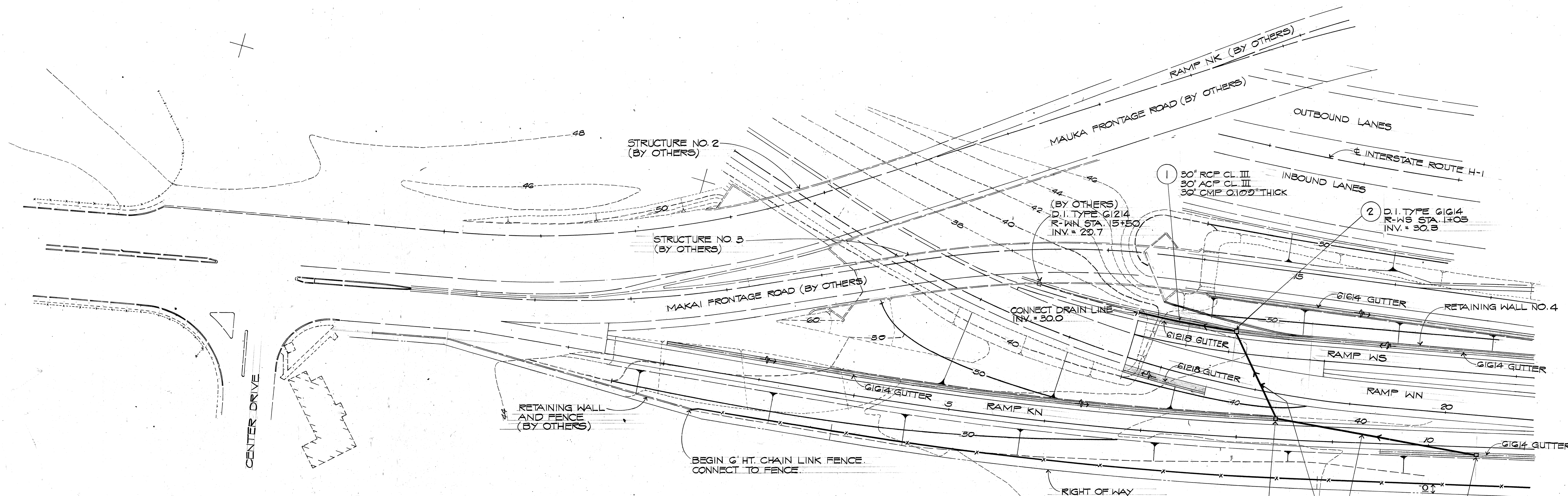


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHH(73)15	1974	51	360

TRUE NORTH
SCALE: 1"=50'



ABBREVIATION

ACP	ASBESTOS CEMENT PIPE
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
CL	CLASS
%	OFFSET
INV	INVERT ELEVATION
THICK	THICKNESS
CIPP	CAST-IN-PLACE CONCRETE PIPE

LEGEND

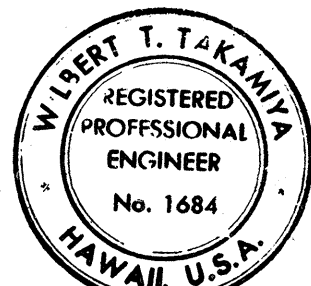
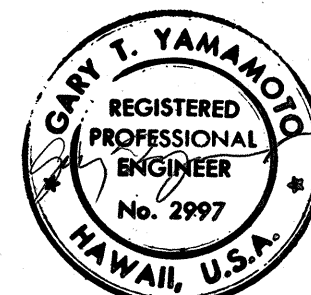
---	EXISTING CONTOUR
---	FINISH CONTOUR
→	FLOW DIRECTION (SURFACE)
→	FLOW DIRECTION (PIPE)
(N2)	DRAINAGE STRUCTURE NUMBER

PLAN

SCALE: 1"=50'

GENERAL NOTES:

- FOR NUMBER OF GRATES SEE DRAINAGE SUMMARY.
- BED COURSE MATERIAL FOR STORM DRAIN PIPES SHALL BE INCIDENTAL TO VARIOUS CONTRACT ITEMS.



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING & DRAINAGE PLAN

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-H-1(73)15

SCALE: AS SHOWN DATE: DEC. 7, 1973
SHEET NO. 0-1 OF 10 SHEETS

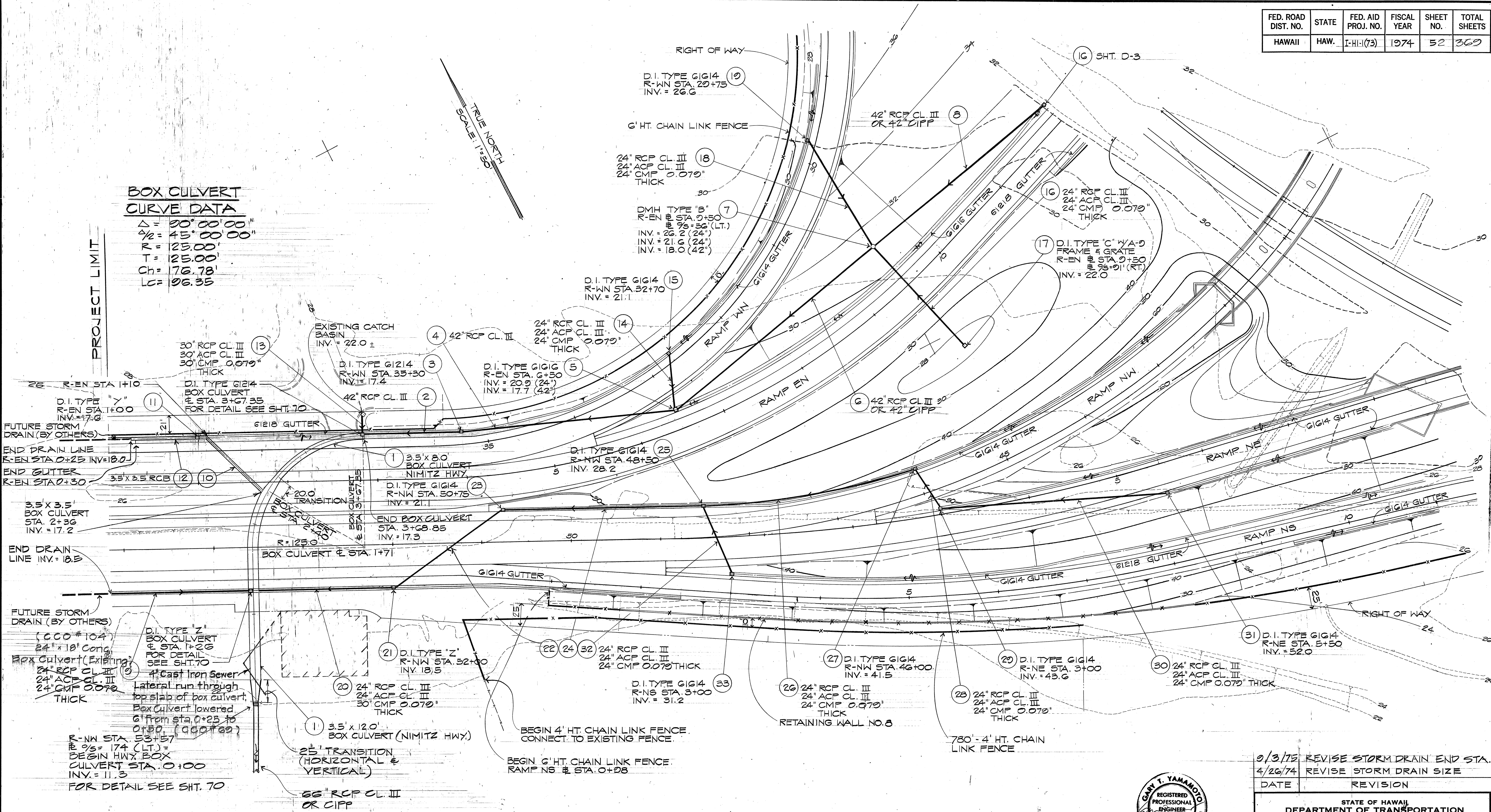
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)	1974	52	360

BOX CULVERT CURVE DATA

$\Delta = 90^{\circ}00'00''$
 $\frac{\Delta}{2} = 45^{\circ}00'00''$
 $R = 125.00'$
 $T = 125.00'$
 $Ch = 176.78'$
 $Lc = 96.35'$

PROJECT LIMIT

TRUE NORTH
SCALE: 1" = 50'



NOTE: FOR DETAILS ON ITEMS
⑩ ⑪ & ⑫ SEE SHEET 73.

PLAN
SCALE: 1" = 50'



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OR UNDER MY SUPERVISION

9/3/72 REVISE STORM DRAIN END STA.
 4/26/74 REVISE STORM DRAIN SIZE

DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GRADING & DRAINAGE PLAN

PEARL HARBOR INTERCHANGE
 F.A.I. PROJ. NO. I-HI-1(73)15

SCALE: AS SHOWN DATE: DEC. 7, 1973
 SHEET NO. 0-2 OF 10 SHEETS

C.O.ADD.52

11/11/75	Added cleanout and Details.
DATE	REVISION

GRADING & DRAINAGE PLAN

SCALE: AS SHOWN DATE: DEC. 7, 1973
SHEET No. 0-3 OF 10 SHEETS

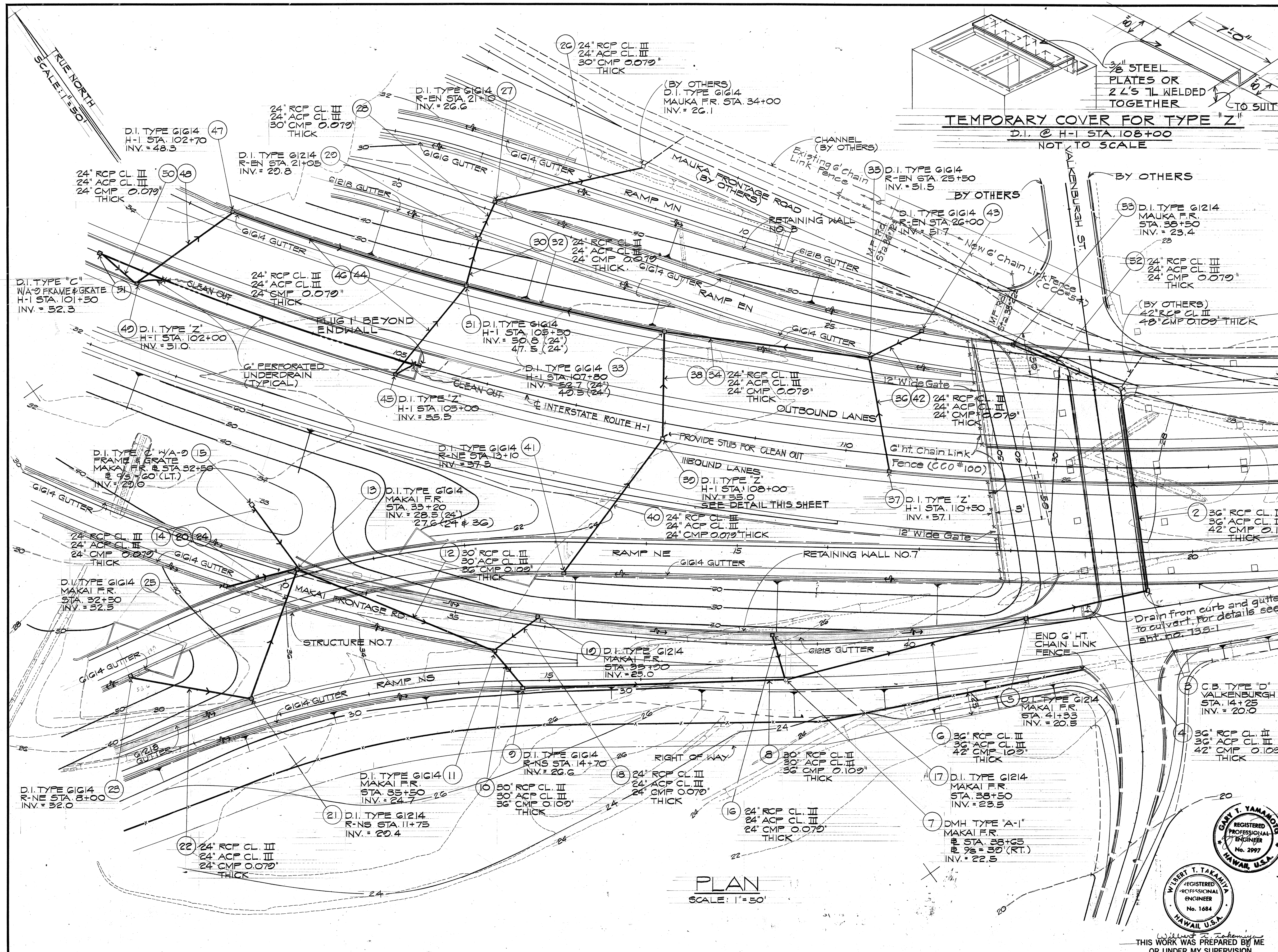


PLAN
SCALE: 1" = 50'

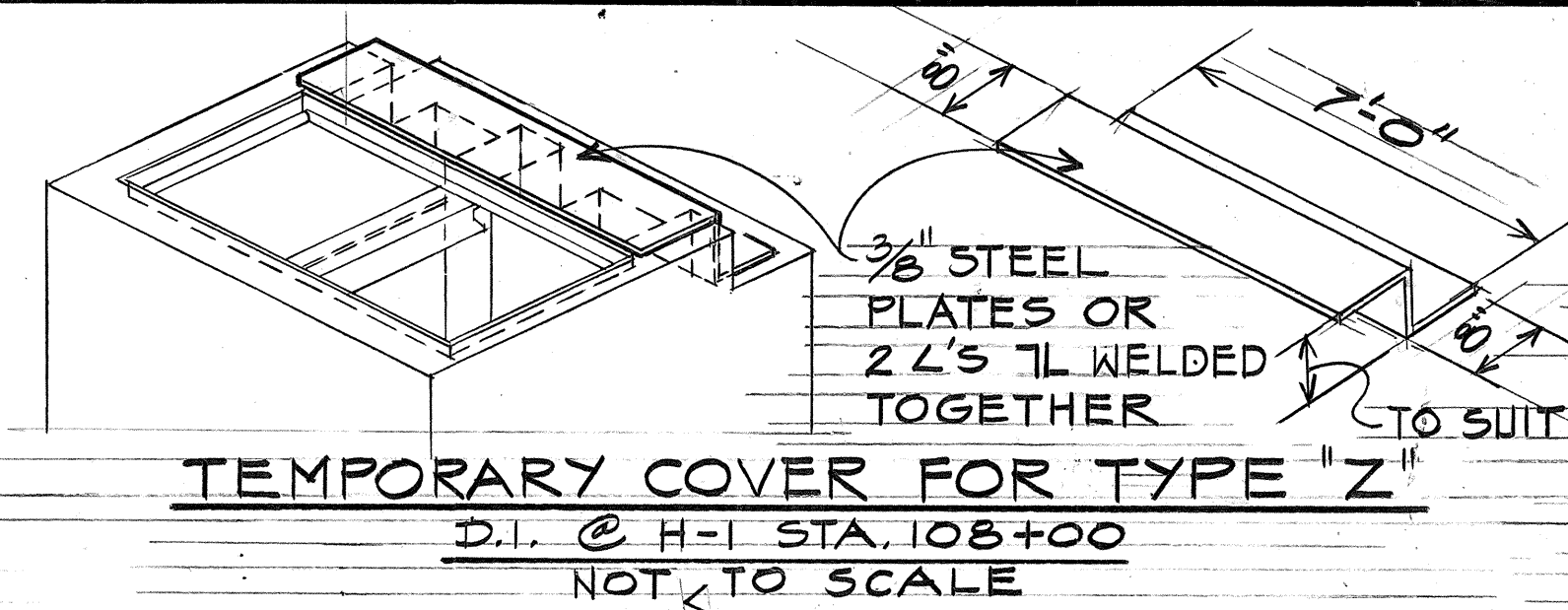


WILBERT T. TAKAMIY
REGISTERED
PROFESSIONAL
ENGINEER
No. 1684
HAWAII, U.S.A.

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OR UNDER MY SUPERVISION



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(73)15	1974	54	360
DATE		REVISION			
10/12/76		DELETED 6" PERFORATED UNDER DRAIN & SECTIONS OF GUARD RAIL TYPE 4A (MODIFIED) FROM H-1 & STA. 105+20 TO 111+60. REVISED MAKAI FRONTAGE RD. ADDED DETAIL FOR D.I. 39			



DATE	_____
ORIGINAL PLAN	_____
TRACED BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____

NOTES:

- FOR DETAILS OF DROP INTAKE TYPE "Z" SEE SHT. 71
- SURFACE DRAINAGE FOR GRADED AREA EASTERLY OF VALKENBURGH STREET TO PROJECT LIMIT SHALL BE MADE TO DRAIN TOWARD AIRPORT INTERCHANGE. THIS WORK TO BE COORDINATED WITH ADJACENT CONTRACTOR.

11/11/75	Added cleanout
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING & DRAINAGE PLAN

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-H-1(73)15

SCALE: AS SHOWN DATE: DEC. 7, 1973

SHEET NO. 0-4 OF 10 SHEETS

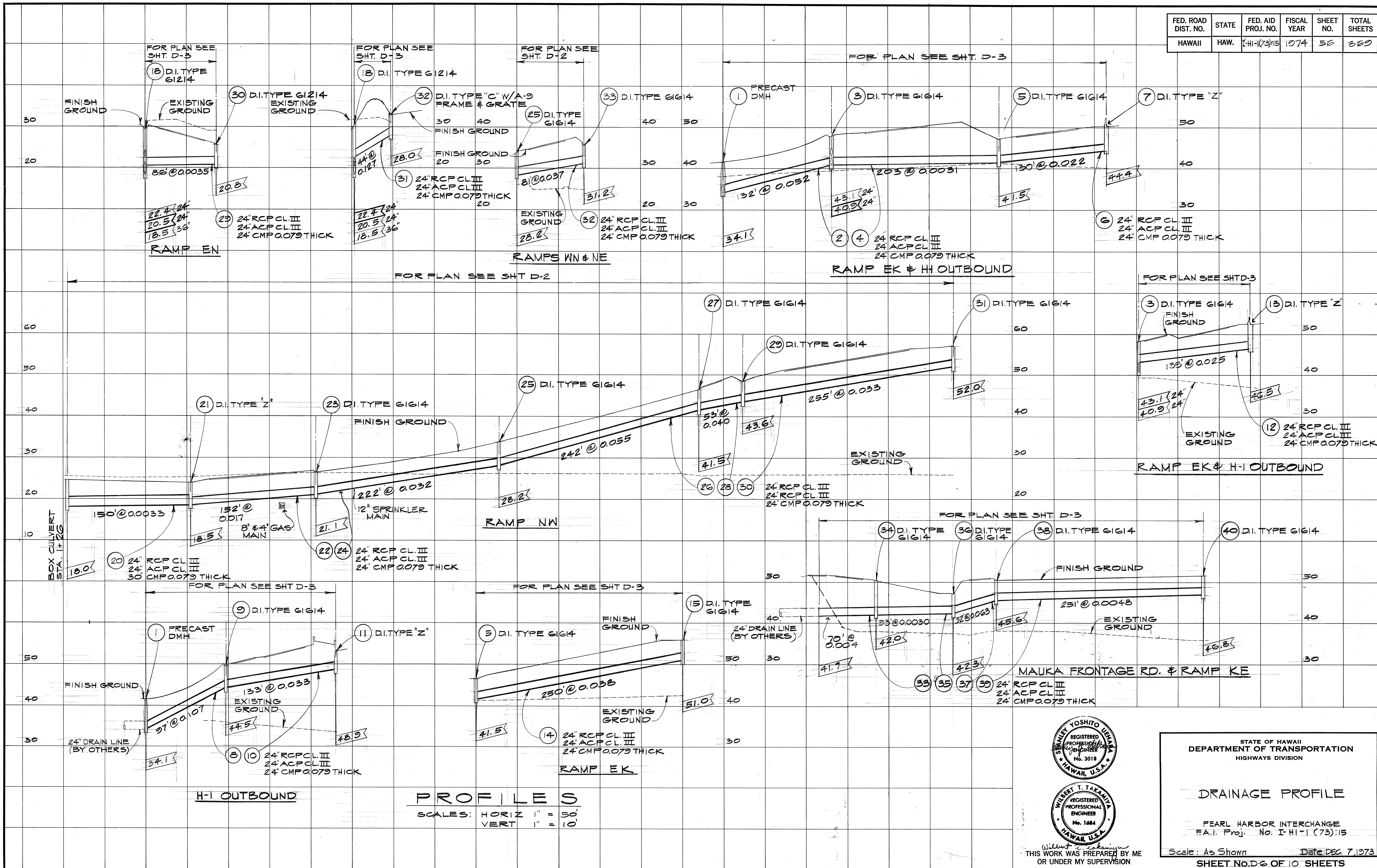
WILBERT T. TAKAMIA
REGISTERED PROFESSIONAL ENGINEER
No. 2997
HAWAII, U.S.A.

GARY T. YAMAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 2997
HAWAII, U.S.A.

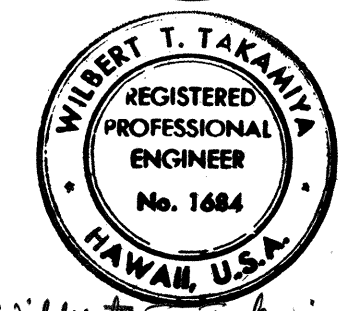
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PLAN
SCALE: 1" = 50'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	56	269



PROFILES
 SCALES: HORIZ 1" = 50'
 VERT 1" = 10'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

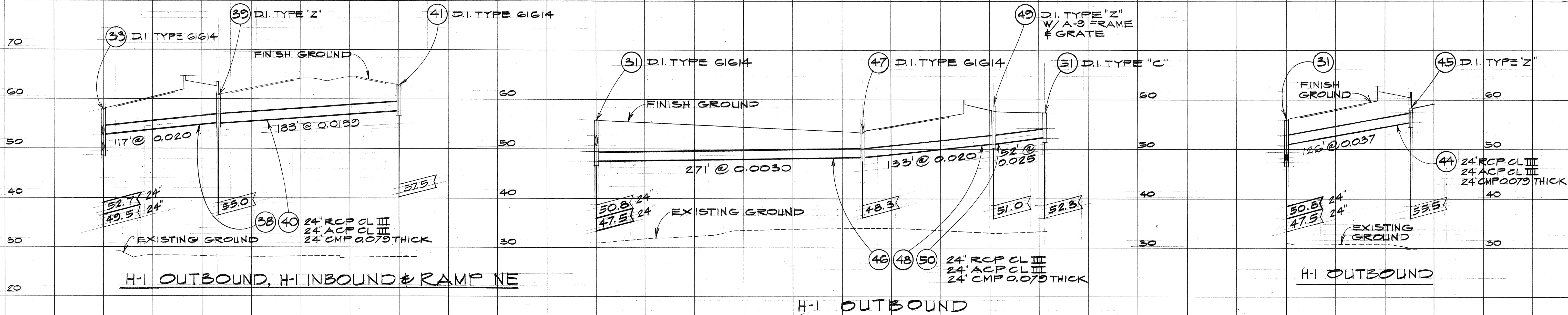
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DRAINAGE PROFILE

PEARL HARBOR INTERCHANGE
 F.A.I. Proj. No. I-HI-1(73)15

Scale: As Shown Date: Dec. 7, 1973
 SHEET NO. 56 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	58	360



NOTE:
FOR PLAN SEE SHEET D-4

PROFILES
 SCALES: HORIZ 1" = 50'
 VERT 1" = 10'



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DRAINAGE PROFILE

PEARL HARBOR INTERCHANGE
 F.A.I. Proj. No. I-HI-1 (73):15

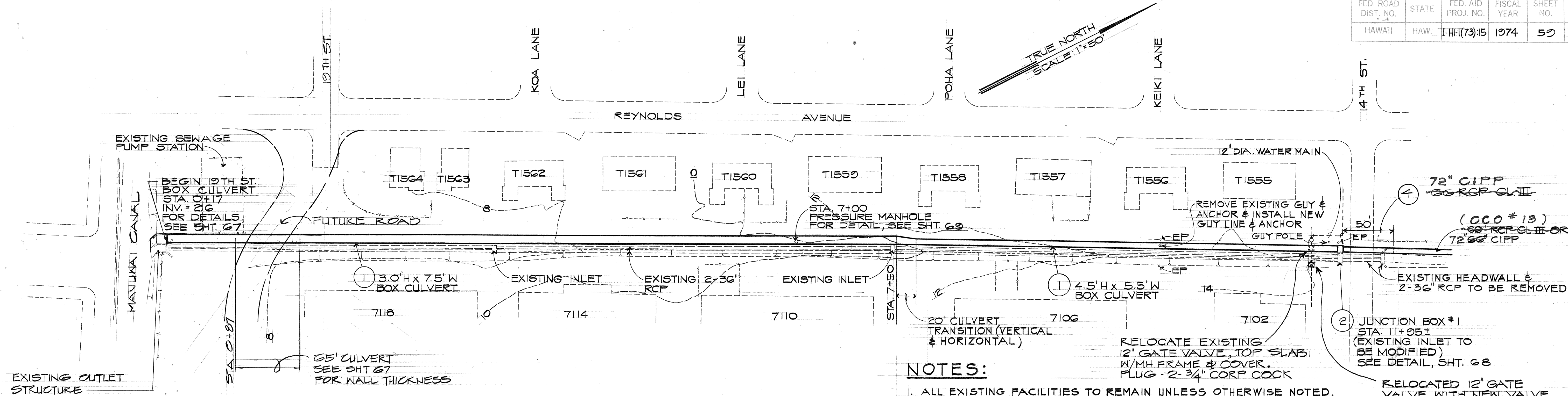
Scale: As Shown Date: DEC. 7, 1973

SHEET NO. D-8 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	59	369

PLAN	DATE	BY	DATE
SURVEYED			
PLOTTED			
ALIGNMENT CHECKED			
NOTE BOOK NO.			

PROFILE	DATE	BY	DATE
SURVEYED			
PLOTTED			
STRUCTURE NOTATIONS OK'D			
NOTE BOOK NO.			

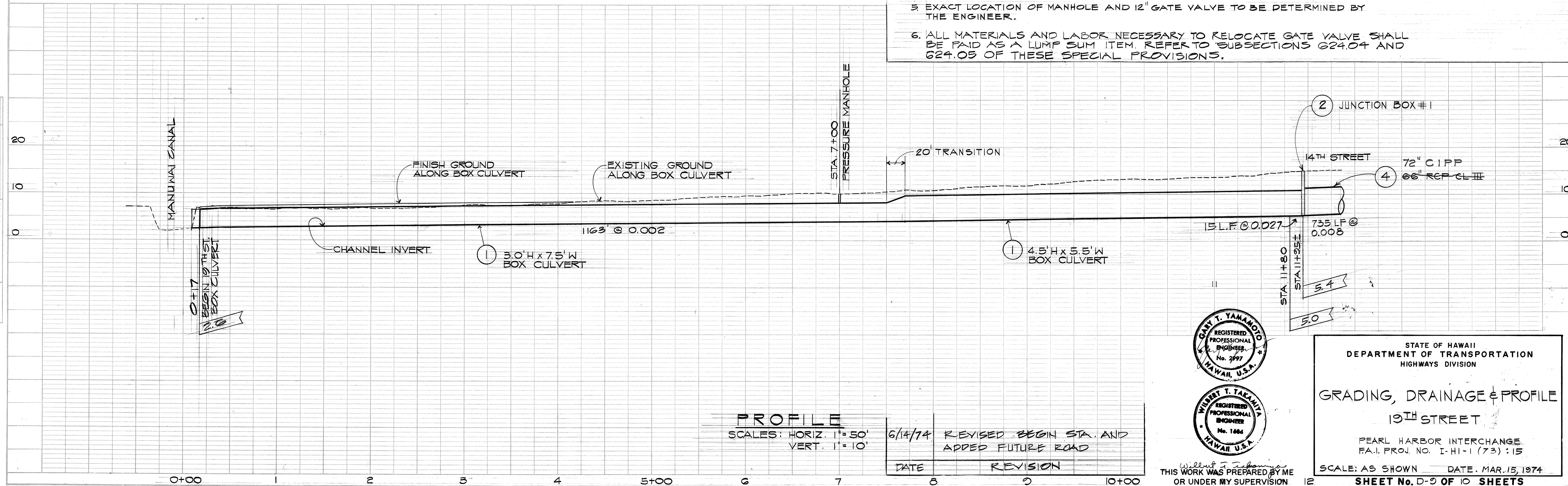


NOTES:

1. ALL EXISTING FACILITIES TO REMAIN UNLESS OTHERWISE NOTED.
2. HORIZONTAL ALIGNMENT FOR BOX CULVERT (STA 0+00 TO 11+95±) CONTROLLED BY EXISTING DRAIN PIPE. SEE SHTS 67 & 68 FOR OFFSET.
3. WHERE REQUIRED, RESTORATION OF EXISTING PAVEMENTS DEMOLISHED BY DRAINAGE WORK SHALL BE INCIDENTAL TO VARIOUS CONTRACT ITEMS. RESTORATION SHALL BE TO ORIGINAL OR BETTER CONDITION.
4. REMOVAL OR MODIFICATION OF EXISTING DRAINAGE STRUCTURES SHALL BE MADE INCIDENTAL TO VARIOUS CONTRACT ITEMS.
5. EXACT LOCATION OF MANHOLE AND 12" GATE VALVE TO BE DETERMINED BY THE ENGINEER.
6. ALL MATERIALS AND LABOR NECESSARY TO RELOCATE GATE VALVE SHALL BE PAID AS A LUMP SUM ITEM. REFER TO SUBSECTIONS 624.04 AND 624.05 OF THESE SPECIAL PROVISIONS.

PLAN

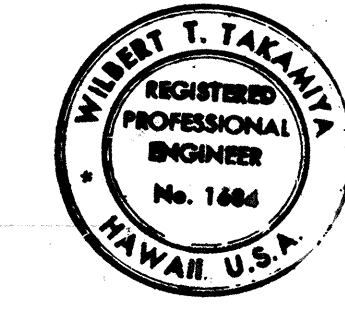
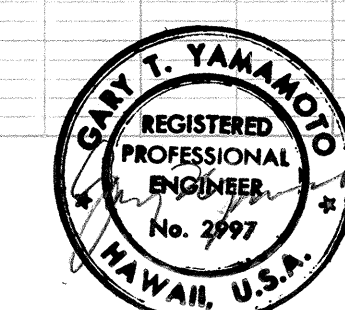
SCALE: 1"=50'



PROFILE

SCALE: HORIZ. 1"=50' VERT. 1"=10'

DATE	REVISION
6/14/74	REVISED BEGIN STA. AND ADDED FUTURE ROAD



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING, DRAINAGE & PROFILE
19TH STREET

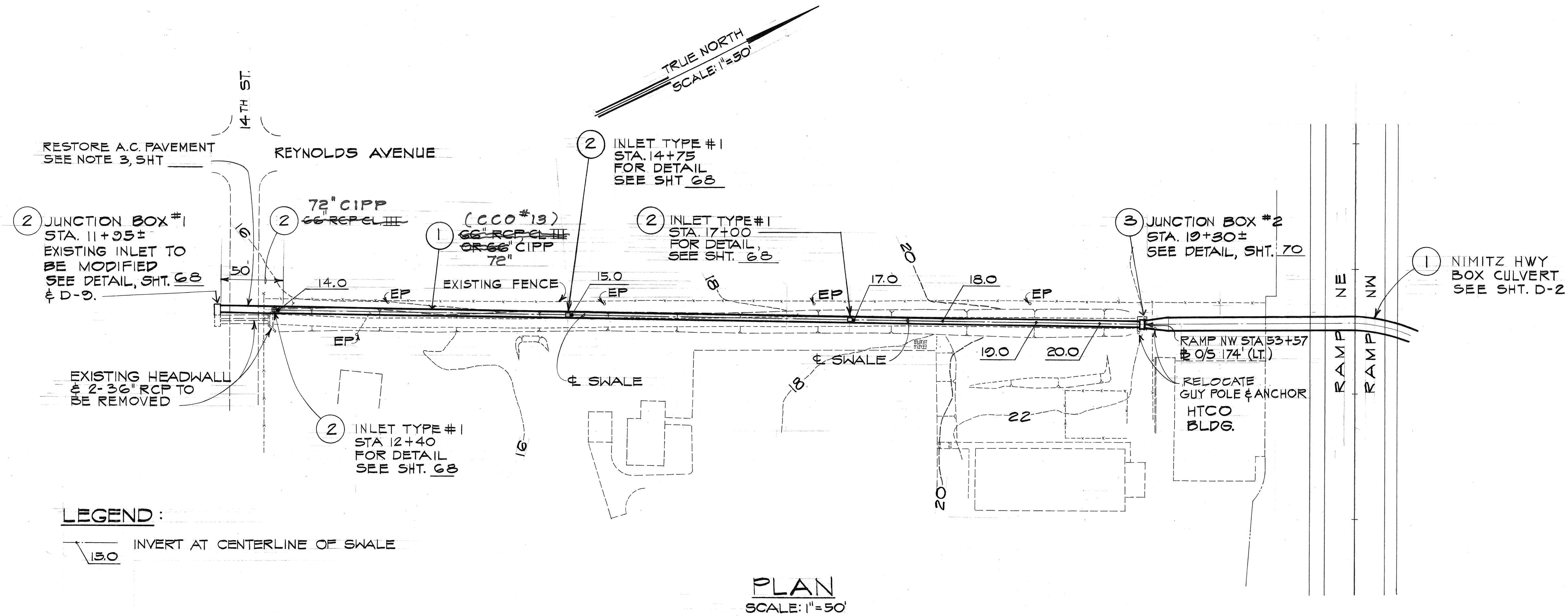
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1 (73):15

SCALE: AS SHOWN DATE: MAR. 15, 1974

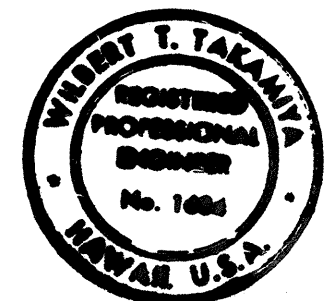
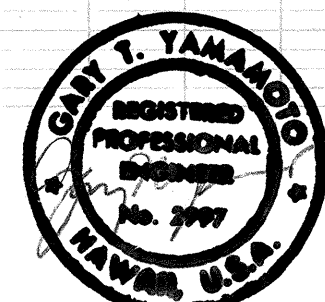
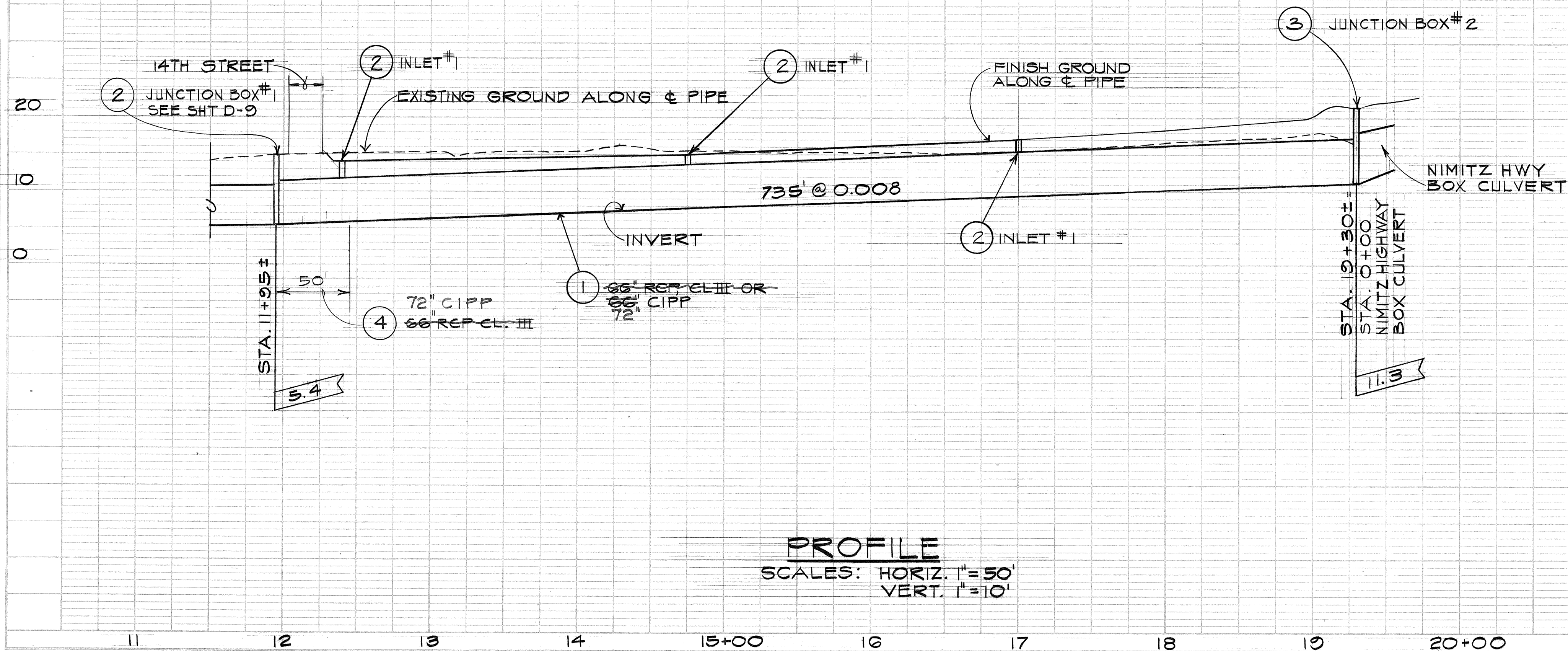
SHEET No. D-9 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	60	369

PLAN	DATE	BY
SURVEYED		
PLANNED		
NOTED		
NO.		



PROFILE	DATE	BY
SURVEYED		
PLANNED		
NOTED		
NO.		



WILBERT T. TAKAMI
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OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING, DRAINAGE & PROFILE
19TH STREET

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1 (73):15

SCALE: AS SHOWN DATE: MAR. 15, 1974

SHEET No. D-10 OF 10 SHEETS

SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	61	369

[illegible]

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[H-](73):5	1974	62	369

C.O.62

S U M M A R Y

63

SUMMARY

54

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[H-1](73):15	1974	65	369

65

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11(73):15	1974	66	369

C.O.66 R

1/2" ϕ Bolt, 2 1/2" long Hex. Head
U.S.S. Thread, A 307, w/ Nut
Drill 7/32" ϕ for 1/2" ϕ Bolt

3/4" Radius

1/4"

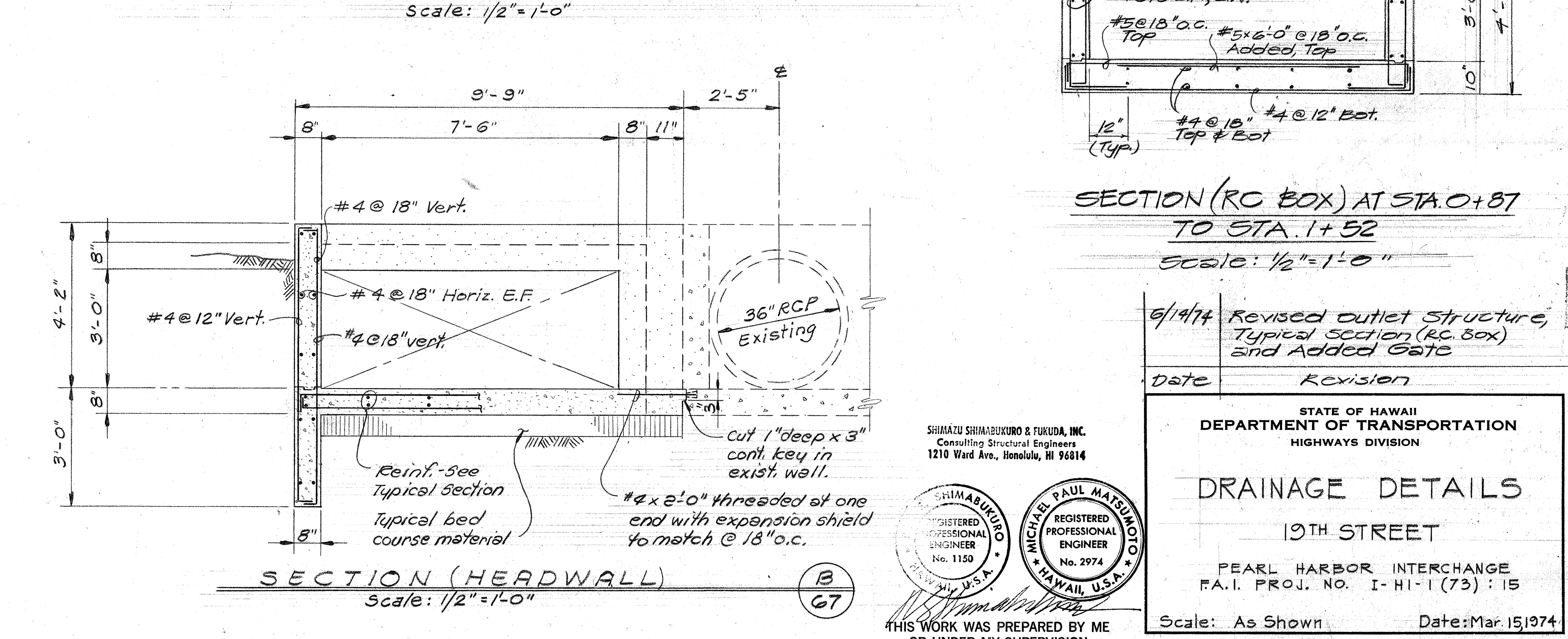
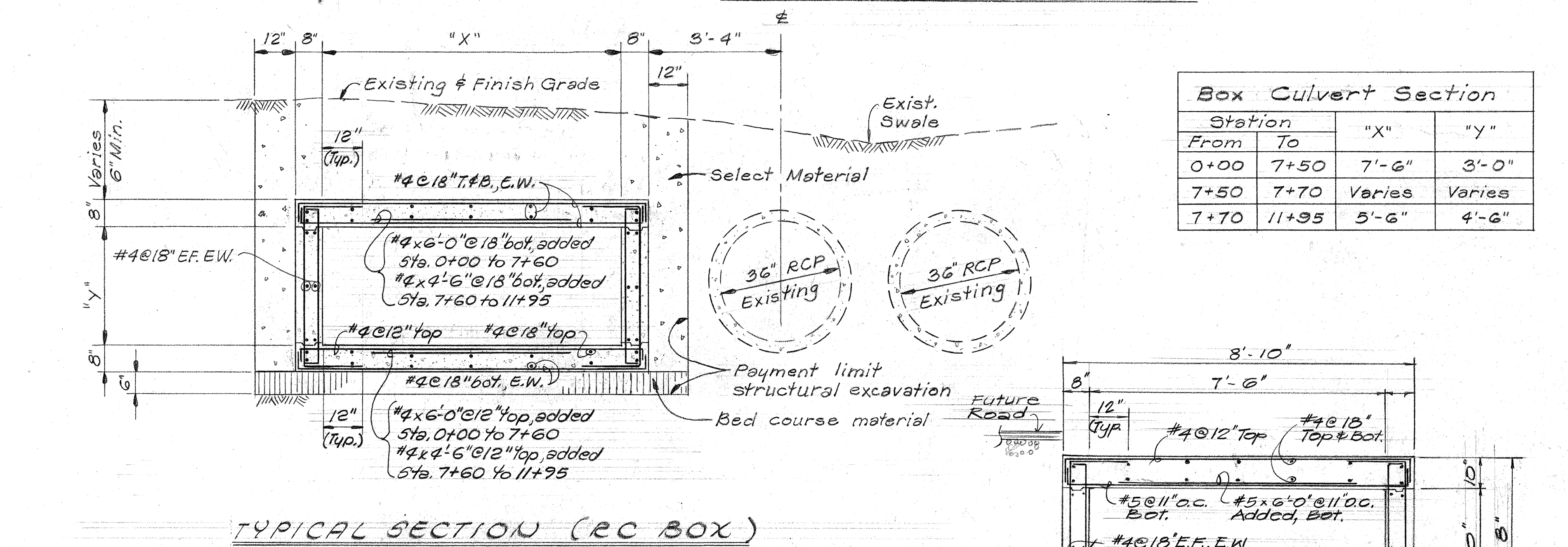
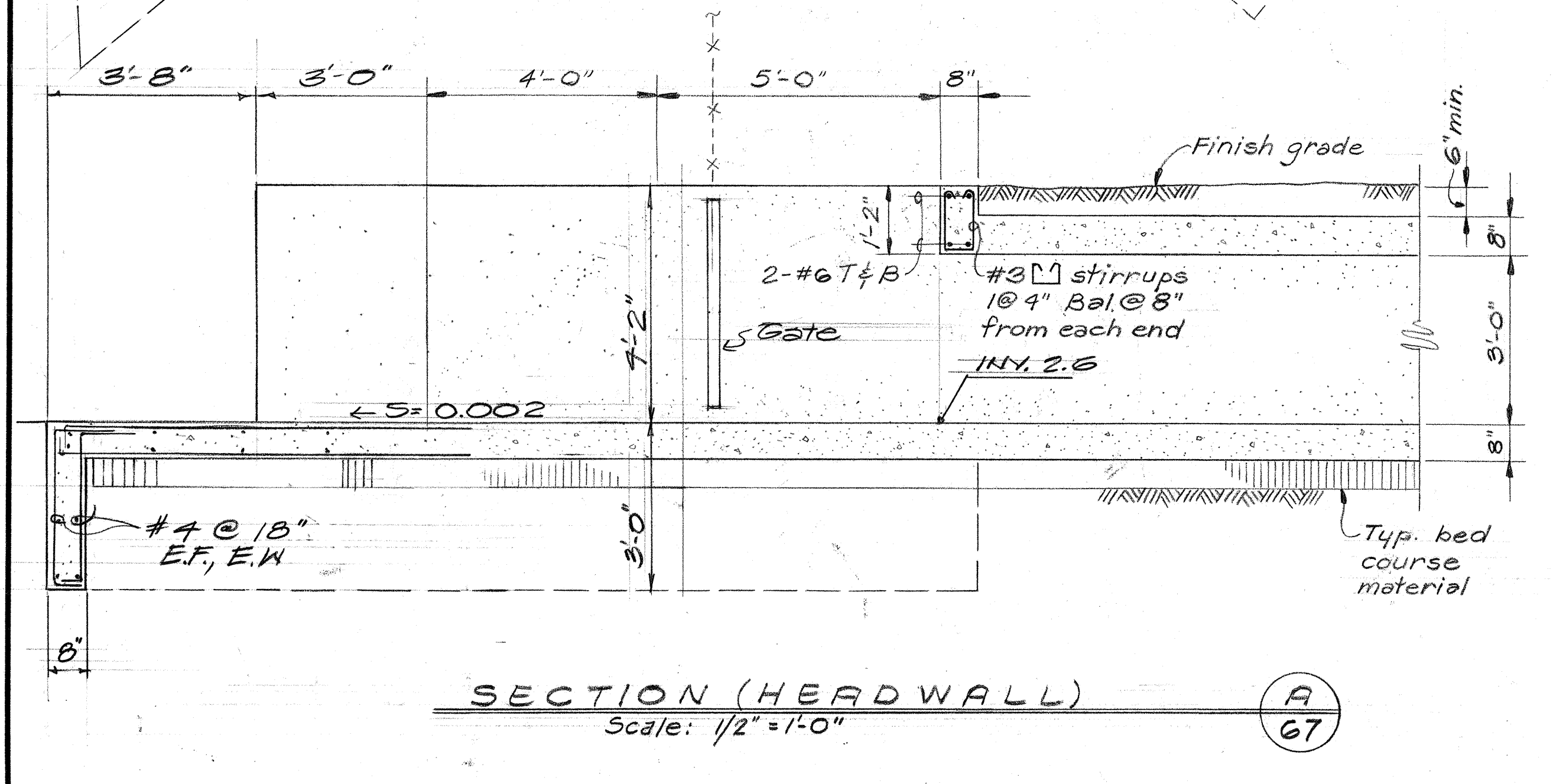
1 1/2" x 1/2" PL

3/4" Radius

1 1/2" x 3/8" PL

3/8" Expansion Bolt

1 1/4" 7/8"



SHIMAZU SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

SHIMABUKURO
REGISTERED
PROFESSIONAL
ENGINEER
No. 1150
HAWAII, U.S.A.

