

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	86	163

8/19/82	Deleted Siphon No.12 & Appurtenances & adjusted Quantity Totals.
6/24/82	Deleted Item No. G48.0608 per Addendum No. 1.
DATE	REVISION

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

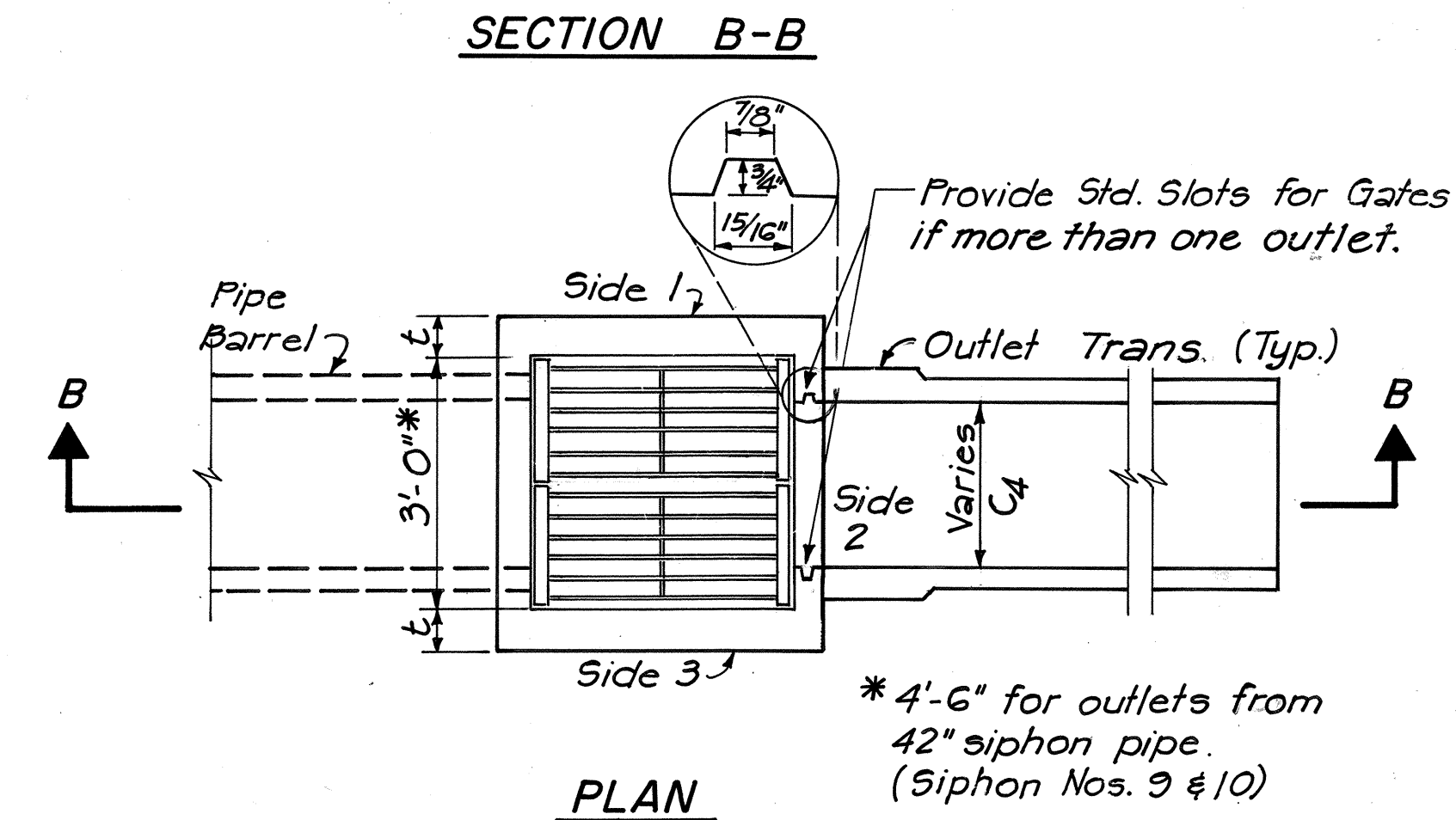
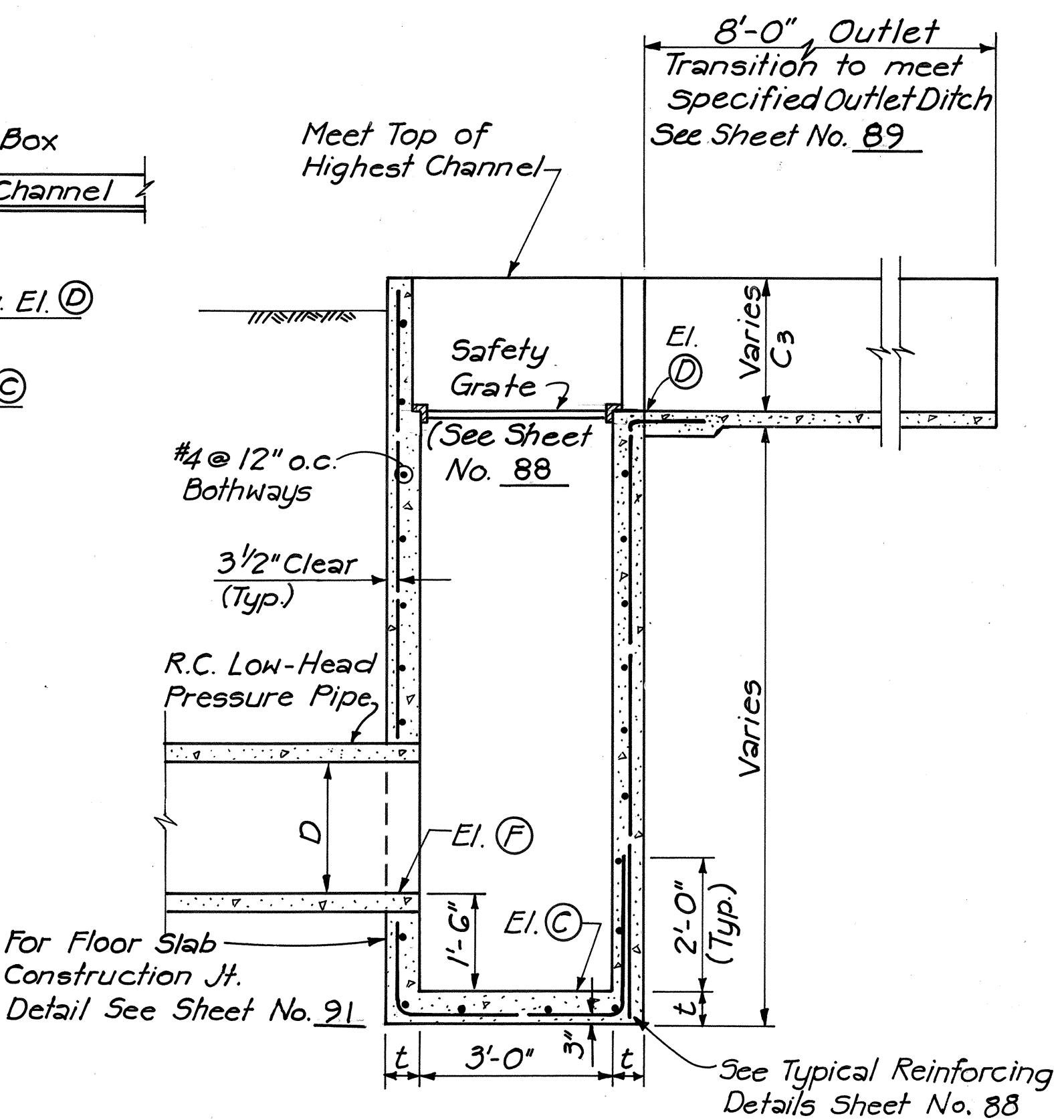
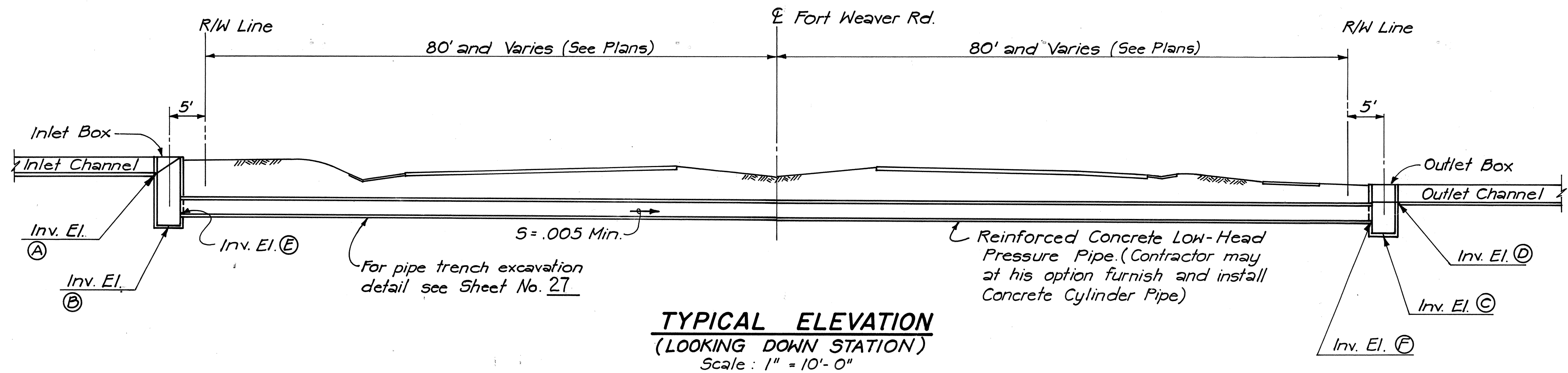
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SHEET No. 1 OF 1 SHEETS

