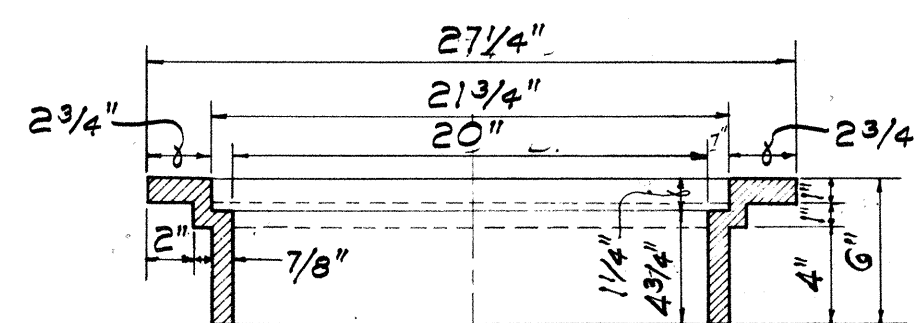
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B"
CAST IRON FRAME AND COVER

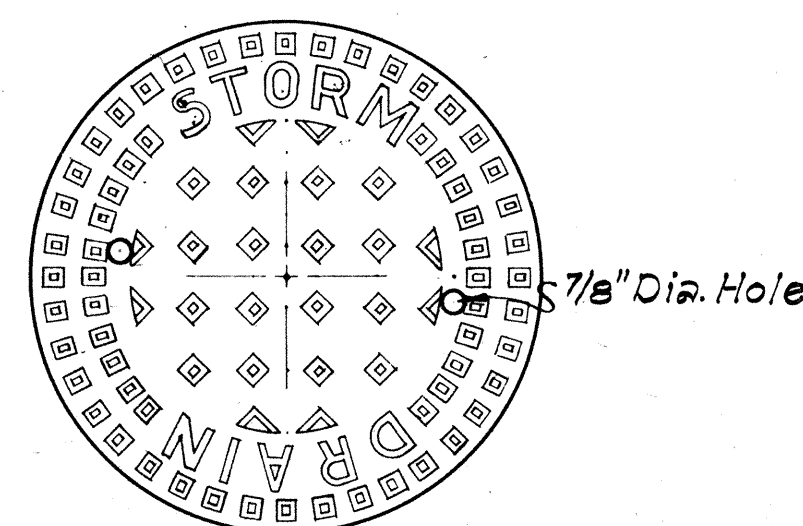
SCALE: 1-1/2" = 1'-0"