MICHAEL PAUL MATSUMOTO
REGISTERED
PROFESSIONAL
ENGINEER
No. 2974
HAWAII, U.S.A.

Shimabukuro

THIS WORK WAS PREPARED BY ME

6/14/74	Revised Outlet Structure, Typical Section (RC Box) and Added Gate
Date	Revision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

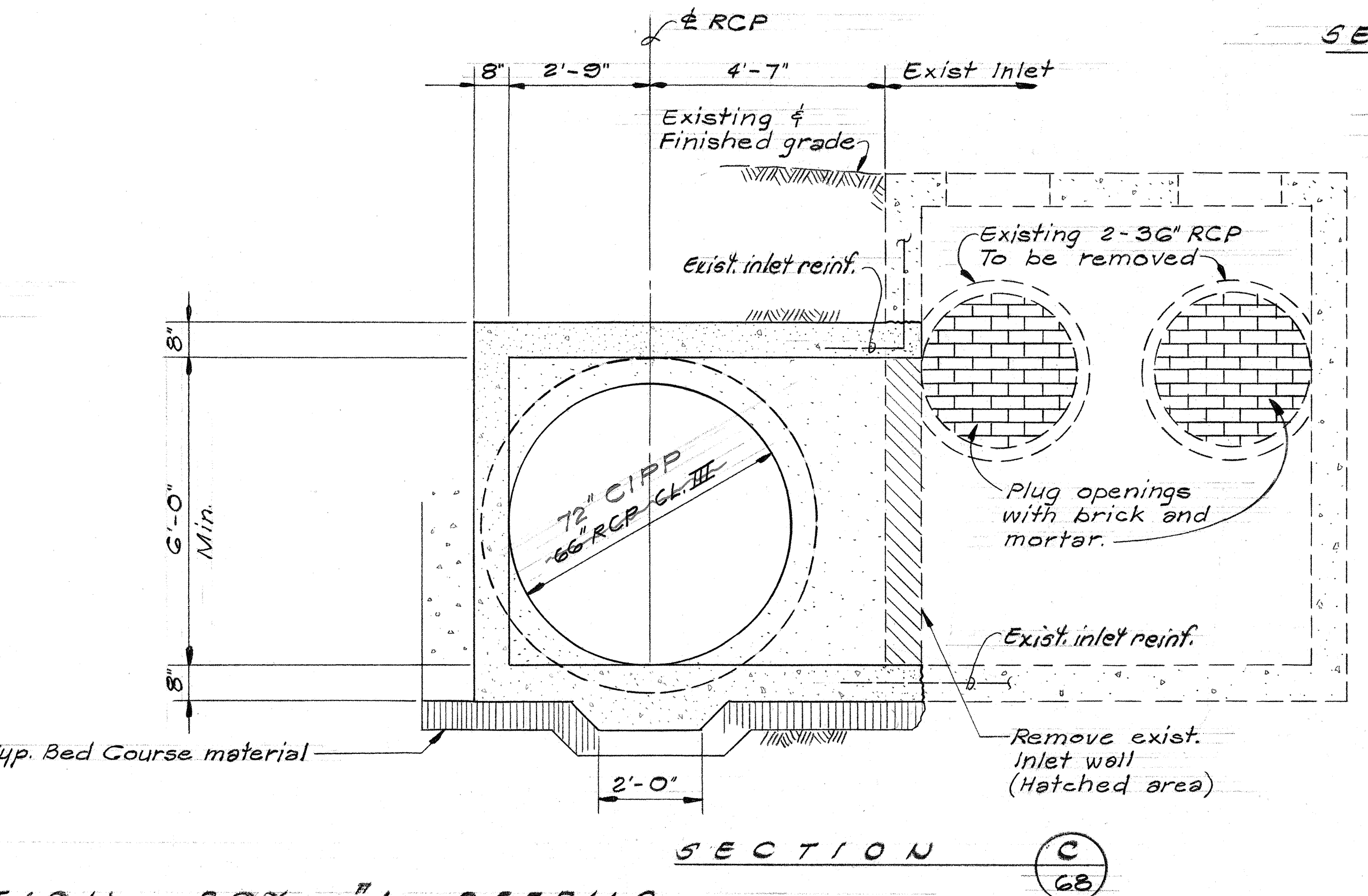
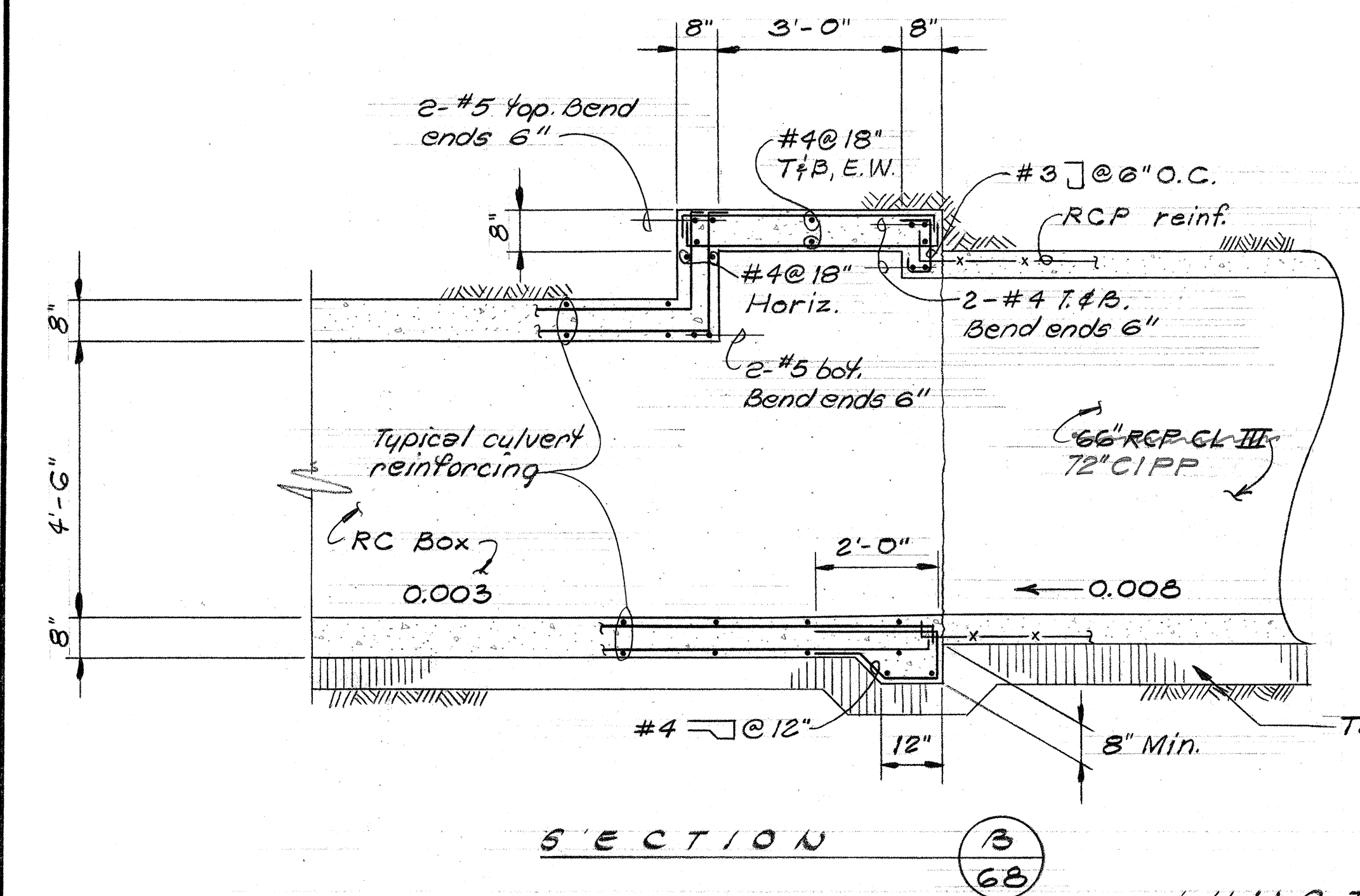
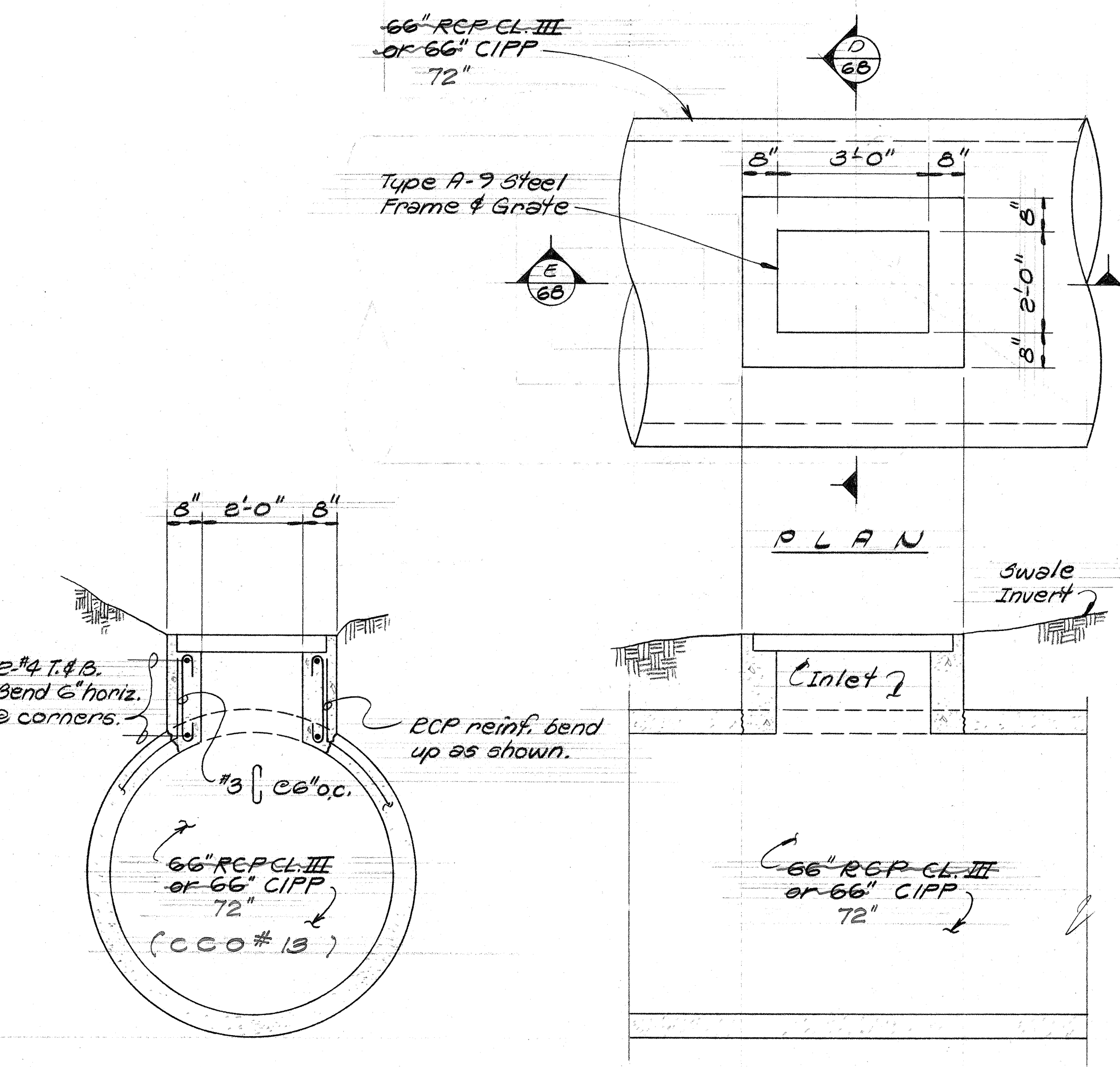
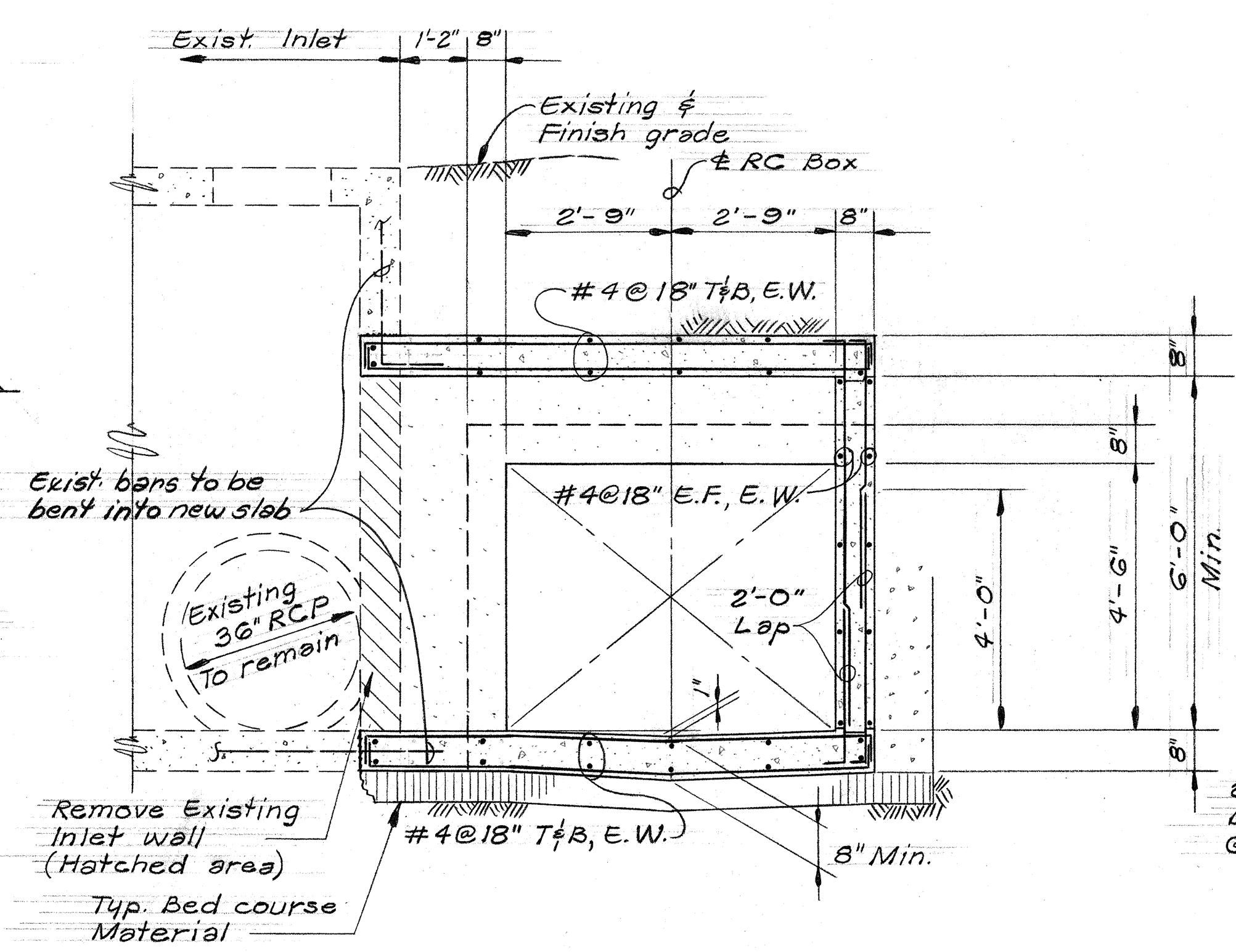
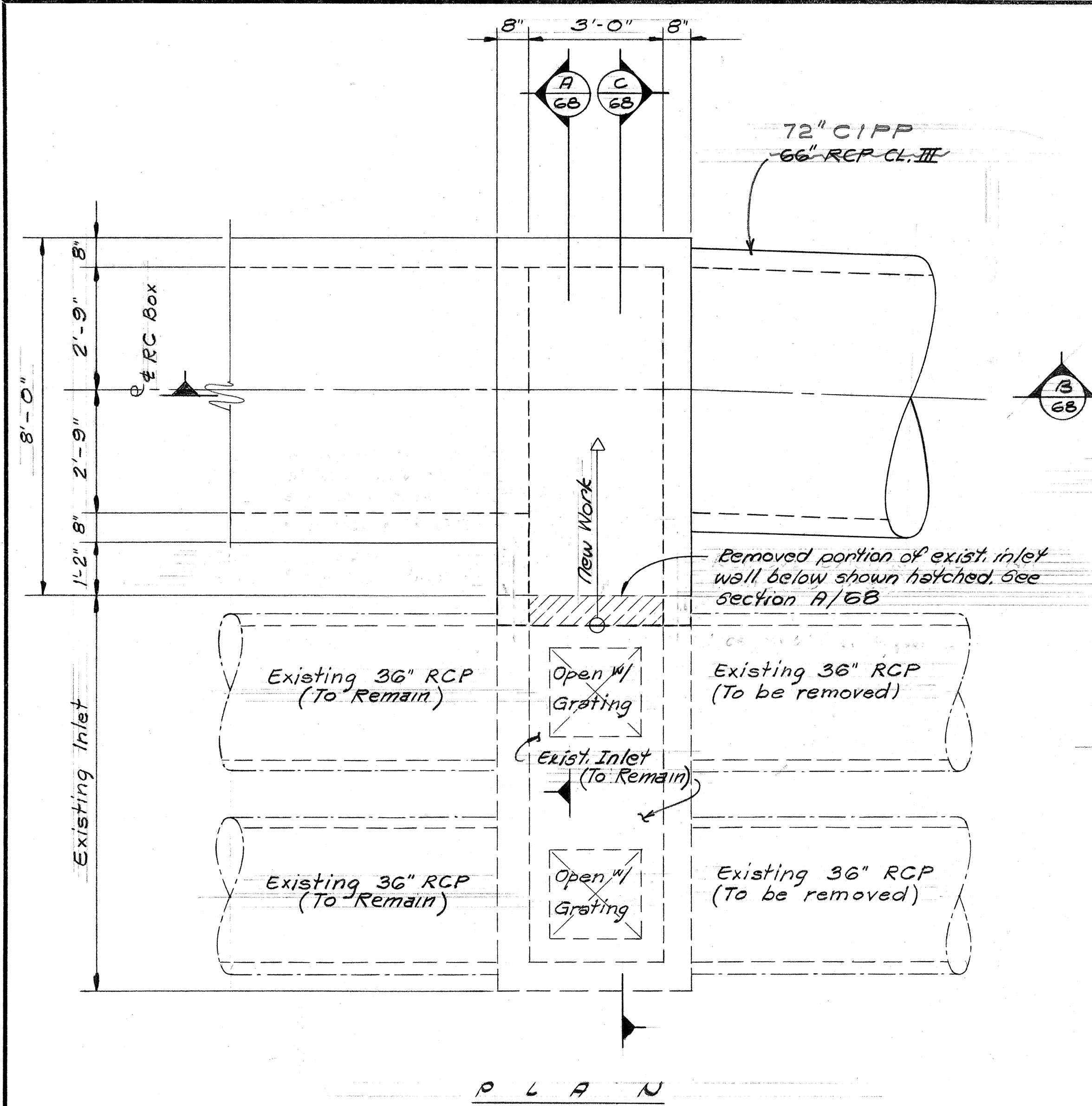
DRAINAGE DETAILS

19TH STREET

PEARL HARBOR INTERCHANGE
FA.I. PROJ. NO. I-HI-1 (73) : 15

Scale: As Shown	Date: Mar. 15, 1974
-----------------	---------------------

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	68	360



INLET #1 DETAILS
Scale: 1/2" = 1'-0"

JUNCTION BOX #1 DETAILS
Scale: 1/2" = 1'-0"

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No. 2974
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

19TH STREET

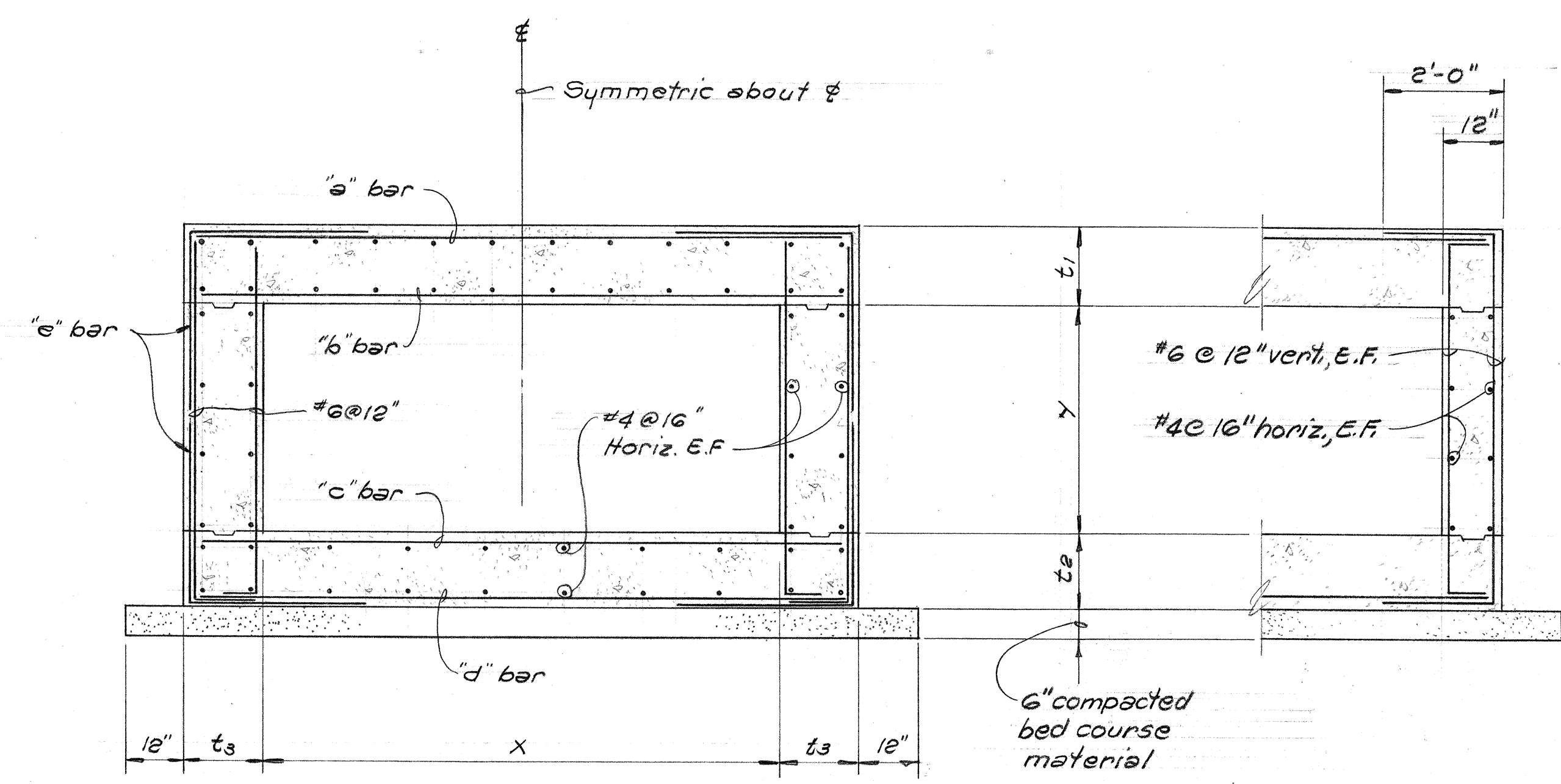
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(73) : 15

Scale: As Shown Date: Mar. 15, 1974

SHEET No. 2 OF 17 SHEETS

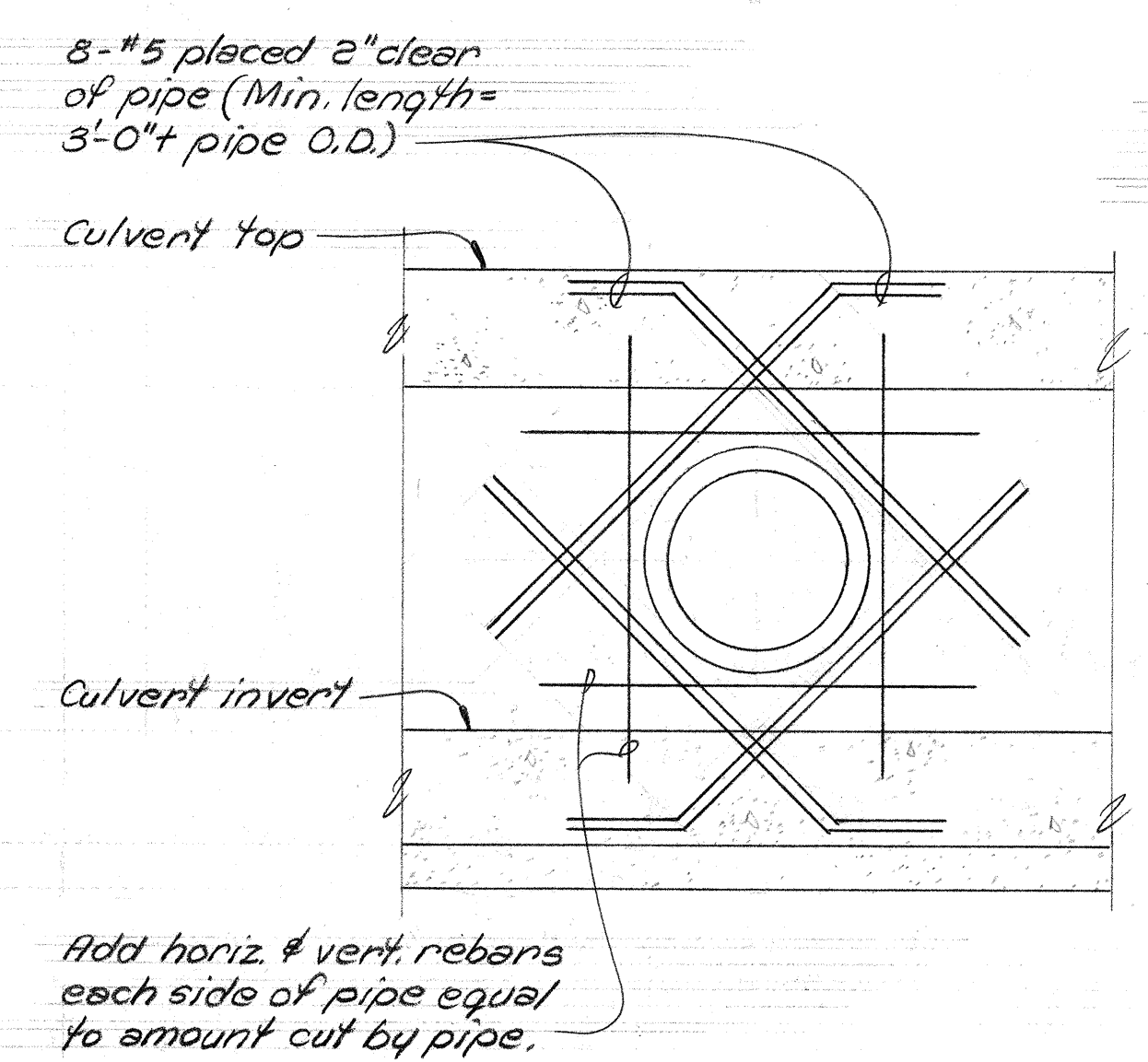
SURVEY PLOTTED BY: _____
DATE: _____
DRAWN BY: _____
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____
No.:

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-1(73)-15	1974	70	300

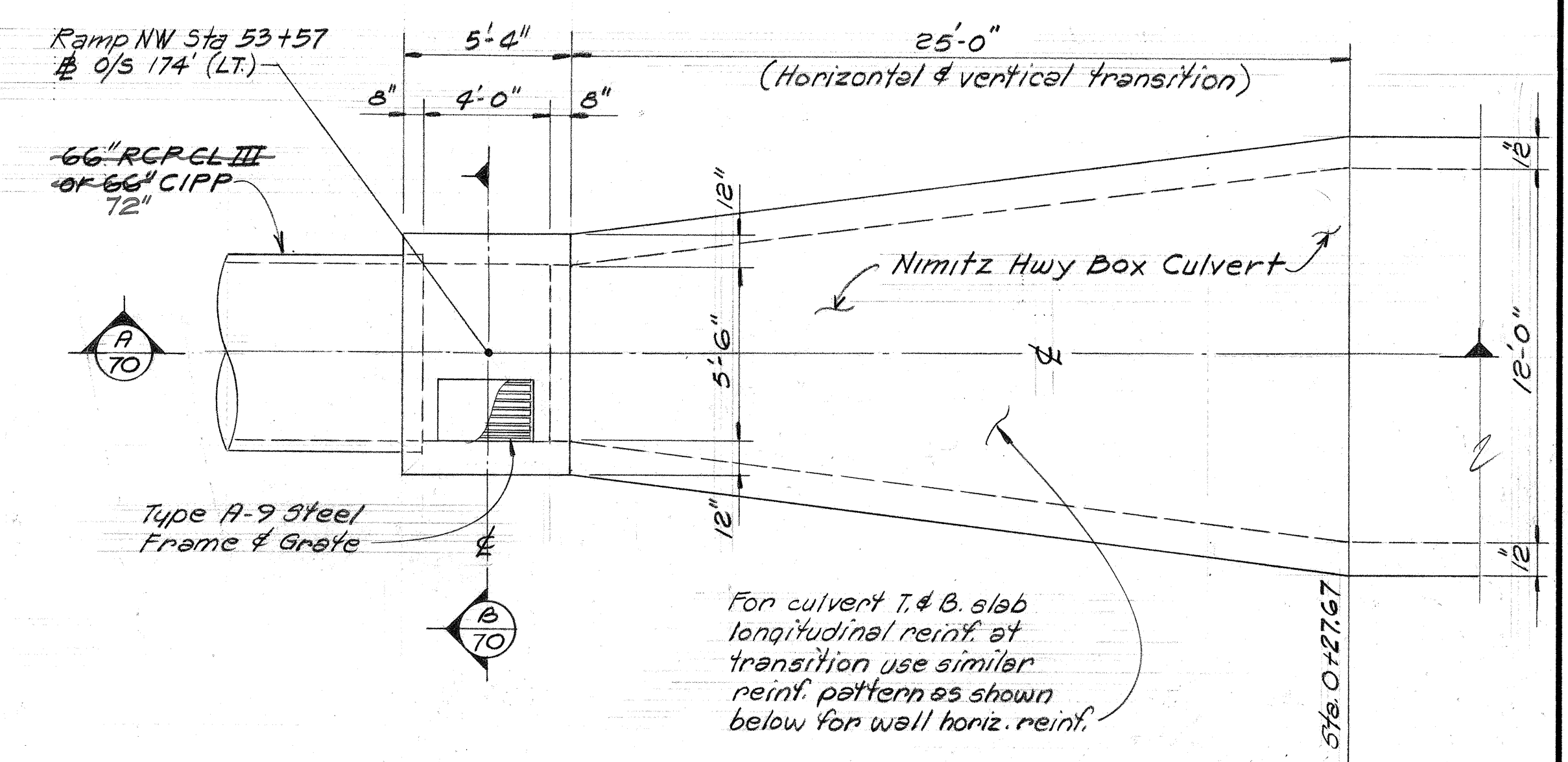


TYPICAL SECTION

SECTION AT END WALL (STA. 3+68.85)
Scale: 1/2" = 1'-0"



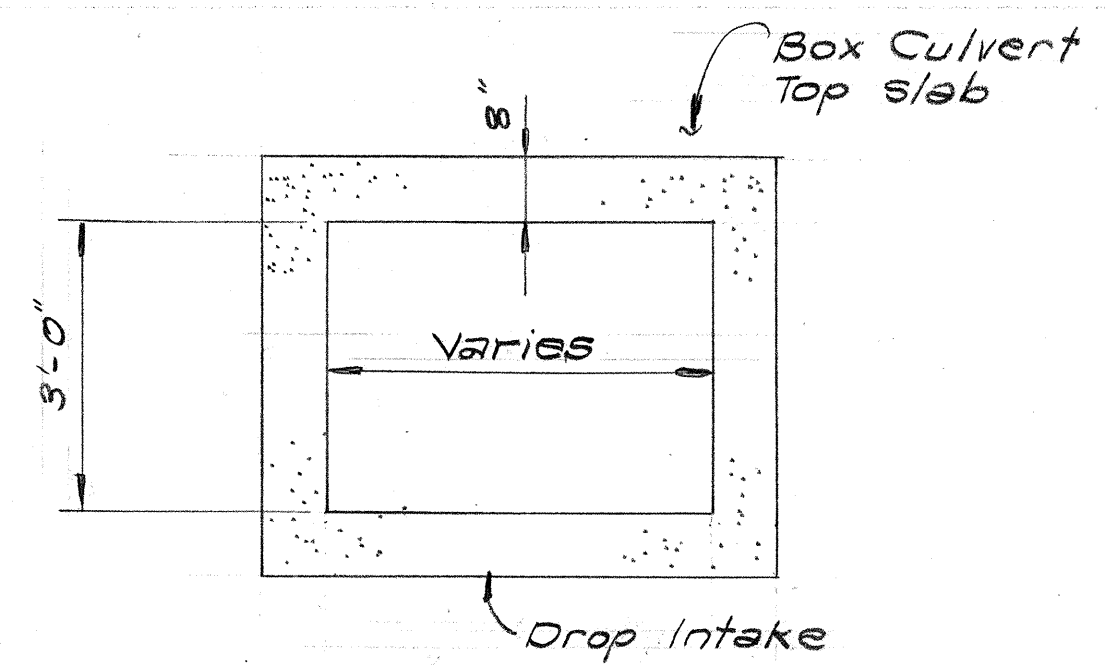
TYPICAL DETAIL AT JUNCTION
Scale: 1/2" = 1'-0"



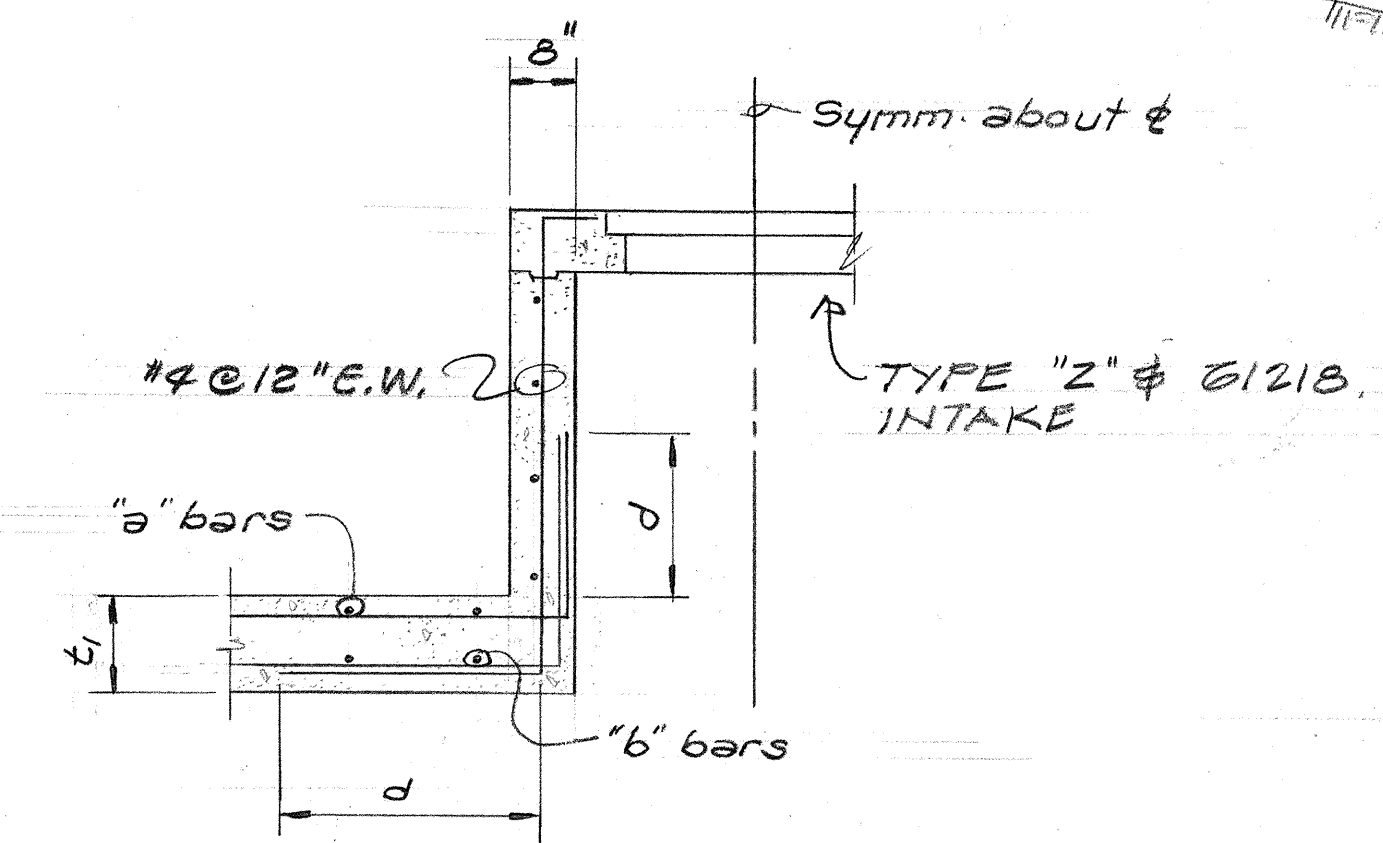
PLAN AT JUNCTION BOX #2 (STA. 0+00)
Scale: 1/4" = 1'-0"

CULVERT SCHEDULE										
Station From	To	X	Y	t ₁	t ₂	t ₃	"a" bar	"b" bar	"c" bar	"d" bar
0+00	0+27.67	Varies	Varies	12"	12"	12"	#6 @ 11"	#8 @ 11"	#8 @ 11"	#8 @ 11"
0+27.67	1+20	12'-0"	3'-6"	12"	12"	12"	#6 @ 11"	#8 @ 11"	#8 @ 11"	#8 @ 11"
1+20	2+40	12'-0"	3'-6"	1'-2"	1'-2"	1'-2"	#6 @ 12"	#8 @ 12"	#8 @ 12"	#8 @ 12"
2+40	2+60	Varies	3'-6"	1'-2"	1'-2"	1'-2"	#6 @ 12"	#8 @ 12"	#8 @ 12"	#8 @ 12"
2+60	3+68.85	8'-0"	3'-6"	1'-2"	1'-2"	1'-2"	#8 @ 13"	#8 @ 13"	#8 @ 13"	#8 @ 13"

SPECIAL NOTE: At Sta. 1+20 provide 3'-0" x 6'-0" opening in top slab for drop intake. Add 3-#8 x 14'-0" ea. side of opening.