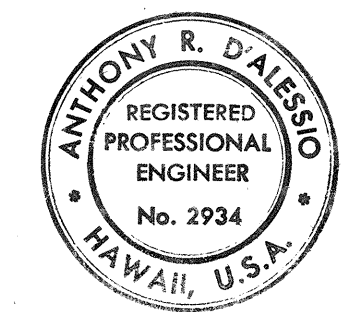
C O 86 R

Oahu Sugar Company Date

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HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	87	163



TYPICAL OUTLET BOX
Scale: 1" = 2'-0"



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Anthony R. Daleso

Oahu Sugar Company

Date

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

IRRIGATION SYSTEM DETAILS

FORT WEAVER ROAD

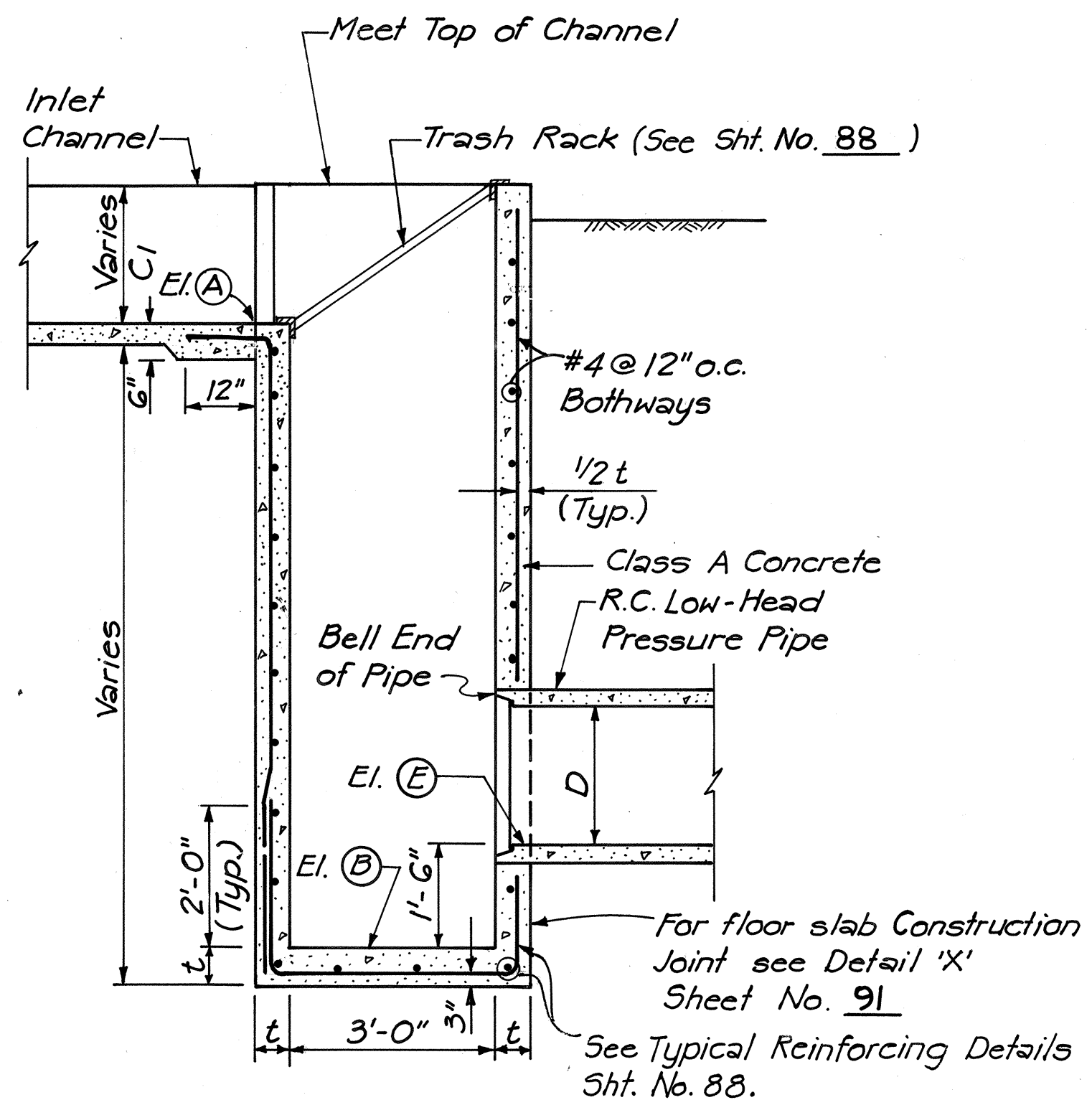
VICINITY OF MANGO TREE ROAD

TO THE VICINITY OF RENTON ROAD

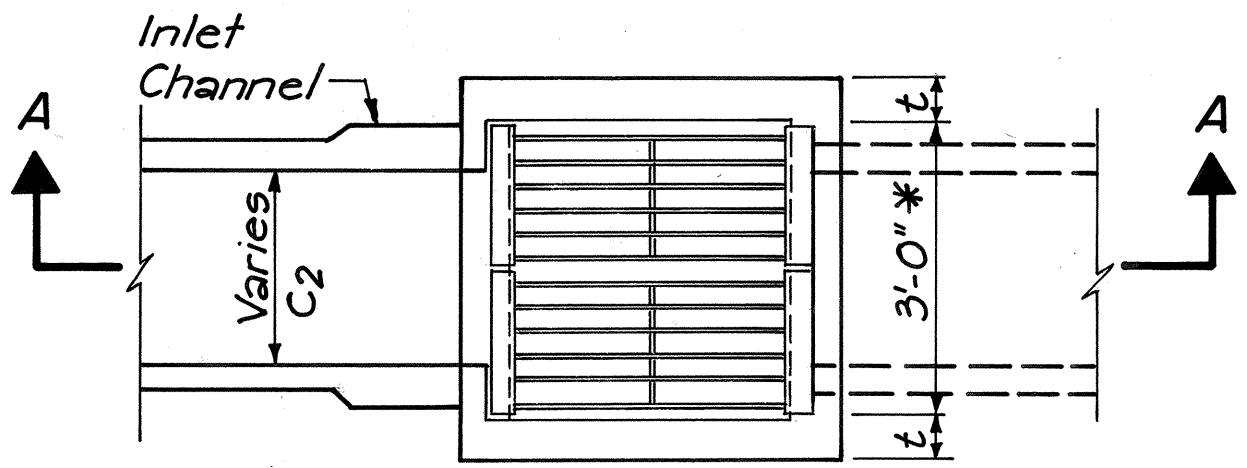
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DATE: APRIL 1982