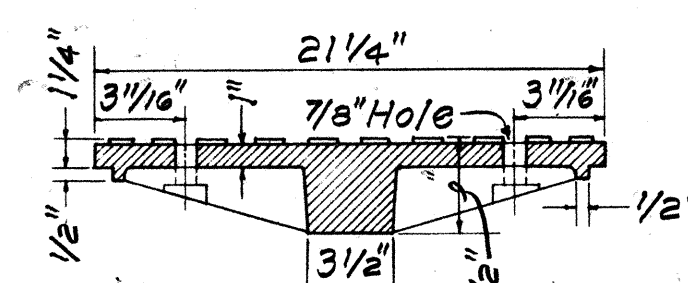
PLAN OF RIM



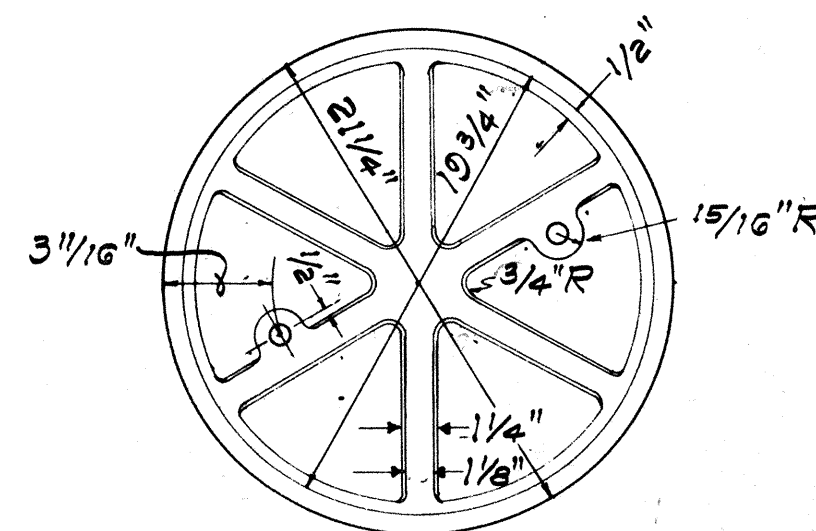
SECTION OF RIM



TOP VIEW OF COVER



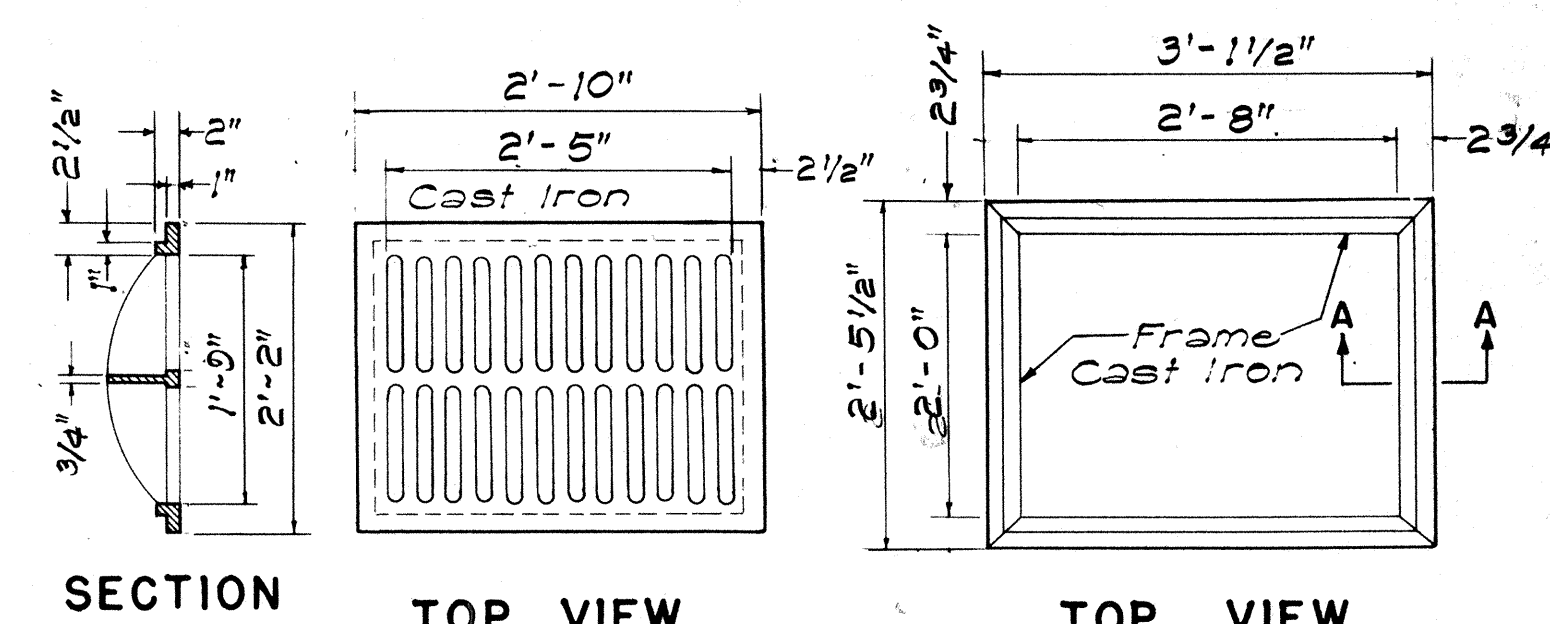
SECTION



BOTTOM VIEW OF COVER

DETAILS OF TYPE "A"
CAST IRON FRAME AND COVER

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



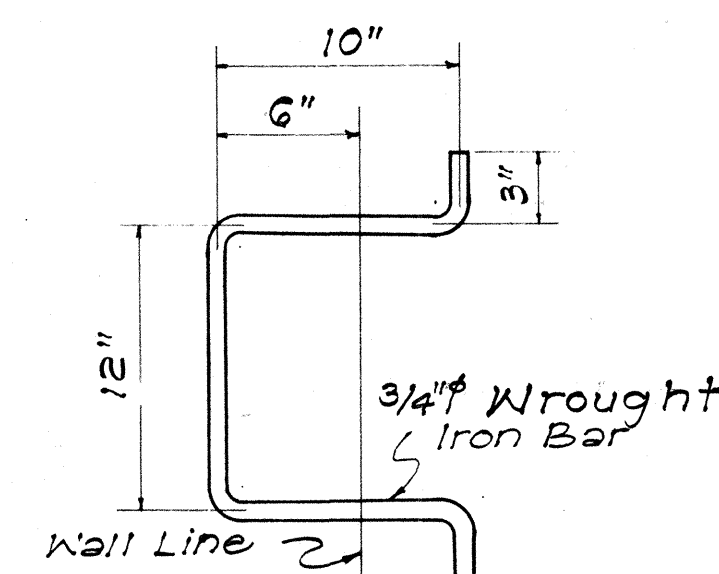