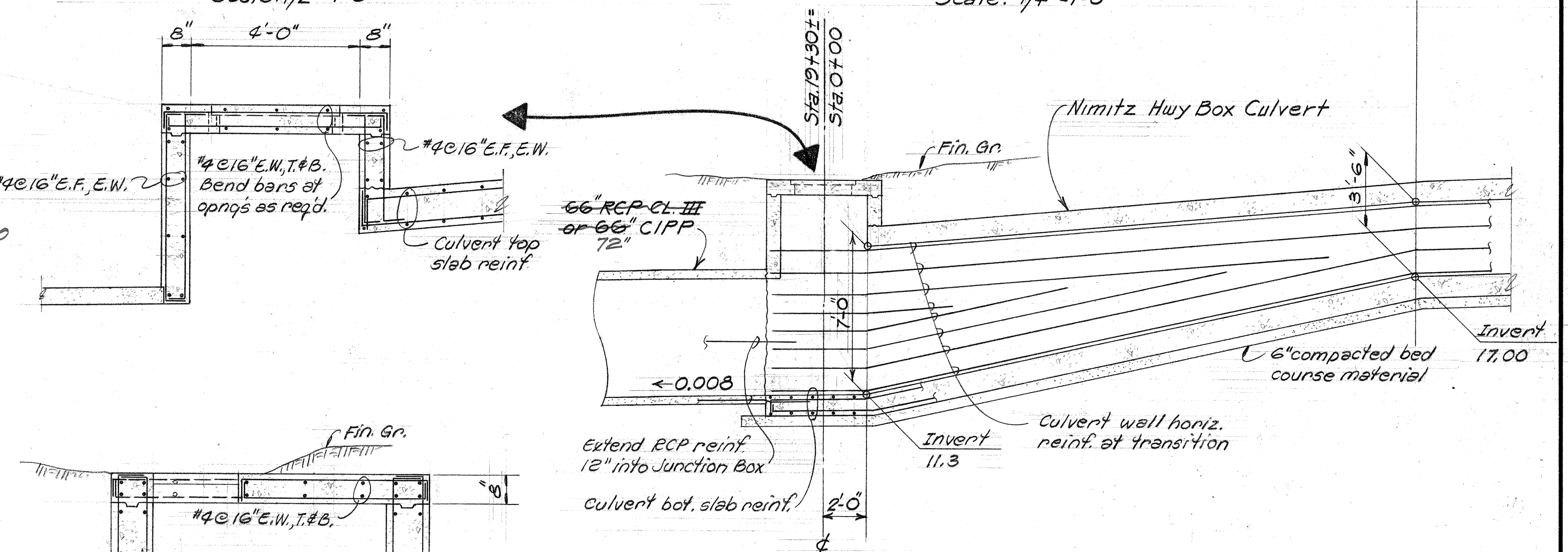


DROP INTAKE MOUNTED ON BOX CULVERT, FOR TYPE "2" INTAKE SEE SH. 71, FOR TYPE 6/12/18 SEE SH. 82
PLAN



NOTE: For Plan Location of Drop Intake See Sh. D-2

TYPICAL SECTION



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

NOTE: For Nimitz Hwy Box Culvert Plan See Sheet D-2

JUNCTION BOX #2 DETAILS

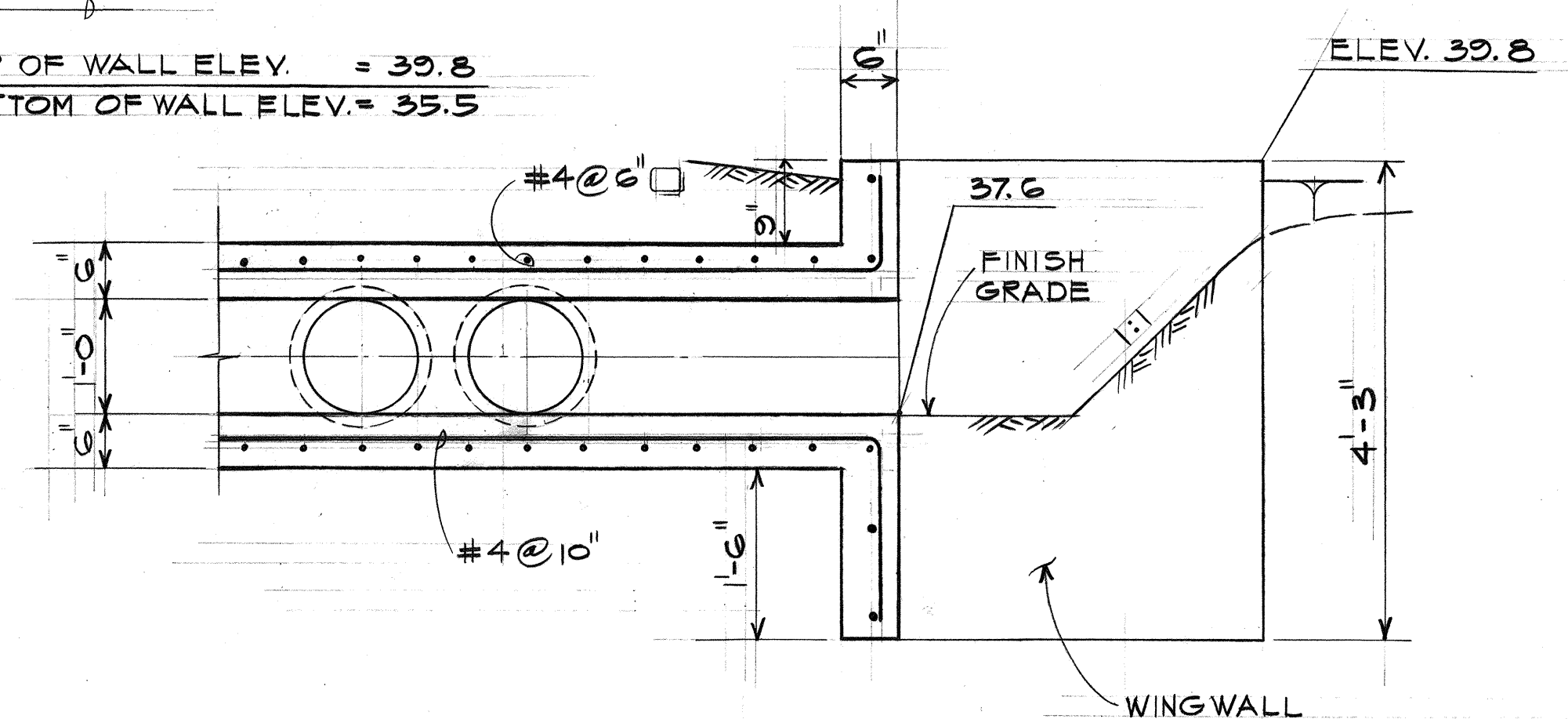
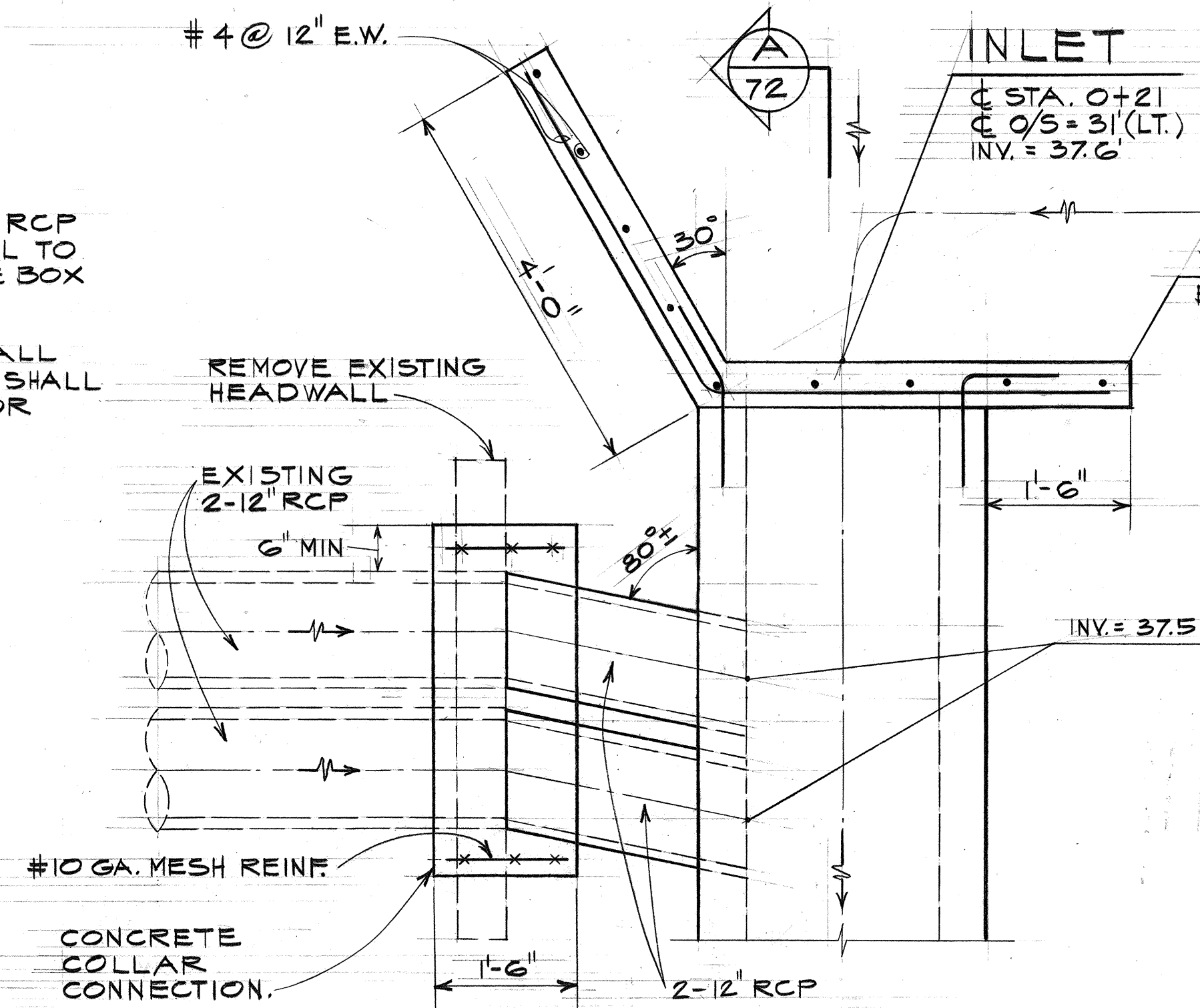
SHIMAZU SHIMADZUKI & FUKUDA, INC.
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MICHAEL PAUL MATHENIO
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SHIMAZU SHIMADZUKI & FUKUDA, INC.
REGISTERED PROFESSIONAL ENGINEER
No. 1150
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
(NIMITZ HIGHWAY BOX CULVERT)
&
(JUNCTION BOX #2)
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1 (73) : 15
SCALE: AS SHOWN DATE: DEC. 7, 1973
SHEET NO. 4 OF 17 SHEETS

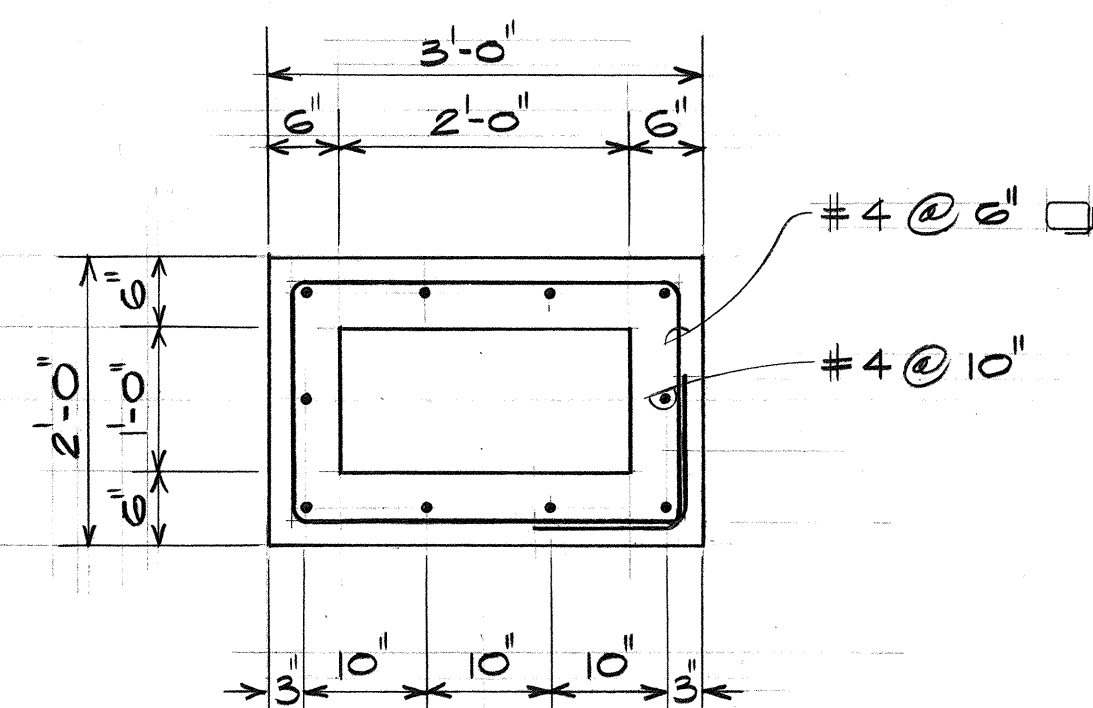
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(73):15	1974	72	369

NOTES:

1. COLLAR INSTALLATION, 2-12" RCP AND REMOVAL OF HEADWALL TO BE INCIDENTAL TO CONCRETE BOX CULVERT
2. WHEN REMOVING HEADWALL PORTION OF PIPE TO REMAIN SHALL BE FREE OF SHATTERING OR SPALLING.



SECTION A
72



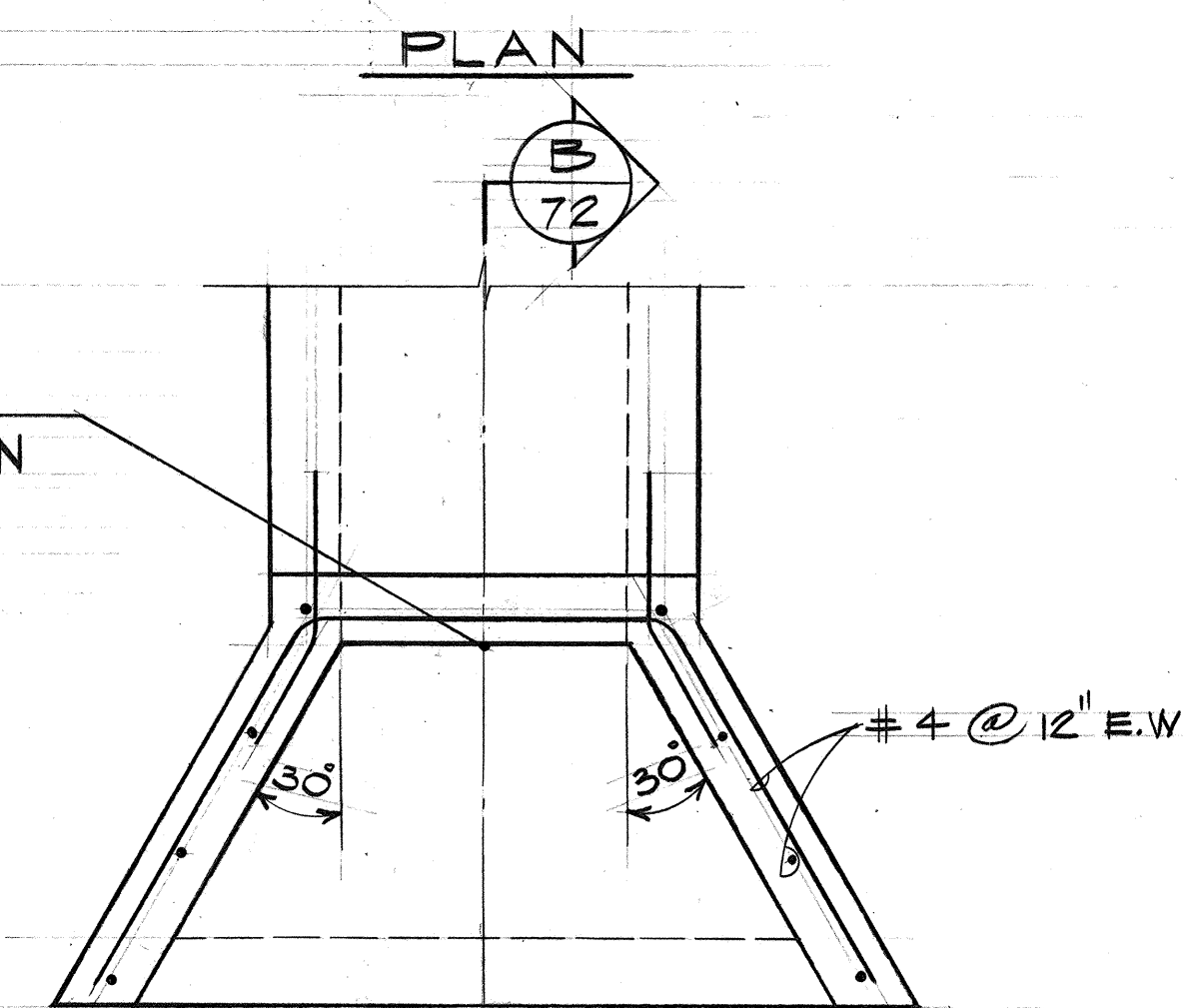
TYPICAL SECTION

STEWART AVE BOX CULVERT

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

OUTLET

STEWART AVE EXTENSION
STA. 0+18
O/S 39' (RT.)
INV. = 36.9



PLAN

SECTION B
72

OUTLET

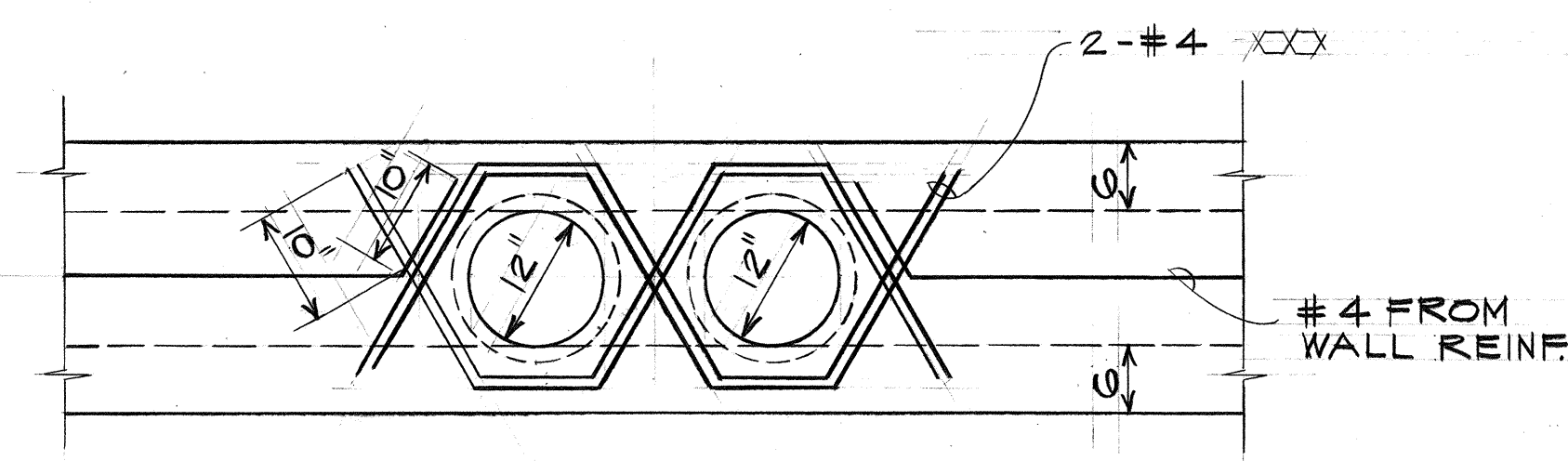
SCALE: 3/4" = 1'-0"

INLET

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

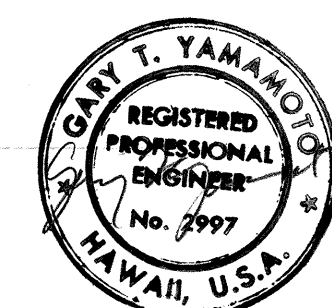
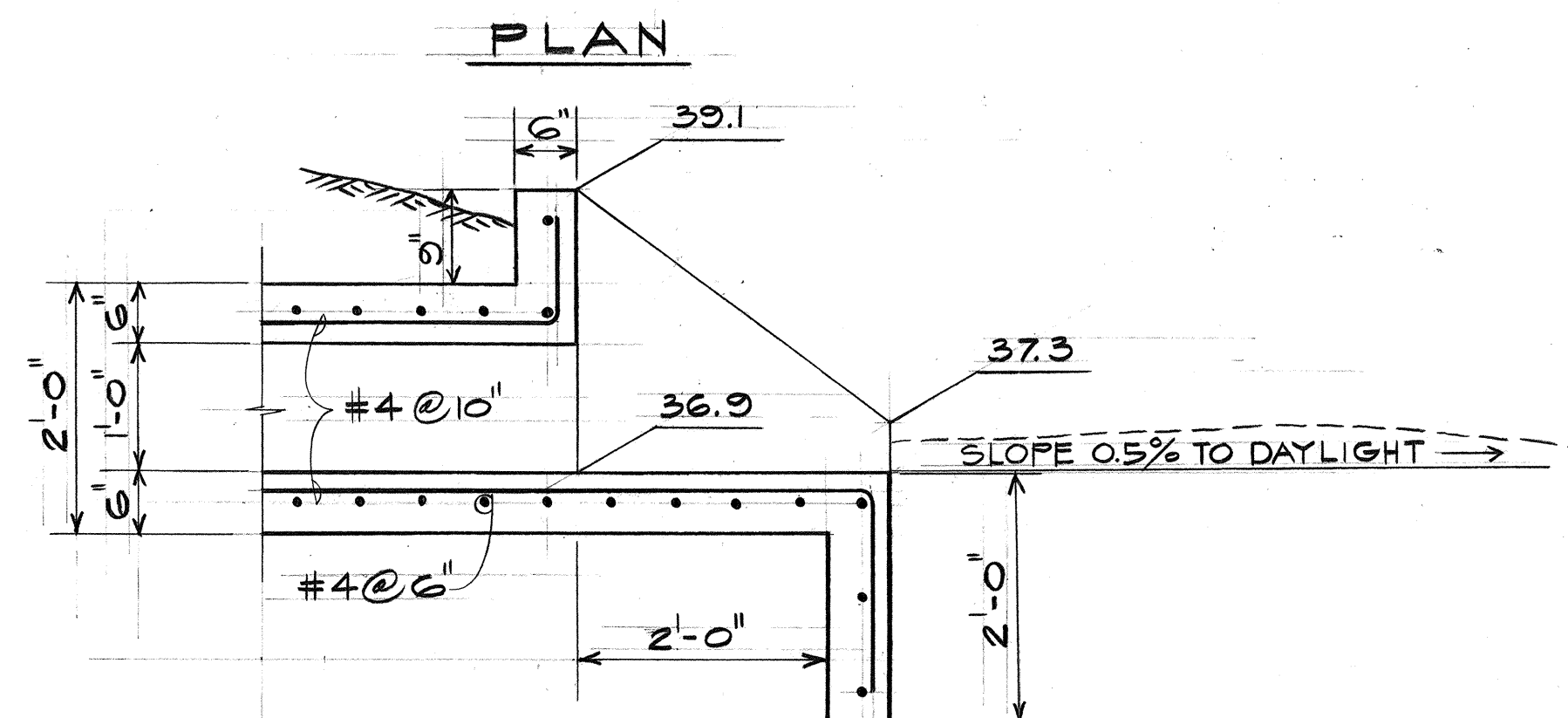
GENERAL NOTES:

1. REINFORCED CONCRETE DESIGN DATA:
f'c = 3,000 (28 DAYS)
f's = 20,000 PSI (DEFORMED BARS)
2. FOR SPLICES NOT DETAILED OVERLAP BAR 12".
3. REINFORCING STEEL ARE TO BE CENTERED IN SLAB.
4. ALL CONCRETE SHALL BE CLASS "A".
5. REINFORCING BARS SHALL BE PLACED 1/2" CLEAR FROM THE FACE OF FORM WORK.



PIPE CONNECTION DETAIL

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



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
(STEWART AVE. BOX CULVERT)

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-H-1 (73) : 15

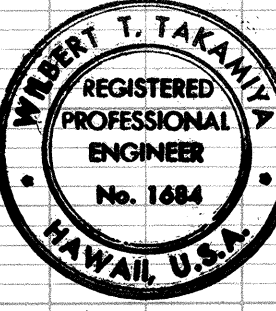
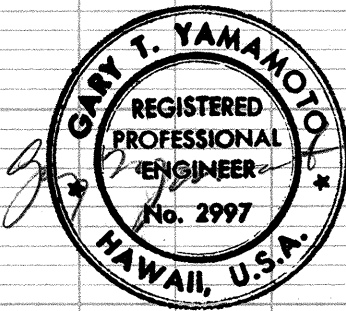
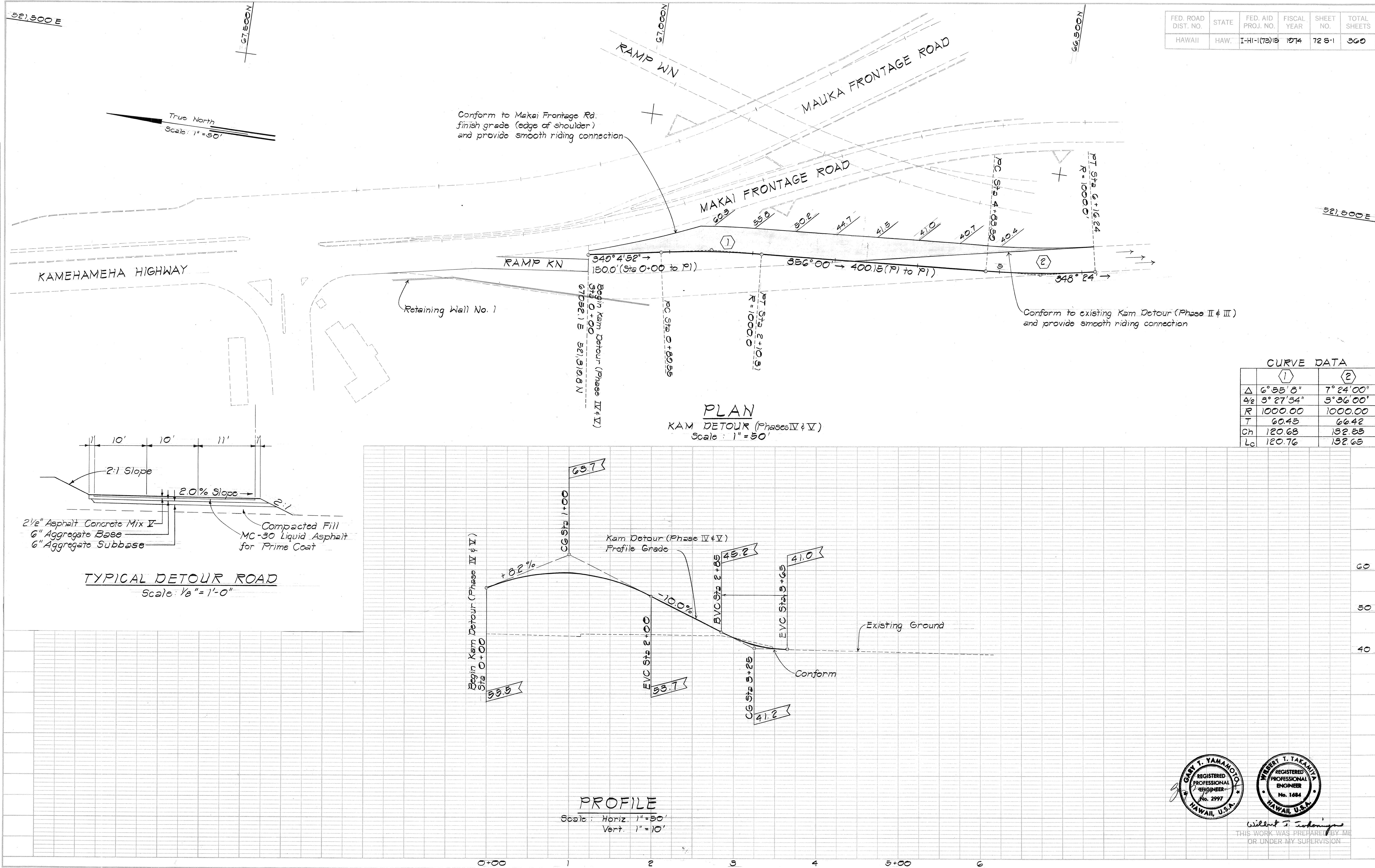
Scale: As Shown Date: DEC. 7, 1973

SHEET No. 6 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	72 S-1	360

PLAN	DATE	BY
SURVISED		
GRADES CHECKED		
PLOTTED		
NOTE BOOK NO.		
ALIGNMENT CHECKED		
RT OF WAY CHECKED		

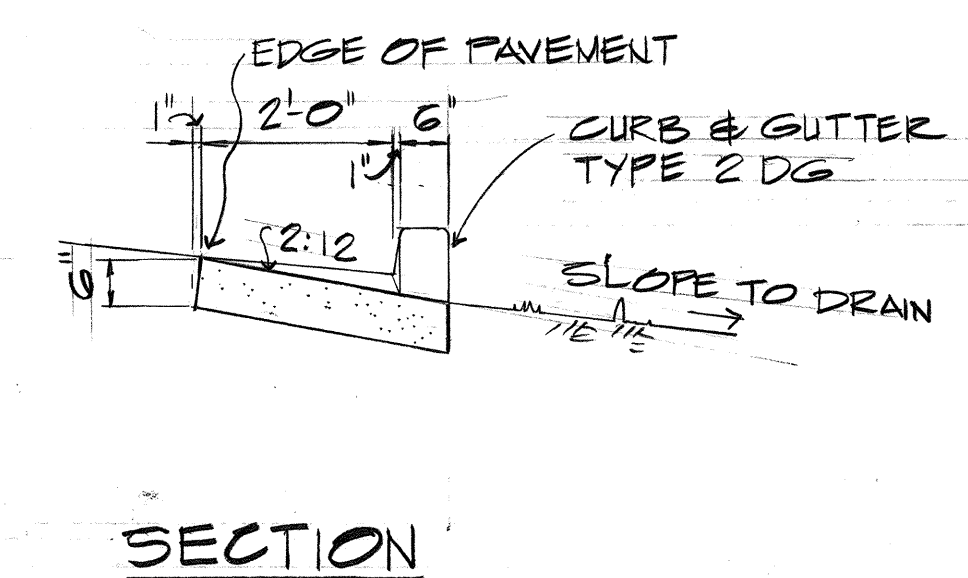
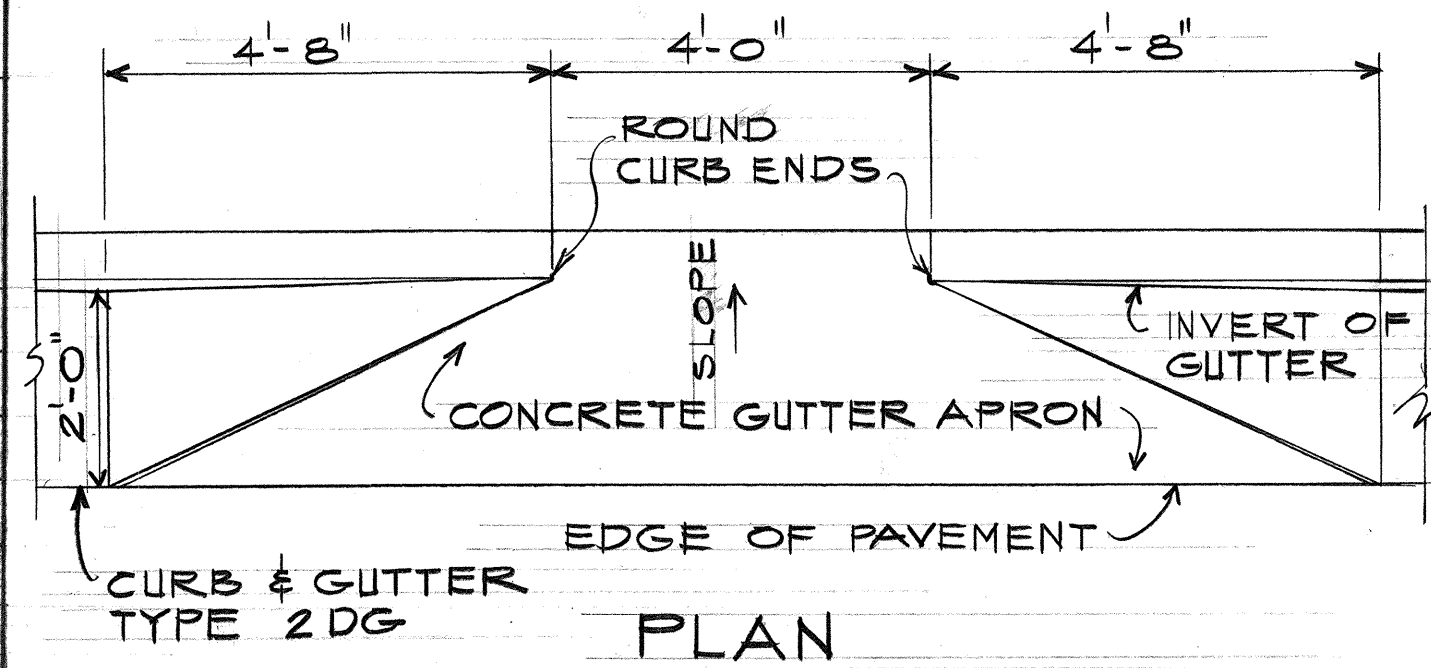
PROFILE	DATE	BY
SURVISED		
GRADES CHECKED		
PLOTTED		
NOTE BOOK NO.		
STRUCTURE NOTATIONS CHKO		



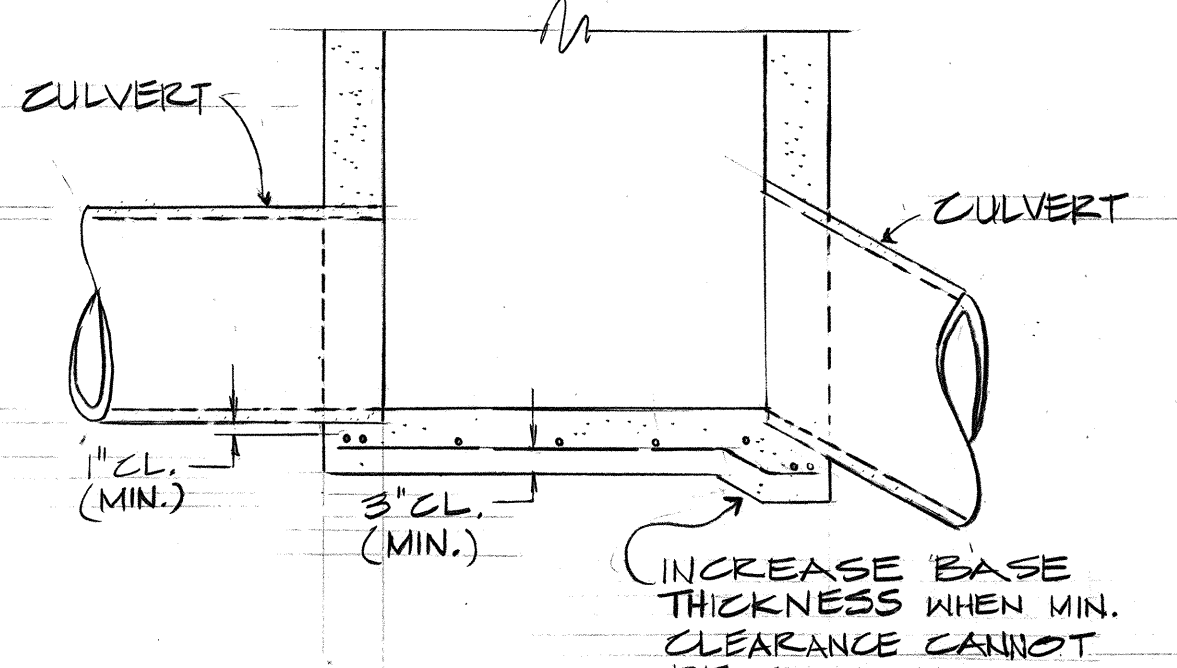
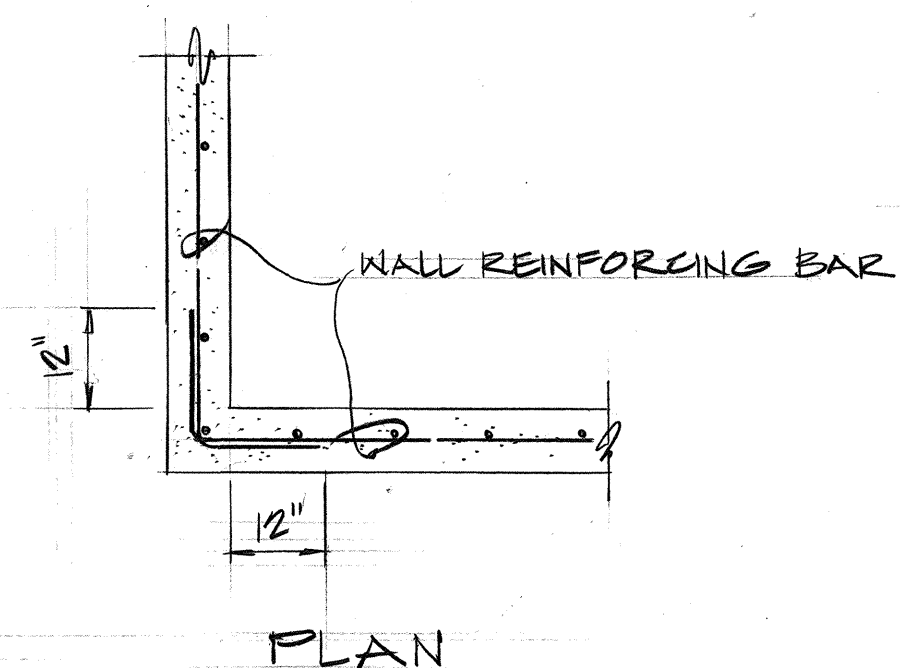
Willard T. Takamizawa
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(73)15	1974	73	369

SCHEDULE OF ROADWAY GUTTERS & CURBS											
LOCATION	ITEM NO.	609 190	609 193	609 195	609 200	609 230	609 241	609 249	609 250	ITEM NO.	LOCATION
H-1 OUTBOUND (92+00 TO 92+50 LT.)		G1G4 GUTTER LF								608 190	TRANSITIONS (G1G6 TO G1218)=100'
H-1 OUTBOUND (92+50 TO 93+50 LT.)	100	G1G6 GUTTER LF	TRANSITION							609 193	(G1G14 TO G1218)=400'
H-1 OUTBOUND (93+50 TO 96+75 LT.)	325	G1218 GUTTER LF								609 195	(TYPE 26 TO G1218)=103'
H-1 OUTBOUND (102+20 TO 109+50 LT.)	730	CURB TYPE 2A LF								609 200	(TYPE 2AGM TO G1218)=20'
MAKAI F.R. (14+05 TO 19+00 RT.)	495	GUTTER TYPE 26 LF								609 230	STEWART AVE. EXTENSION
MAKAI F.R. (20+00 TO 26+25 LT.)	625	CURB #1 LF								609 241	TOTAL
MAKAI F.R. (28+45 TO 34+00 LT.)	555	GUTTER TYPE 2AGM LF								609 249	10469 300 4280 31 461 812 1918 784
MAKAI F.R. (34+00 TO 34+50 LT.)	50	CURB #2 LF	TRANSITION							609 250	
MAKAI F.R. (34+50 TO 41+30 LT.)				680							
MAKAI F.R. (41+30 TO 41+50 LT.)	20		TRANSITION								
MAKAI F.R. (30+45 TO 35+50 RT.)	505										
RAMP EK (1+70 TO 2+60 RT.)	90										
RAMP EK (3+00 TO 9+75 LT.)	695										
RAMP WS (0+00 TO 0+55 LT.)				55							
RAMP WS (0+55 TO 1+05 LT.)	50	TRANSITION									
RAMP WS (1+05 TO 7+50 LT.)	645										
RAMP KN (2+00 TO 8+40 LT.)	640										
RAMP KN (9+50 RT.) TO RAMP WN (34+00 RT.)	467										
RAMP WN (34+00 TO 34+50 RT.)	50	TRANSITION									
RAMP WN (34+50 RT.) TO RAMP EN (0+30 LT.)				443							
RAMP WN (16+63.87 TO 17+50 RT.)				86							
RAMP EN (6+50 TO 11+50 LT.)	500										
RAMP EN (11+50 TO 12+00 LT.)	50	TRANSITION									
RAMP EN (12+00 TO 13+50 LT.)				150							
RAMP EN (13+50 LT.) TO RAMP MN (0+00 LT.)	53	TRANSITION									
RAMP EN (11+50 TO 23+85 RT.)				1235							
RAMP EN (23+85 TO 24+35 RT.)	50	TRANSITION									
RAMP EN (24+35 TO 26+50 RT.)	215										
RAMP EN (21+10 TO 26+25 LT.)	915										
RAMP MN (0+00 TO 3+00 LT.)					300						
RAMP MN (3+00 TO 3+50 LT.)	50	TRANSITION									
RAMP MN (3+50 TO 5+50 LT.)				200							
RAMP MN (5+50 TO 6+00 LT.)	50	TRANSITION									
RAMP MN (6+00 TO 8+00 LT.)	200										
RAMP MN (3+50 TO 7+00 RT.)	350										
RAMP MN (7+00 TO 7+50 RT.)	50	TRANSITION									
RAMP MN (7+50 RT.) TO MAKAI F.R. (38+50 RT.)				564							
RAMP NW (42+35 TO 50+75 RT.)	830										
RAMP NS (0+98 RT.) TO RAMP NS (2+45 RT.)	147										
RAMP NS (9+35 TO 14+70 RT.)	535										
RAMP NS (3+00 TO 6+50 LT.)	350										
RAMP NS (6+50 TO 7+00 LT.)	50	TRANSITION									
RAMP NS (7+00 TO 11+75 LT.)				475							
RAMP NE (3+00 TO 7+50 LT.)	450										
RAMP NE (5+50 TO 8+05 RT.)	255										
VALKENBURGH (11+72.64 RT.) TO MAKAI F.R. (41+50 LT.)										379	
MAUKA F.R. (39+88.88 RT.) TO MAKAI F.R. (44+40.24 LT.)										423	
VALKENBURGH (14+92 TO 23+44.41 LT.)											968
VALKENBURGH (14+98 TO 23+44.41 LT.)											950
VALKENBURGH/MAKAI TRAFFIC ISLAND				31							
SUB-TOTAL		10269	850	3938	31	300	802	1918			

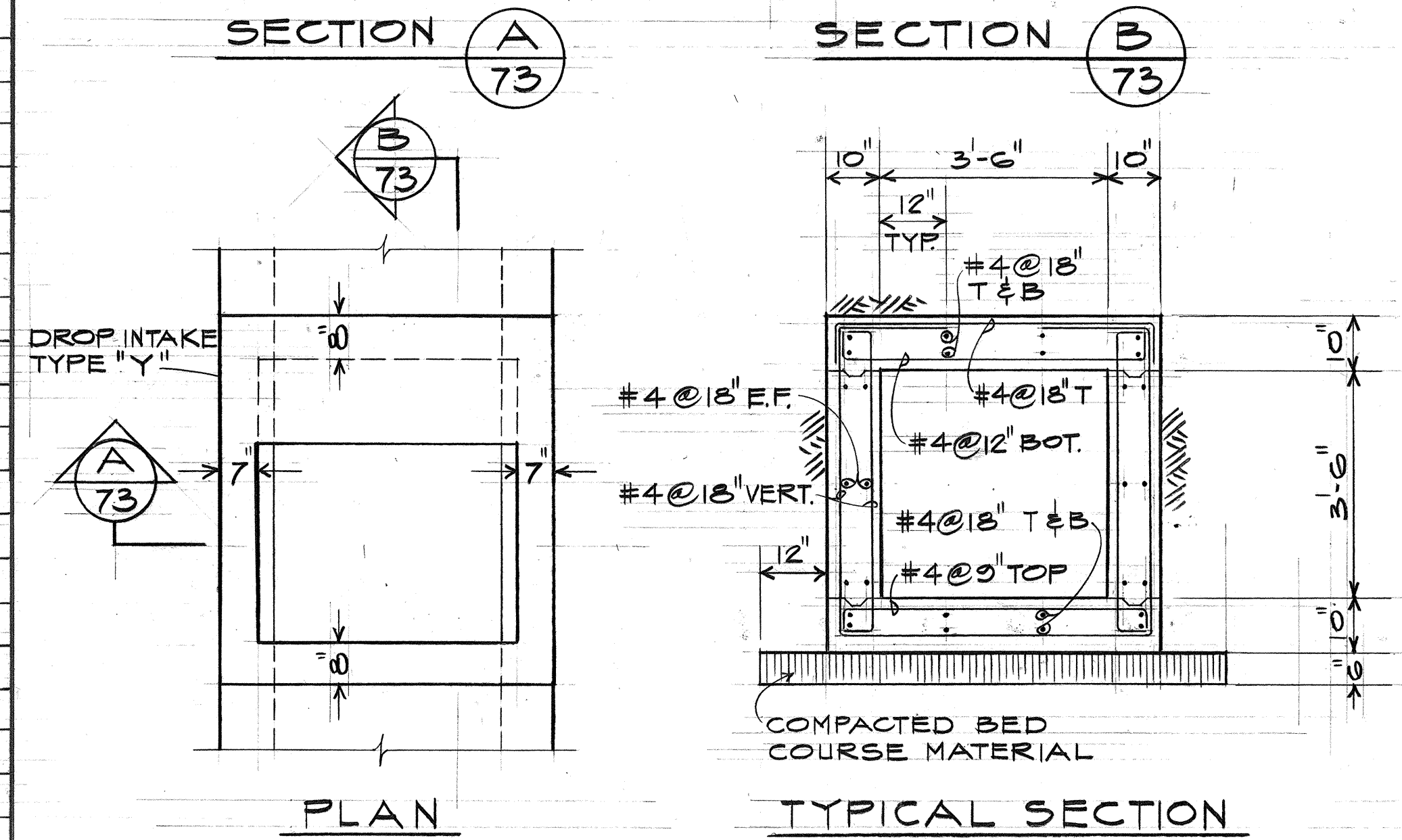
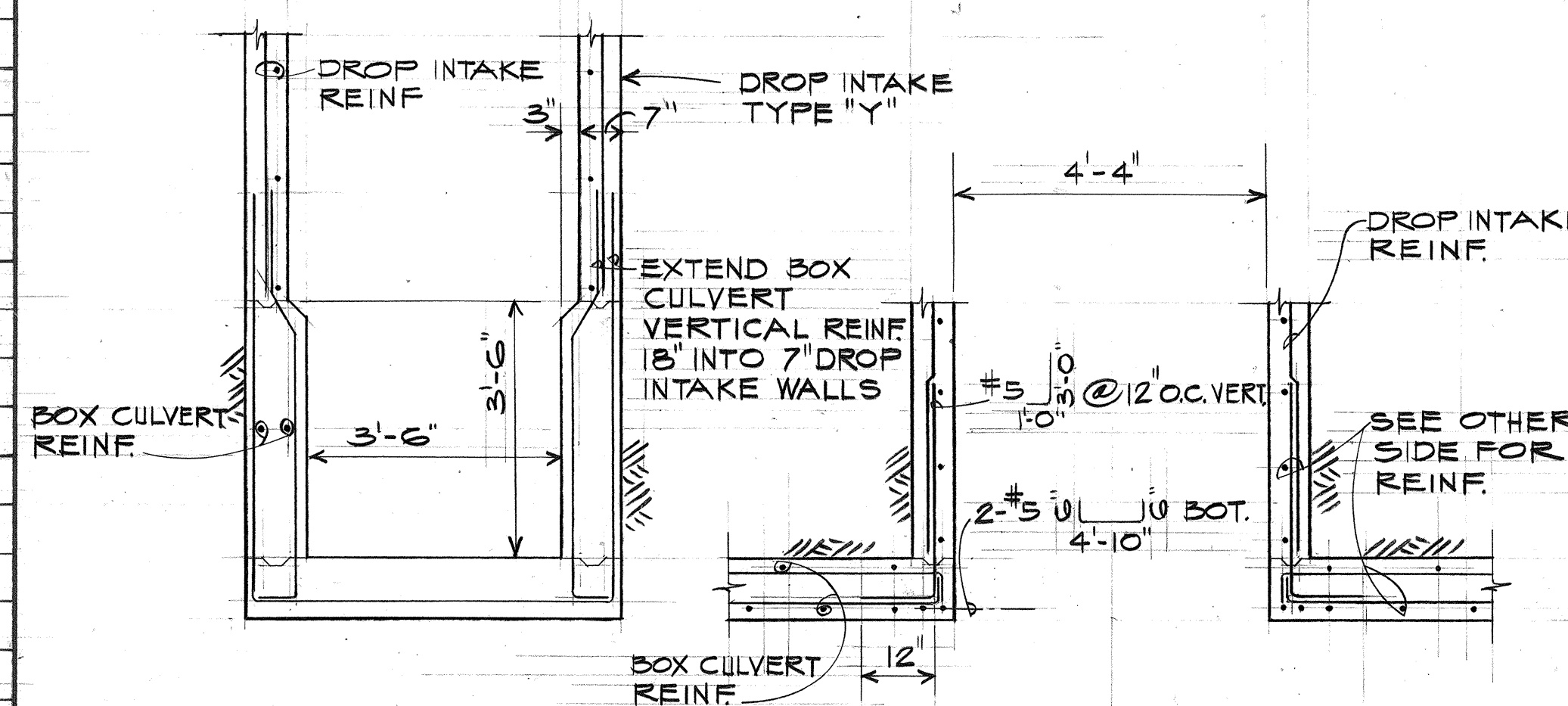