SHEET No. 1 OF 3 SHEETS



SECTION A-A



TYPICAL INLET BOX
Scale: 1" = 2'-0"

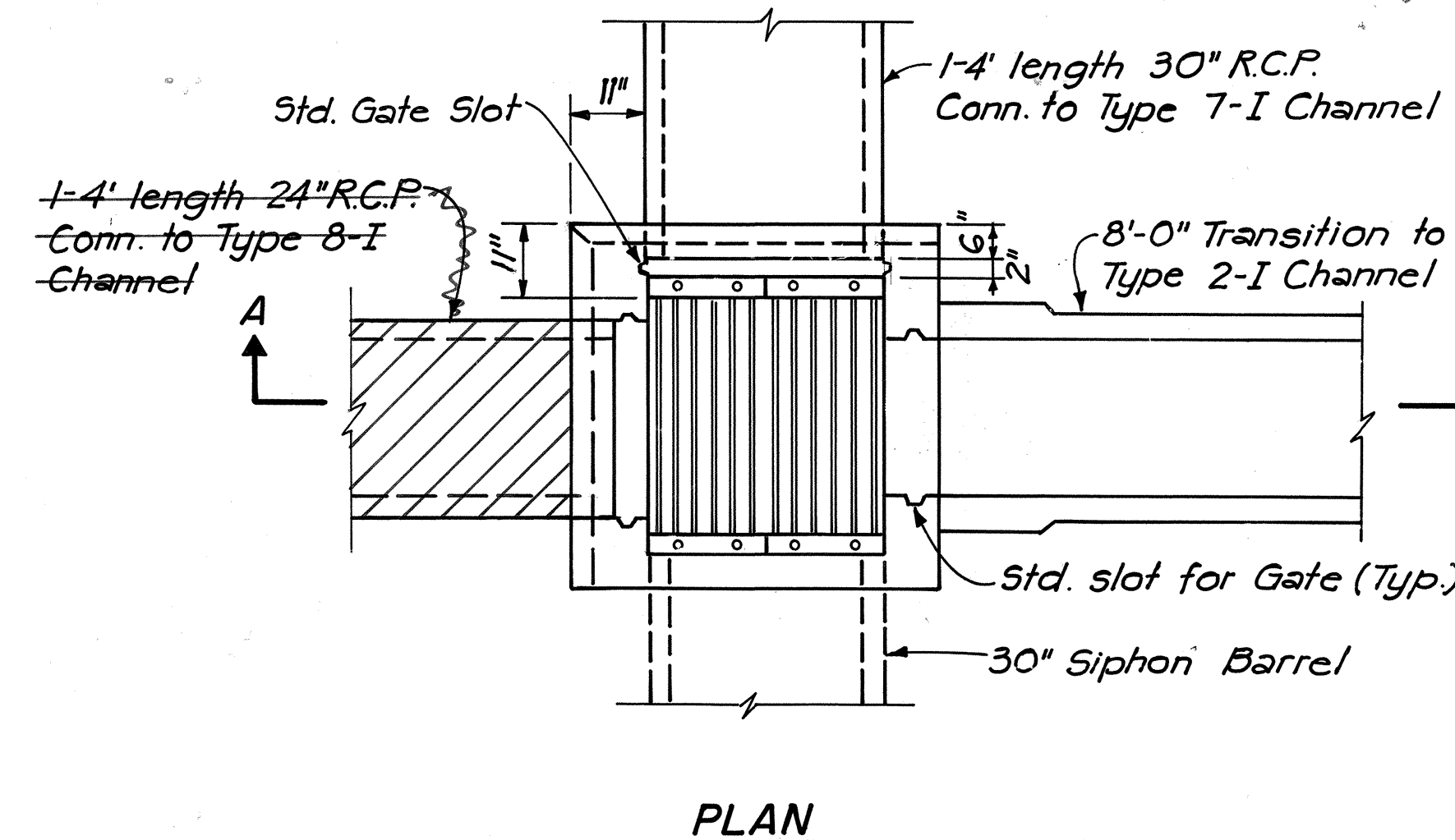