SECTION

TOP VIEW

TOP VIEW

TYPE C C.I. FRAME AND GRATE

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



MANHOLE RUNG

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

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

APPROVED:
R. P. P. P.
ASSISTANT CHIEF, ENGINEERING 12-17-69
DATE

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

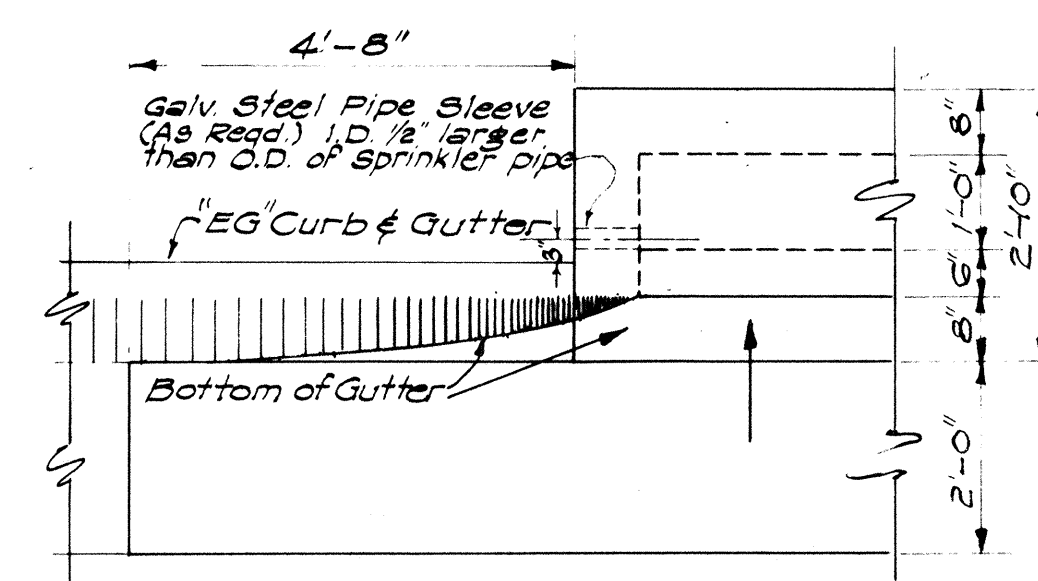
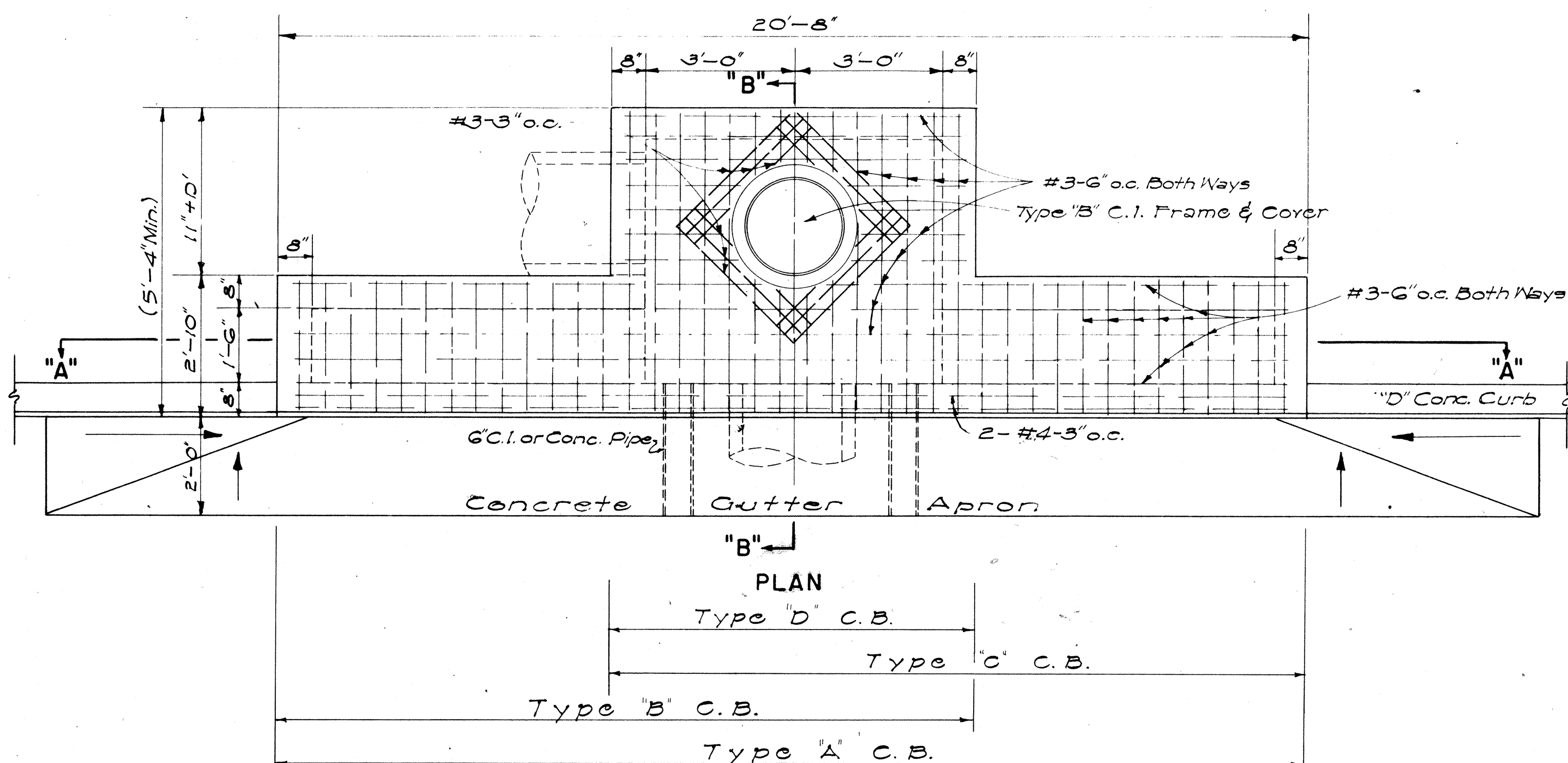
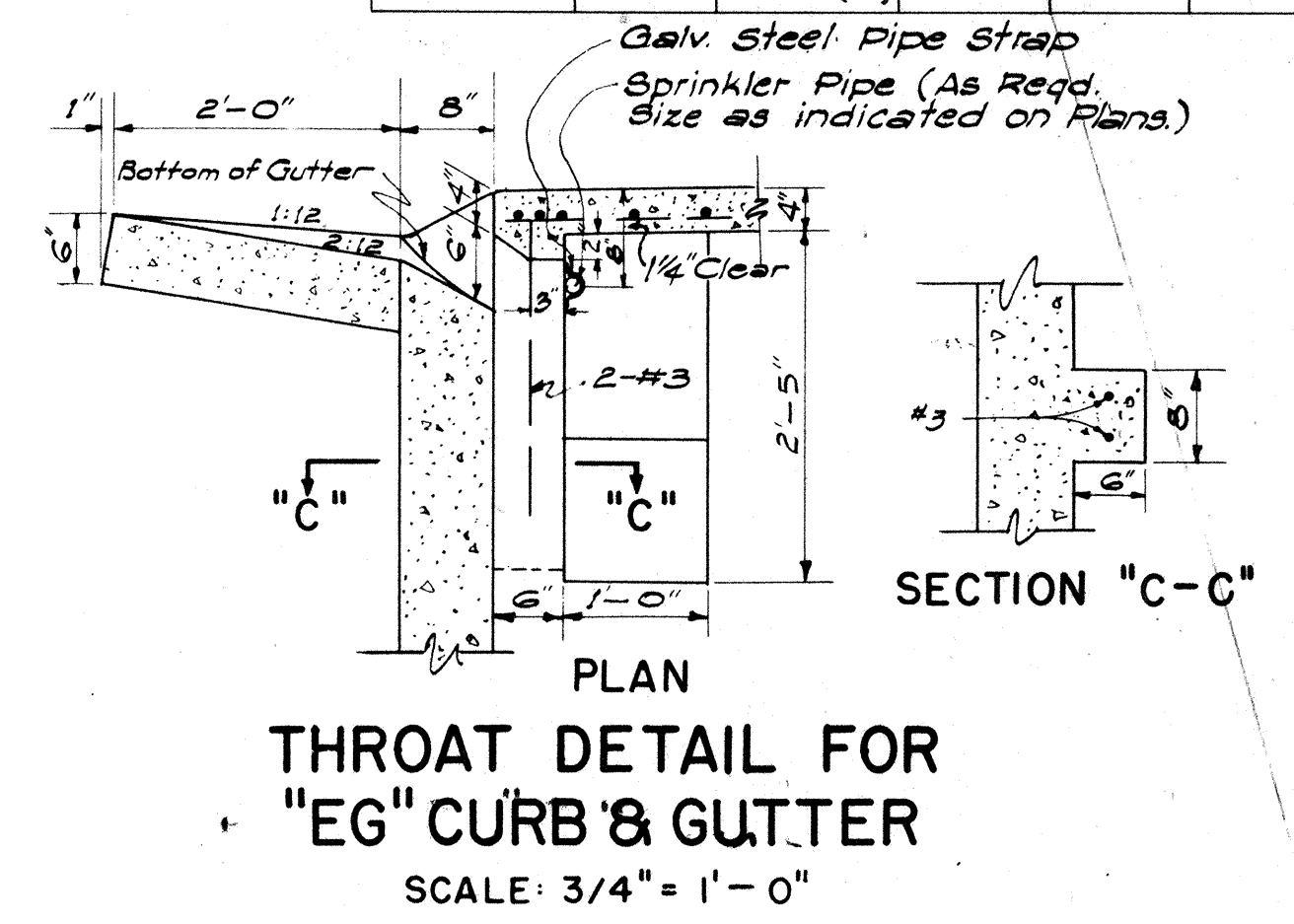
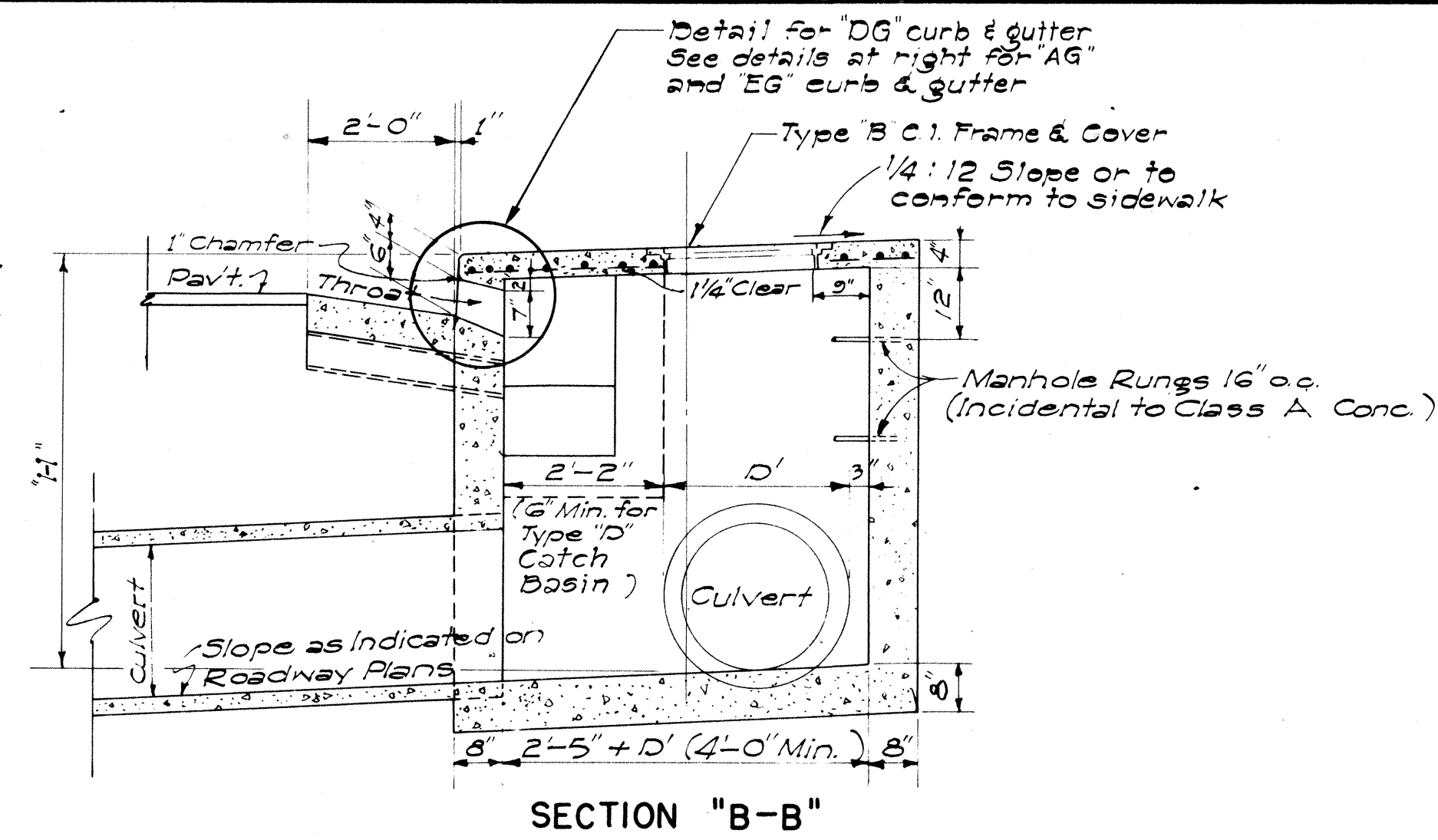
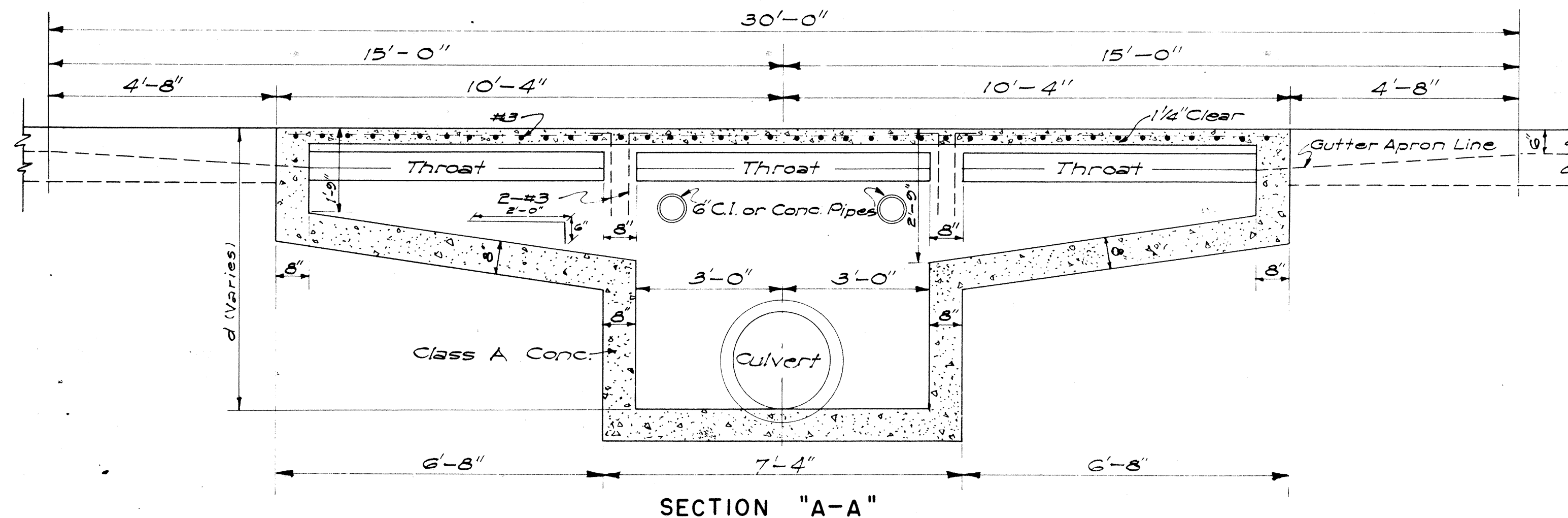
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS CATCH BASIN AND MANHOLE CASTINGS
Scale: As Noted Date: July, 1969