TYPICAL CURB OPENING
SCALE: 1/2"=1'-0"

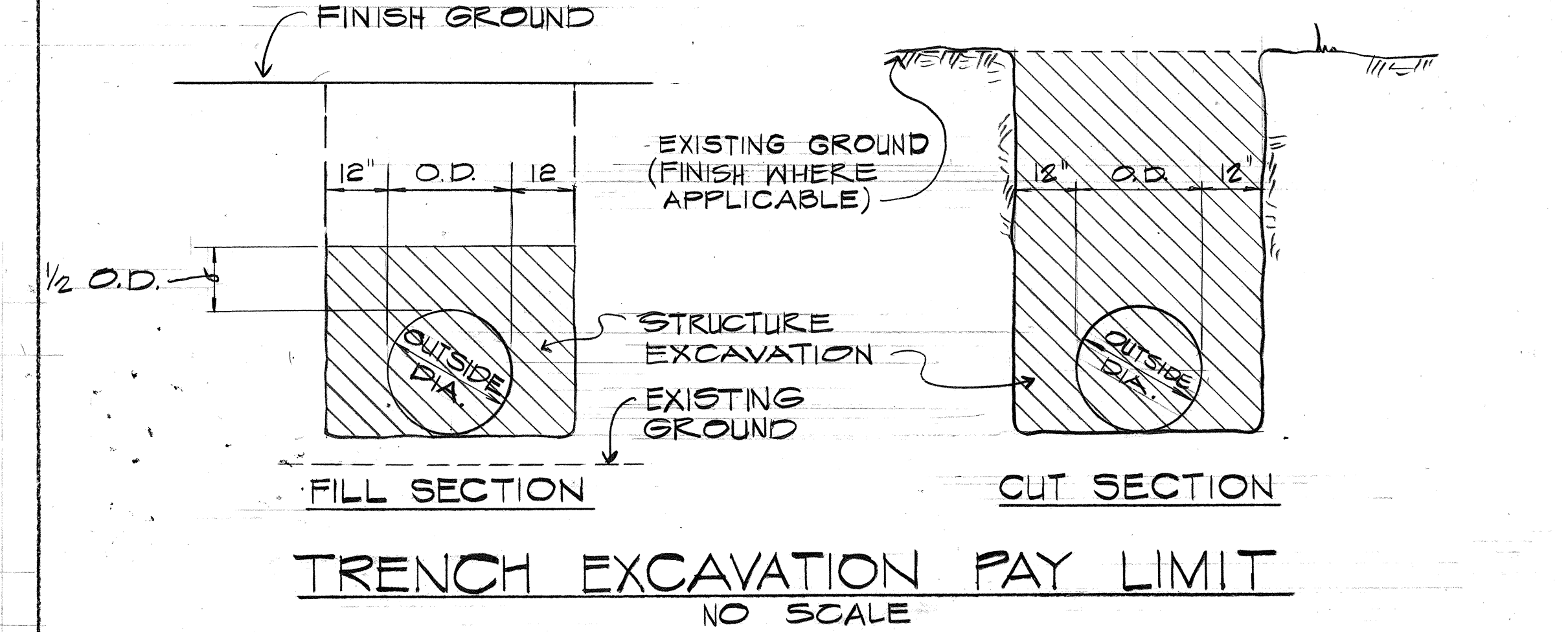


TYPICAL WALL CORNER REINFORCEMENT
SCALE: 1/2"=1'-0"

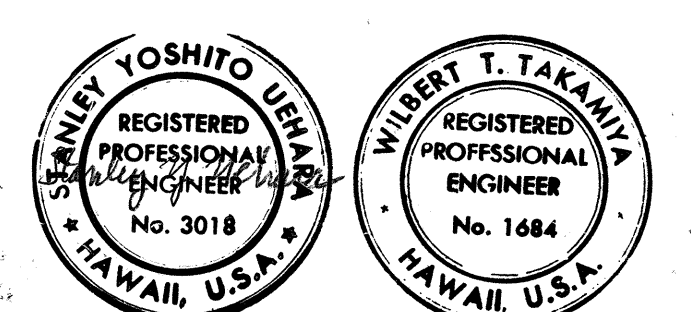
TYPICAL DETAIL FOR MIN. INLET BASE THICKNESS
SCALE: 1/2"=1'-0"



DETAIL OF DROP INTAKE "Y" CONNECTION
SCALE: 1/2"=1'-0"



TRENCH EXCAVATION PAY LIMIT
NO SCALE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

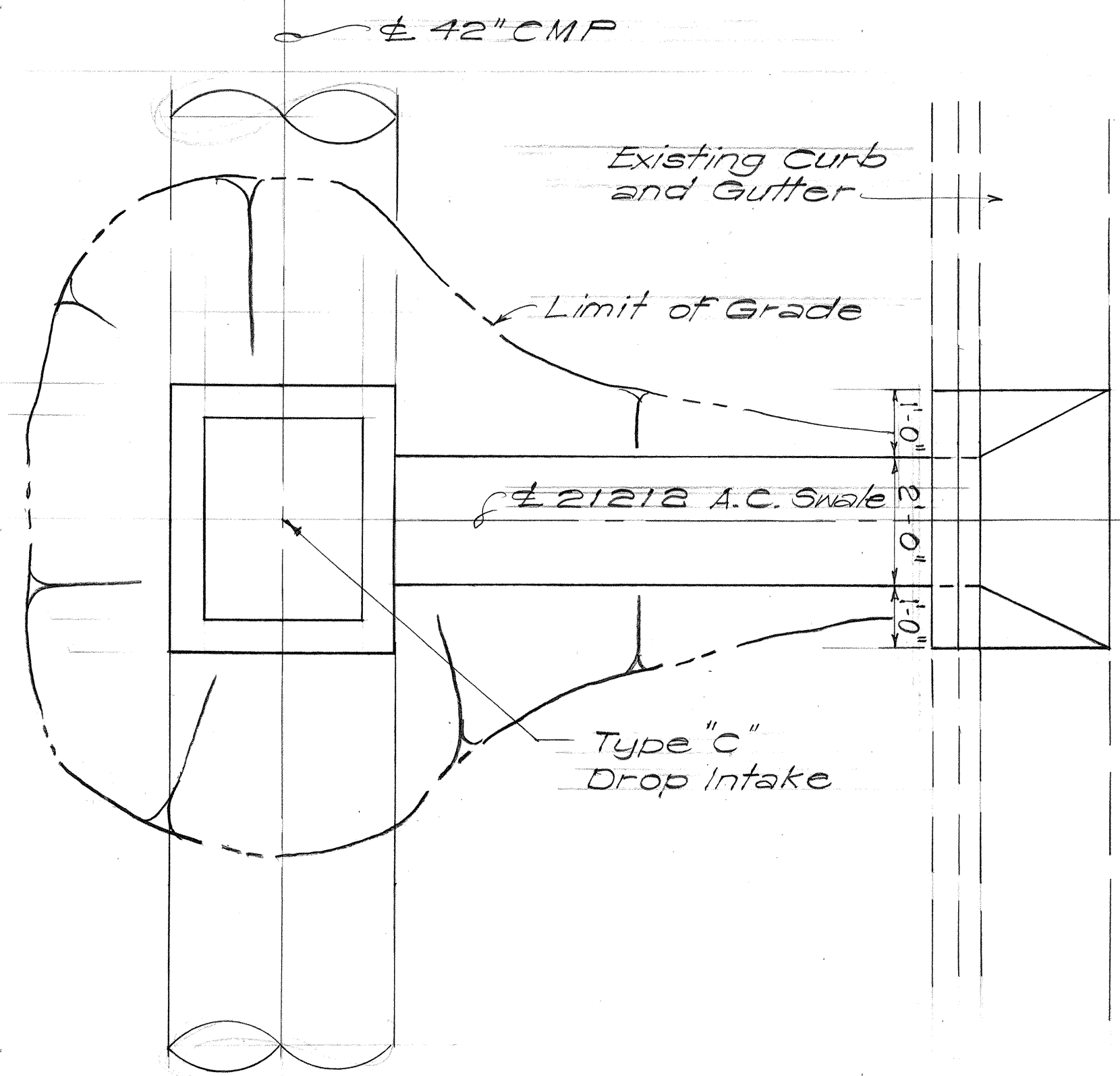
DRAINAGE DETAILS

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(73)15
SCALE: AS SHOWN DATE: DEC. 7, 1973
SHEET NO. 7 OF 17 SHEETS

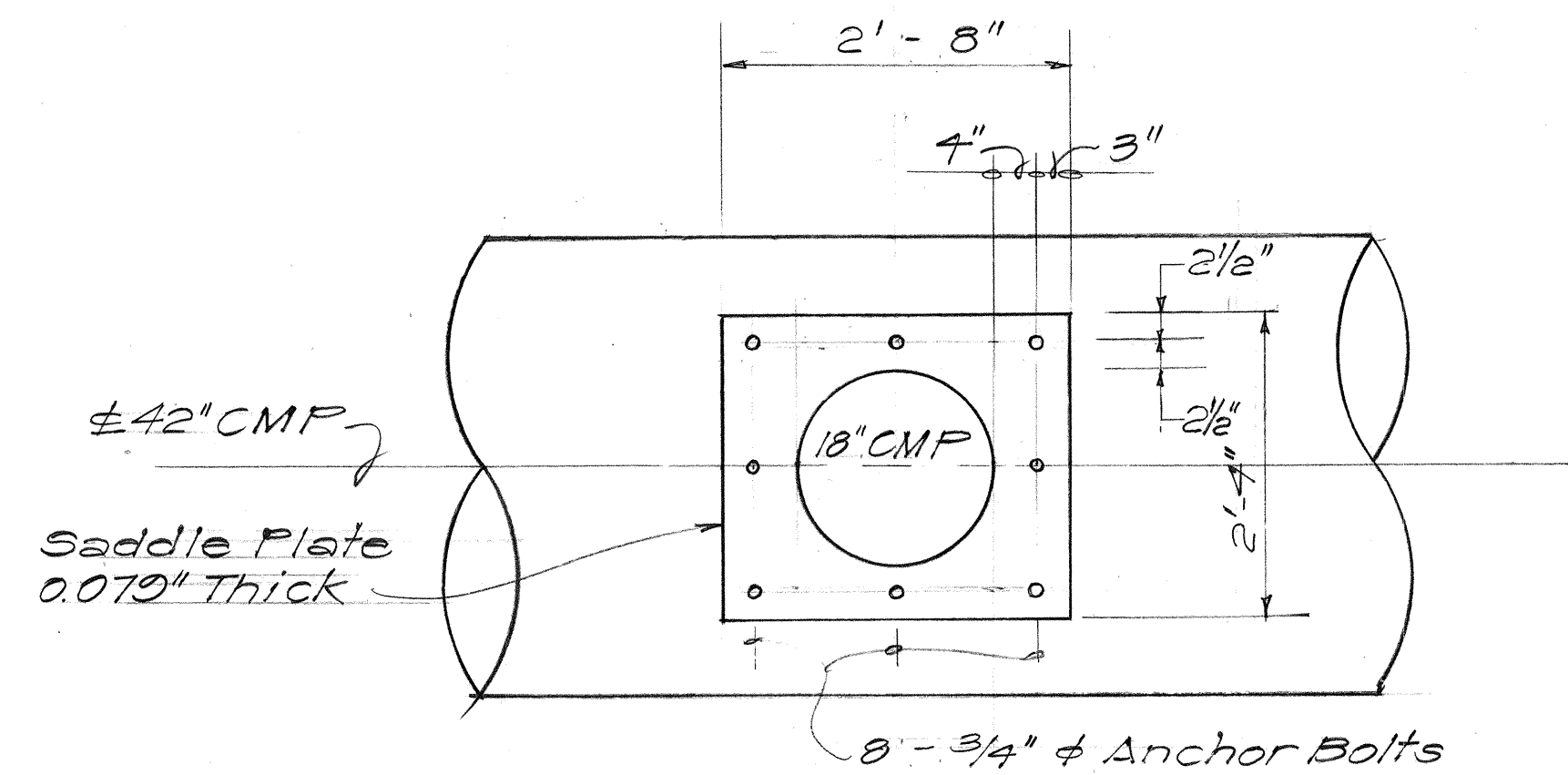
9/3/75	REVISE G1218 GUTTER LENGTH
4 26 74	ADDED RCB DETAIL
DATE	REVISION

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

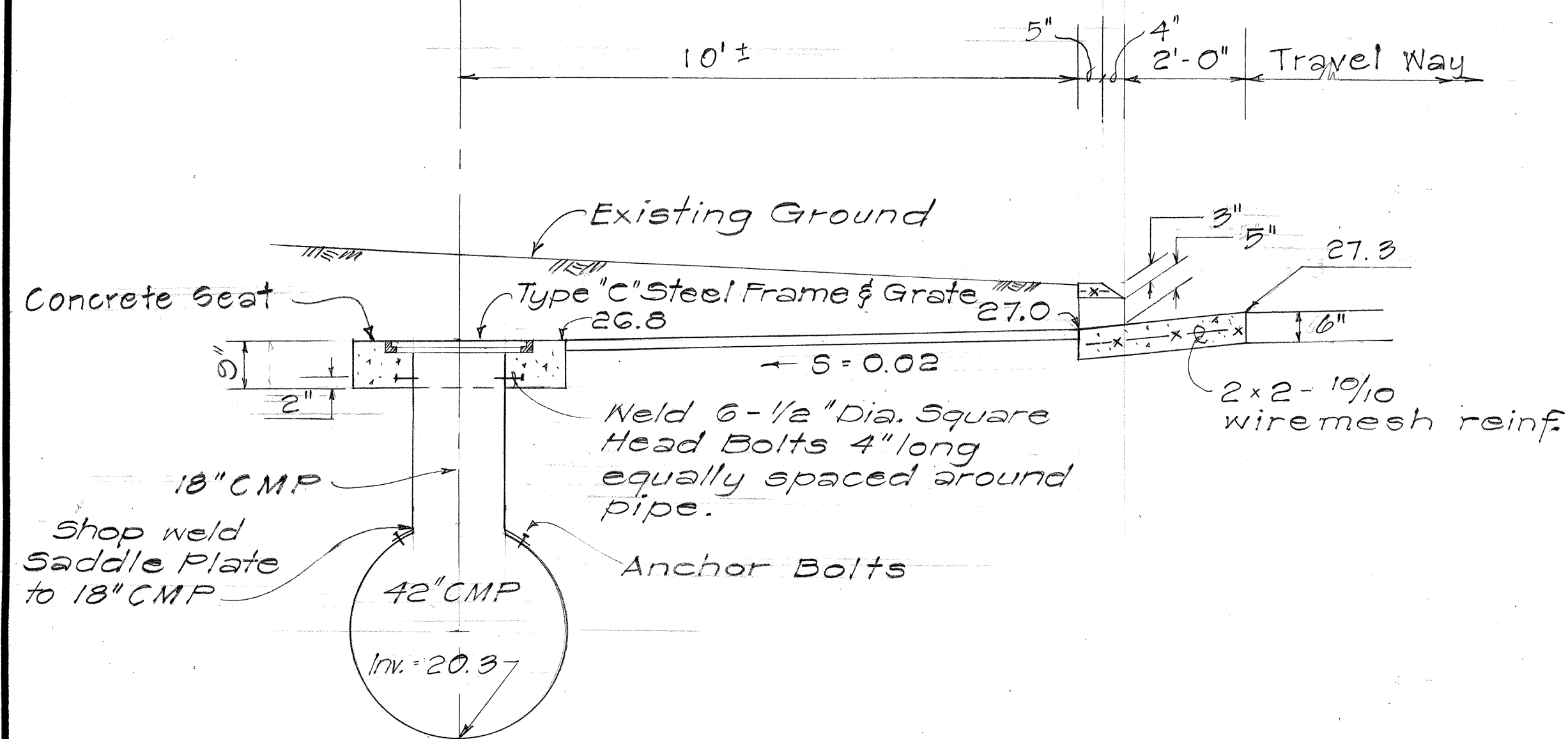
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	73 S-1	369



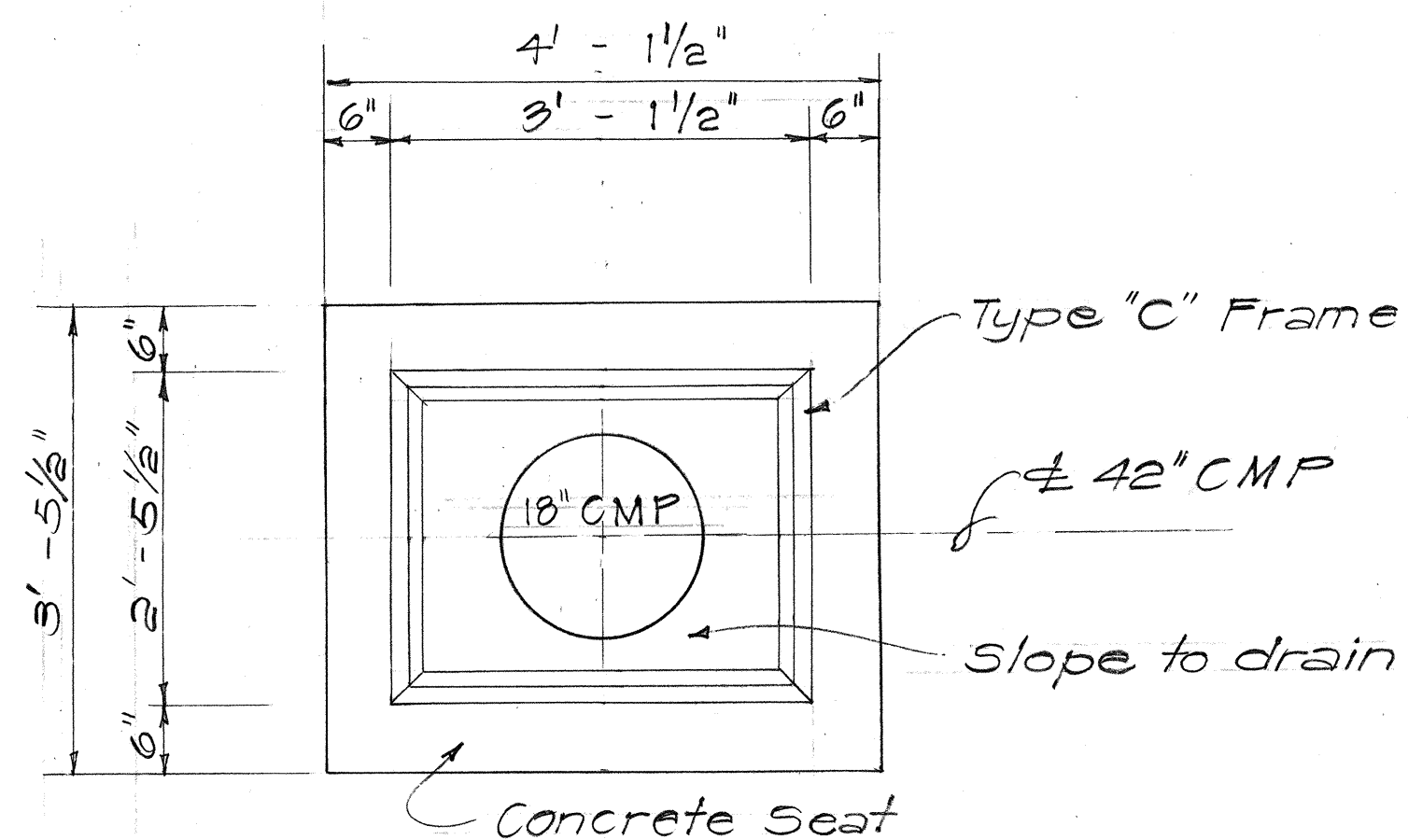
PLAN
Scale: 1/2" = 1' - 0"



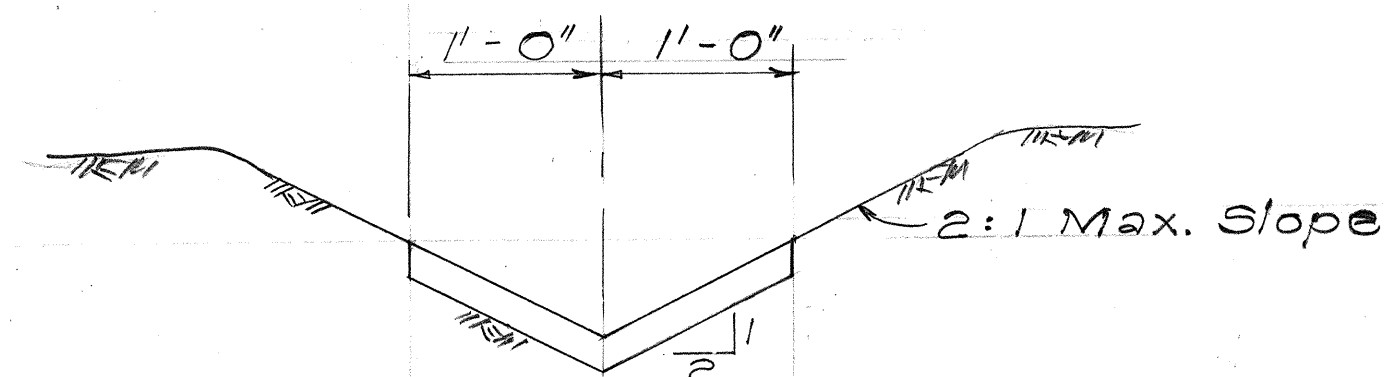
PLAN
SADDLE PLATE
Scale: 3/4" = 1' - 0"



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



PLAN
CONCRETE SEAT
Scale: 3/4" = 1' - 0"



21212 A.C. GUTTER
Scale: 1" = 1' - 0"

THIS SHEET PREPARED
DURING "AS-BUILT" POSTING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE DETAILS
DRAIN FROM CURB AND
GUTTER TO CULVERT
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1 (73):15

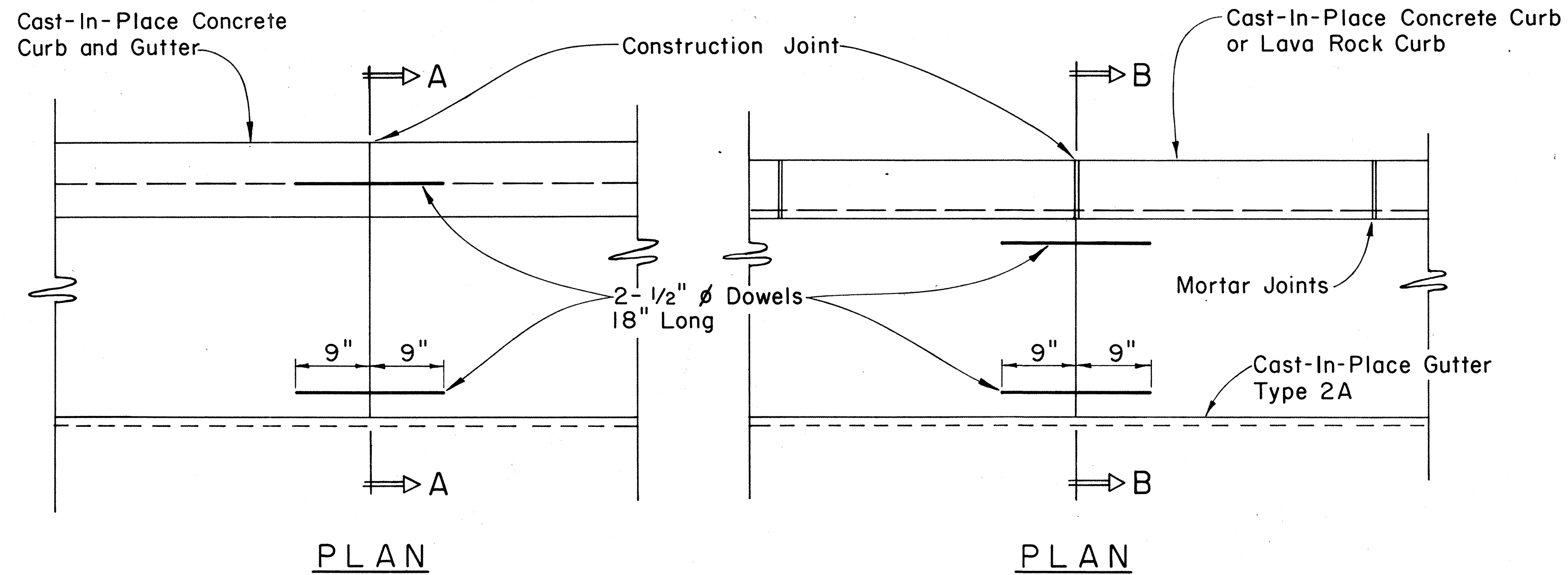
Scale: As Shown

SHEET NO. OF SHEETS

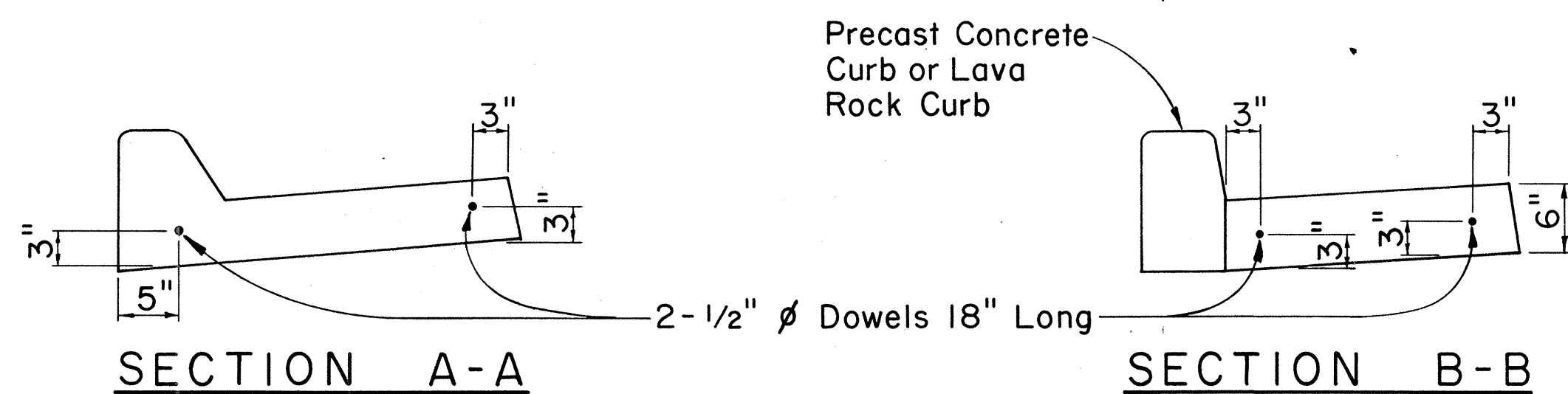
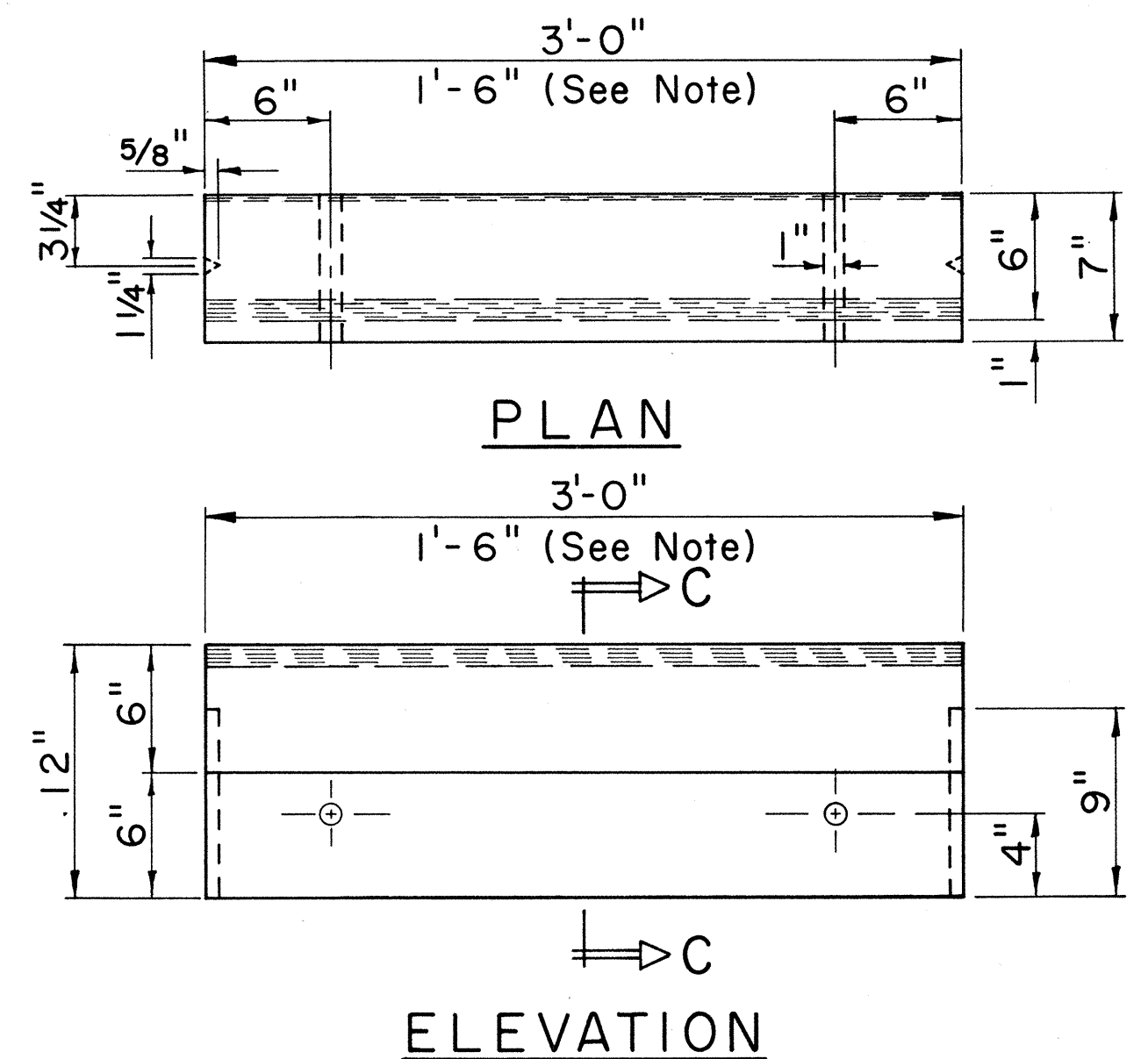
73 S-1

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	NOTED BY	
NO.		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(73)15	1974	74	369

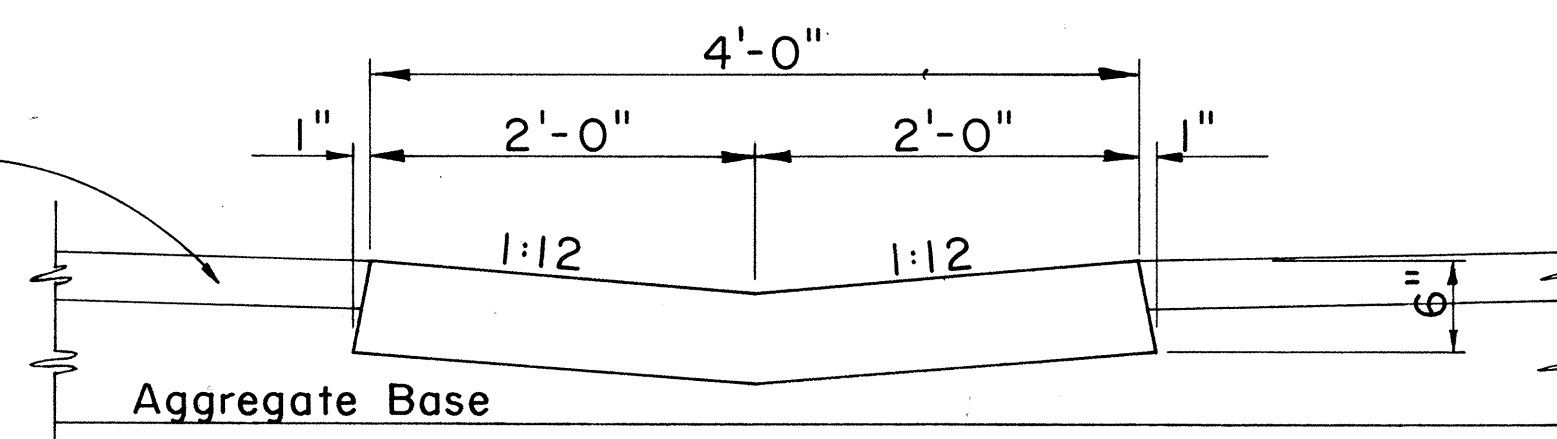
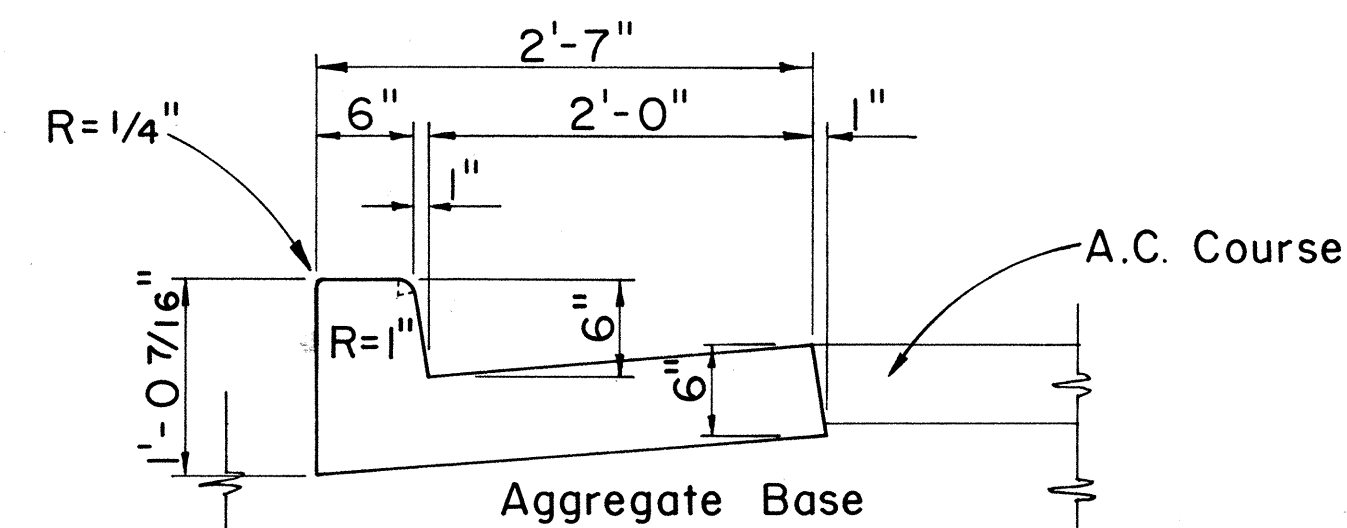
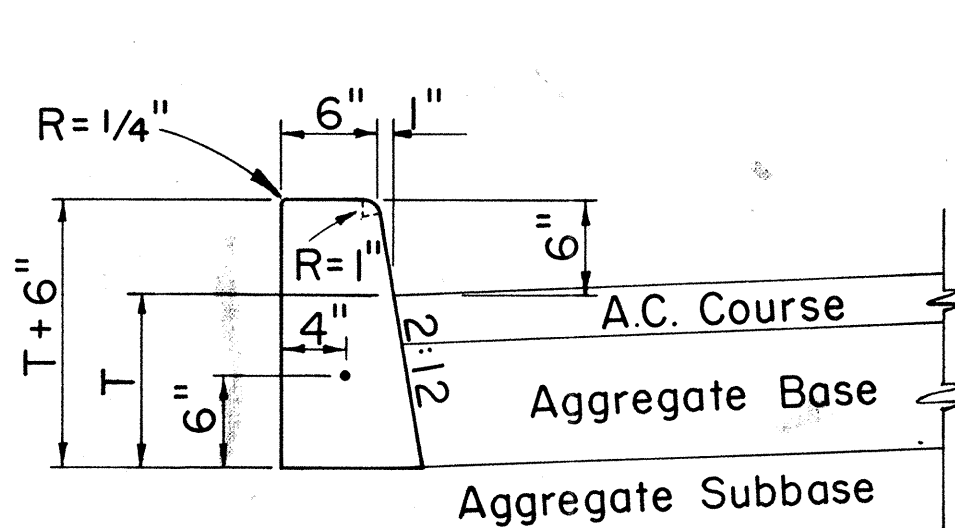
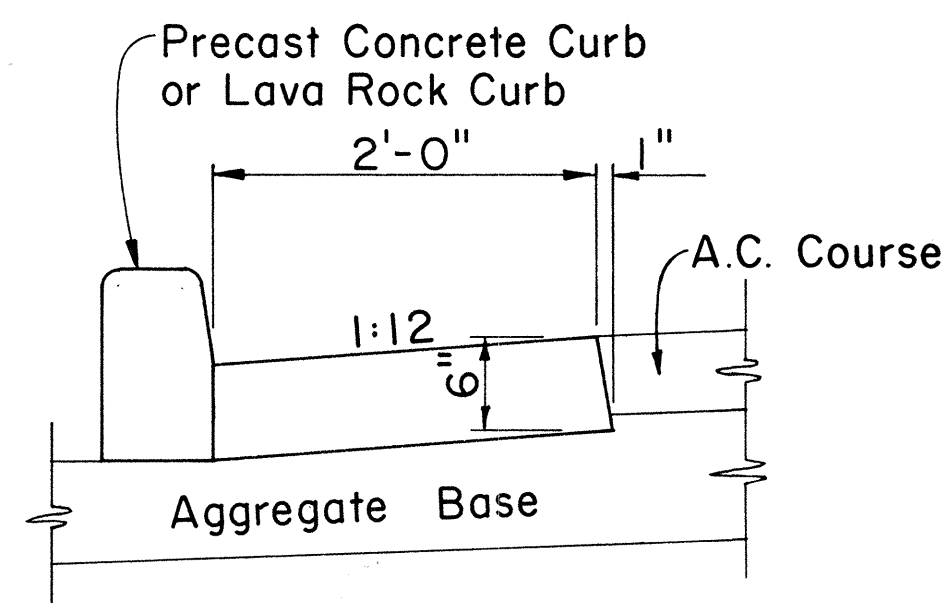
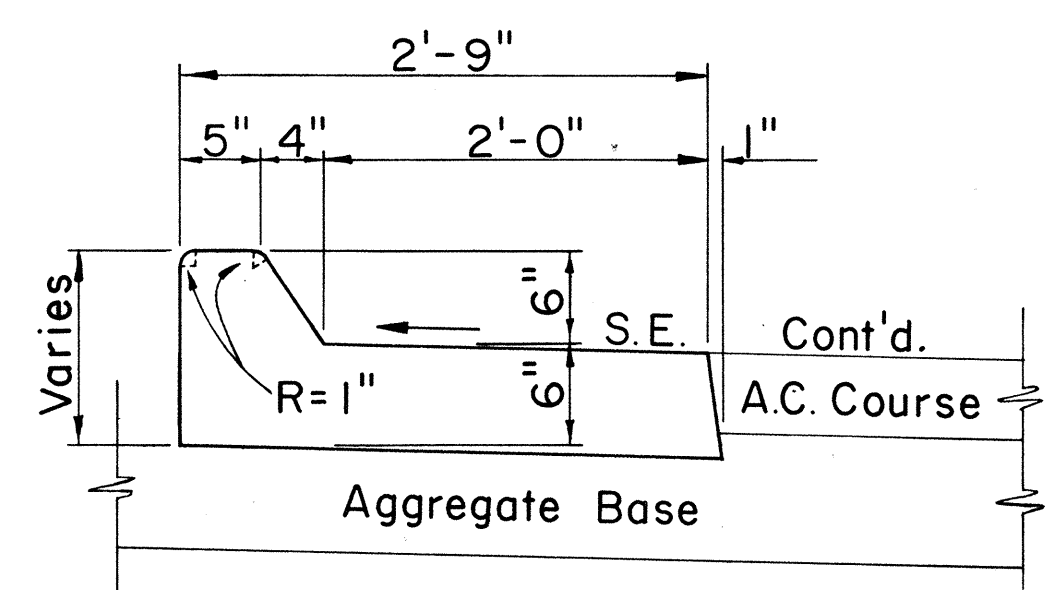
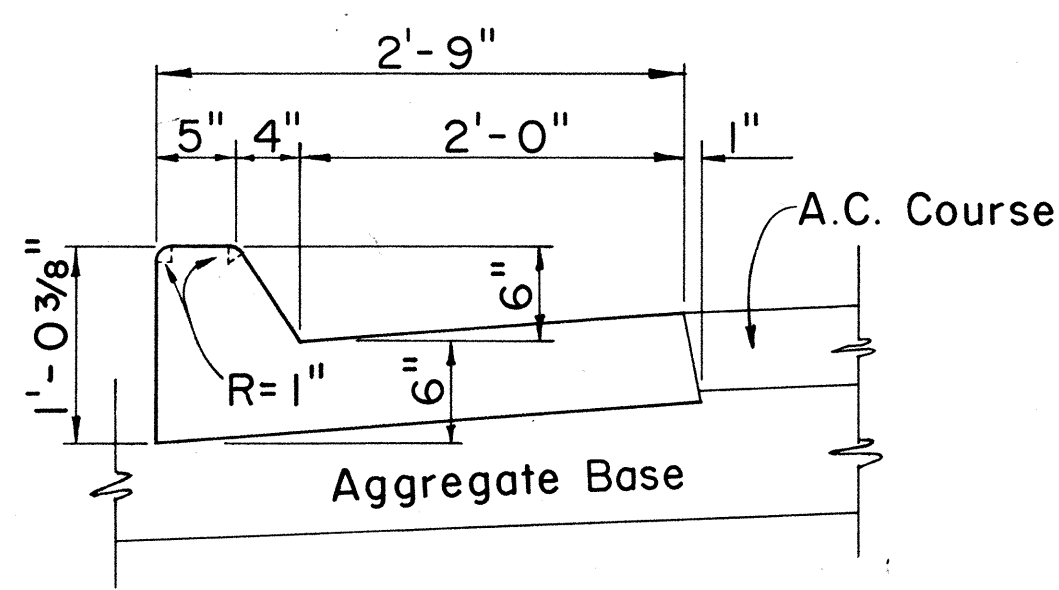
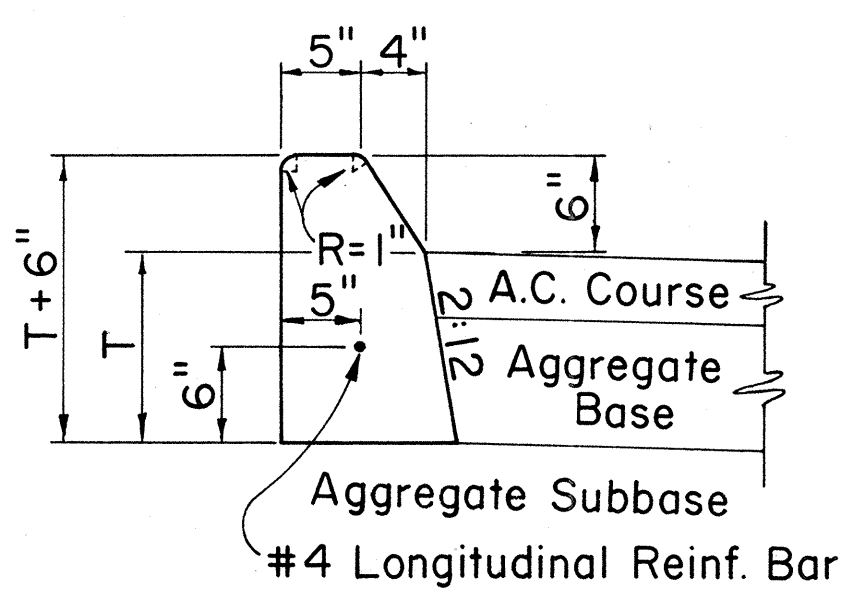


CURB, TYPE 6
BITUMINOUS CURB
Scale: 1 1/2" = 1'-0"



CAST-IN-PLACE CURB & GUTTER **CAST-IN-PLACE GUTTER**

CONSTRUCTION JOINT DETAIL
Scale: 1" = 1'-0"



CURB, TYPE 2D

CURB & GUTTER, TYPE 2DG

GUTTER, TYPE 2G

CAST-IN-PLACE CONCRETE CURBS AND/OR GUTTERS
Scale: 1" = 1'-0"

NOTE:
For curb returns use 1'-6" pre-cast concrete curbs.