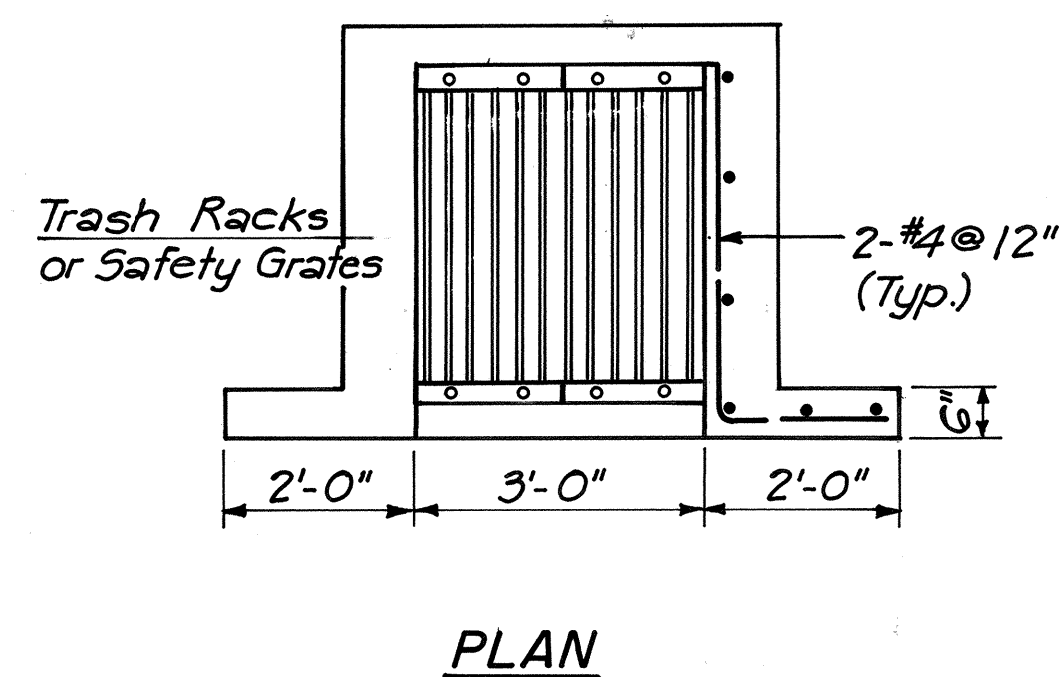
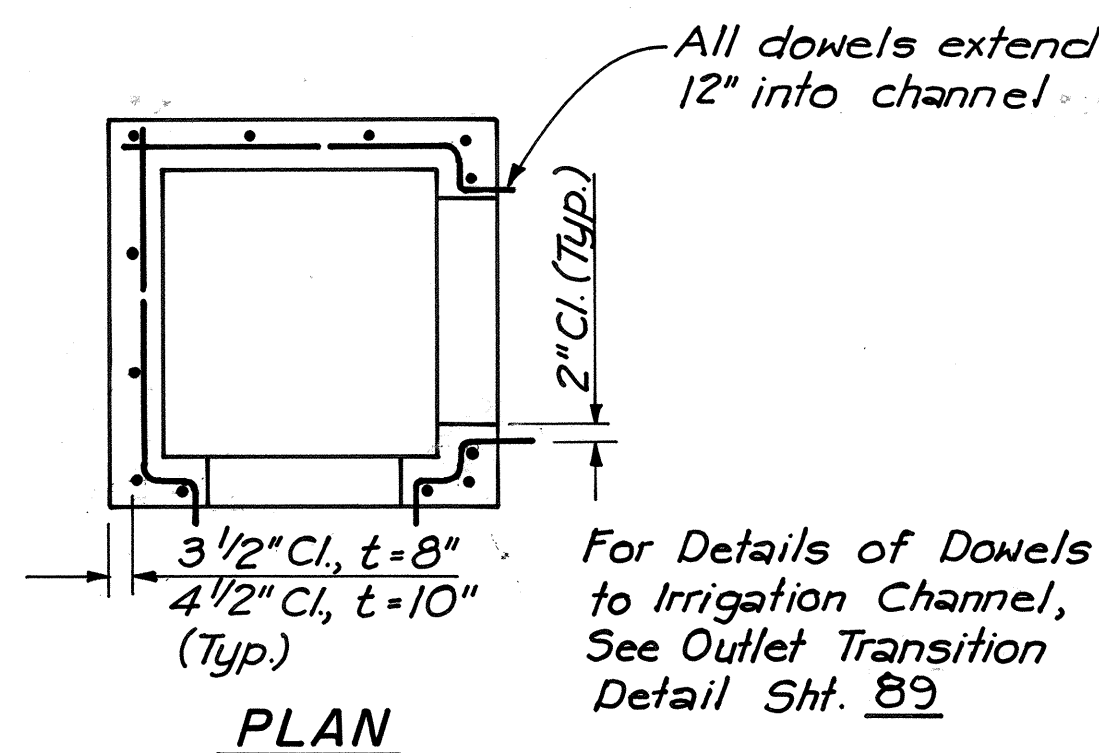
For Notes and Details, see sheet No. 88
For Siphon No. 12, see sheet No. 90