SHEET NO. 11 OF 13 SHEETS DH 6.

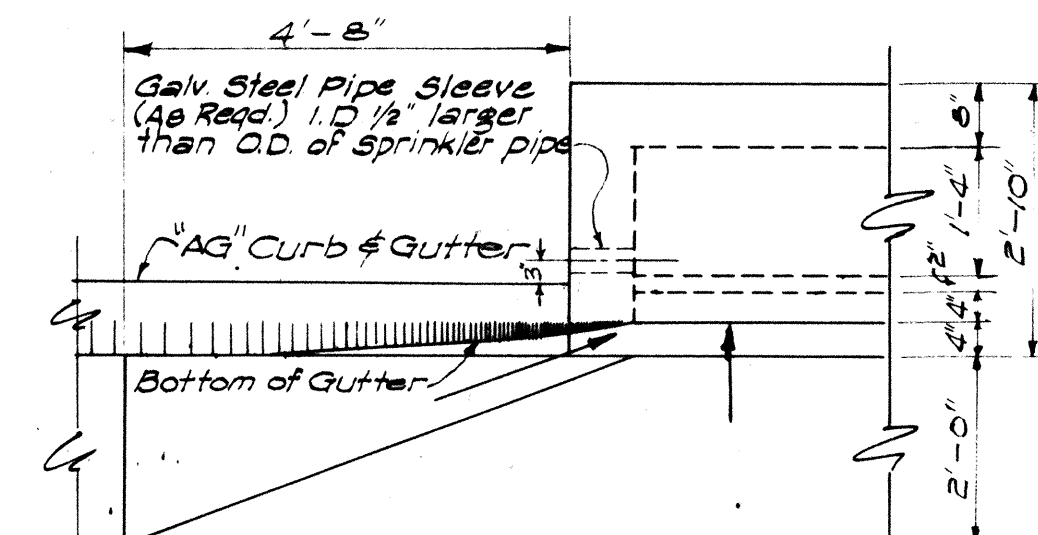
31

2/17/59

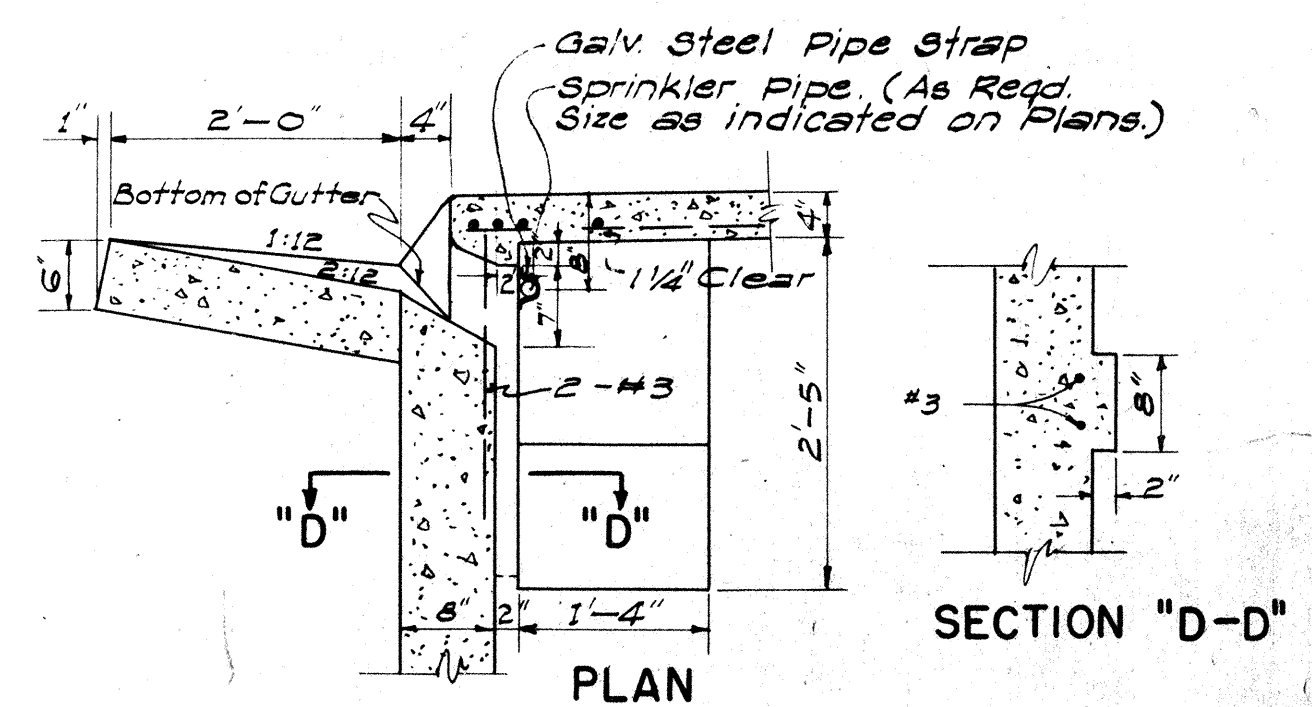
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH5-U-092-1(11)	1974	30	141



DETAIL OF CATCH BASIN WITH "EG" CURB & GUTTER



DETAIL OF CATCH BASIN WITH "AG" CURB & GUTTER
SCALE: 1/2" = 1'-0"



THROAT DETAIL FOR "AG" CURB & GUTTER
SCALE: 3/4" = 1'-0"

DETAILS OF TYPES "A", "B", "C" AND "D" CATCH BASINS
SCALE: 1/2" = 1'-0"

GENERAL NOTES

- Quantities based on d = 5.75' and D = 30".
- Quantities do not include concrete for Gutter Apron.
- The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A Concrete for Construction Drainage. The Engineer shall determine the exact location in the field.
- Culvert shall leave C.B. from any position and any direction indicated by plans or ordered by the Engineer. Culvert may both enter and leave C.B. so that C.B. will also act as Manhole.
- The Contractor shall install Galvanized Steel Pipe Sleeves and Straps as incidental to Sprinkler System.
- The type of curb and/or gutter (Type 1, 2, 3, etc.) shall conform to the type specified on the Roadway plans.
- 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. Type "B" Cast Iron Frame and Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.

ESTIMATED QUANTITIES

Type	Class A Conc.	Struct. Exc.	Reinf. Steel	Gutter Length
"A"	7.5 c.y.	24.7 c.y.	145 lb.	30'-0"
"B"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"C"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"D"	4.9 c.y.	16.5 c.y.	77 lb.	16'-8"