SECTION C-C
CURB, TYPE 3D
PRE-CAST CONC. CURB
Scale: 1 1/2" = 1'-0"

APPROVAL RECOMMENDED: *M. F. F.* 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED: *R. S. S.* 12-10-59
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TYPICAL DETAILS OF CURB
AND/OR GUTTERS

Scale: As Shown

SHEET No. 8 OF 17 SHEETS DD 609.1

[illegible]

Technical drawing of a rectangular plate. The overall dimensions are 4'-0" in length and 7" in height. The drawing includes various tolerances and specific dimensions for different sections and features:

- Overall length: 4'-0"
- Overall height: 7"
- Top edge: 6" from the left corner to the start of a section, and 6" from the end of a section to the right corner.
- Right edge: 5/8" from the top corner to the start of a section, and 3/4" from the end of a section to the bottom corner.
- Internal features: A 1" wide section is indicated on the left, and a 1/4" wide section is indicated on the right.
- Other dimensions: 1" from the bottom left corner to the start of a section, and 1" from the end of a section to the bottom right corner.

Technical drawing of a cross-section of a wall and foundation. The wall is 3'-0" high. The foundation is 7" thick. The wall has a 5/8" thick top layer and a 3/4" thick bottom layer. The foundation has a 1" thick top layer and a 1/4" thick bottom layer. The wall is shown with a dashed line indicating a break in the middle.

Technical drawing of a tapered shaft. The shaft has a total length of 4'-0" and a total height of 1'-0". The top diameter is labeled "D" and the bottom diameter is labeled "D". The shaft is tapered, with a height of 9" at the left end and 6" at the right end. The taper is indicated by a dashed line. Two 1" Dia. Holes are shown, one at each end. The distance from the left end to the first hole is 6", and the distance from the right end to the second hole is 6". The distance between the two holes is 4'-0". The thickness of the shaft at the right end is 2 1/16".

Technical drawing of a rectangular plate with the following dimensions and features:

- Overall width: 3'-0"
- Overall height: 8 1/16"
- Top flange height: 2 1/16"
- Bottom flange height: 4"
- Central section height: 6"
- Central section width: 6"
- Feature: "E" (indicated by an arrow pointing right)
- Feature: 1" Dia. Holes (two holes, indicated by circles with crosshairs)

Diagram illustrating the cross-section of a drop curb. The diagram shows the gutter line, the top of the driveway curb block, the drop curb block, and the top of the normal curb. The distance from the gutter line to the start of the drop curb block is 4'-0". The distance from the end of the drop curb block to the top of the normal curb is 4'-0". The drop curb block itself varies in length.

Dist. Curb Line to P	Slope
12'	5/8" to 12"
10'	3/4" to 12"
8'	1" to 12"
7'	7/8" to 12"
6'	1" to 12"
3'	1 3/4" to 12"

Diagram illustrating the cross-section of a curb and gutter. Key dimensions and labels include:

- Curb Grade**: Indicated by a dashed line.
- Top Width**: 7" (total), 6" (inner width).
- Vertical Dimensions**: 1" (top curb), 4 1/2" (top curb), 1 1/2" (top curb), 7 1/2" (total height), 6" (height to gutter), 4" (height to gutter), 6" (height to gutter), 9" (height to gutter), 8 1/16" (height to gutter), 12" (total height).
- Horizontal Dimensions**: 3 1/4" (width of gutter).
- Radii**: $R = 1/4"$ (top curb), $R = 1"$ (inner corner), $R = 15/8"$ (outer corner).
- Other Labels**: 35/16" (width of gutter).

Technical drawing of a mechanical part with the following dimensions:

- Overall width: 7"
- Overall height: 8 1/16"
- Top radius: $R = 1/4"$
- Right side height: 1 1/2"
- Bottom right corner radius: $R = 15/16"$
- Bottom right corner width: 6"
- Bottom right corner height: 4"
- Bottom center width: 3 1/4"

Diagram illustrating the cross-section of a gutter installation with the following specifications:

- Gutter:** 6" wide.
- Slopes:**
 - 1" : 12" Slope (on the left side of the gutter).
 - Variable Slope (along the gutter run).
 - 1/4" : 12" Slope (on the right side of the gutter).
 - 1 1/2" : 12" Slope (on the sidewalk).
 - 5/8" : 12" Slope (on the sidewalk).
- Dimensions:**
 - 2'-0" (from gutter edge to start of variable slope).
 - 2 1/2' to 7 1/2' (variable length).
 - *4'-0" (width of the sidewalk).
- Property Line:** Indicated by a dashed line.
- Reinforcement:** *4" Conc. Reinf. with 6"x6" x #6 Wire Mesh (40# per 100 s.f. minimum).

2" Galvanized Pipe under entire Driveway and extending 6" at both ends where required. Provide Plugs for both ends.

Diagram of a concrete curb and gutter section. The curb is 1" high and 2'-0" wide. The gutter is 7" wide and 1 1/2" deep. The curb has a radius of $R = 1/4"$. The gutter has a radius of $R = 15/8"$. The gutter is labeled "Slope Varies (See Table)" and "P".

See Detail
"B" & "C"
on Right -

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

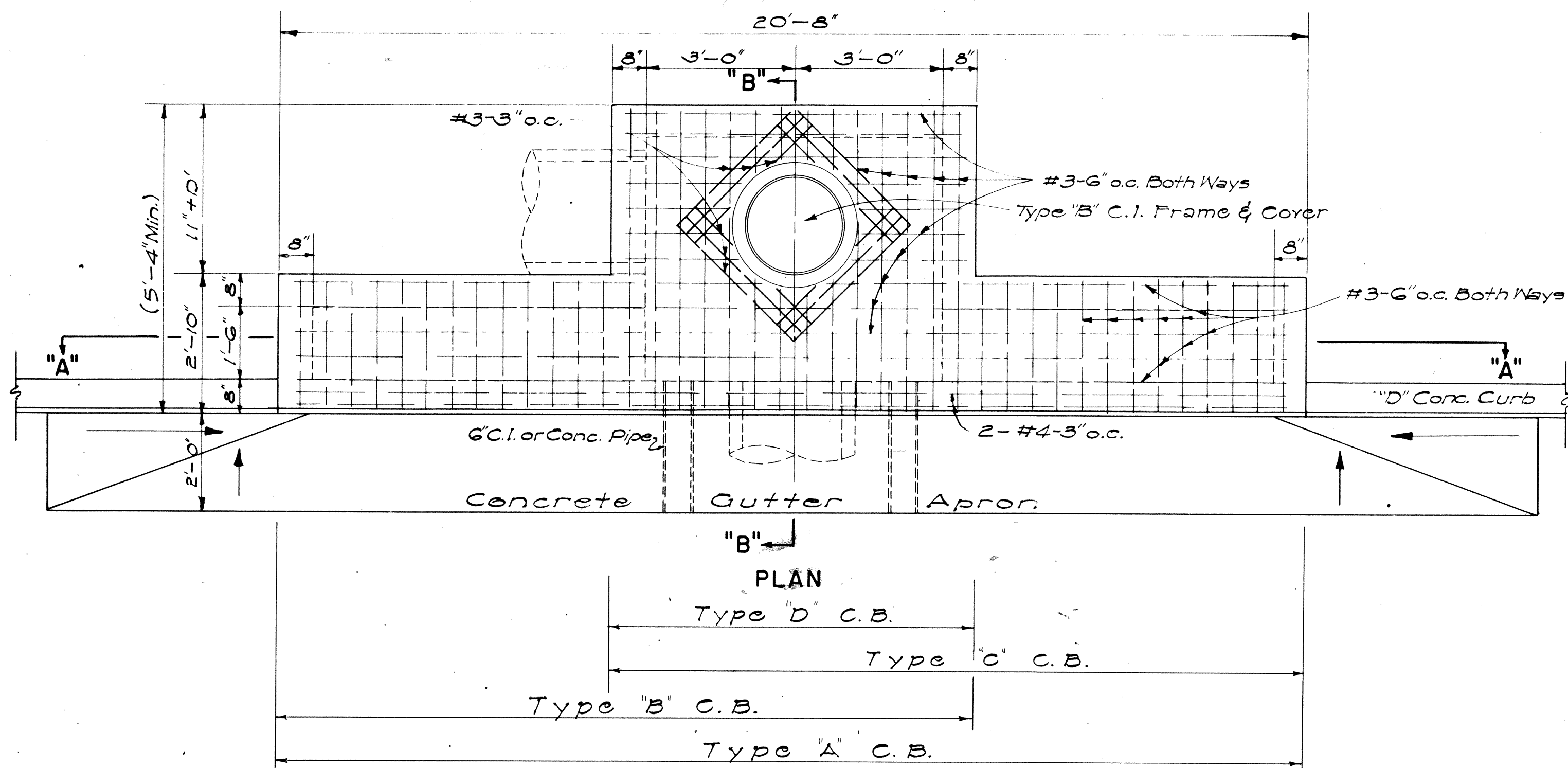
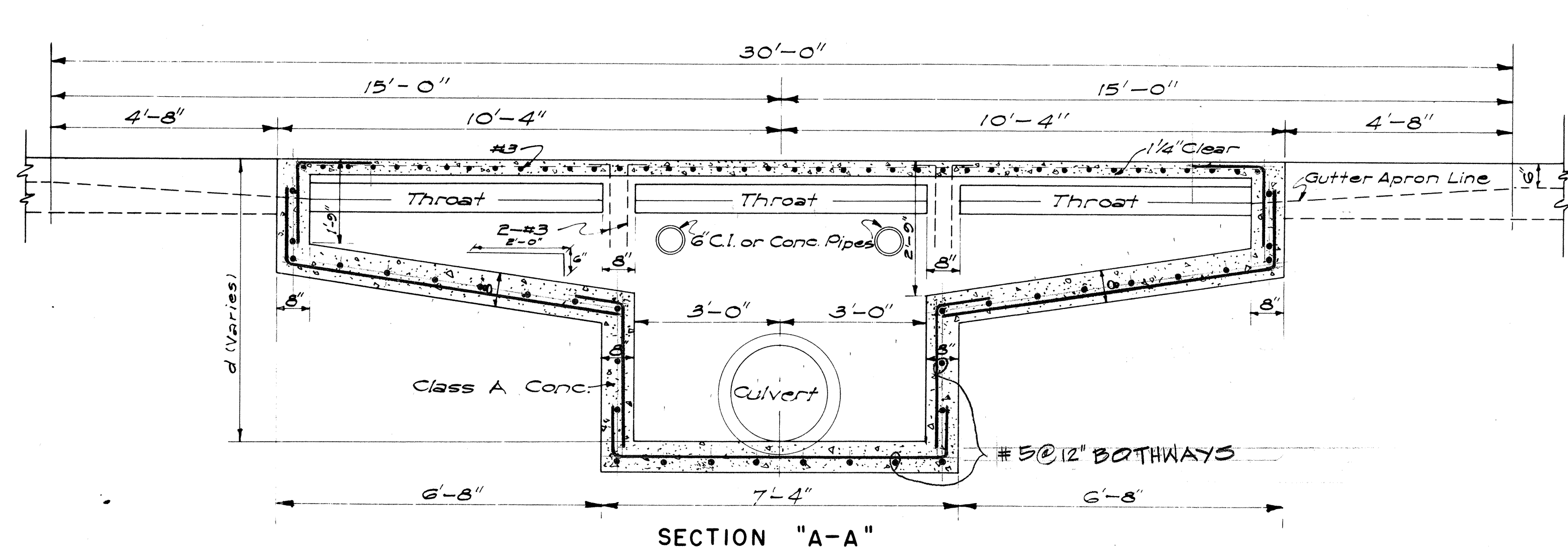
PRE-CAST CONC. DRIVEWAY CURB

APPROVAL RECOMMENDED:
Mr. [Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
Walter D. [Signature] 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TYPICAL DETAILS OF
REINF. CONC. DROP DRIVEWAY

Scale: As Shown



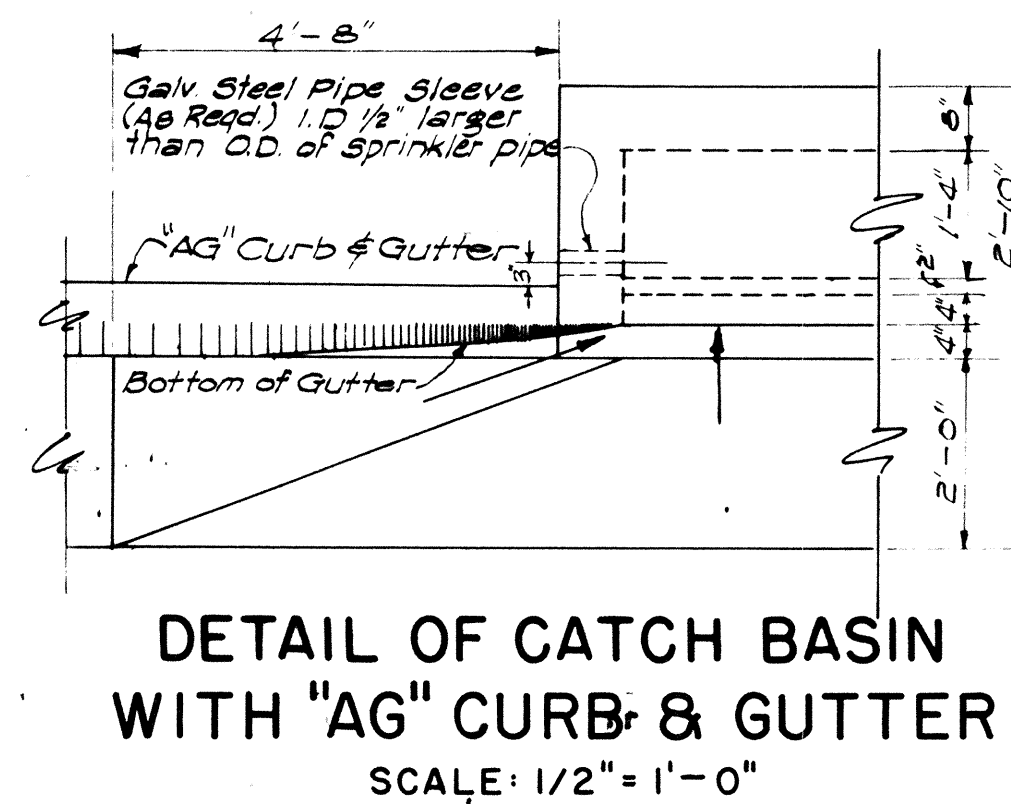
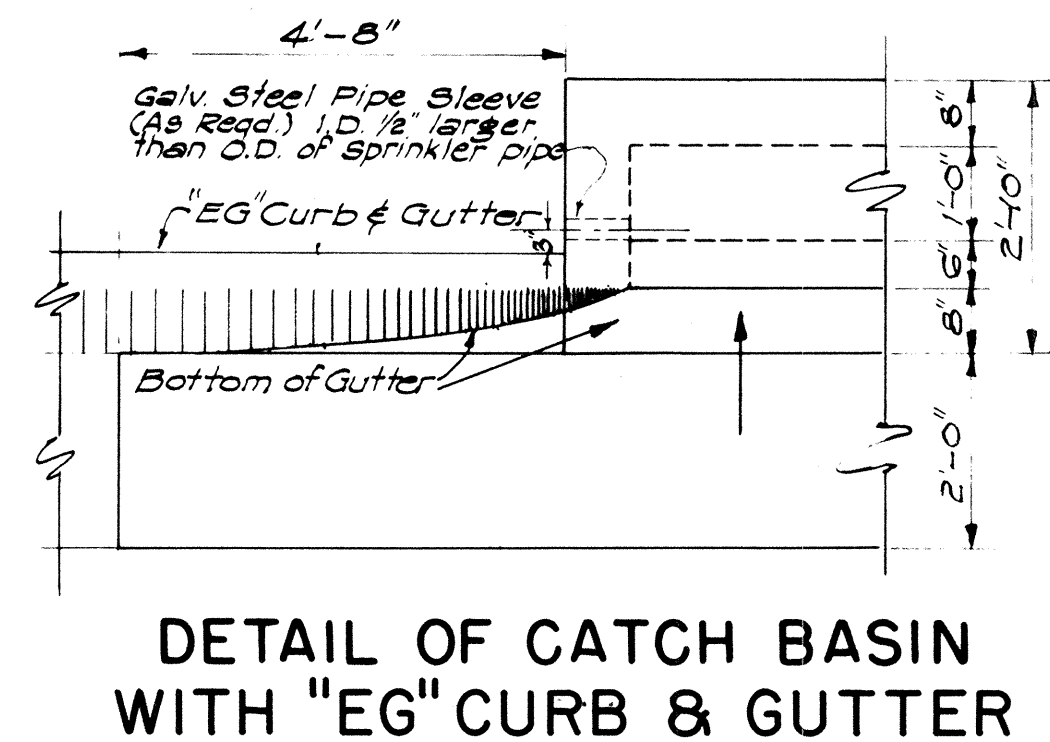
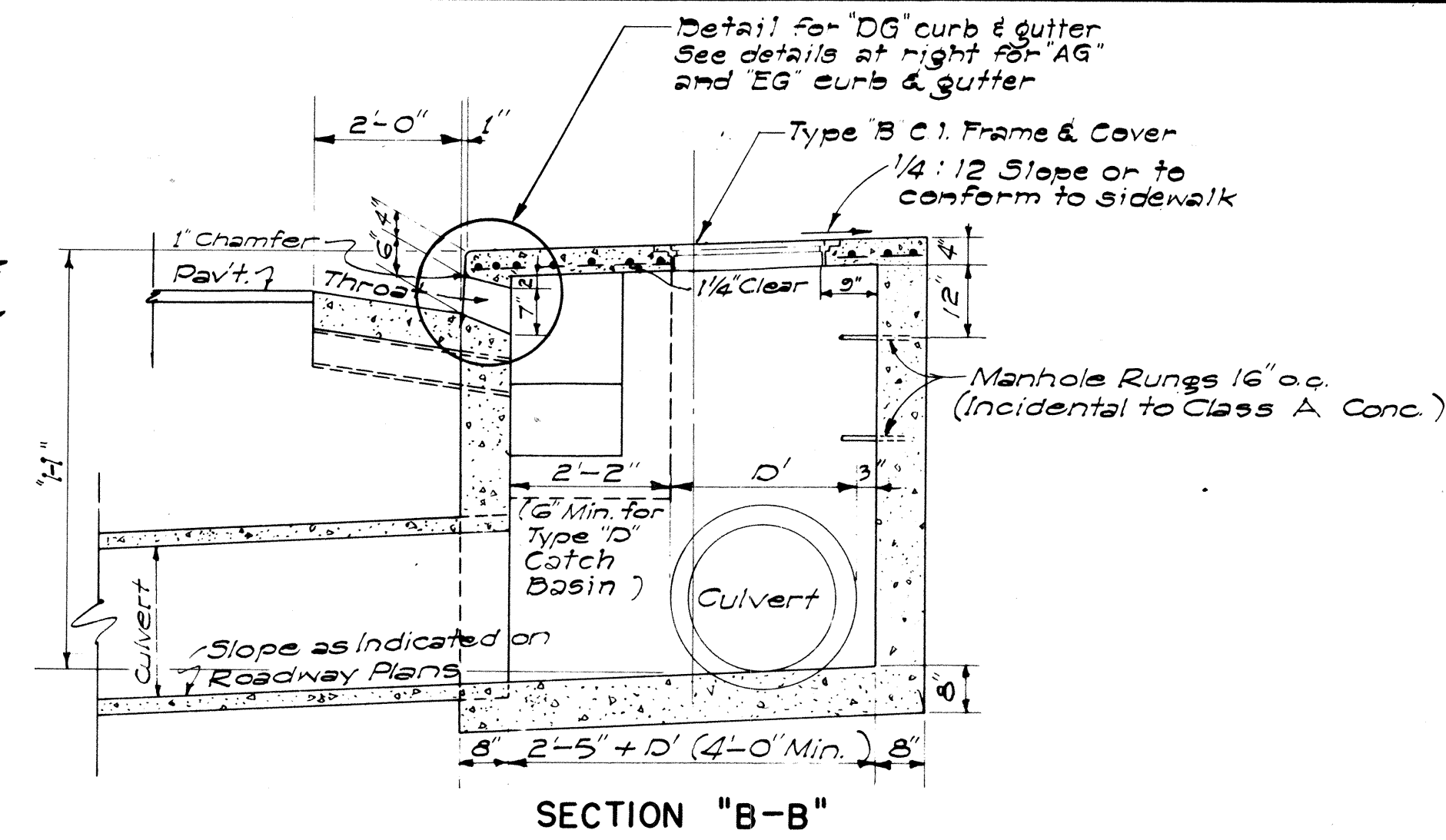
DETAILS OF TYPES "A", "B", "C" AND "D" CATCH BASINS

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

ESTIMATED QUANTITIES*

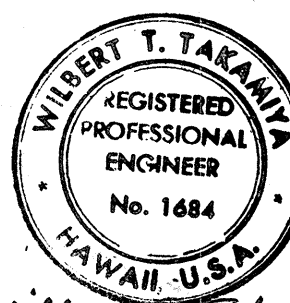
Type	Class A Conc.	Struct. Exc.	Reinf. Steel	Gutter Length
"A"	7.5 cy.	24.7 cy.	145 lb.	30'-0"
"B"	6.0 cy.	21.5 cy.	108 lb.	23'-4"
"C"	6.0 cy.	21.5 cy.	108 lb.	23'-4"
"D"	4.9 cy.	16.5 cy.	77 lb.	16'-8"

* REINFORCING STEEL QUANTITIES ARE FOR TOP SLAB ONLY.



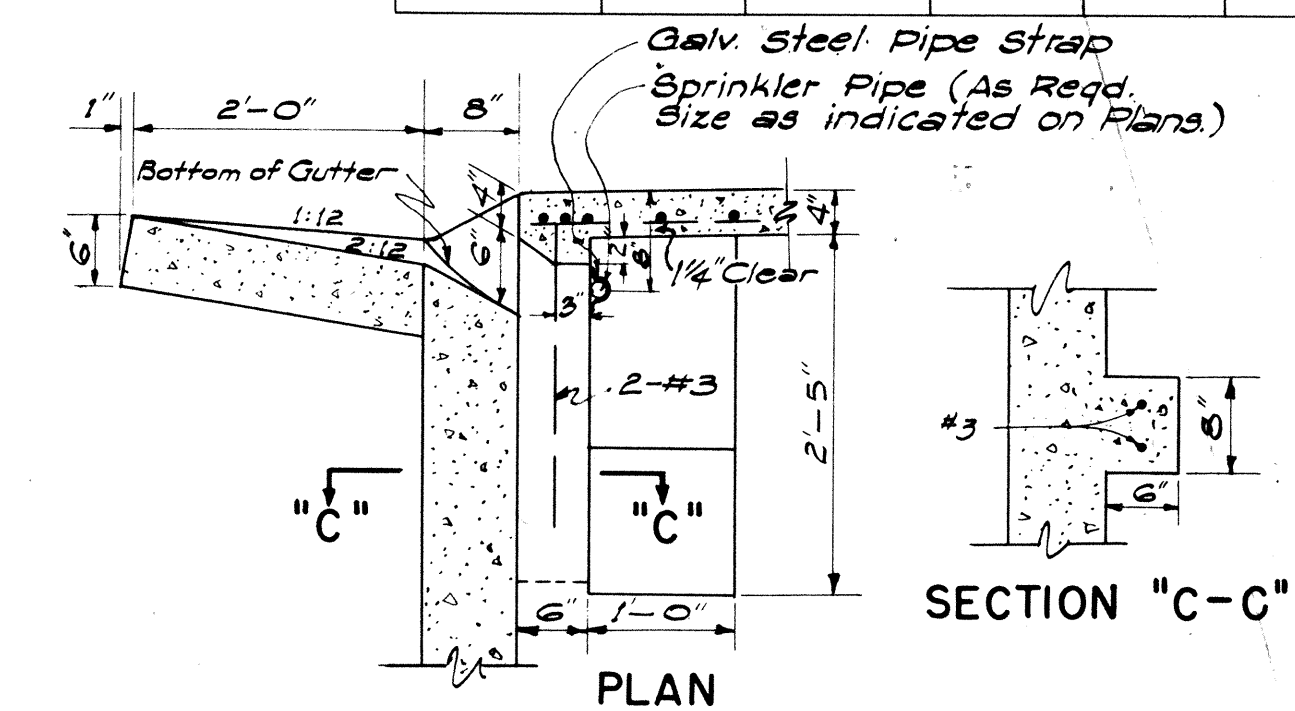
GENERAL NOTES

- 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.
- SEE SHEET 71 GENERAL CONCRETE NOTES AND DETAILS.

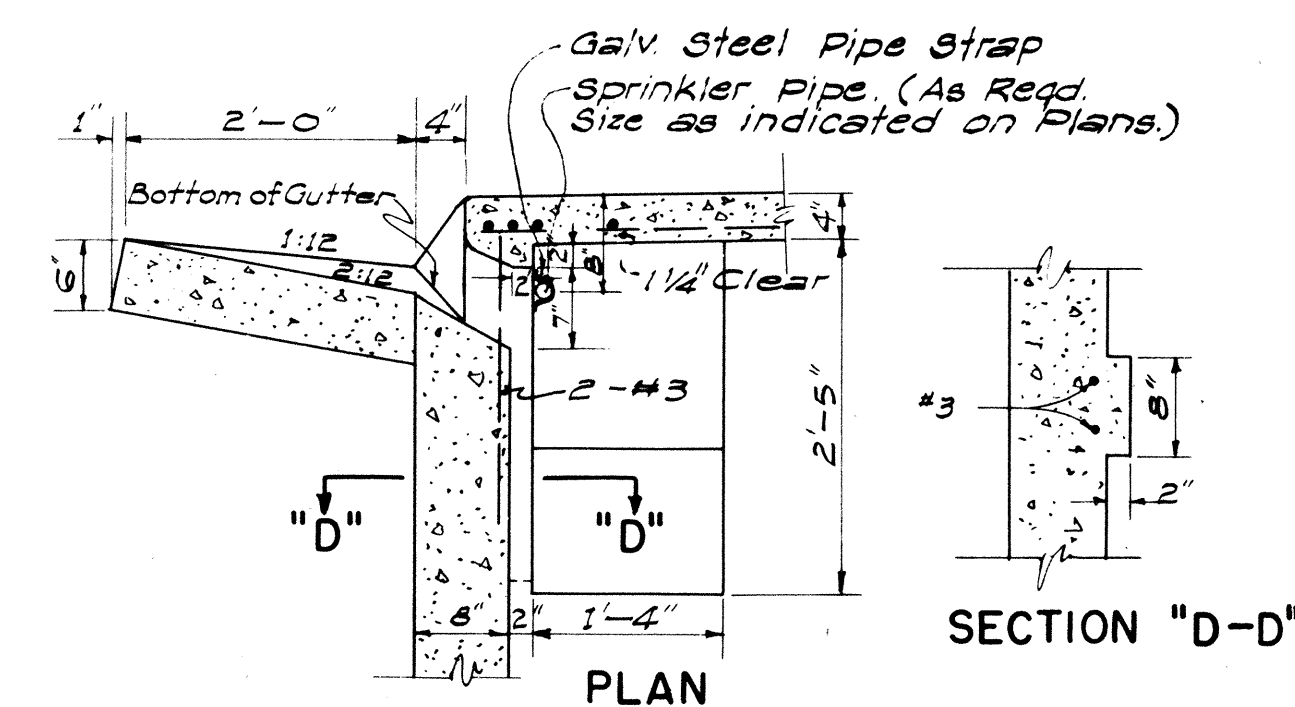


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	76	369



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



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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

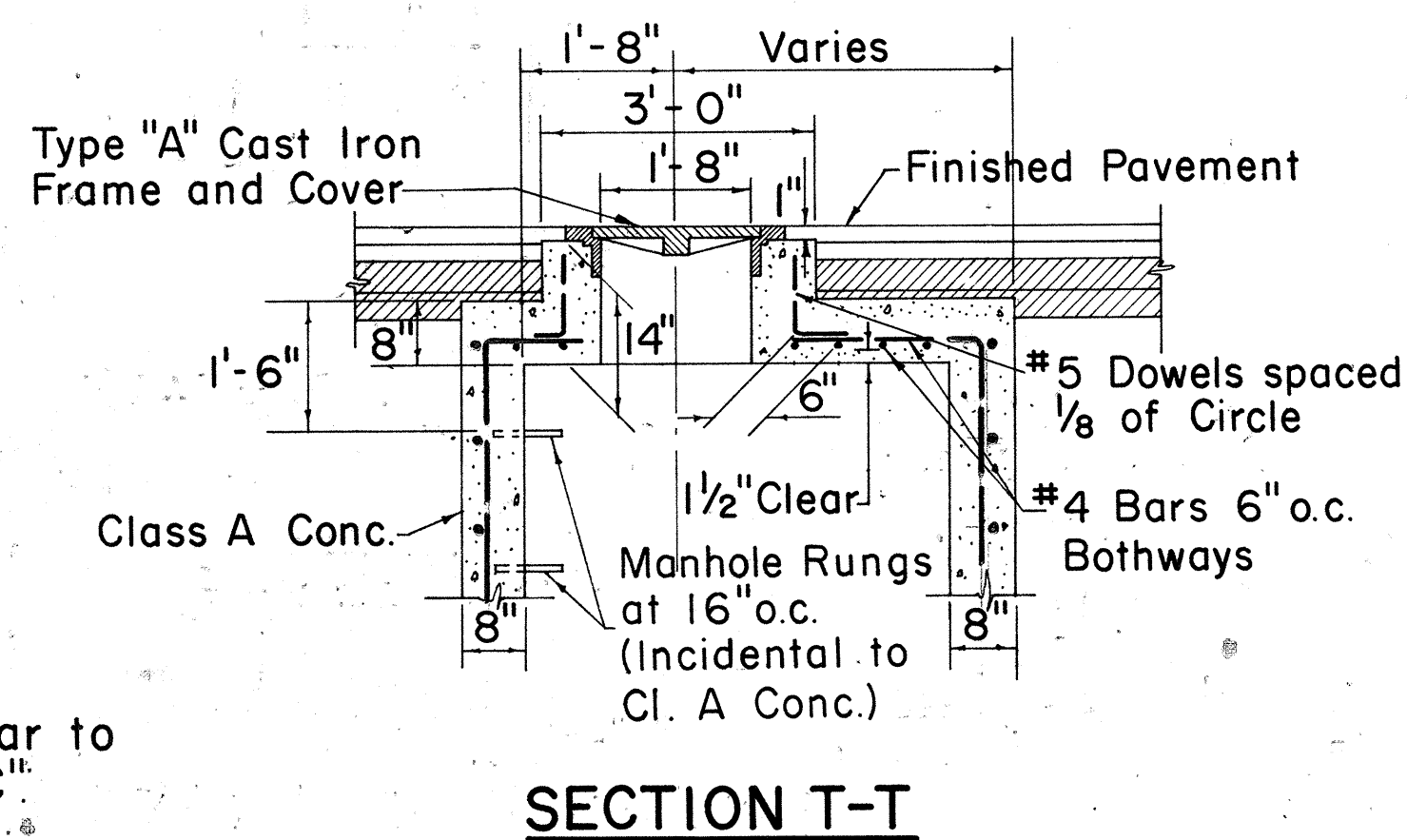
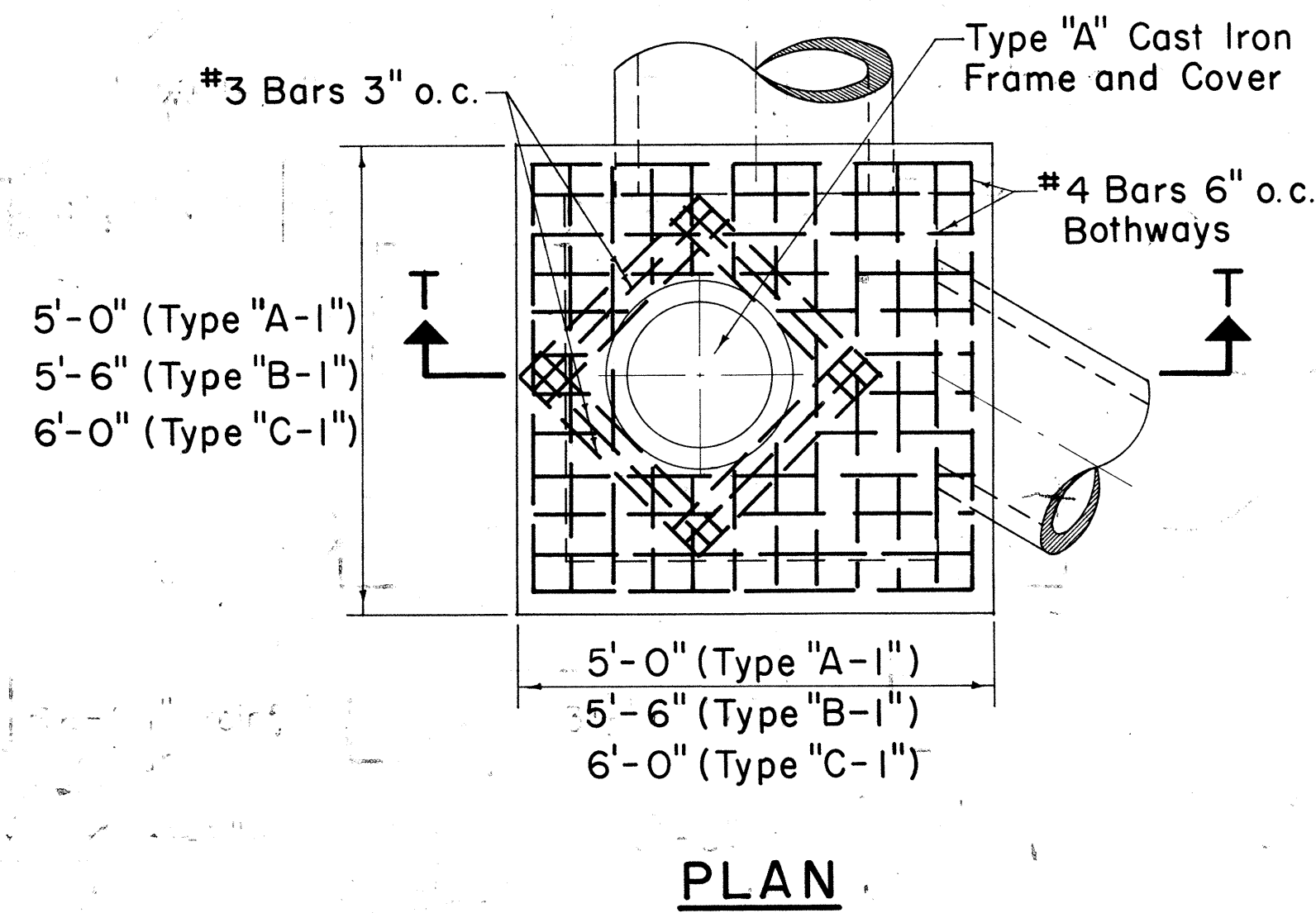
CATCH BASINS

Scale: As Noted

Date: July, 1969

SHEET NO 10 OF 17 SHEETS

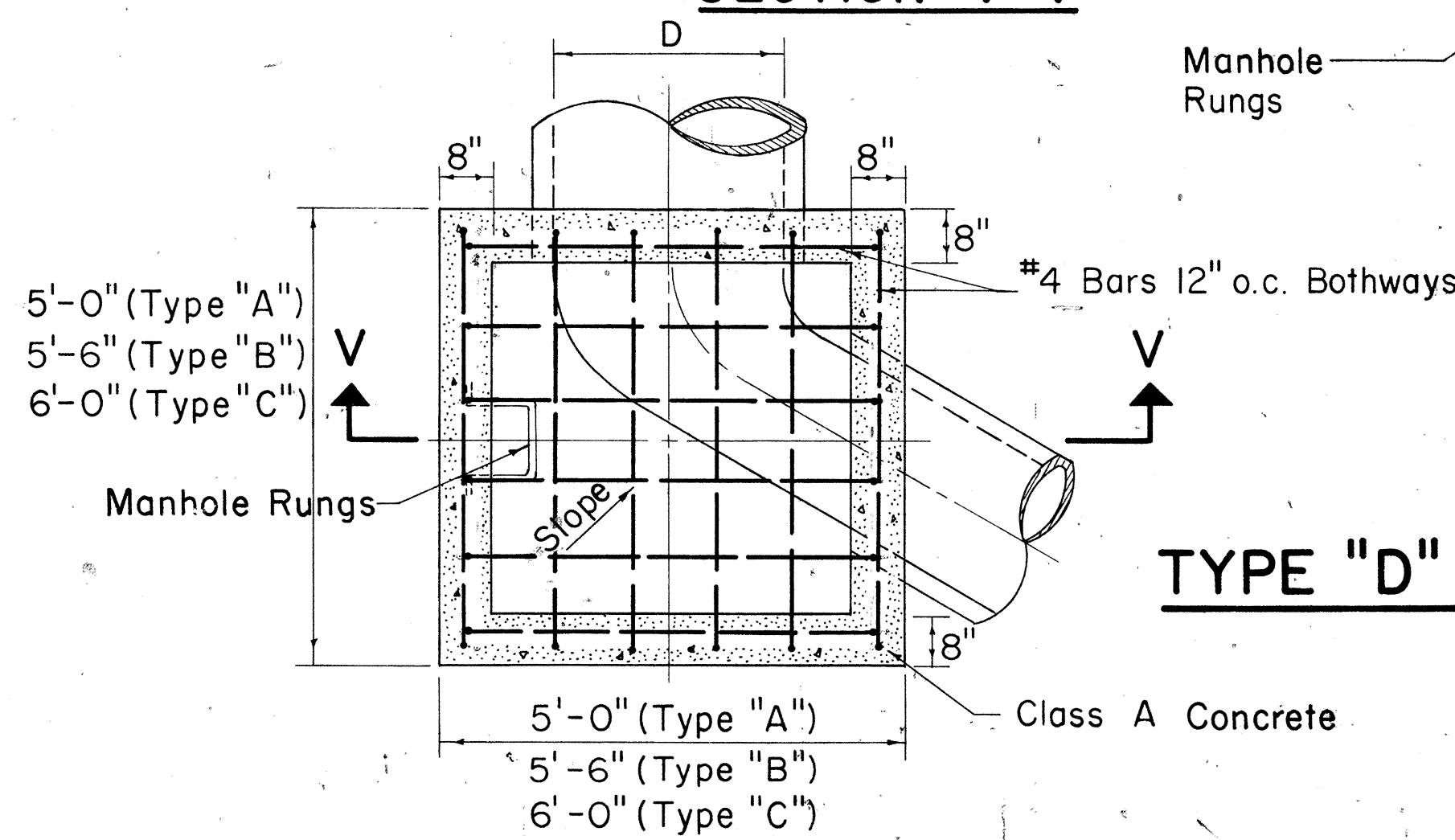
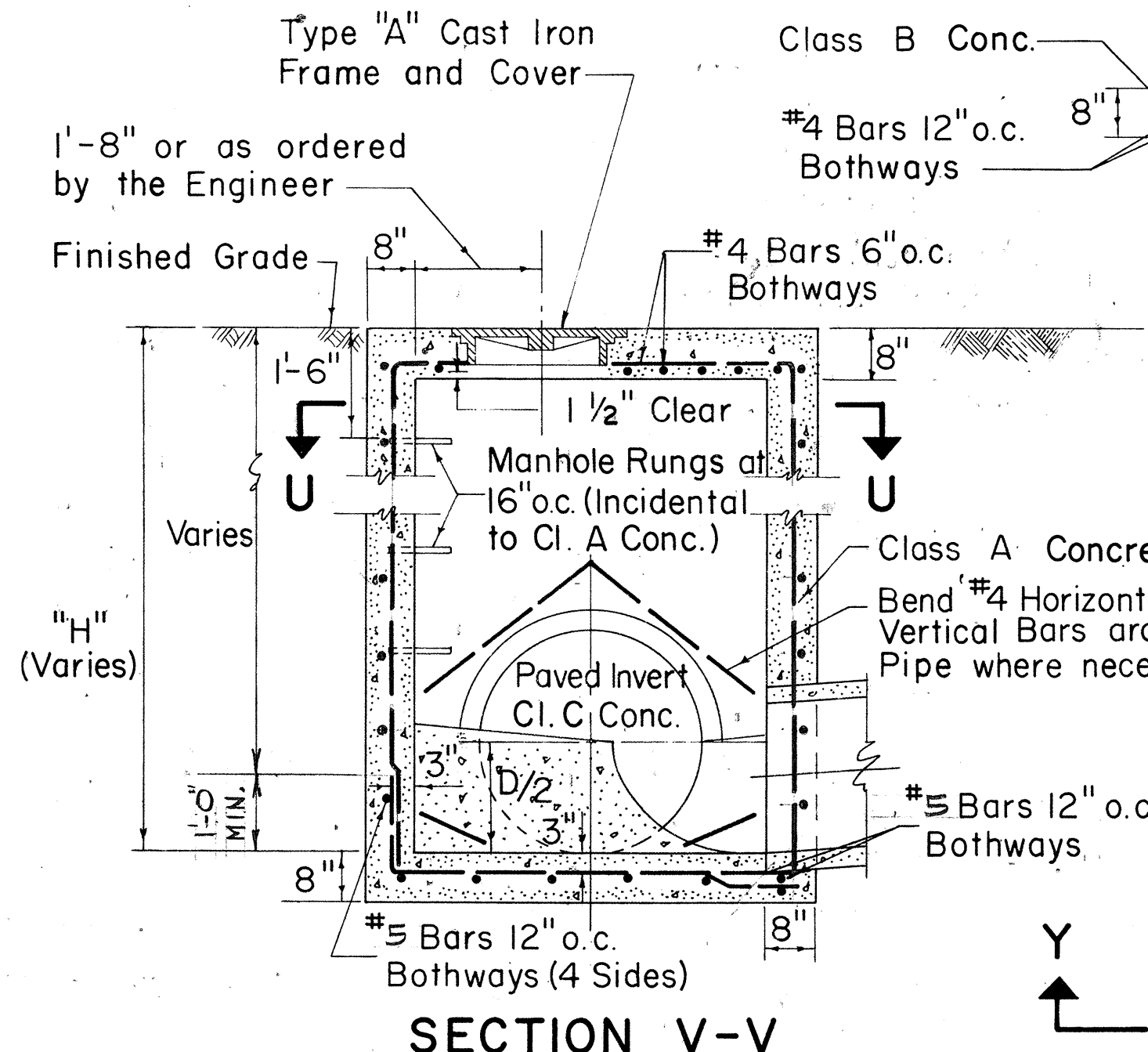
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(73)15	1974	77	369