Siphon No.	Pipe Barrel & Station	PIPE BARREL			INLET BOX								Trash Racks
		D	El. (E)	El. (F)	Number	El. (A)	El. (B)	C ₁	C ₂	t	Special Details		
1	102 + 25	30"	52.40	50.60	S-1A	68.90	50.90	1.50	1.50 Top 1.00 Bott.	8"		2-TR1	
2	109 + 00	30"	47.10	46.10	S-2A	57.00	45.60	1.50	3.00	8"	Provide Inlet Transition	2-TR1	
3	112 + 40	30"	42.70	40.90	S-3A	54.60	41.20	1.50	1.50 Top 1.00 Bott.	8"		2-TR1	
4	150 + 60	30"	8.60	7.90	S-4A	17.00	7.10	1.50	3.00	8"	S	2-TR1	
5	157 + 40	30"	19.30	18.40	S-5A	22.00	17.80	1.50	2.50 Top 2.00 Bott.	8"		2-TR1	
6	176 + 75	30"	45.90	45.50	S-6A	53.60	44.40	2.20	3.00	8"	Transition to Existing Channel	2-TR1	
7	176 + 75	30"	45.50	44.50	S-7A	53.60	44.40	2.20	3.00	8"	Transition to Existing Channel	2-TR1	
8	190 + 50	30"	31.50	30.50	S-8A	43.50	30.00	2.50	3.00	10"	S	2-TR1	
9	196 + 30	42"	29.70	28.80	S-9A	39.50	28.20	3.25	4.50	10"	Provide 8' Inlet Transition	3-TR1	
10	196 + 45, 95' Lt. to 196 + 93 130' Lt.	42"	32.30	31.70	← See S-9B →								
11	T.R. Rd. 24 + 18.39' Lt. to 24 + 83.365' Lt.	30"	20.25	20.00	S-11A	26.85	18.75	1.50	1.50 Top 1.00 Bott.	8"		2-TR1	