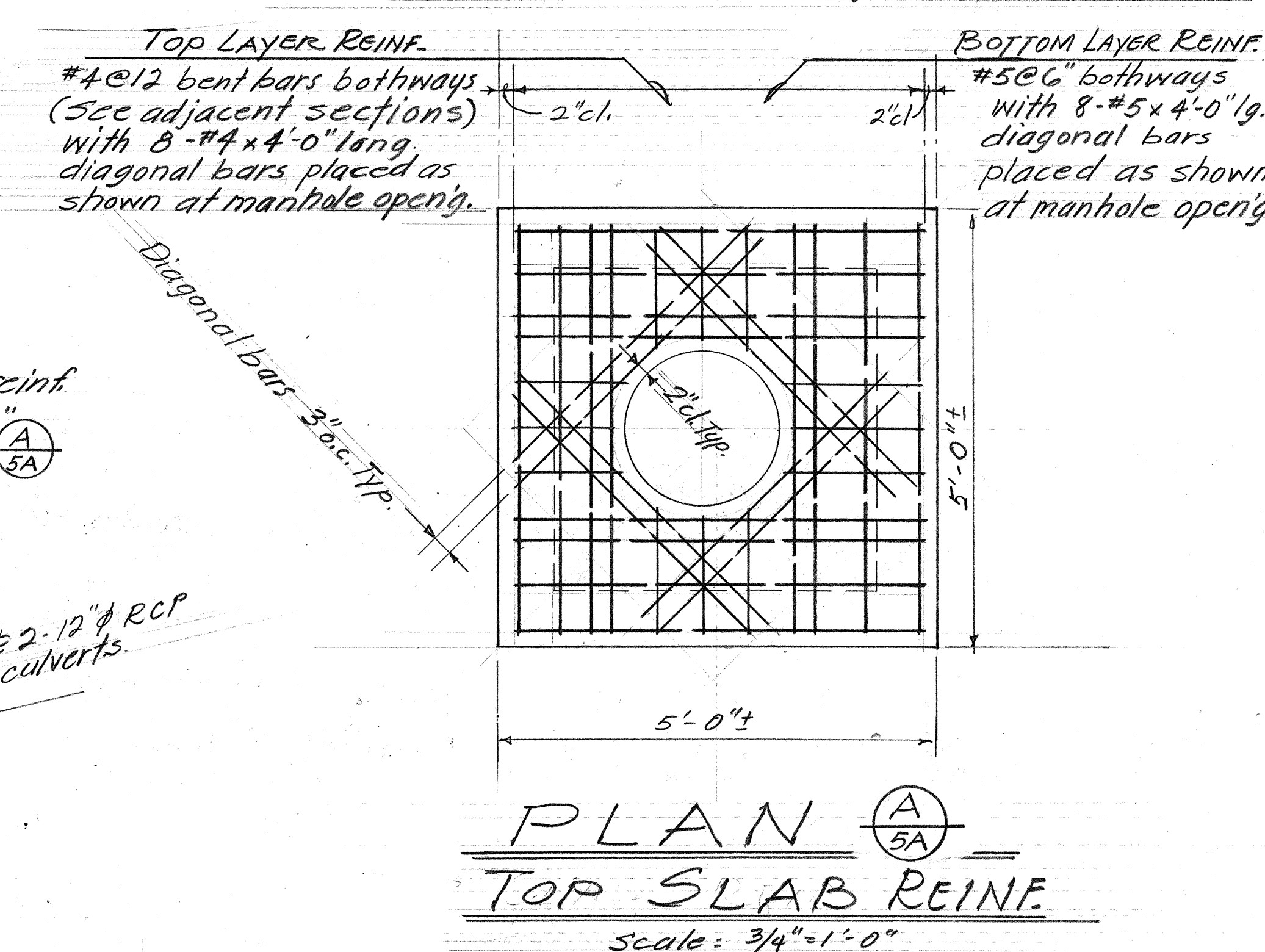
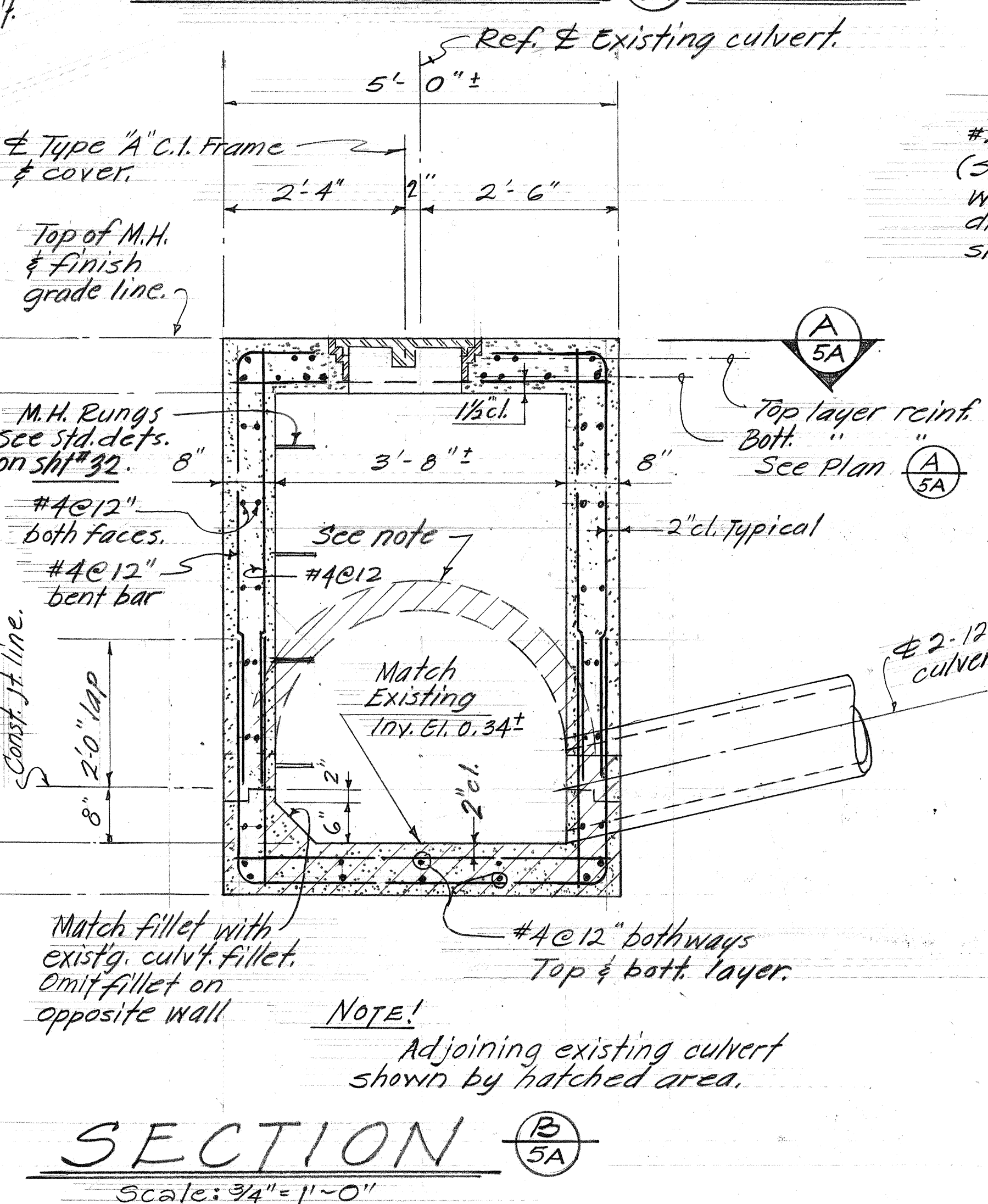
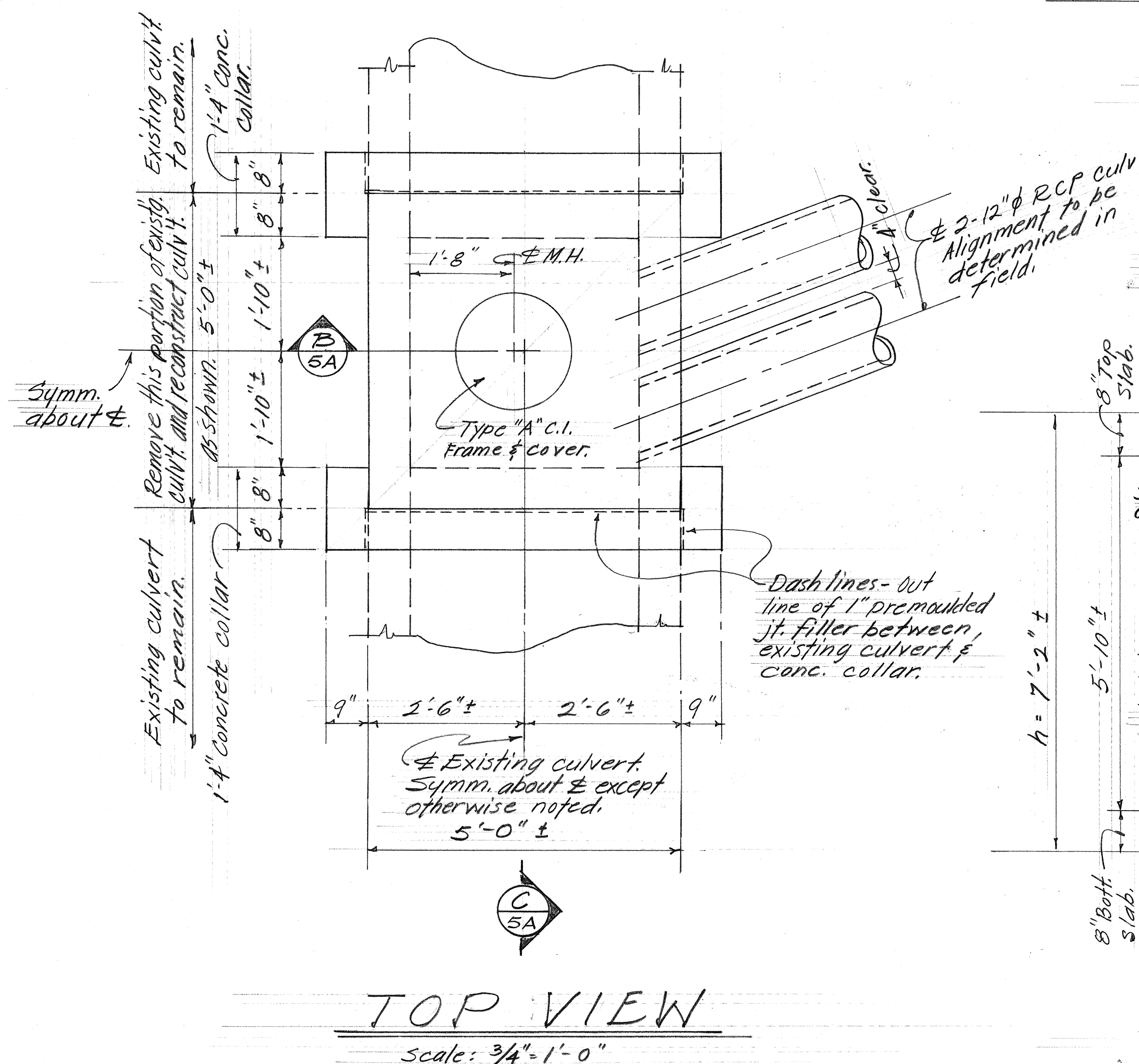
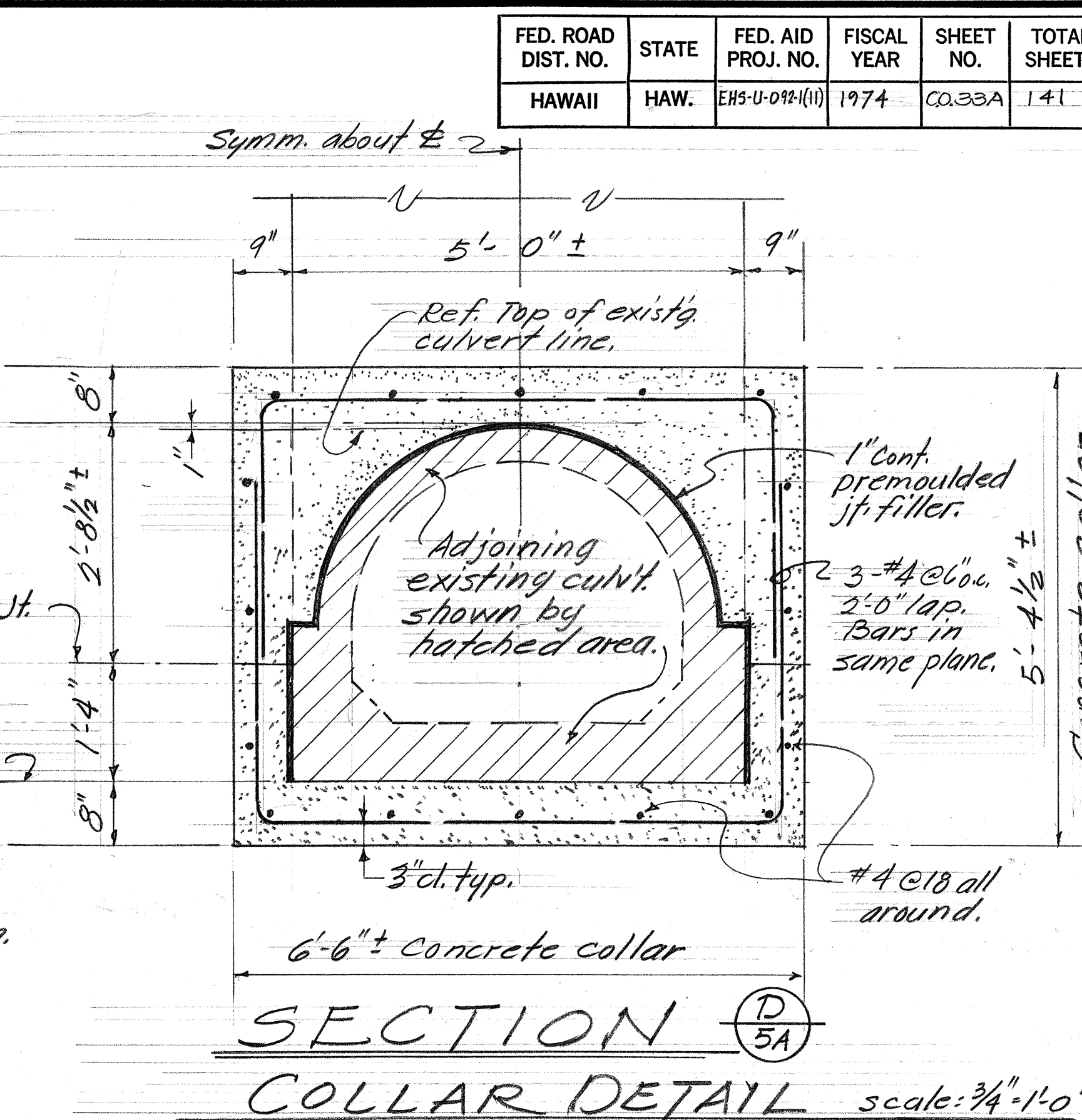
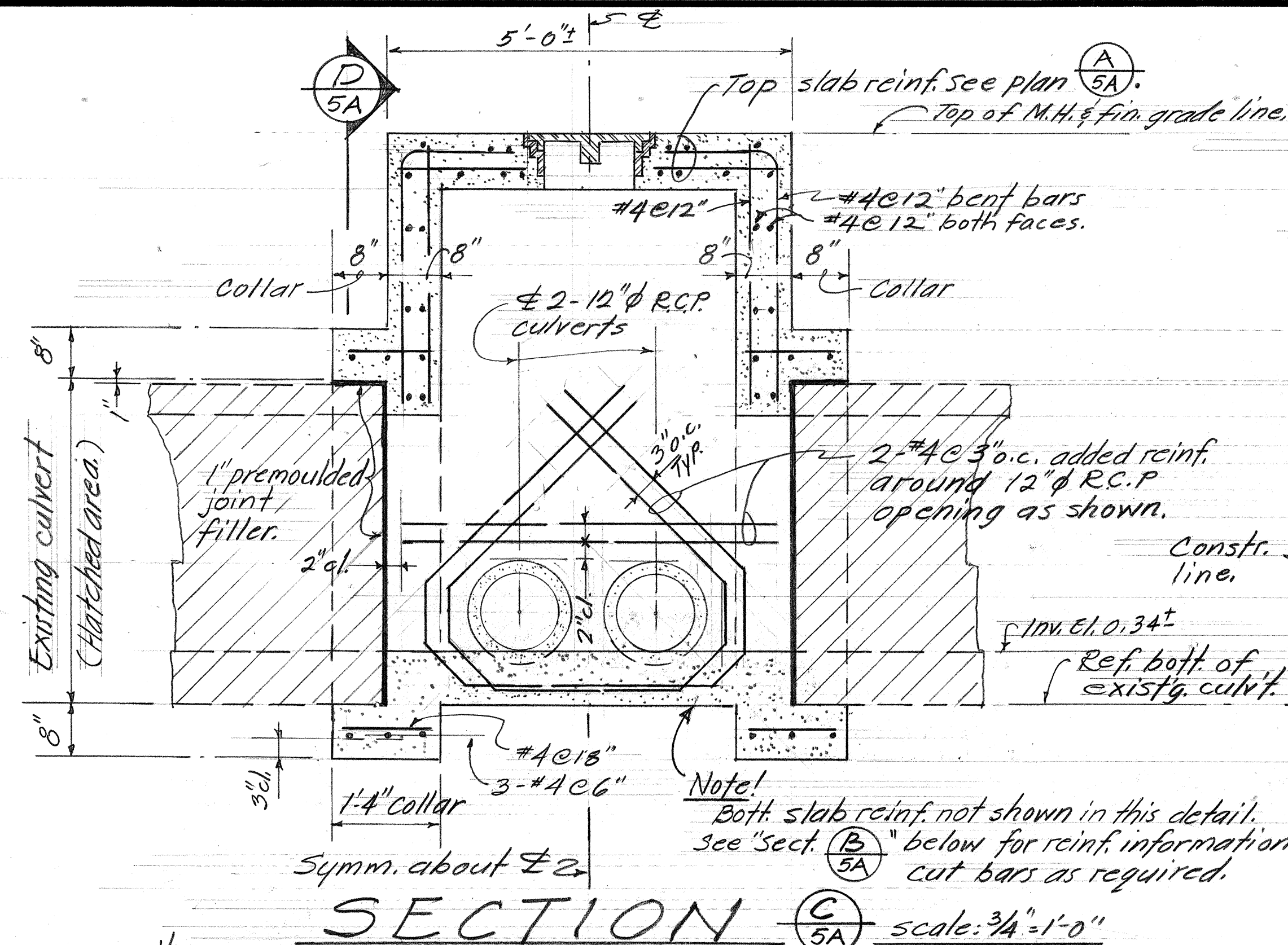
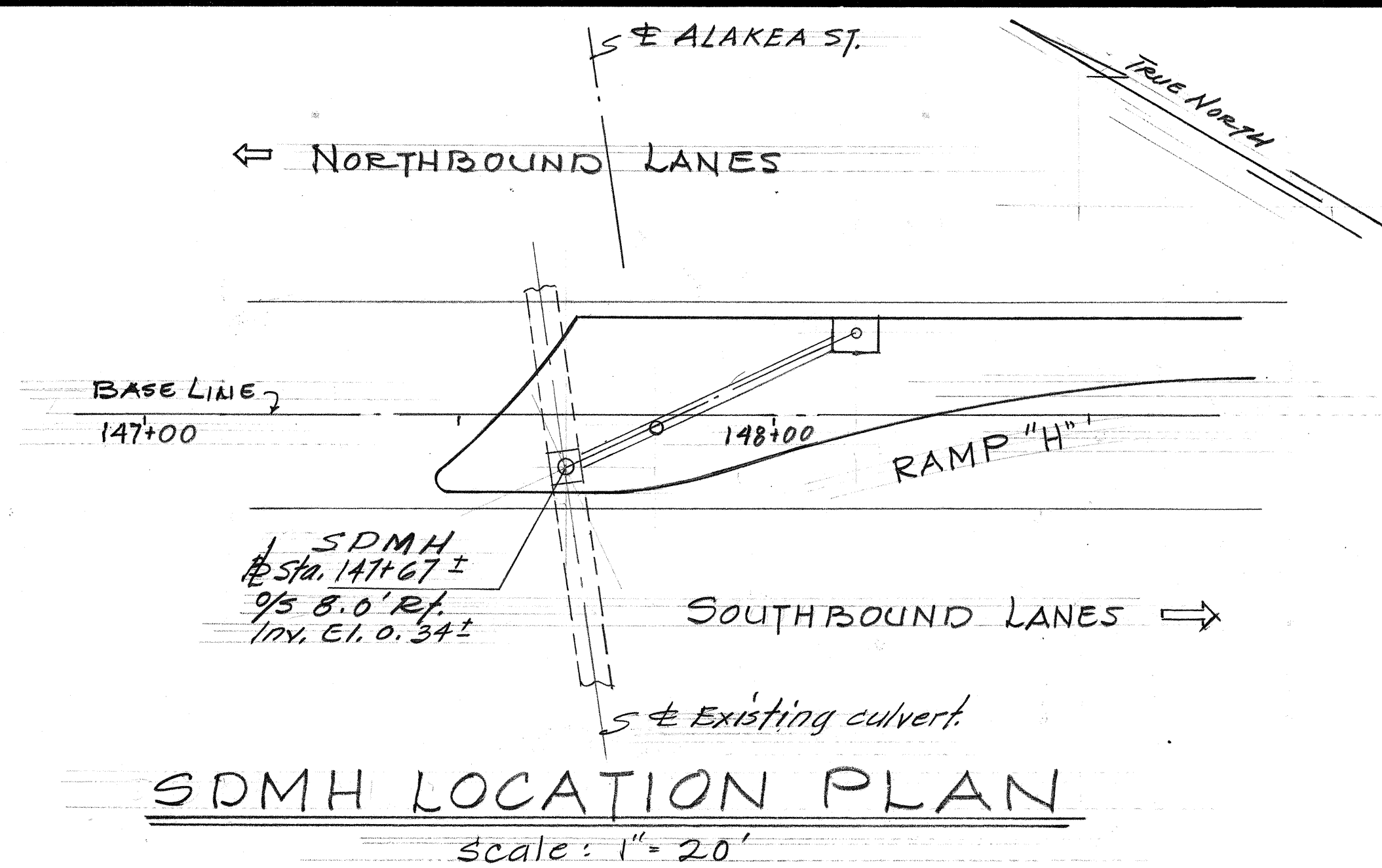
APPROVAL RECOMMENDED:
HYDRAULIC DESIGN ENGINEER
DATE: 12-17-69

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CATCH BASINS
Scale: As Noted
Date: July, 1969
SHEET NO. 13 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EH5-U-092-1(11)	1974	CO.33A	141



DATE	REVISION
7-11-75	Deleted sheet no. 25 and 26
	S.D.M.H. added @ Sta. 147+67 ± 9/5 8' RT. due to adjustment of existing storm drain culvert.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

SDMH AND 2-12" R.C.P. CULV'T.
CONNECTION @ Sta. 147+67 ± 9/5 8' RT.
NIMITZ HIGHWAY
PUNCHBOWL STREET TO BISHOP STREET
Proj. No. EH5-U-092-1(11)
Scale as noted Date: JULY, 1975

SHEET No. 13A OF 13 SHEETS

C.O. 33A