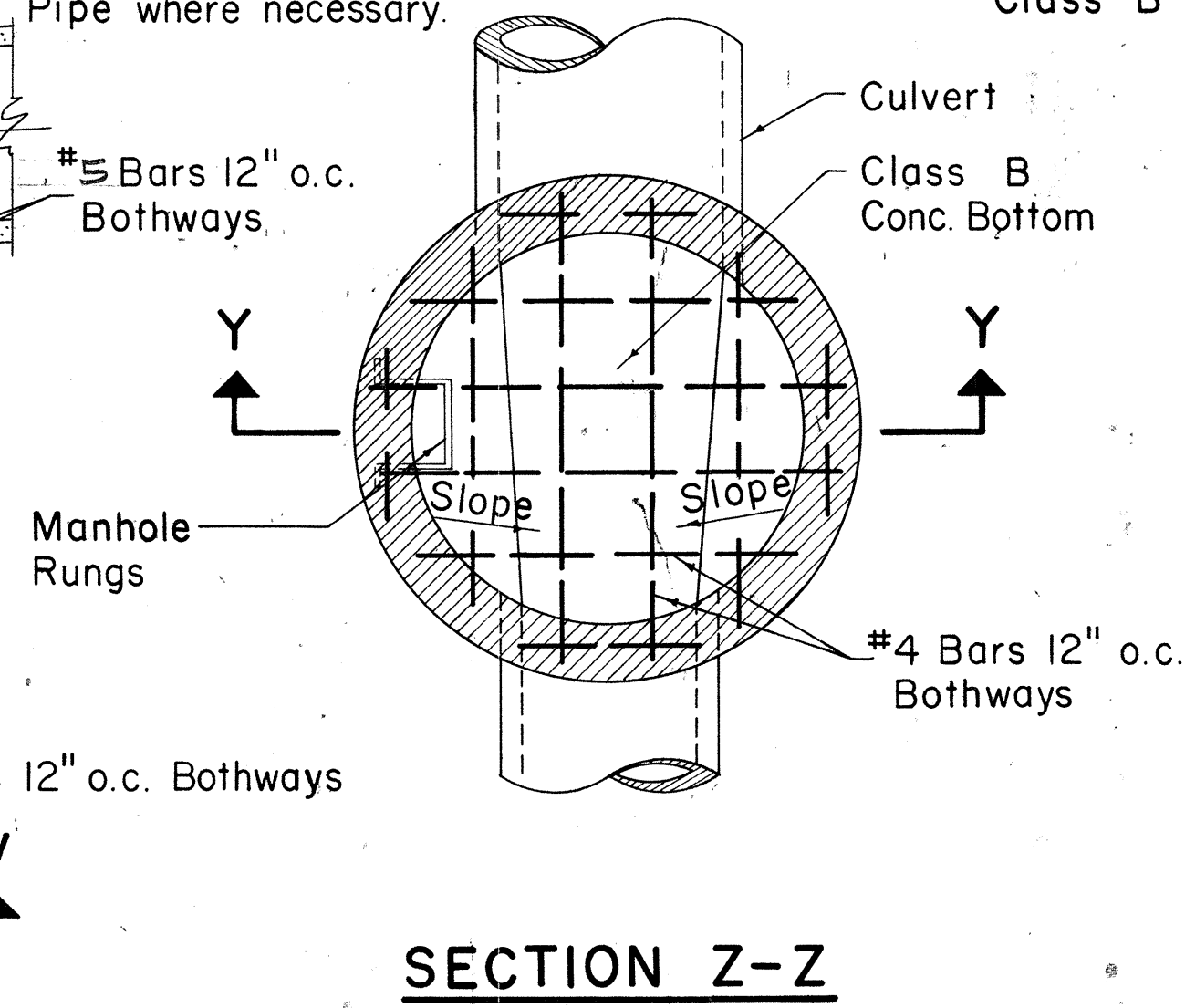
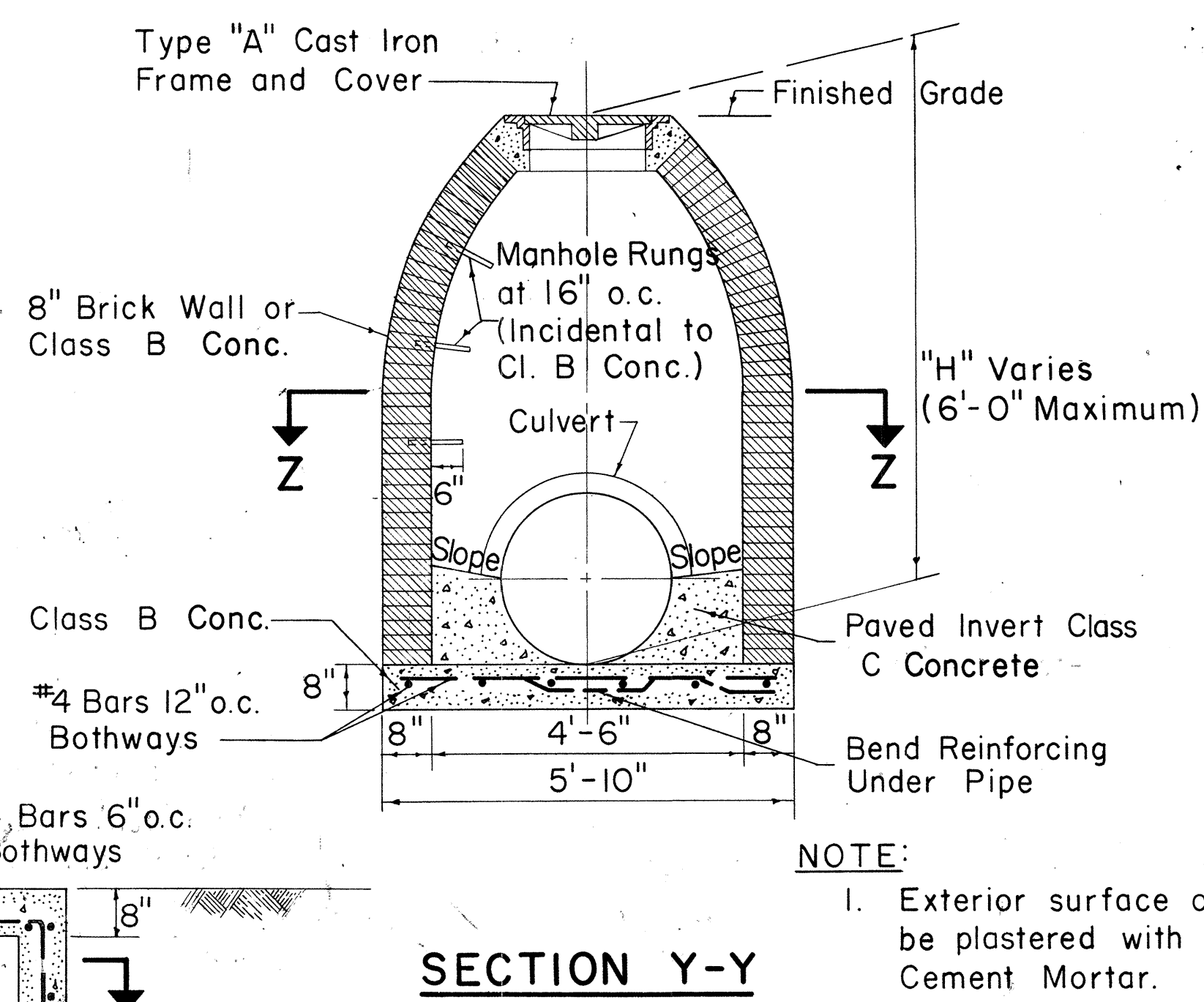
TYPE "A-I", "B-I", & "C-I"
STORM DRAIN MANHOLE
TOP DETAIL UNDER PAVEMENT
 Scale: 1/2" = 1'-0"

GENERAL NOTES

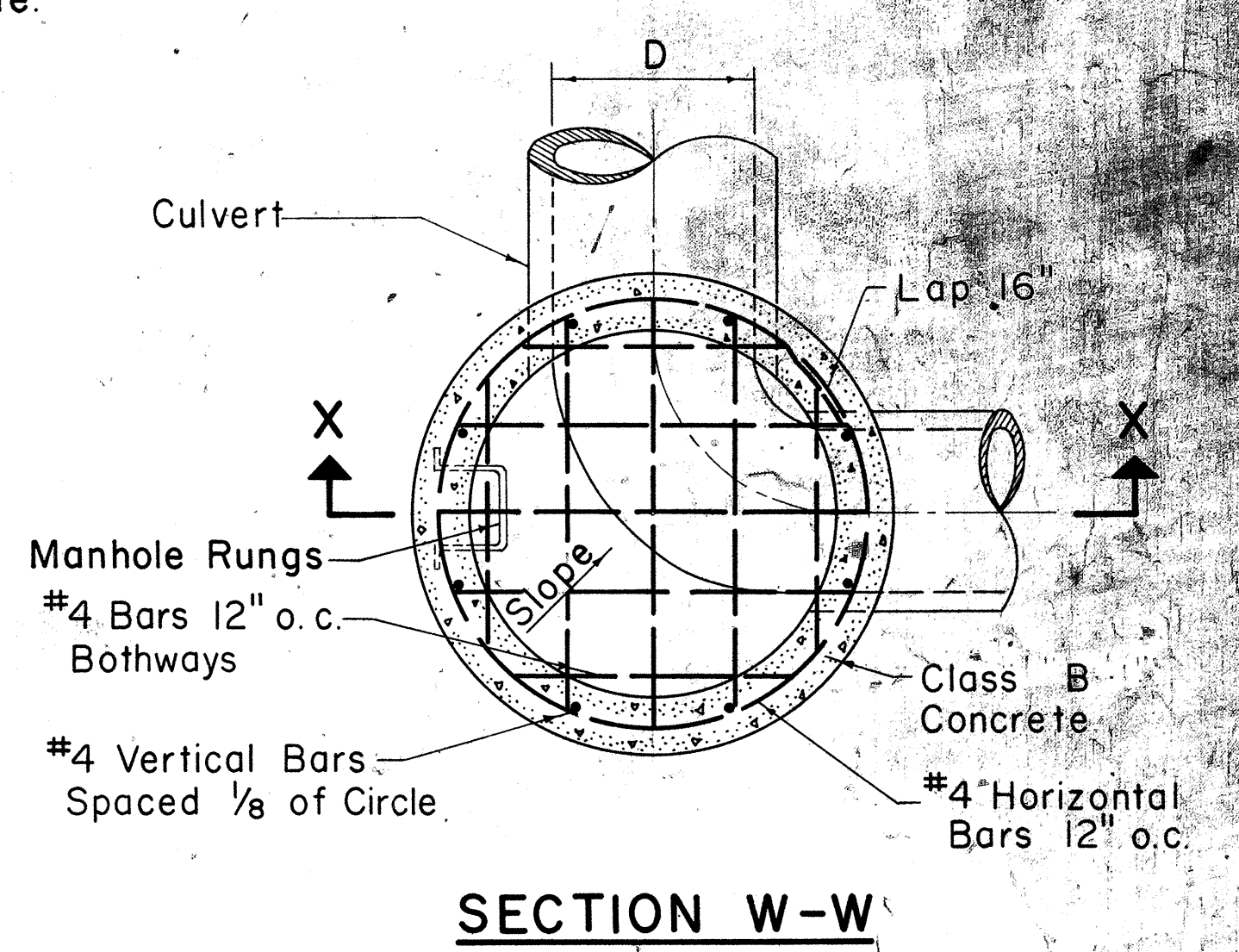
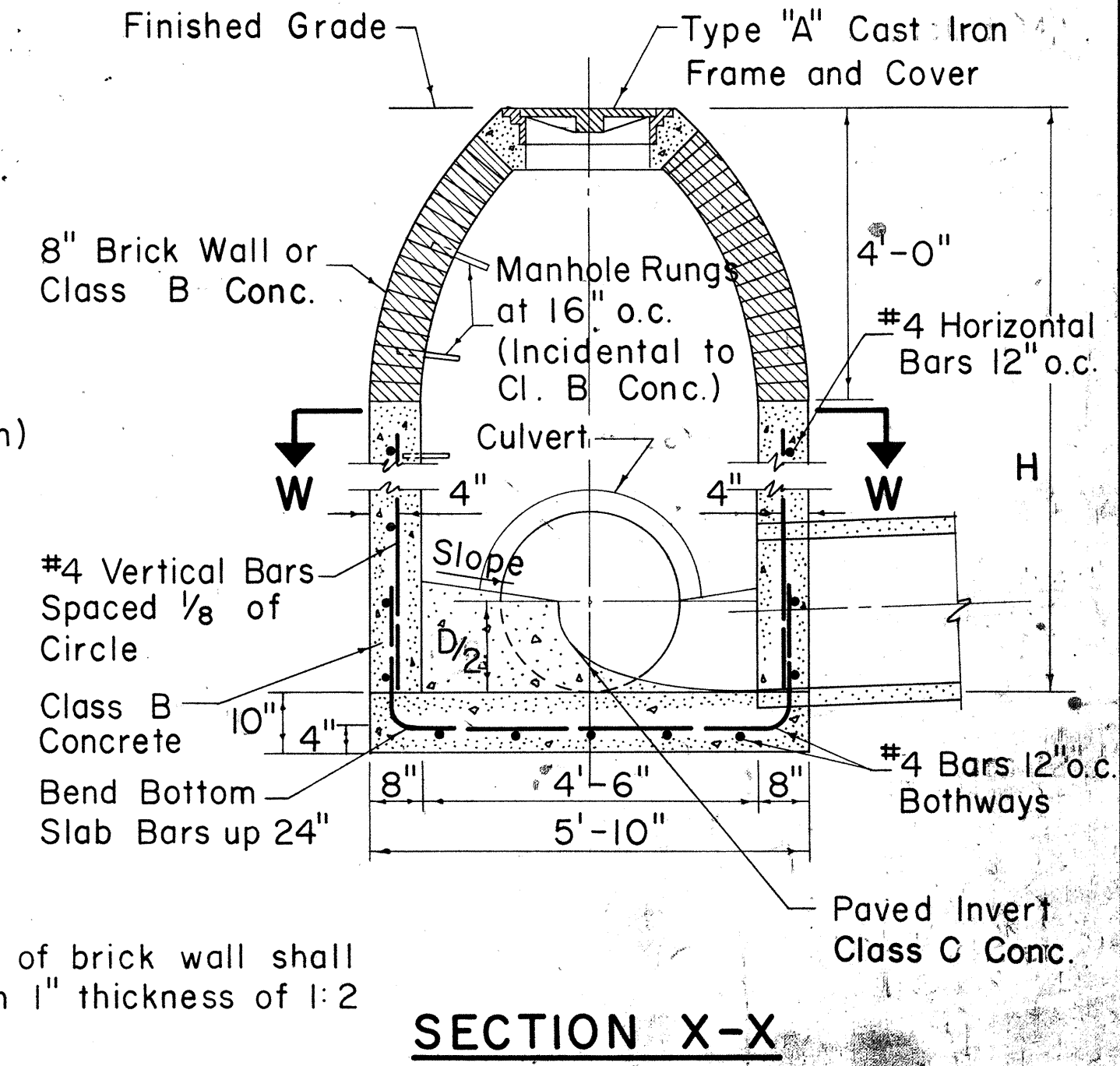
- Culvert shall enter and leave S.D.M.H. from any position and in the direction indicated by the plans or ordered by the Engineer.
- Manhole Rungs (16" o.c.) are required when "H" is greater than 4'-6". Only one rung (12" from the bottom) is required if "H" is 4'-6" or less. Type "A" C.I. Frame and Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.
- SEE SHEET 71 FOR GENERAL CONCRETE NOTES AND DETAILS.



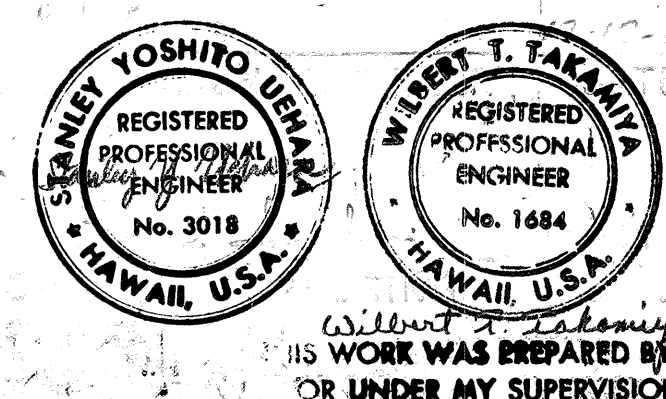
TYPE "A", "B", & "C"
S.D.M.H.
 Scale: 1/2" = 1'-0"



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



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



NO.	REVISION	APPROVED BY	DATE

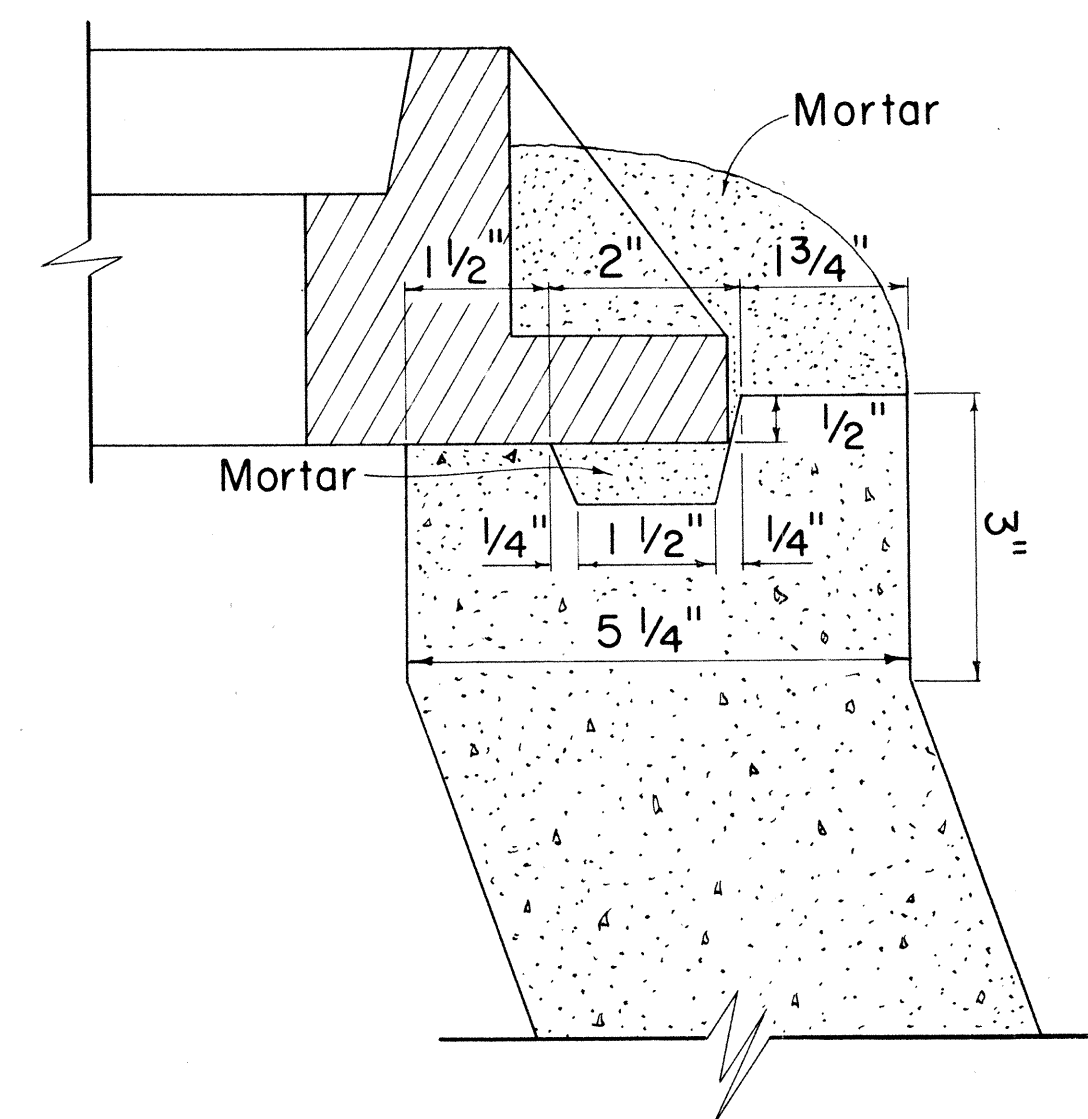
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STORM DRAIN MANHOLES

Scales: As Noted Date: July 1, 1969

SHEET NO. 11 OF 17 SHEETS DH 5

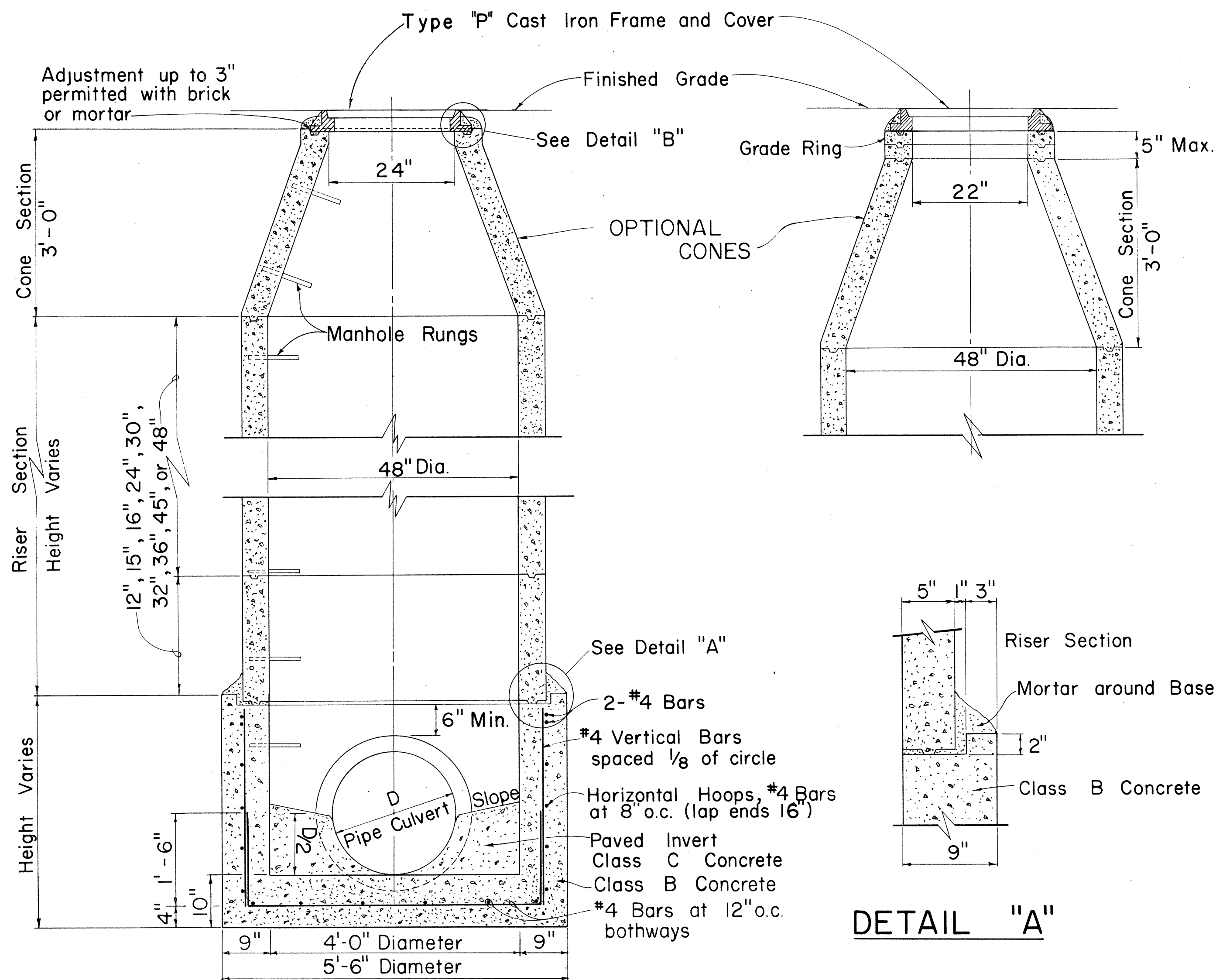
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HH-1(73)15	1974	78	369



GENERAL NOTES

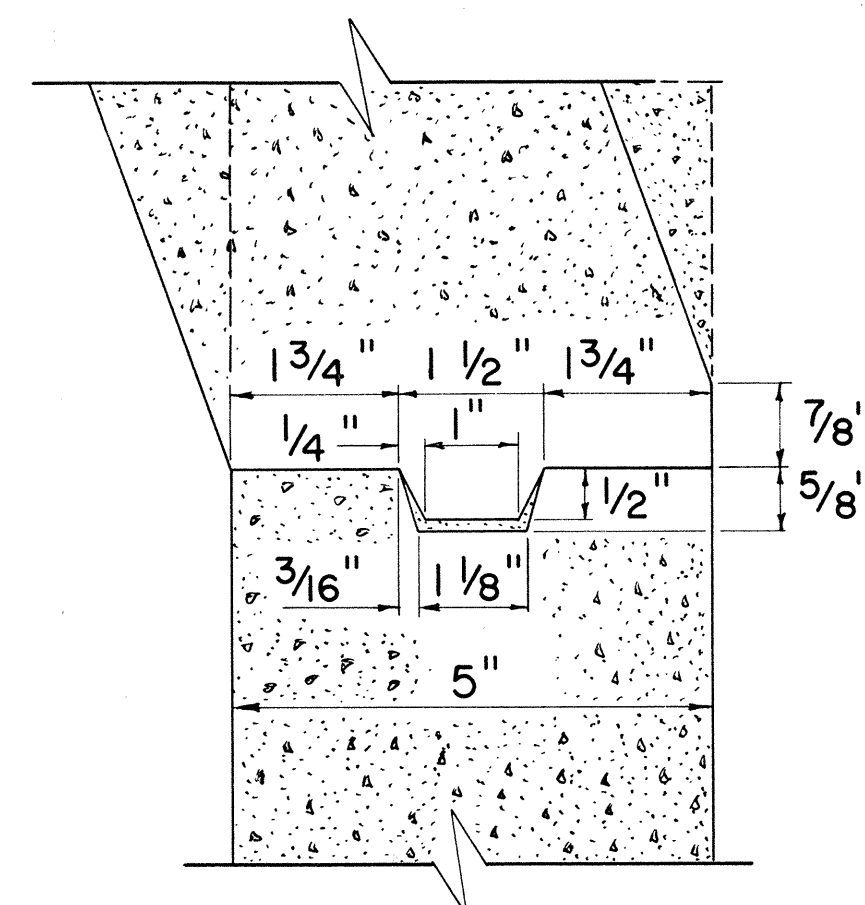
1. Manhole Rungs to be placed at 15" or 16" o.c. (Manhole Rungs incidental to Class B Concrete.) For detail of M.H. rungs see sheet DH-6
2. Select appropriate combination of risers and grade rings for required height.
3. All joints to be grouted as set.
4. The precast sections shall be constructed in accordance with the details shown on the plans and to the requirements of ASTM C 478
5. Manufacturers may submit to the Engineer for approval, prior to manufacturing, designs other than those shown on this sheet.
6. Reinforcing steel for precast sections shall be placed in accordance with the requirements of ASTM C 478
7. All Class C Concrete to be incidental to Class B Concrete.

DETAIL "B"
Not to Scale

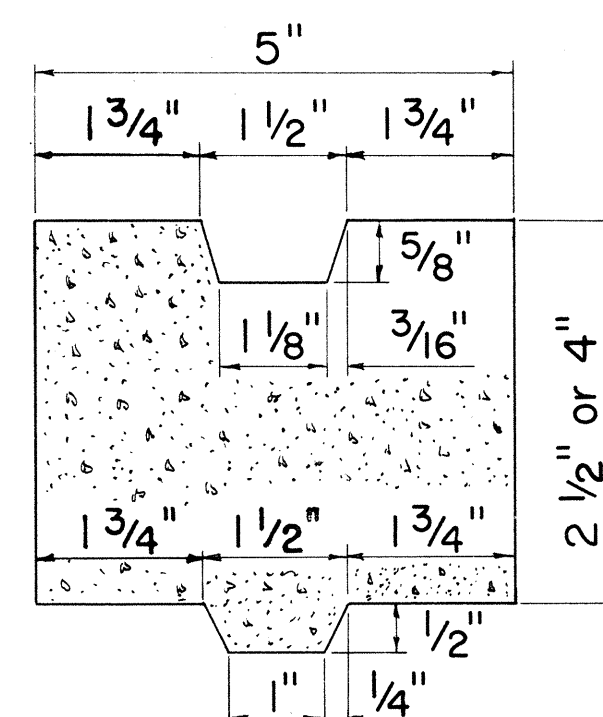


DETAIL "A"

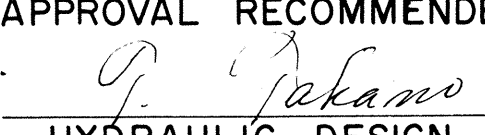
TYPICAL SECTIONS PRECAST CONCRETE MANHOLE
Not to Scale



DETAIL FOR RISER JOINTS
Not to Scale



GRADE RING DETAIL
Not to Scale

APPROVAL RECOMMENDED:

 HYDRAULIC DESIGN ENGINEER
 DATE 2-2-71

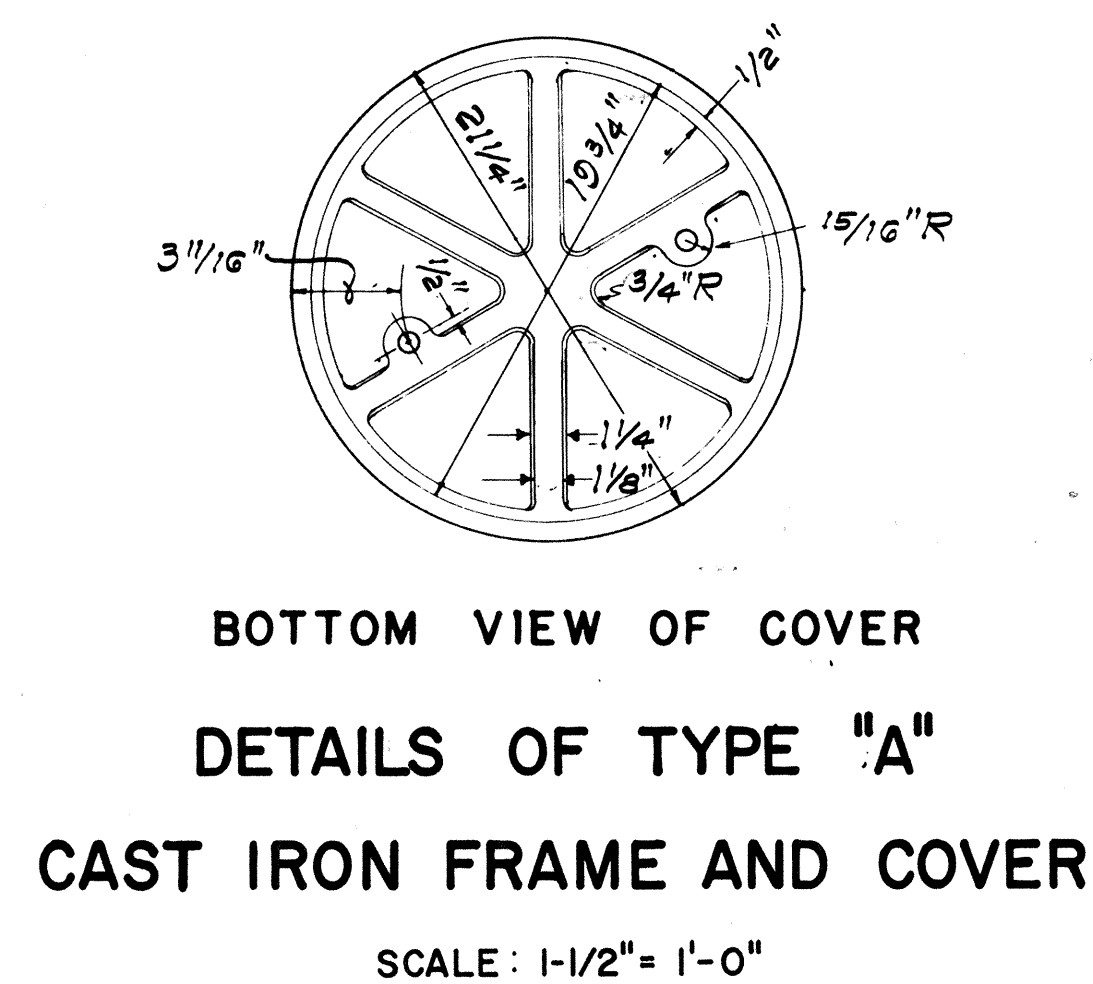
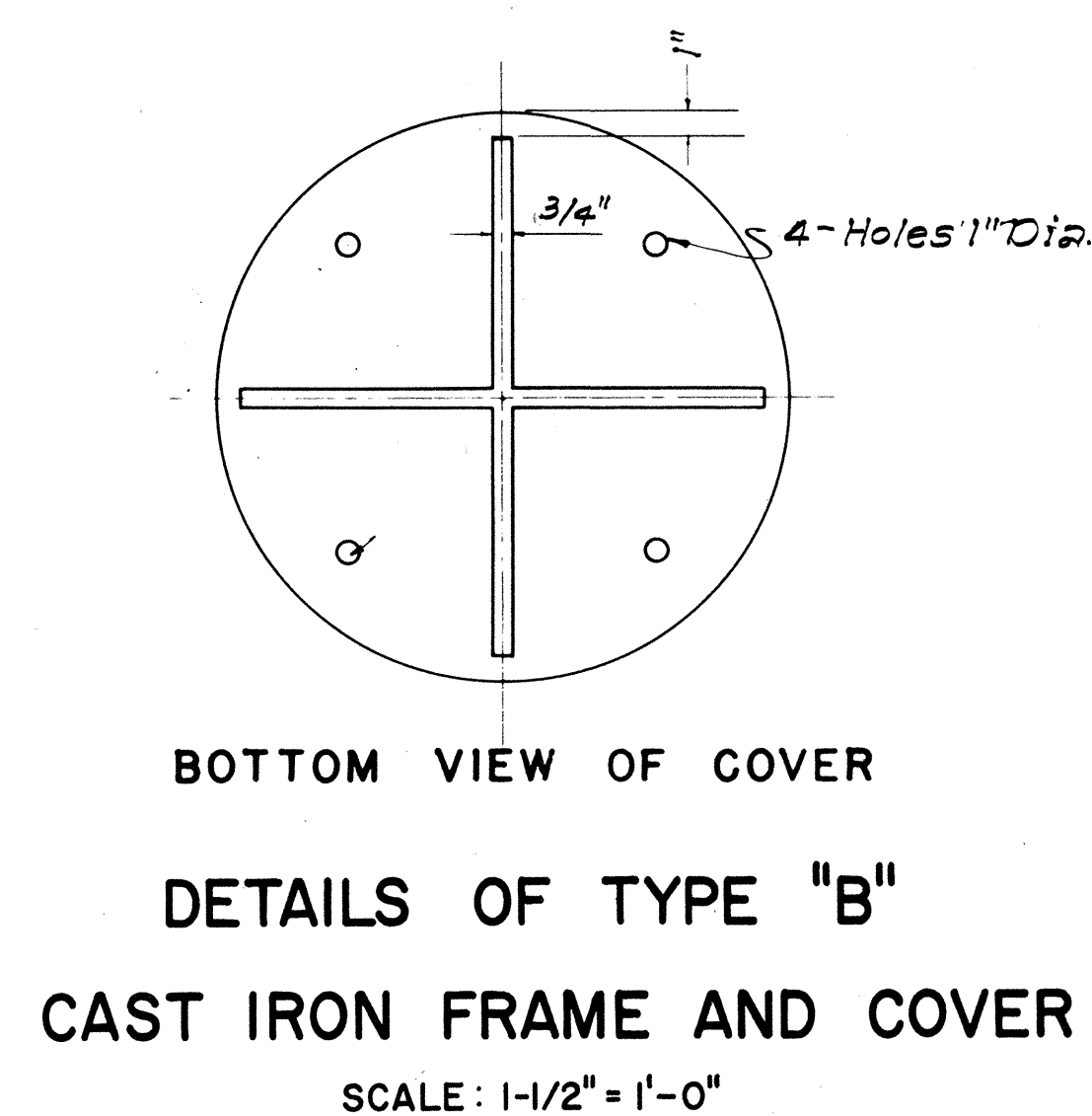
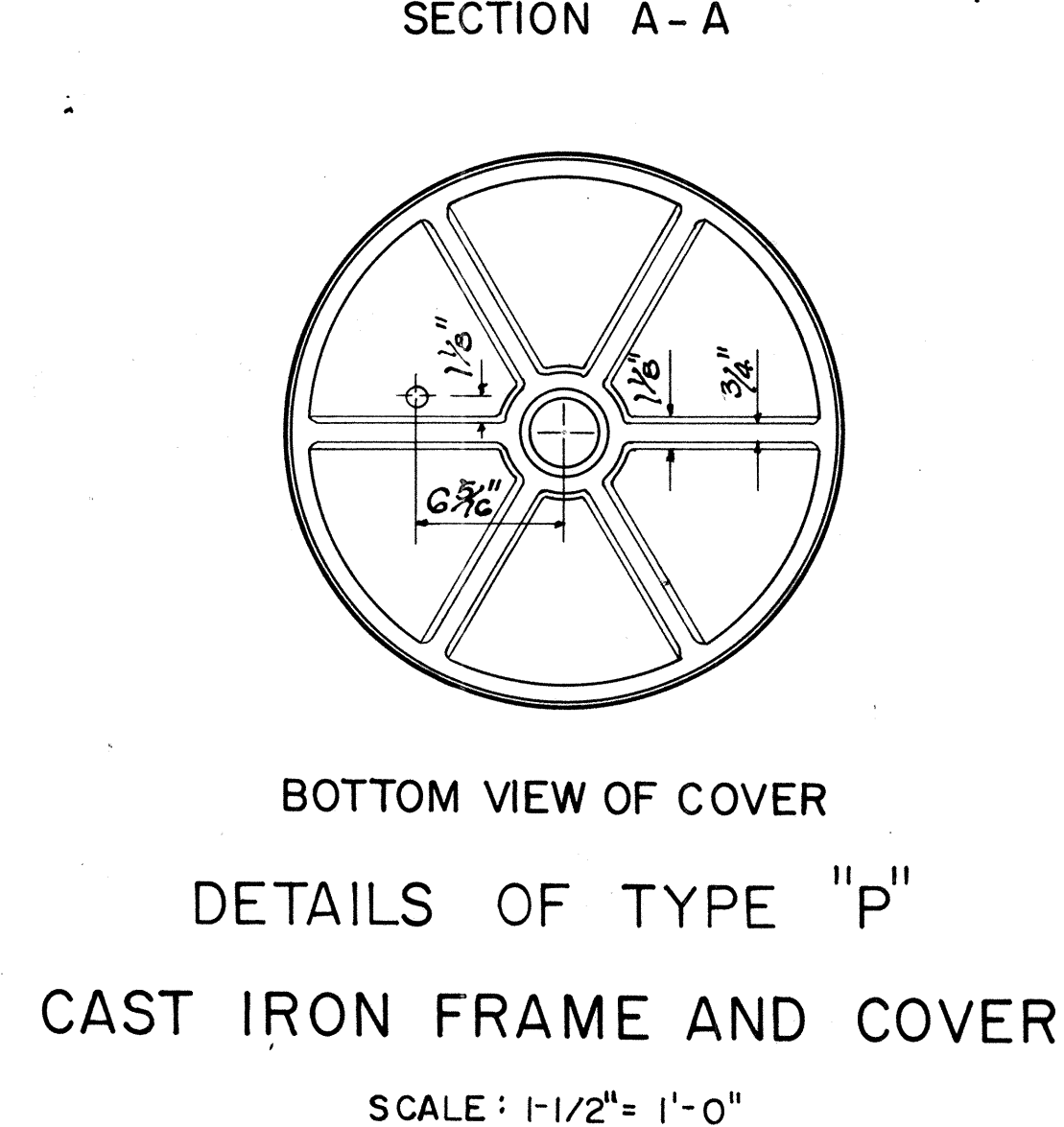
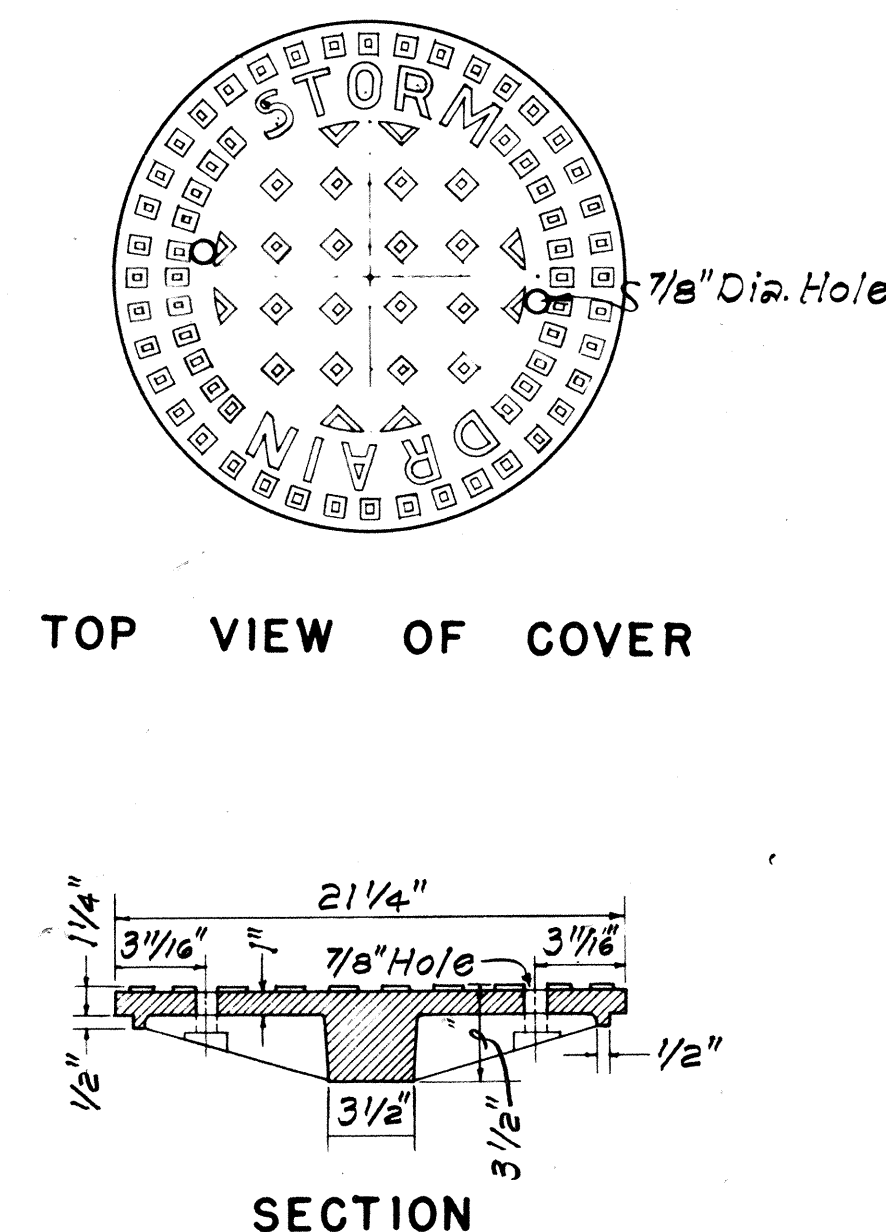
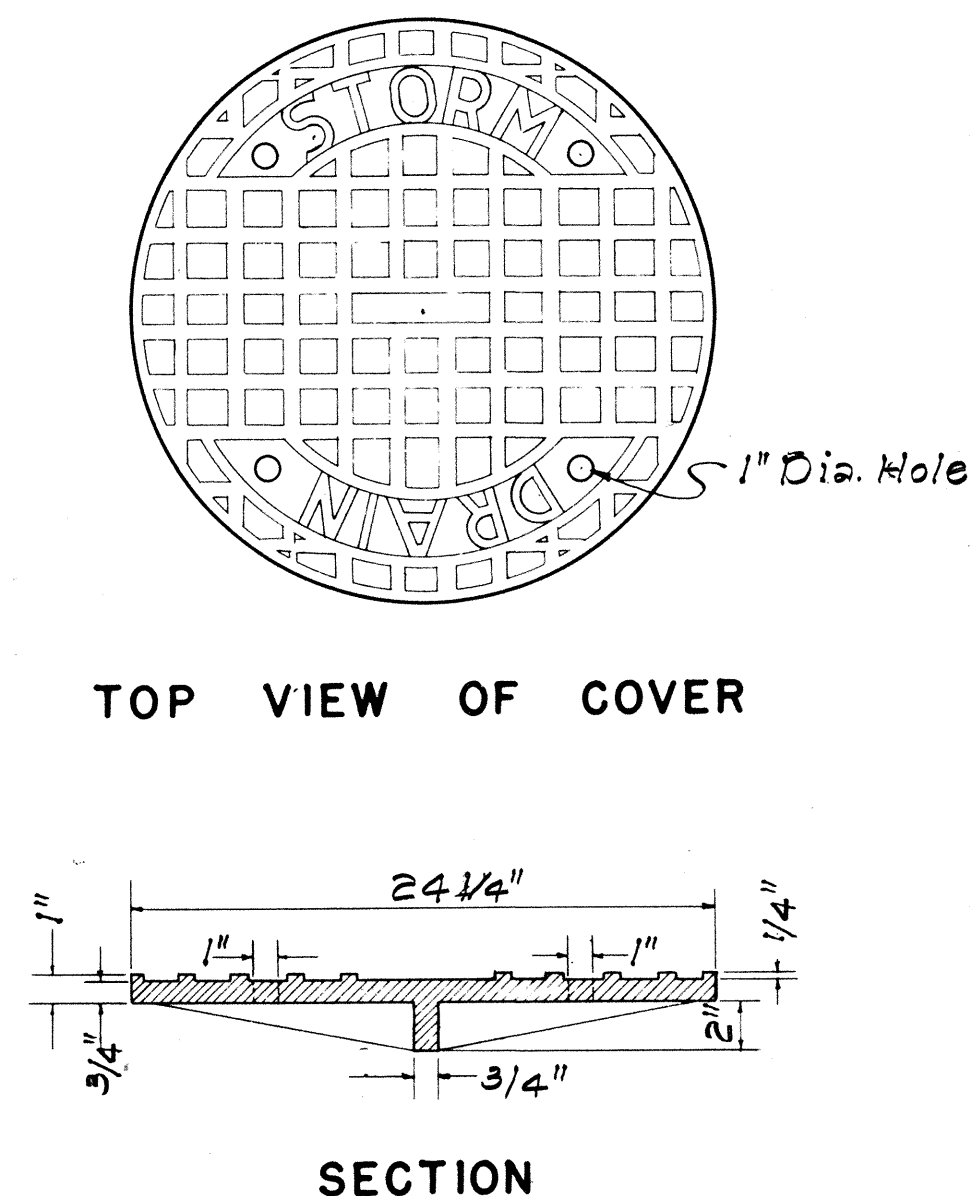
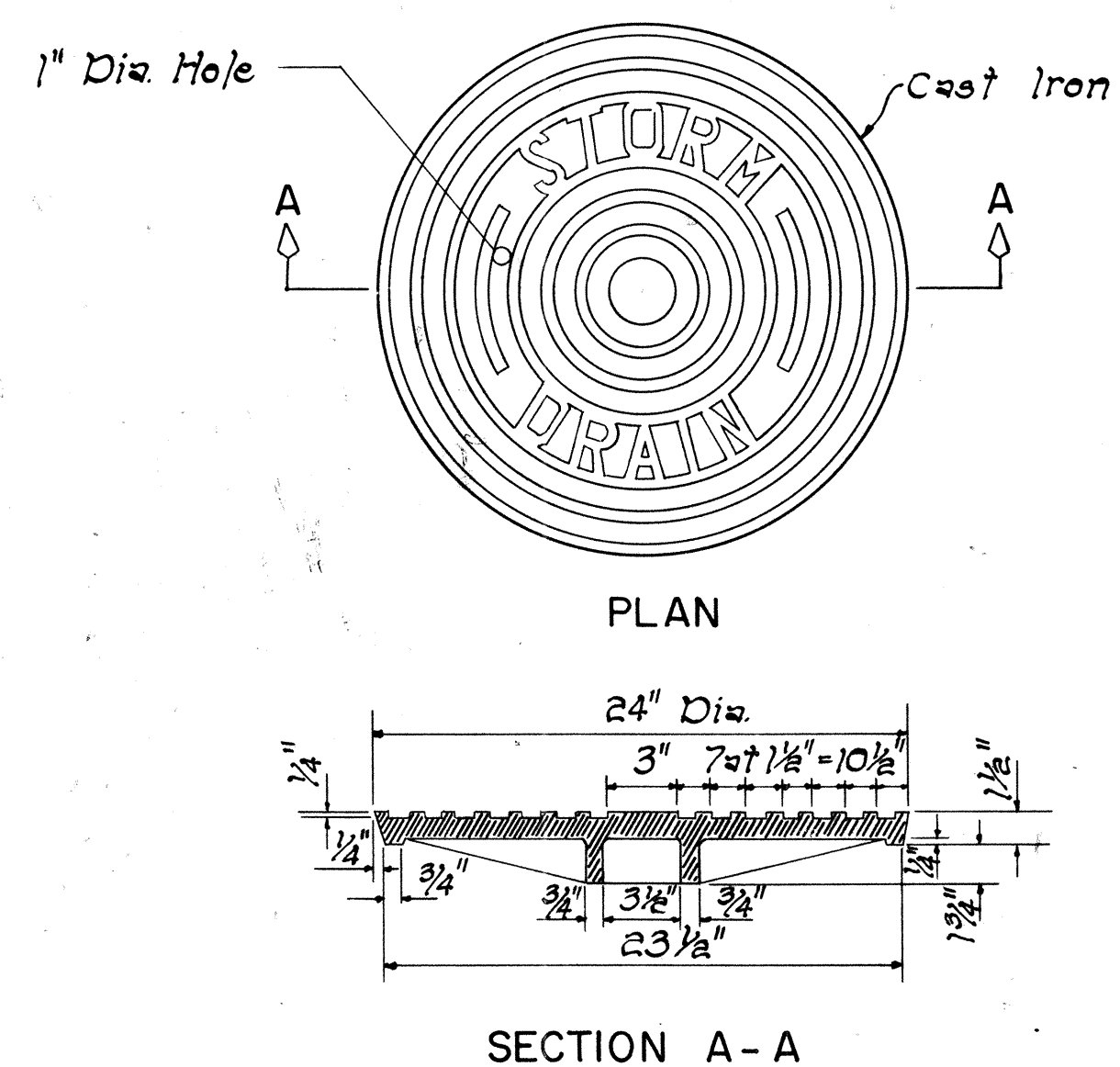
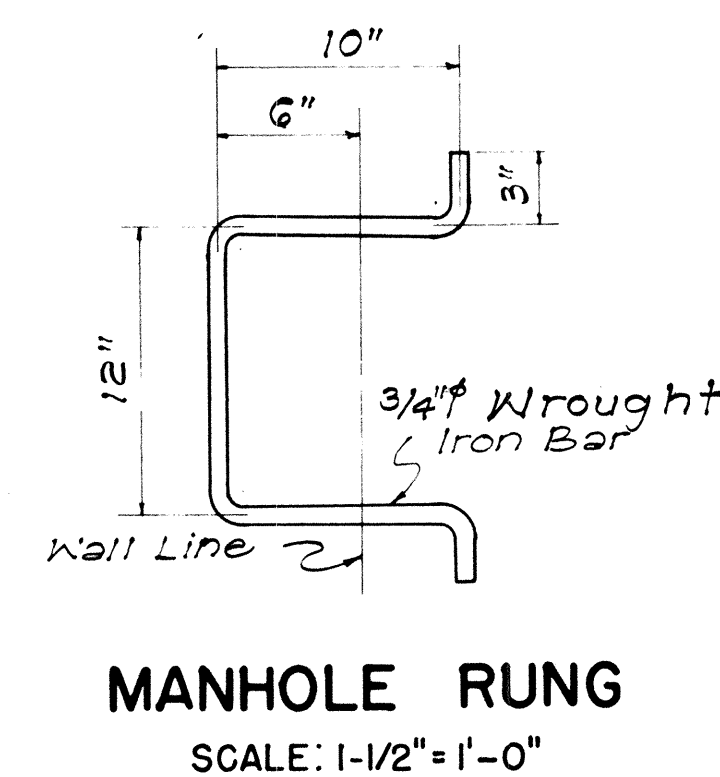
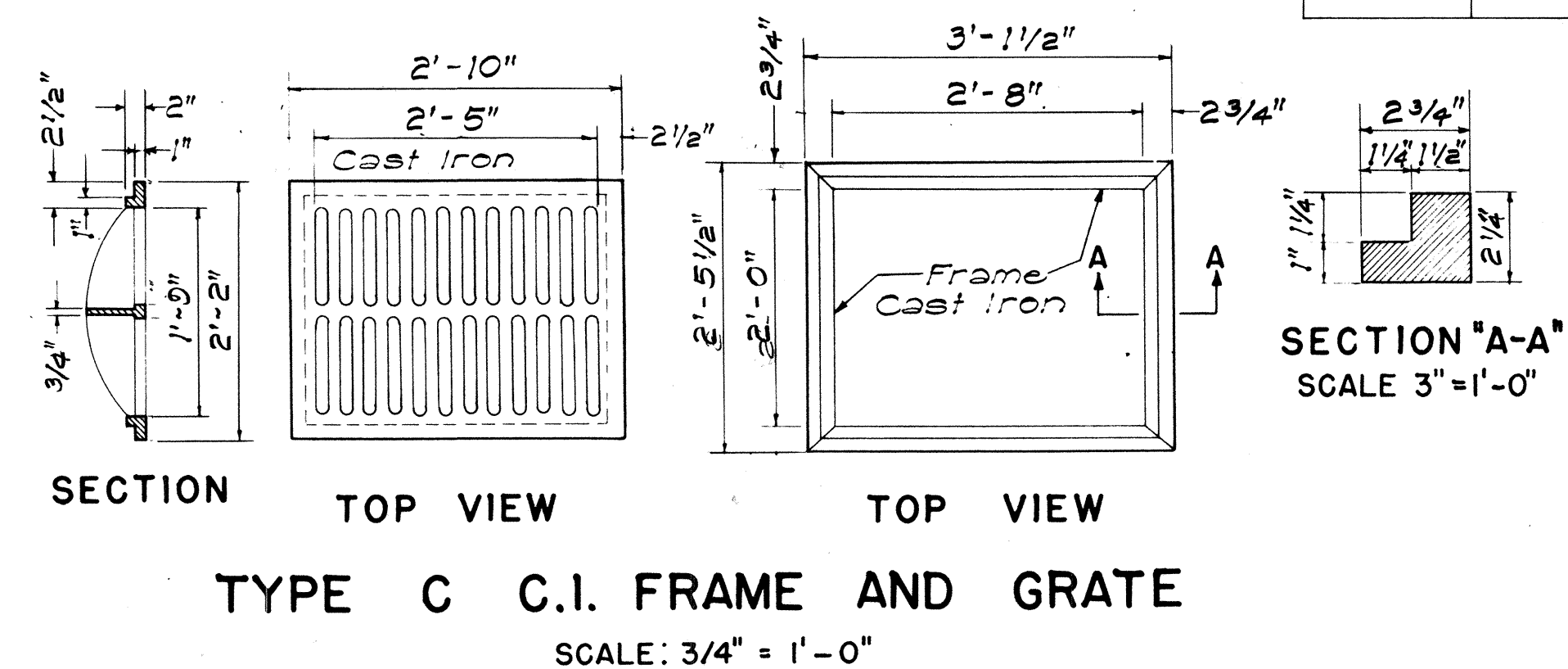
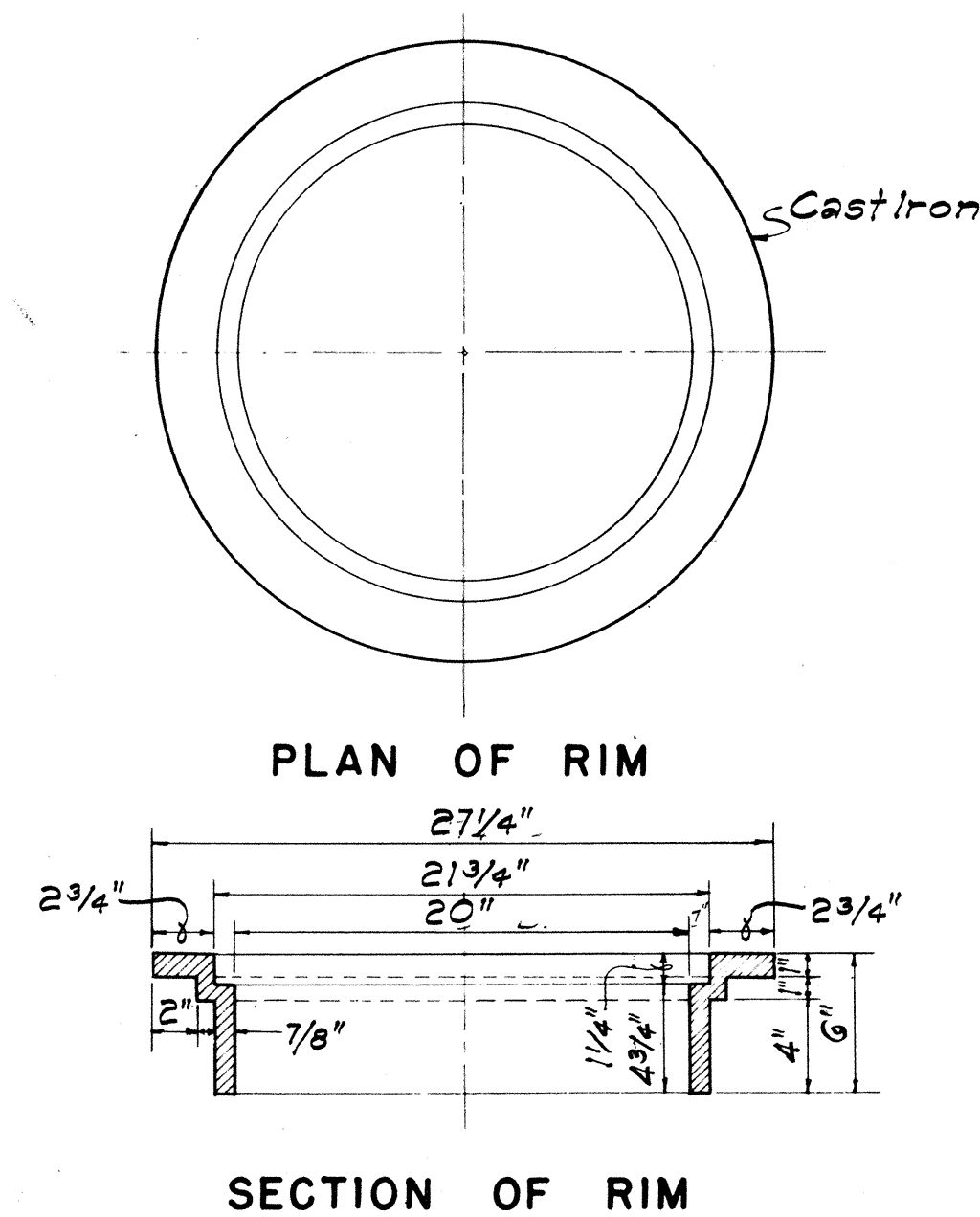
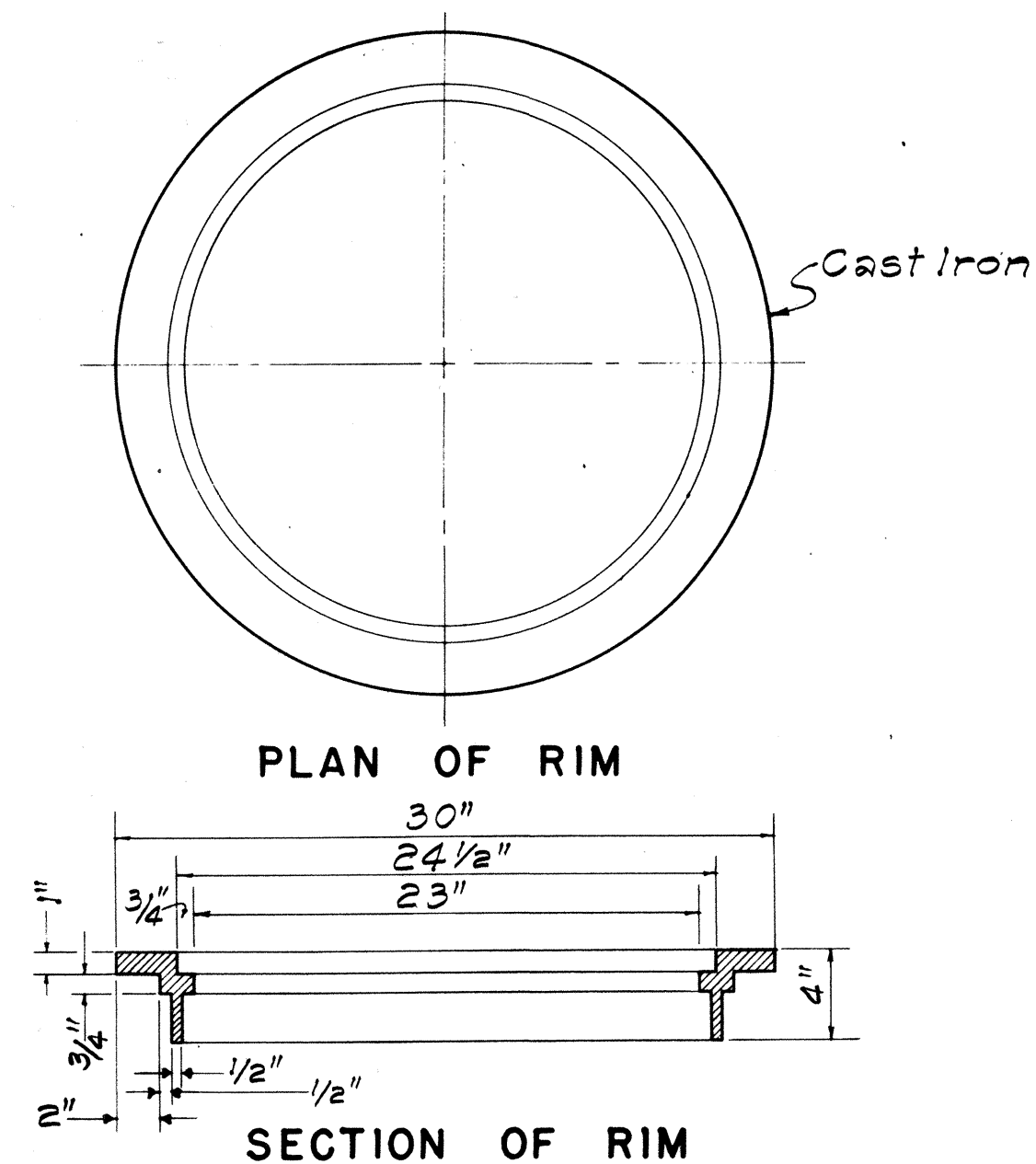
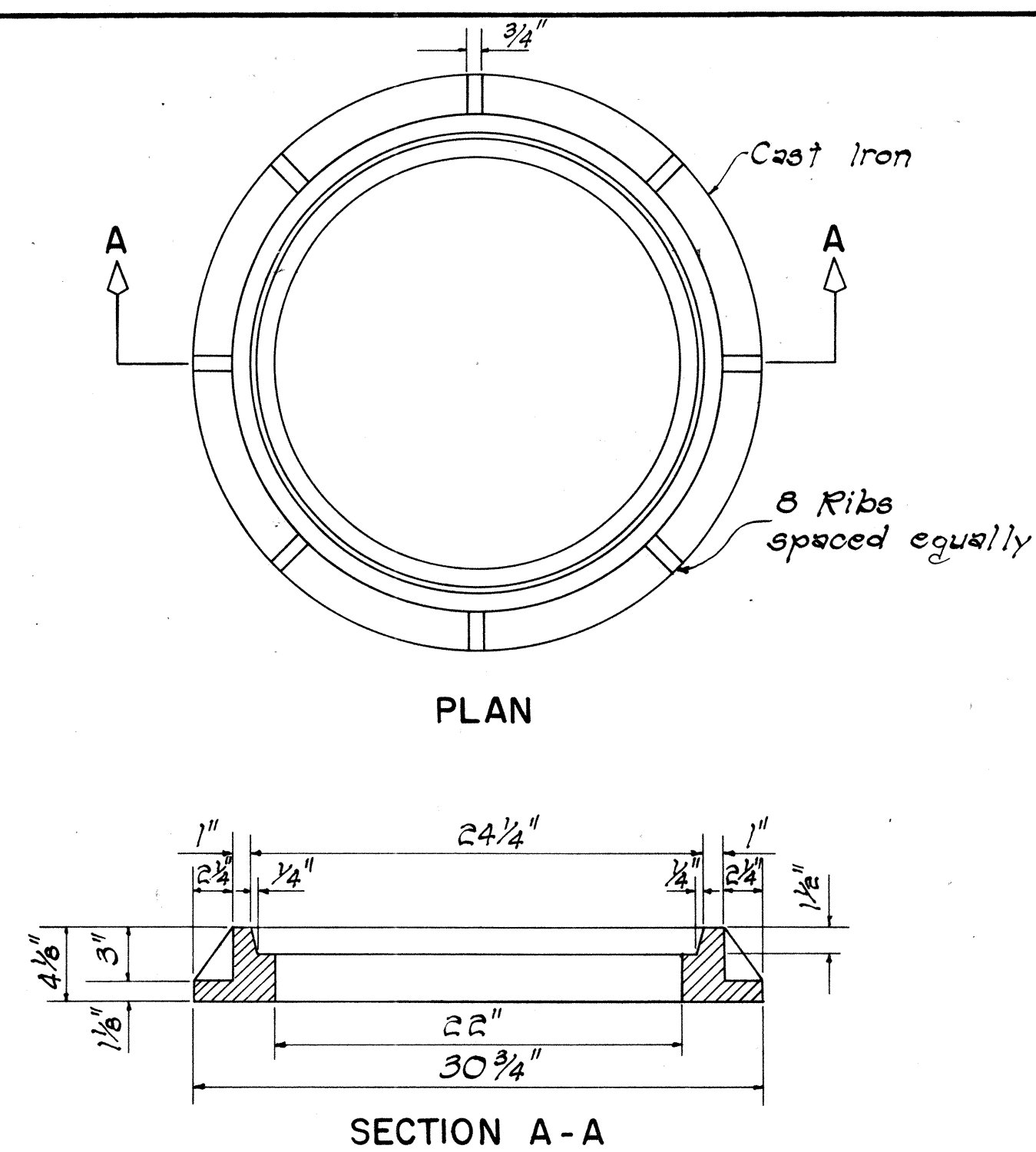
APPROVED:

 ASSISTANT CHIEF, ENGINEERING
 DATE 2-25-71

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
PRECAST CONCRETE
STORM DRAIN MANHOLES
 Not to Scale Date: Nov., 1970
 SHEET No. 12 OF 17 SHEETS DH 5A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(73)-15	1974	79	369



APPROVAL RECOMMENDED:

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

APPROVED:

[Signature] 12-17-69
ASSISTANT CHIEF, ENGINEERING 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 13 OF 17 SHEETS DH 6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-111(73)15	1974	80	369

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.

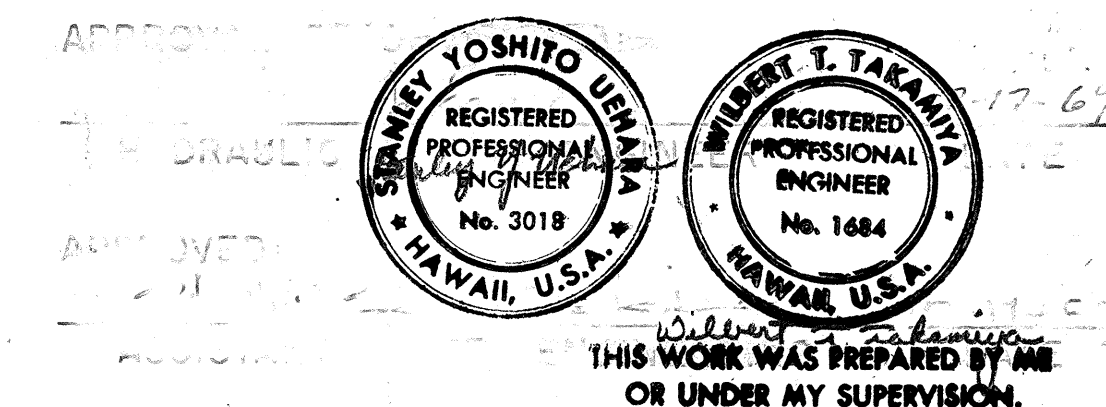
Material	ASTM Designation
Structural Steel.....	A283, Grade D
Cast Steel.....	A27, Grade 65-35
Malleable Iron Casting....	A47, Gr. No. 35018

GRATE BAR SPACING TABLE

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

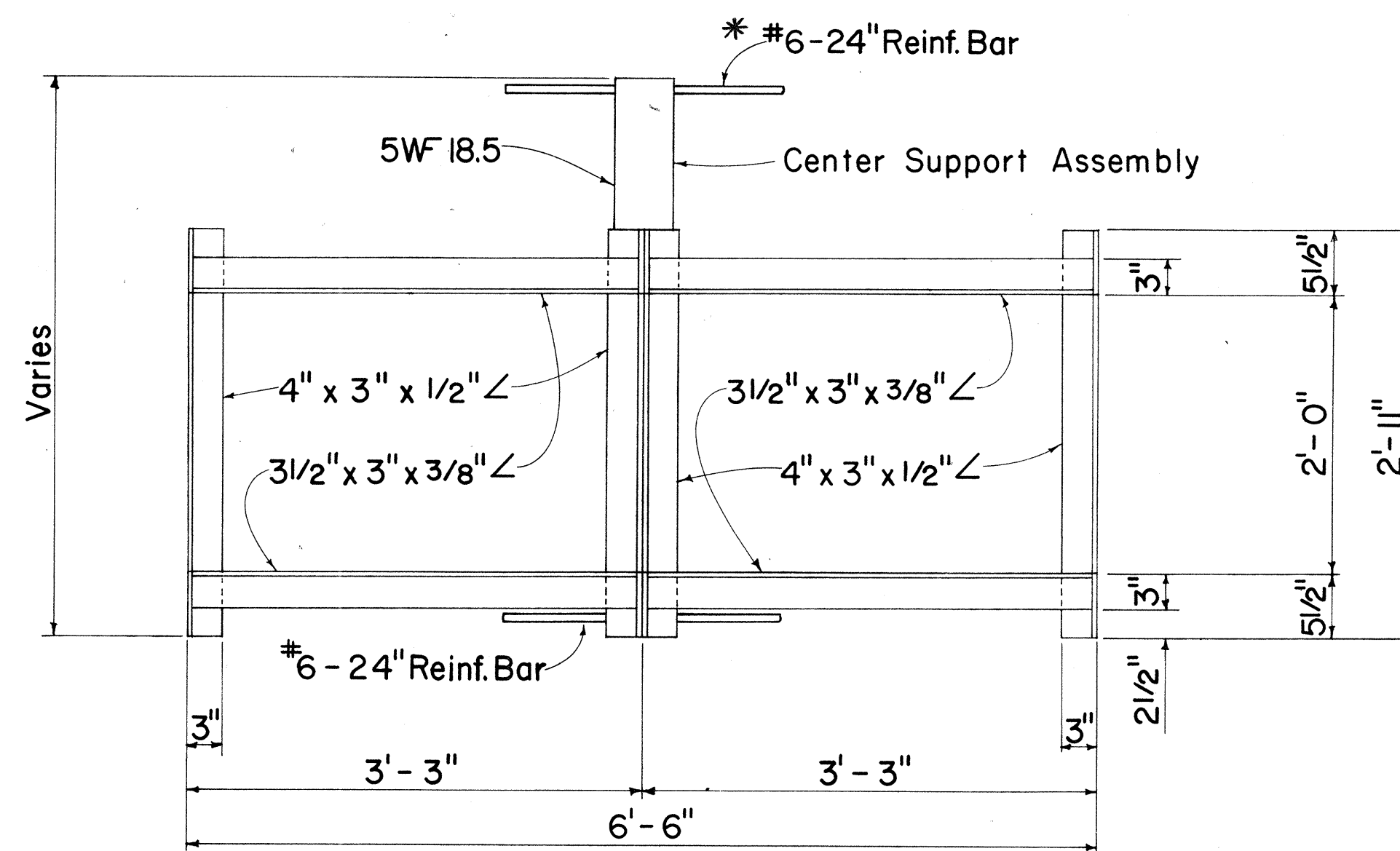
NOTE:

- 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.

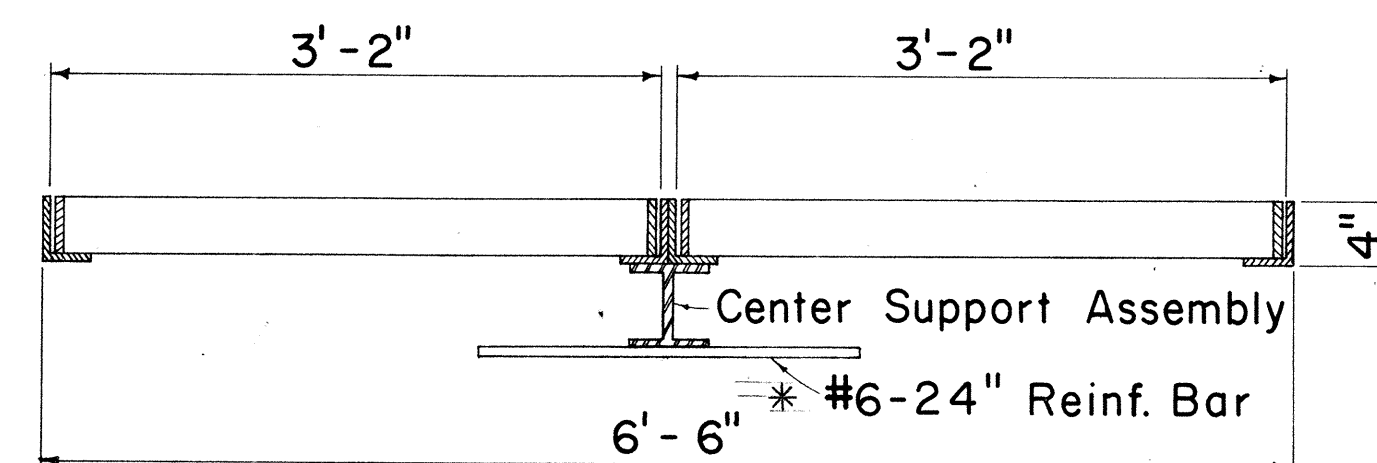


STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION			
TYPE A-9 AND A-12 FRAMES AND GRATES			
Scales: As Noted		Date: Aug. 1968	

SHEET No. 14 OF 17 SHEETS DH 7



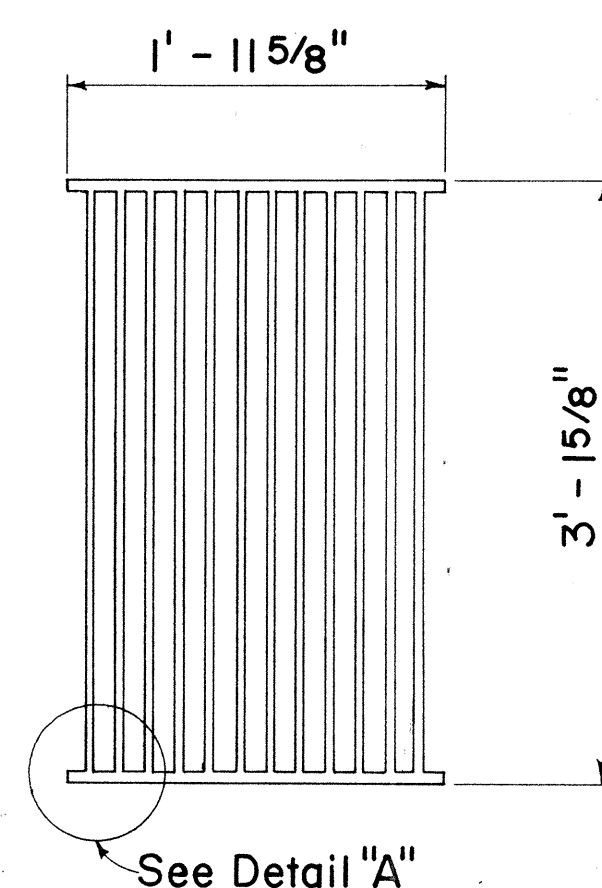
PLAN
(Two or More Grates)



LONGITUDINAL SECTION
(Thru Frame & Grate)

FRAME DETAILS

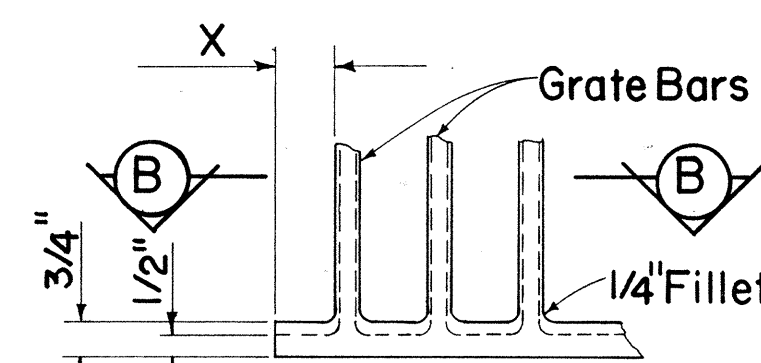
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PLAN

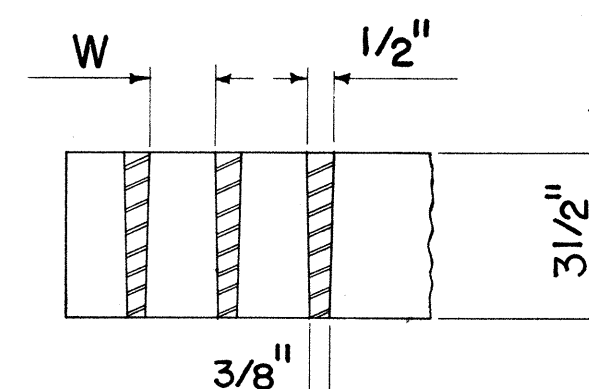
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ALTERNATIVE CAST MALLEABLE IRON OR CAST STEEL GRATE



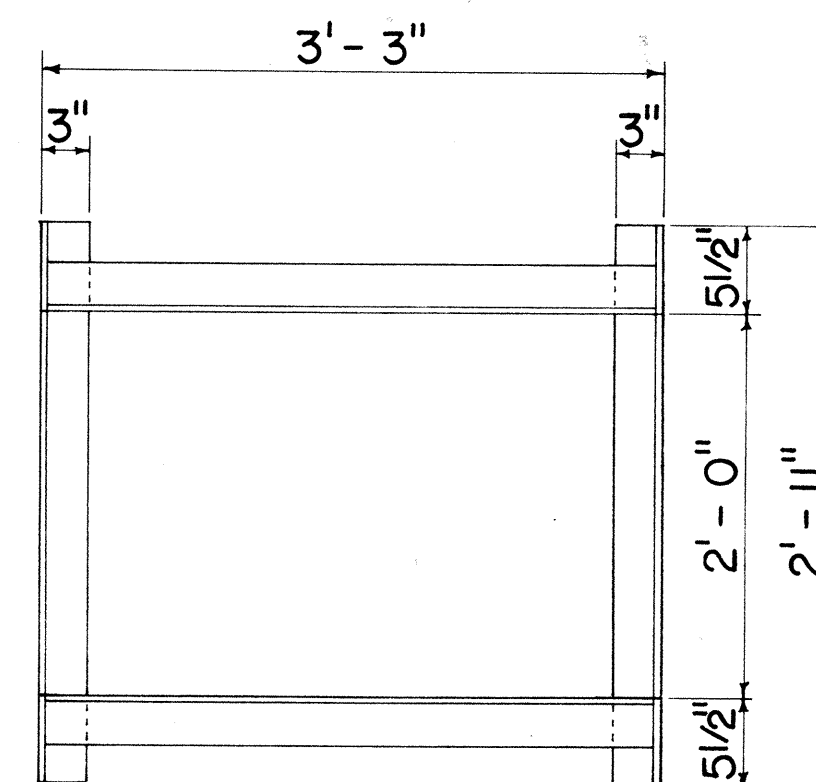
DETAIL "A"

Scale: 3" = 1' - 0"

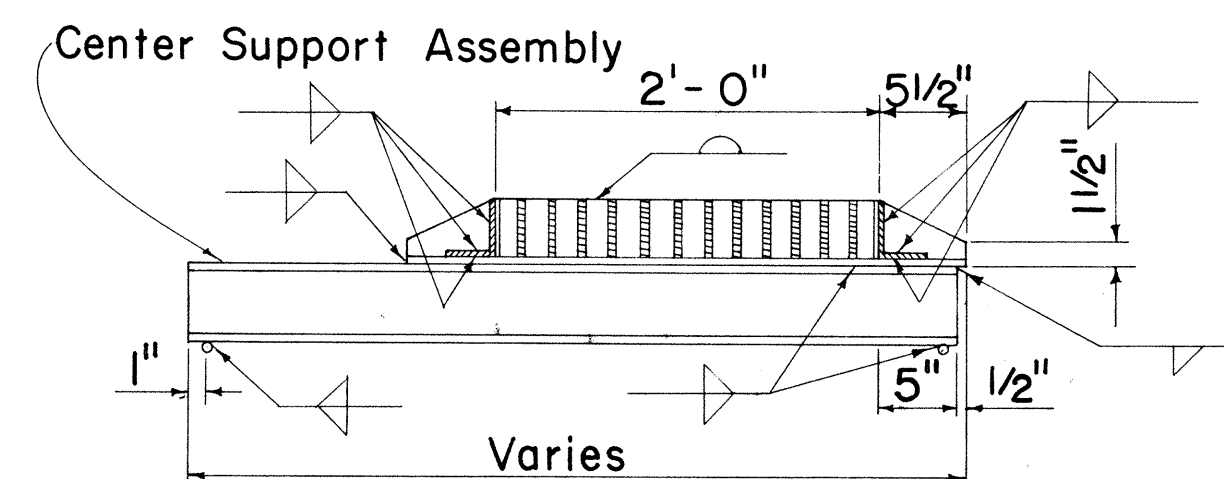


SECTION "B-B"

Scale: 3" = 1' - 0"



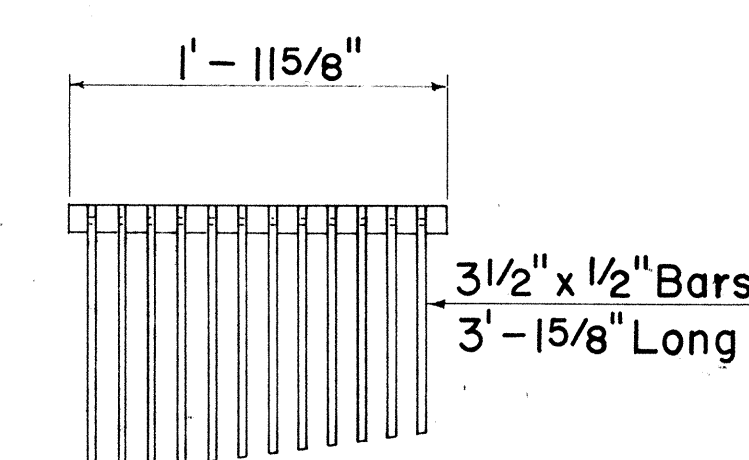
PLAN
(Single Grate)



CROSS SECTION
(Thru Frame & Grate)

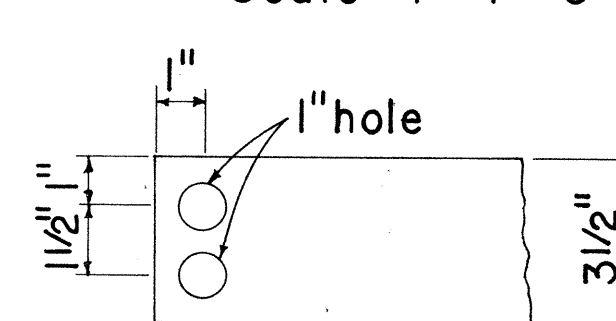
NOTE:

- * BEND #6 REINF. BAR SEE DETAIL SHEET 71



CAST END BLOCK

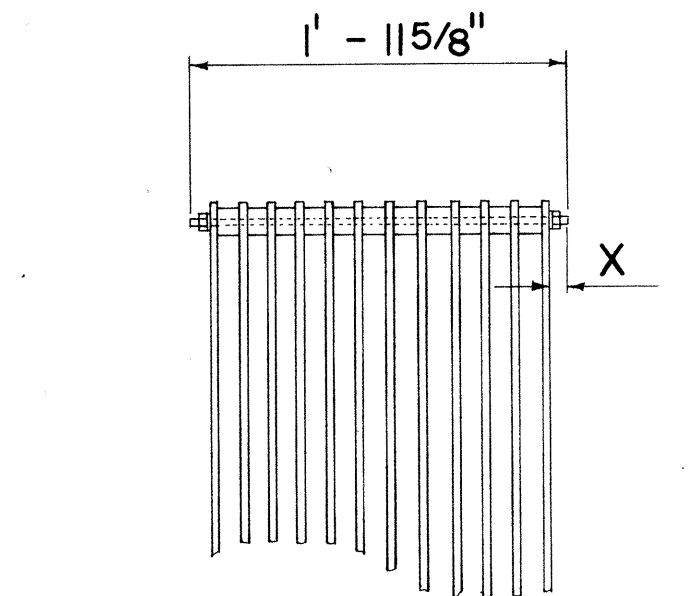
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END OF BAR

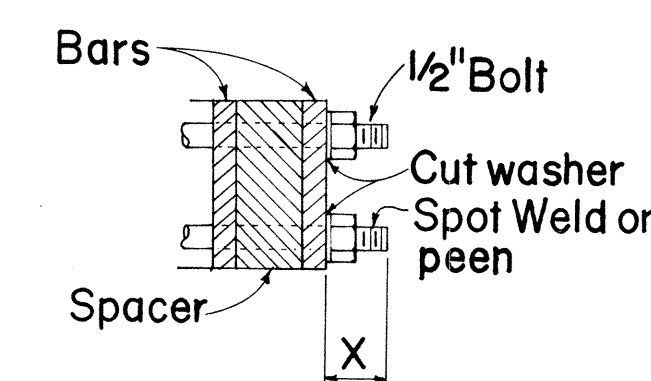
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ALTERNATIVE CAST MALLEABLE IRON OR CAST STEEL END BLOCK GRATE



BOLTED END BLOCK

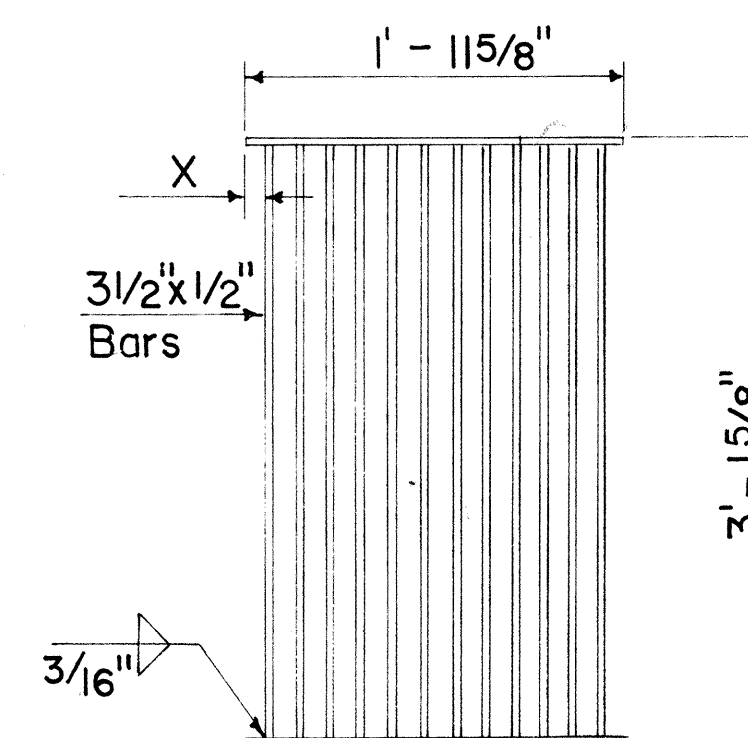
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BOLTING DETAIL

Scale: 3" = 1' - 0"

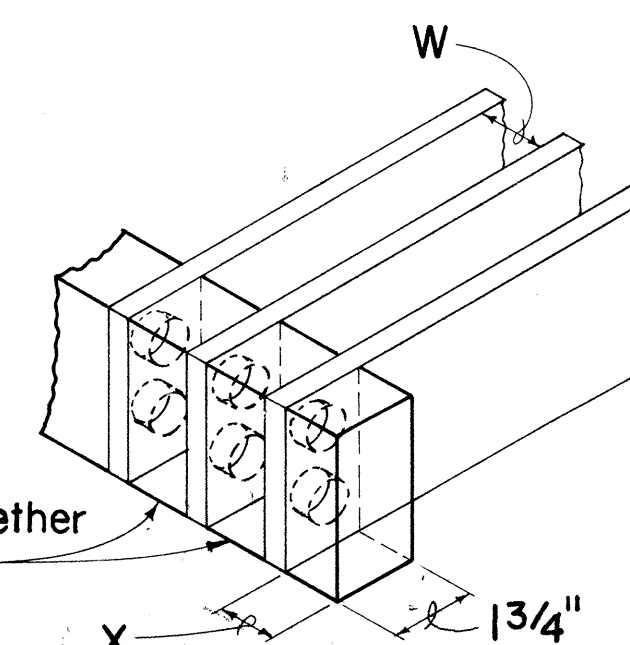
ALTERNATIVE BOLTED GRATE



PLAN

ALTERNATIVE WELDED GRATE

Scale: 1" = 1' - 0"



Both ends held together by solid casting

DESIGNED BY	7/68
TRACED BY	7/68
QUANTITIES BY	7/68
CHECKED BY	7/68
ORIGINAL PLAN	
NOTE BOOK	
No.	

Diagram illustrating the elevation view of a window frame. The frame is rectangular, with overall dimensions of 3' - 0" in height and 2A in width. The frame is divided into two main sections by a vertical mullion, each with a width of A. The frame is constructed using 4" x 3" x 1/2" L-shaped members. The top and bottom horizontal members are labeled "4" x 3" x 1/2" L". The vertical members are labeled "3 1/2" x 1/2" Bars". The frame is shown with a 3/4" gap between the frame and the wall. The overall height is 3' - 0", and the overall width is 2A. The frame is divided into two main sections by a vertical mullion, each with a width of A. The frame is constructed using 4" x 3" x 1/2" L-shaped members. The top and bottom horizontal members are labeled "4" x 3" x 1/2" L". The vertical members are labeled "3 1/2" x 1/2" Bars". The frame is shown with a 3/4" gap between the frame and the wall. The overall height is 3' - 0", and the overall width is 2A.

Diagram of a column cross-section showing dimensions and reinforcement:

- Overall width: B
- Overall height: $3' - 4 \frac{5}{8}"$
- Top reinforcement: $3 \frac{1}{2}" \times \frac{1}{2}"$ Bar
- Bottom reinforcement: $3 \frac{1}{2}" \times \frac{1}{2}"$ Bar
- Vertical spacing between reinforcement: $1 \frac{3}{4}"$
- Clearance from the right edge: C
- Internal reinforcement: $3 \frac{1}{2}" \times \frac{1}{2}"$ Bars

A technical drawing showing a cross-section of a V-shaped anchor bolt assembly. The assembly consists of two angled legs meeting at a central point, forming a V-shape. The legs are labeled "6 : 1". The top horizontal section has a width of $\frac{3}{4}$ " and a height of $\frac{1}{4}$ ". The bottom horizontal section has a width of $\frac{1}{2}$ " and a height of $\frac{3}{16}$ ". The distance from the centerline to the outer edge of the top section is labeled "A". The distance from the centerline to the outer edge of the bottom section is labeled "D". A circular hole is shown in the center of the V-shape, with a diameter of $\frac{1}{2}$ " $\varnothing$. An arrow points to the hole with the text "See Enlarged Detail Below". The entire assembly is supported by two L-shaped anchors, each labeled " $\frac{1}{2}$ " $\varnothing$ Anchor". The distance between the centers of the anchors is labeled "D". The overall height of the assembly is labeled "S".

Diagram illustrating a sloped reinforcement bar with a 6:1 slope. The horizontal distance is labeled B . The bar is shown with a 6:1 slope. A callout indicates "See Enlarged Detail Below".

Diagram illustrating a corner lap joint for a 6:1 slope. The joint uses two 4" x 3" x 1/2" L-shaped bars and a 3 1/2" x 1/2" Bar. The slope is labeled 6:1. A dimension of 4" is indicated on the right side.

Technical drawing of a manhole frame and grate assembly. The drawing shows a rectangular frame with a central opening for a grate. Dimensions include a total width of $2A + 1'-4"$ and a total height of $8" + A + A + 8"$. The central opening is $3'-0"$ wide and $0"$ to $3'-0"$ high, with a minimum of $3'-0"$ and a maximum of $6'-0"$. The frame is made of 61614 or 61616 steel. The grate is made of #5 @ 12" dowels. The frame has 2 removable grates. The frame is labeled "Manhole Rungs". The grate is labeled "2 - Removable Grates". The frame is labeled "Install 61614 or 61616 Steel Frame & Grate". The grate is labeled "#5 @ 12" Dowels". The frame is labeled "A" and "B".

[illegible]

61614 or 61616 Steel Frame & Grate

6:1 6:1

2"

1'-8"

8"

2 A

8"

#4 @ 18" Cl. Stirrups

2-#5

2-#6

5"

3" Min.

R=1"

Install curb when Drop Intake is used to drain Top of Fill Gutters. Provide Gutter Transitions of 25 ft. (entering and leaving D.I.)

STANLEY YOSHITO U.S.A. REGISTERED PROFESSIONAL ENGINEER

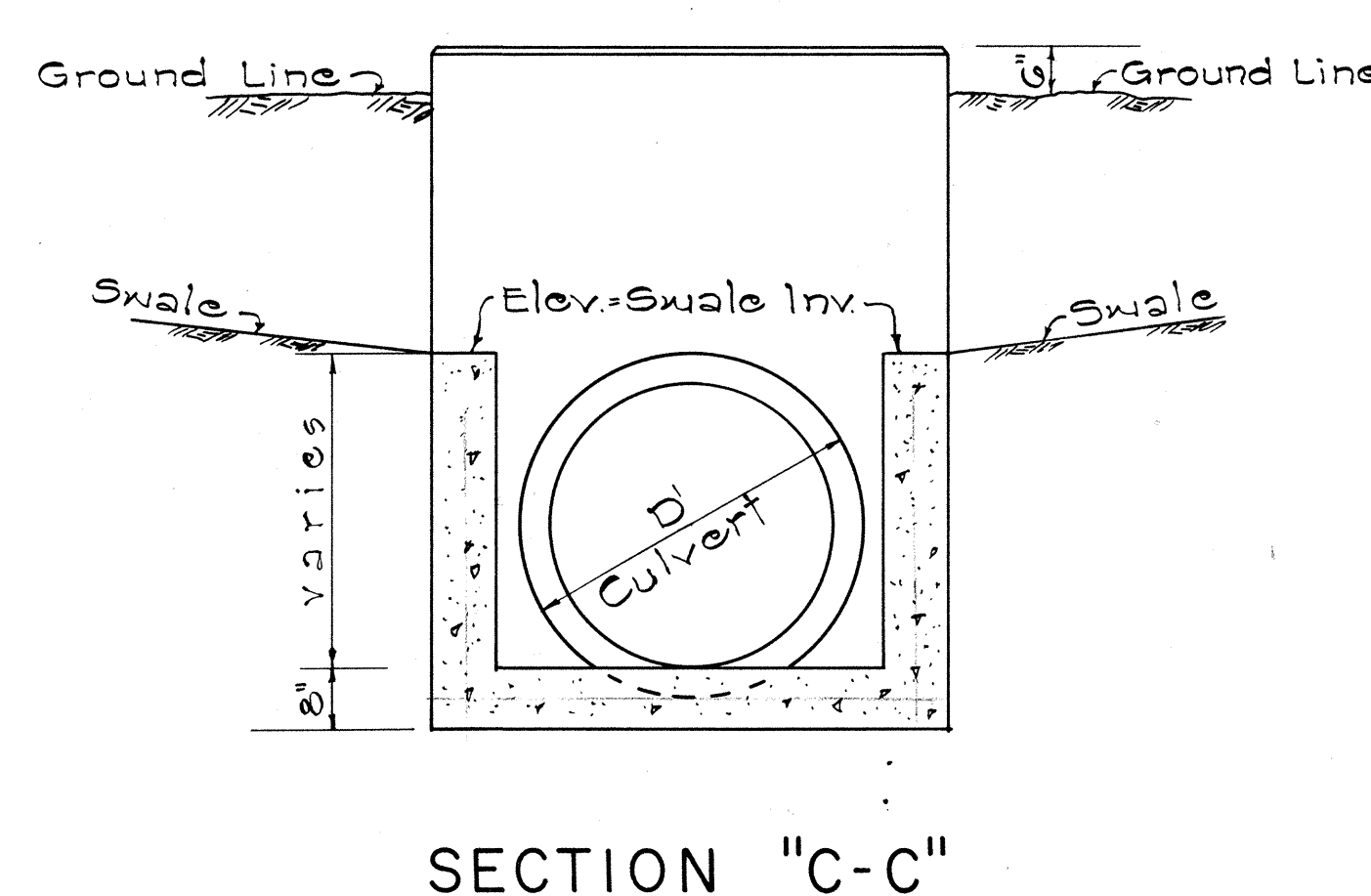
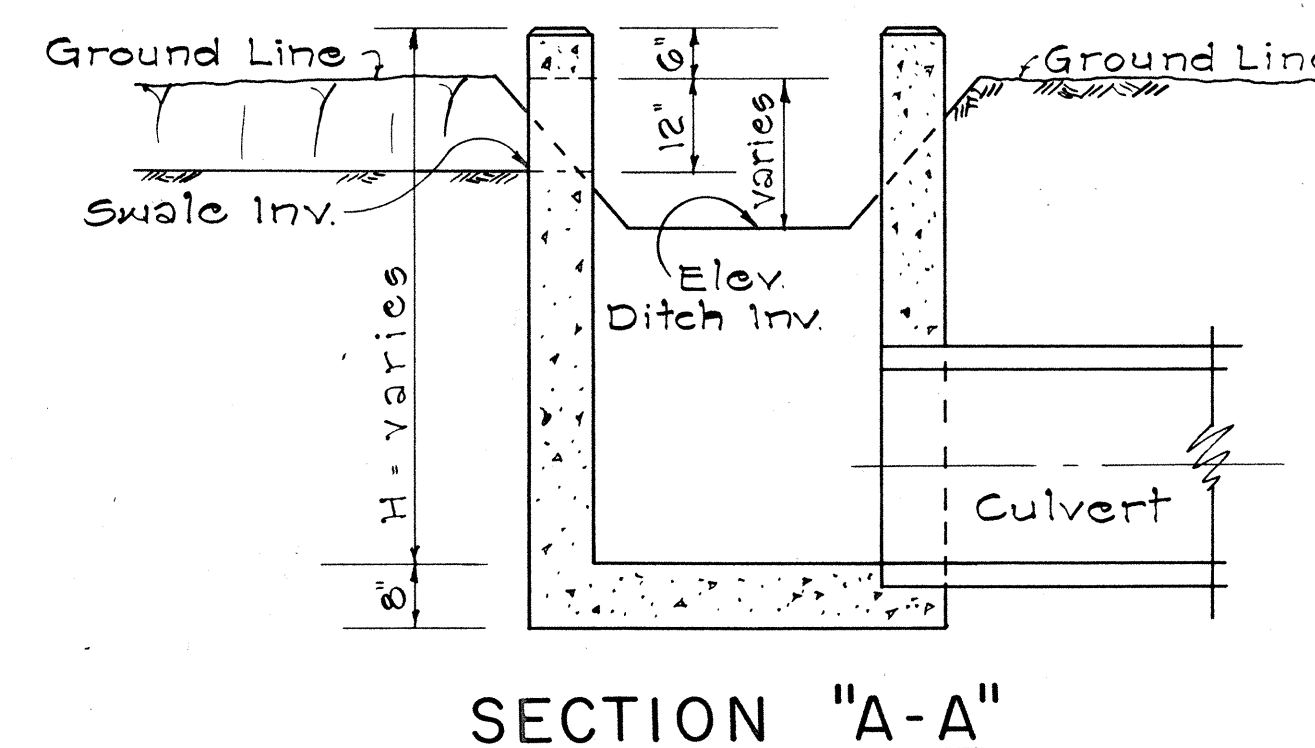
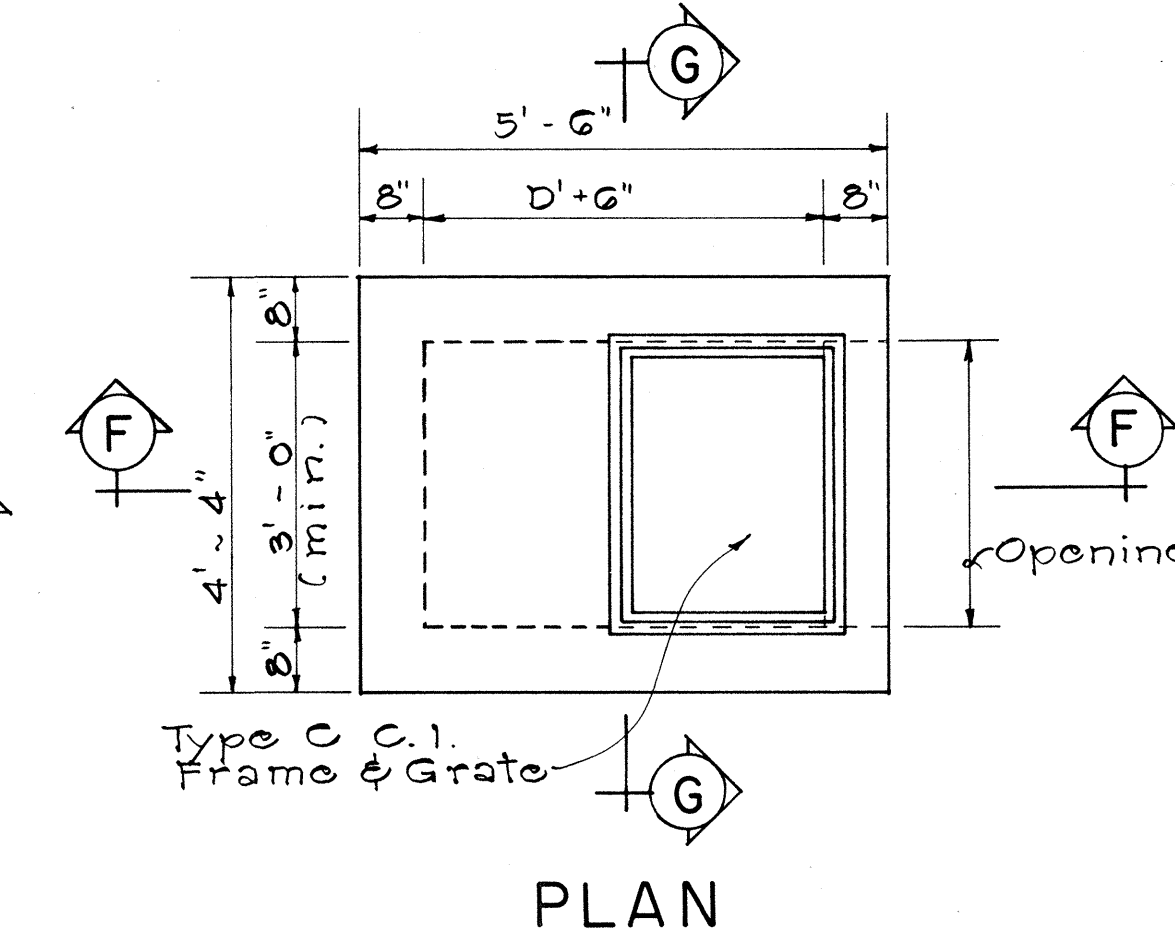
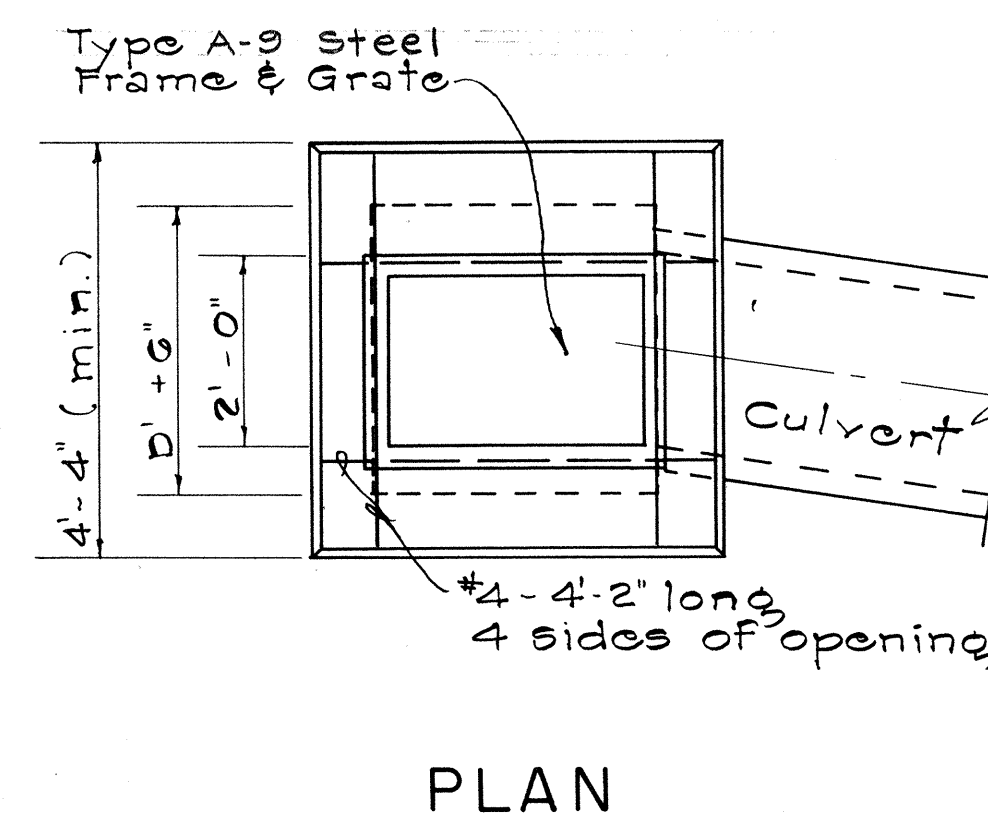
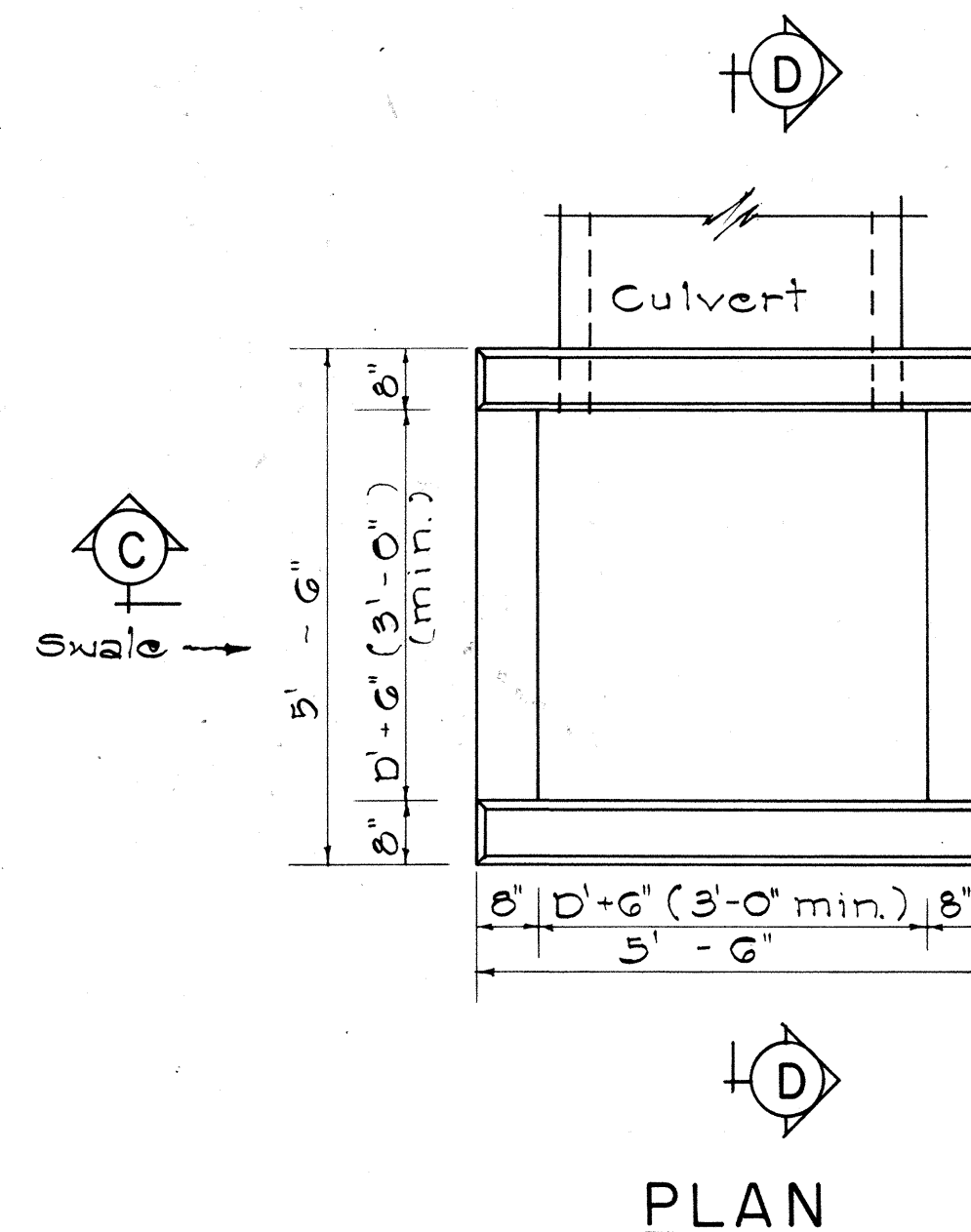
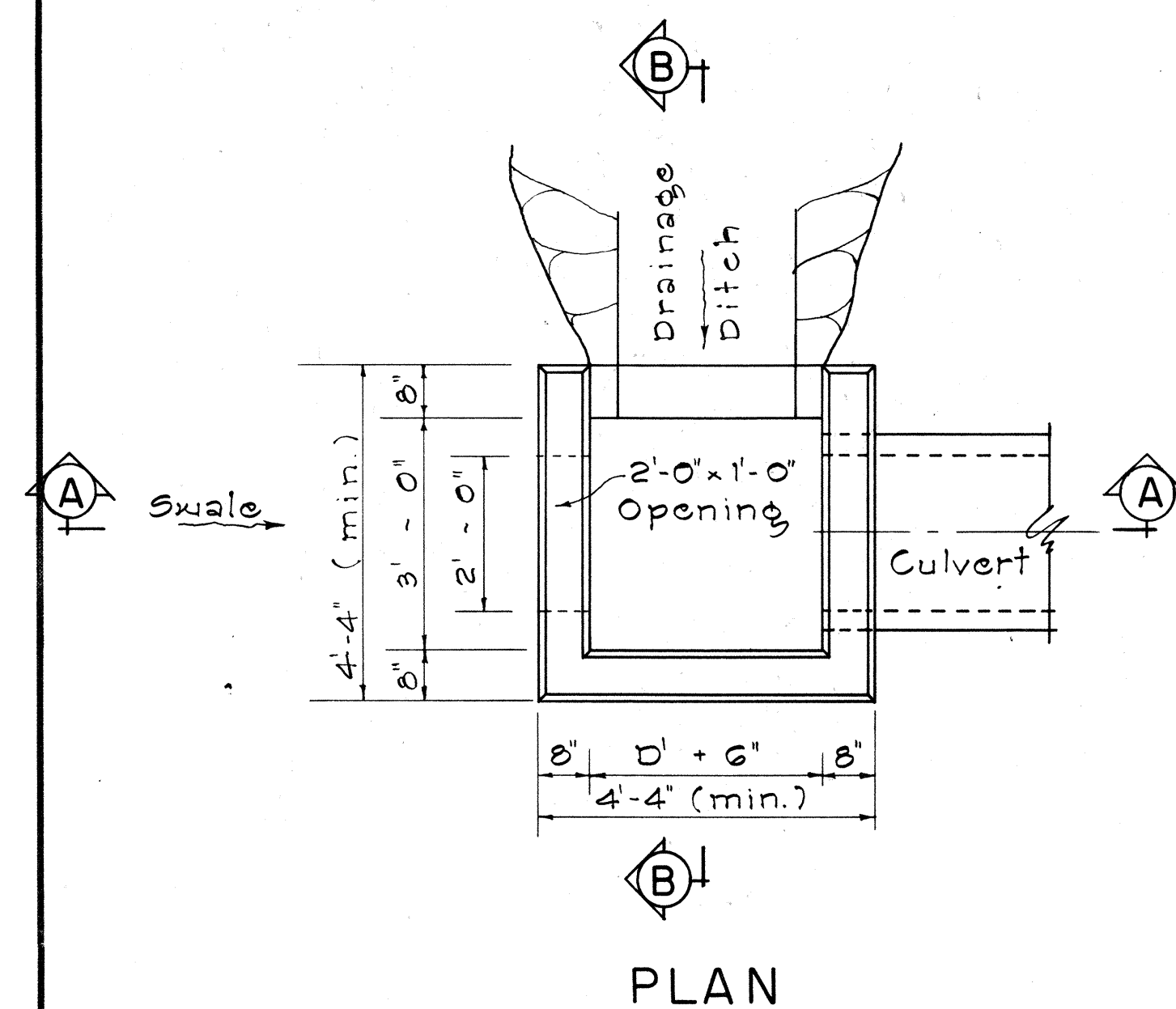
81

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	83	329

GENERAL NOTES

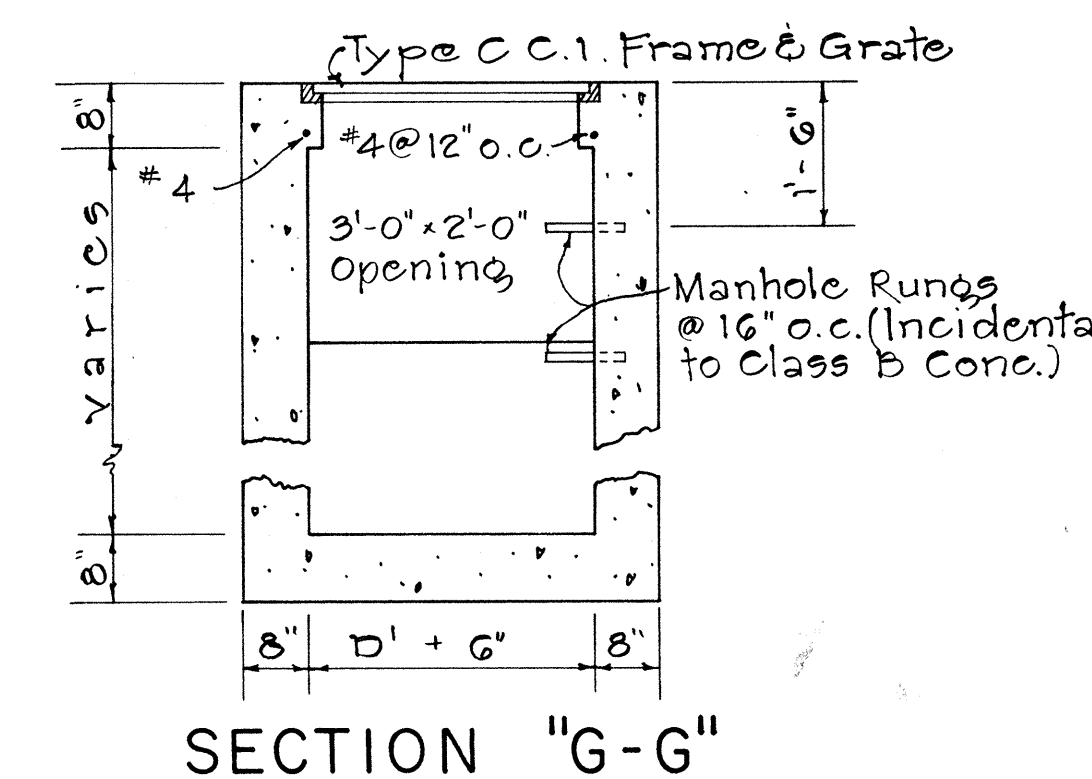
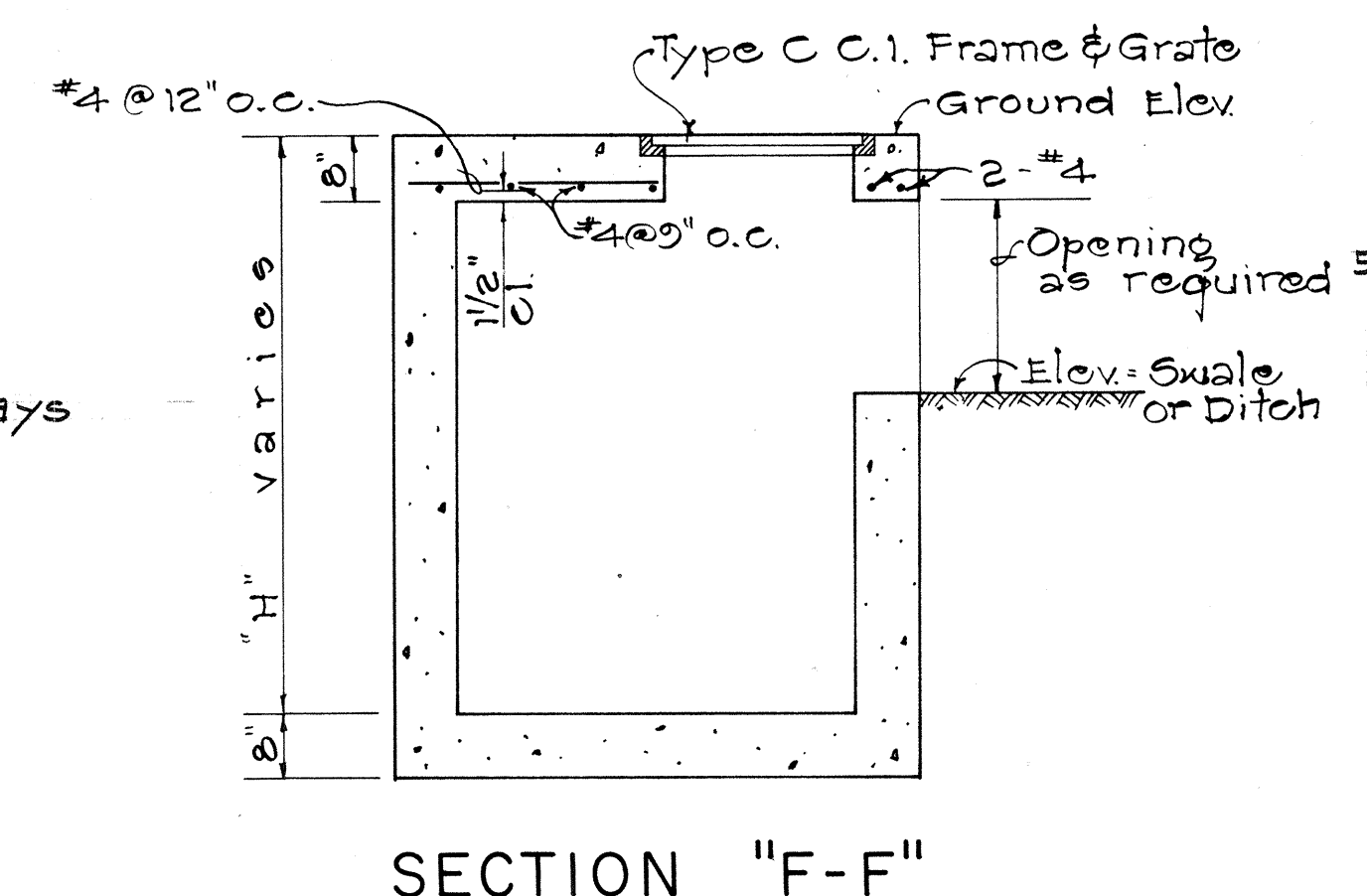
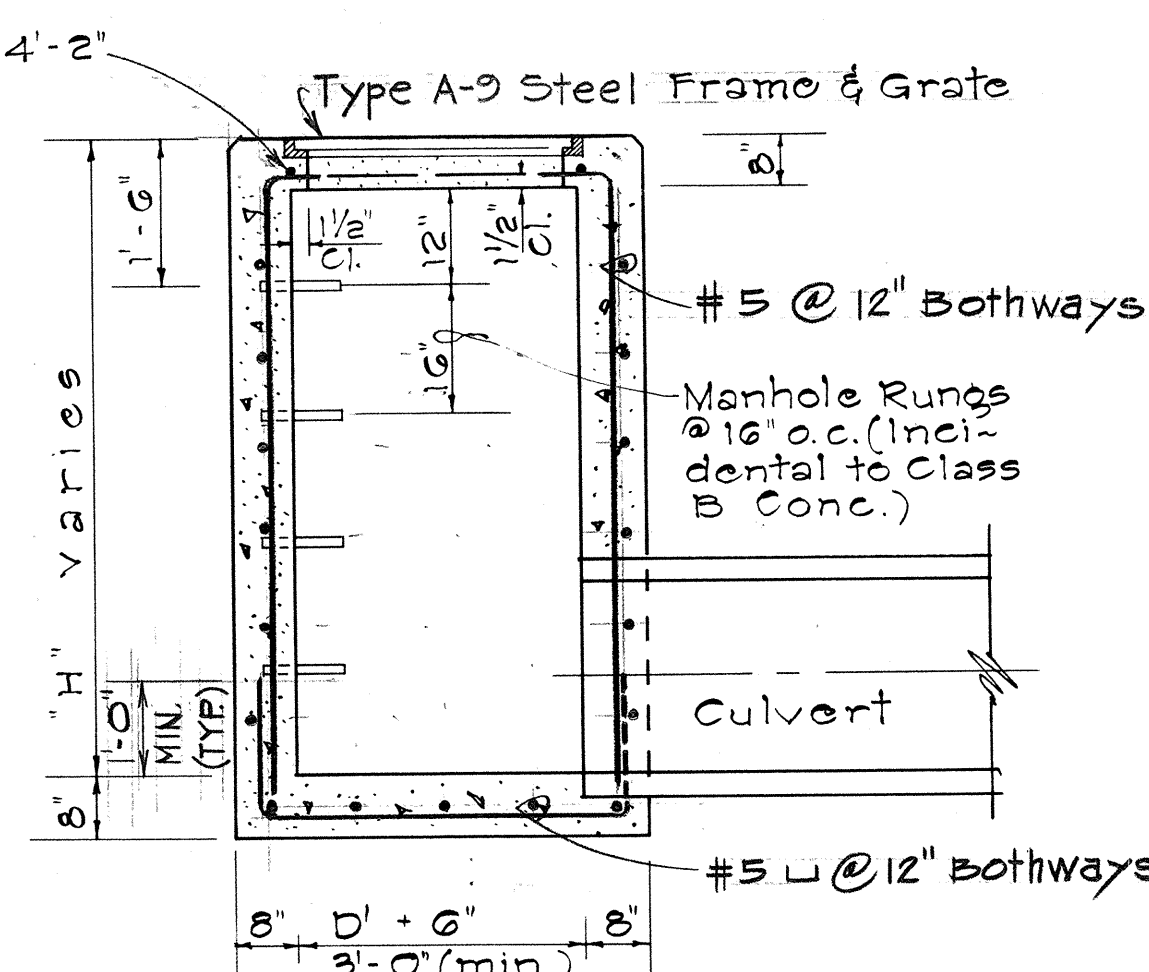
1. All concrete shall be Class "B" unless otherwise noted.
2. Exposed edges of all drainage structures shall be chamfered one inch.
3. Culvert shall enter and leave Drop Intake from any position and in the direction indicated by the plans or ordered by the Engineer.
4. Manhole Rungs (16" o.c.) are req'd. when "H" is greater than 4'-6". Only one rung (12 inches from the bottom) is required if "H" is 4'-6" or less. Manhole Rungs may be placed at any location as ordered by the Engineer.

SEE SHEET 71 FOR GENERAL CONCRETE NOTES AND DETAILS.



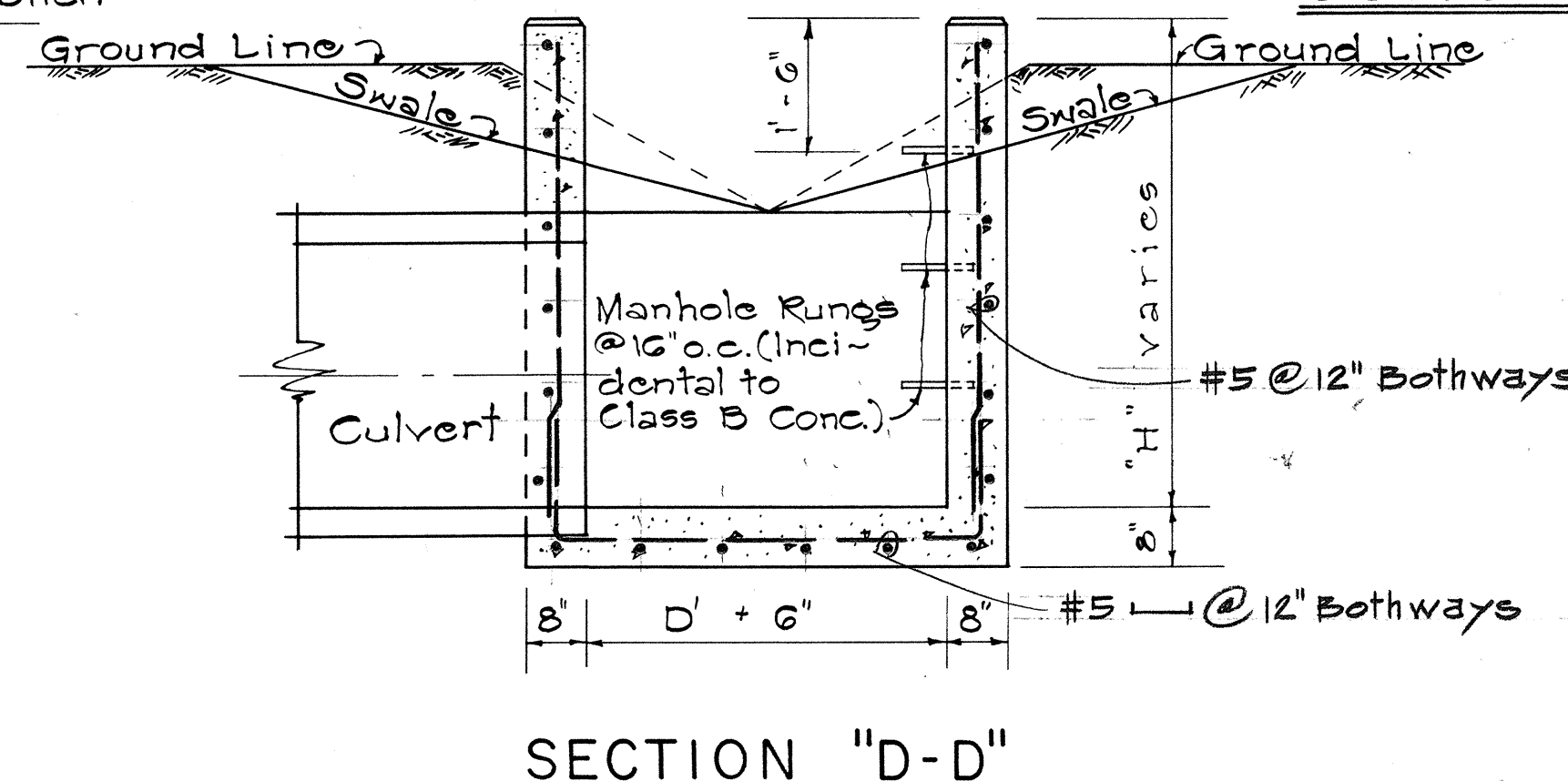
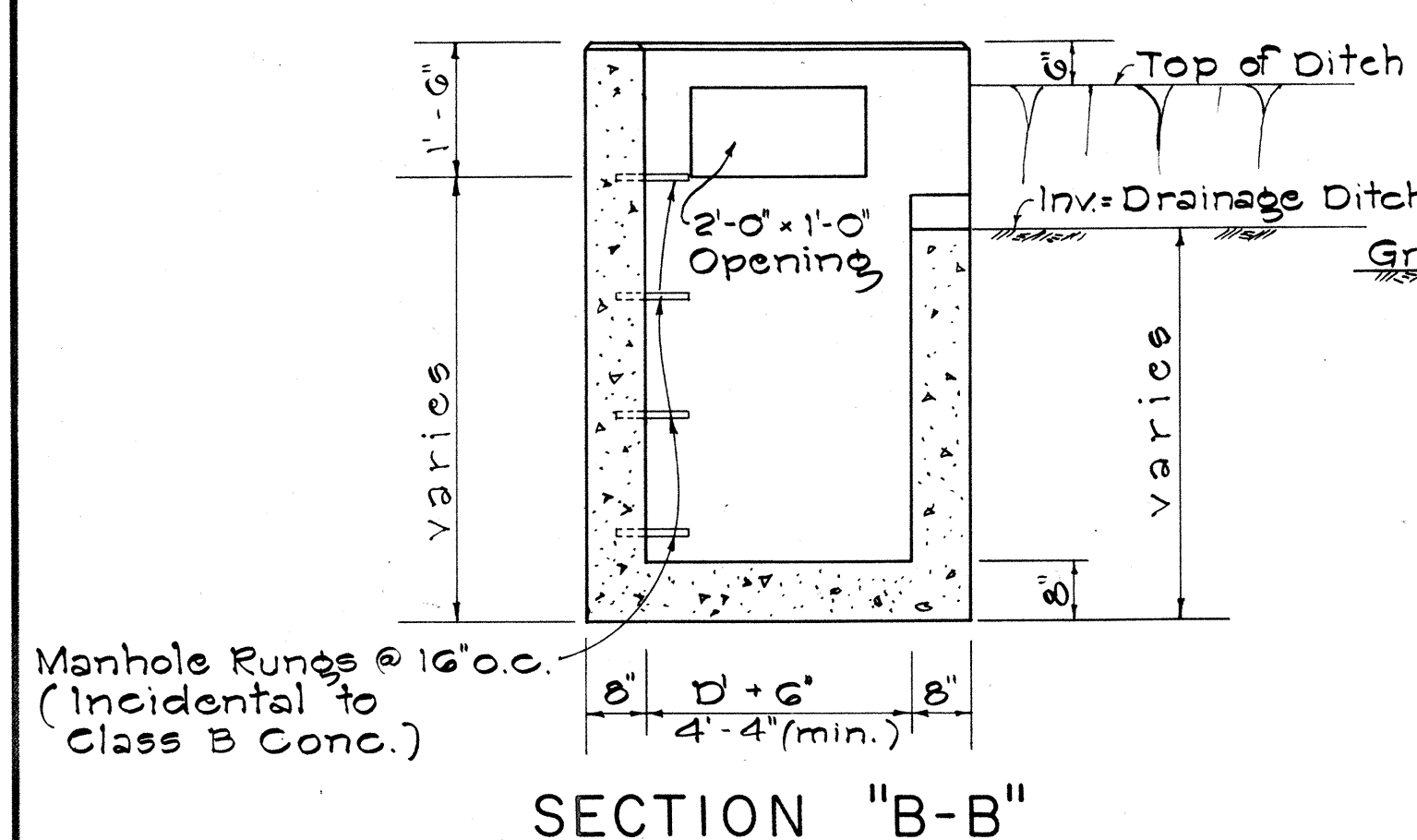
TYPE "C" GRATED CONCRETE DROP INTAKE

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



TYPE "D" GRATED CONCRETE DROP INTAKE

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

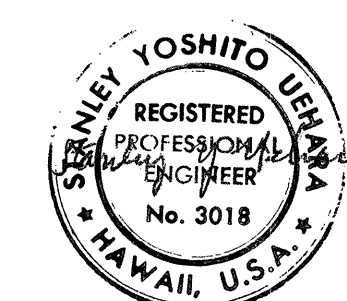


TYPE "A" CONCRETE DROP INTAKE

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

TYPE "B" CONCRETE DROP INTAKE

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "A", "B", "C", AND "D"
CONCRETE DROP INTAKE

Scale: As Noted Date: July, 1969

SHEET No. 17 OF 17 SHEETS DH19