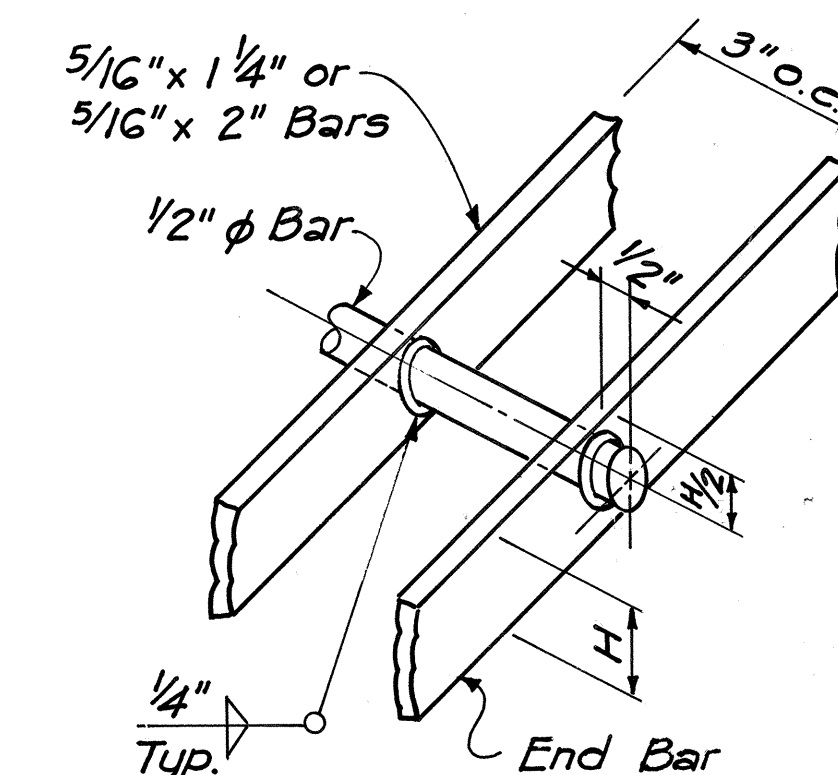
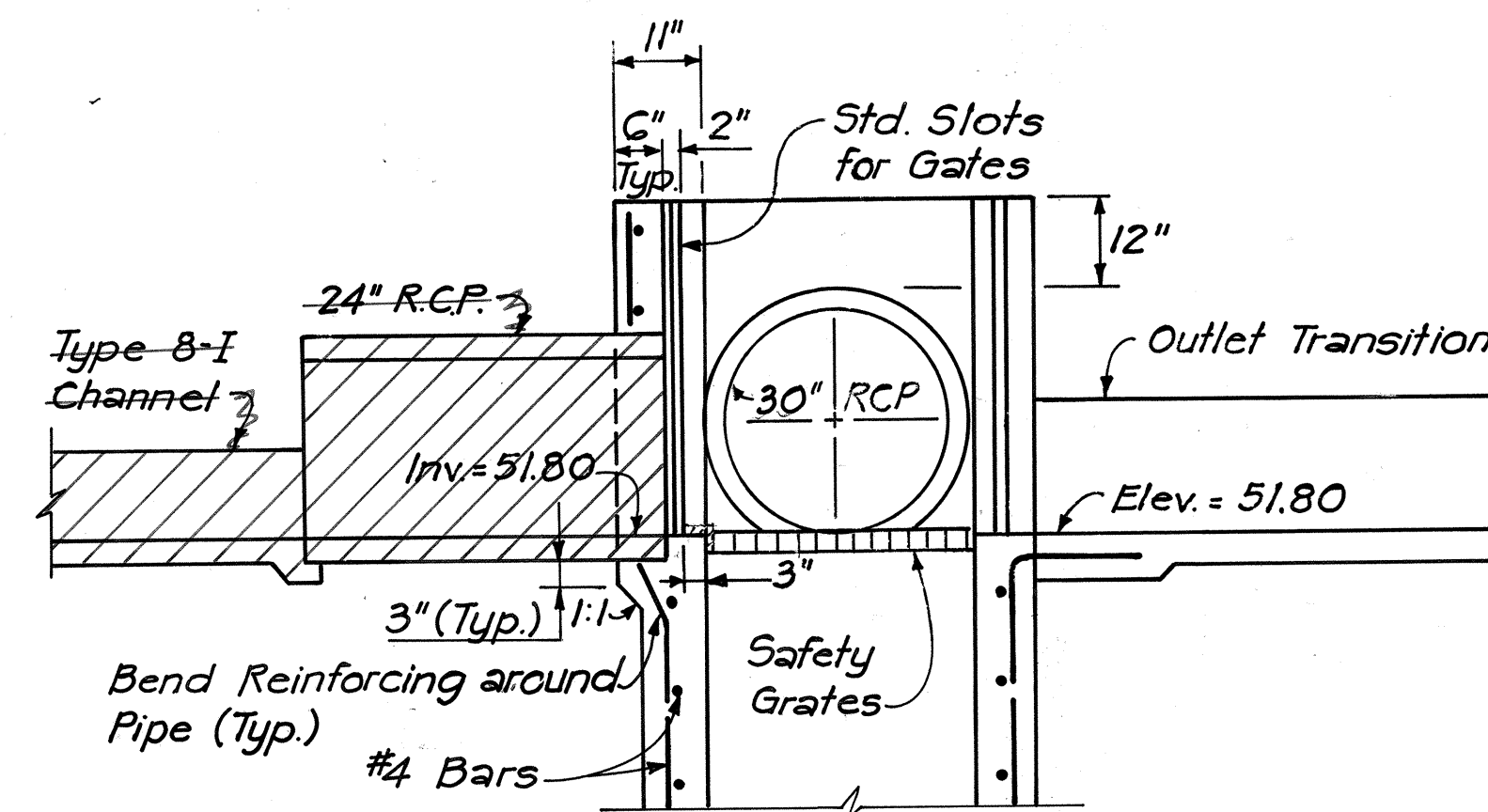
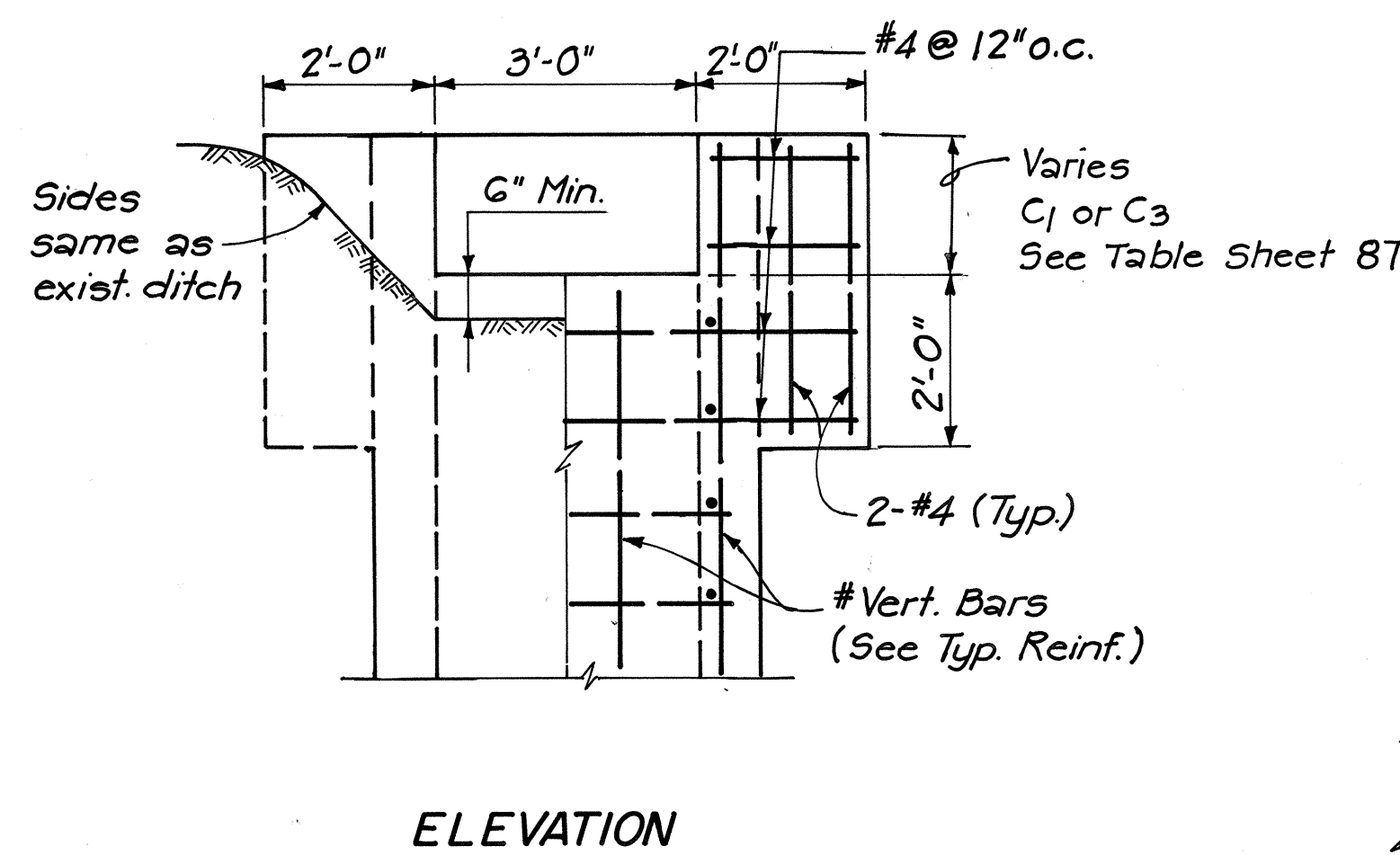
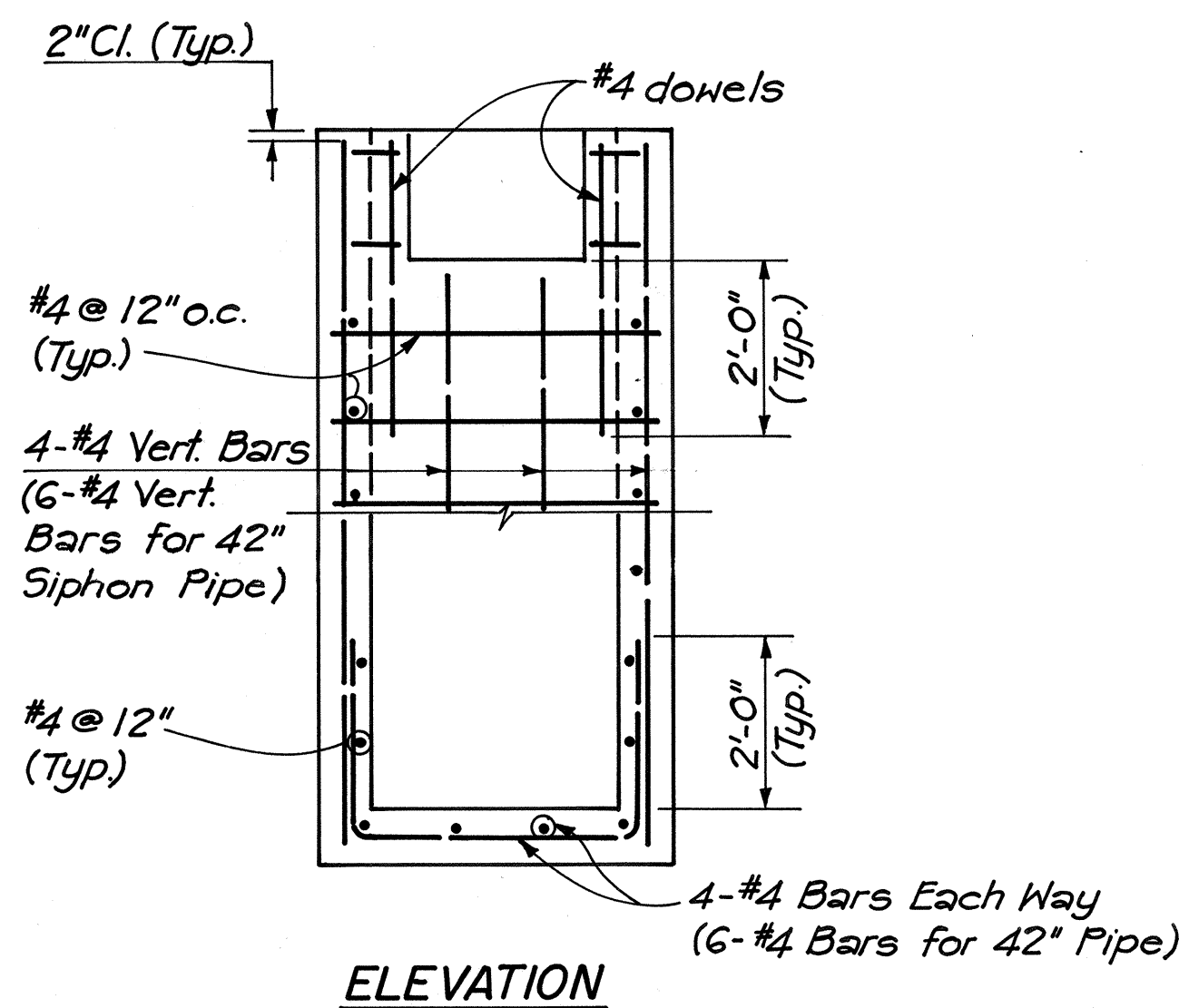
OUTLET BOX													
Number	El. (C)	Side 1			Side 2			Side 3			t	Special Details	Safety Grates
		El. (D)	C ₃	C ₄	El. (D)	C ₃	C ₄	El. (D)	C ₃	C ₄			
S-1B	43.10	67.10	1.50	2.00				67.10	1.50	2.00	8"		2-SG1
S-2B	44.60				55.80	1.50	3.00				8"		2-SG1
S-3B	39.40				51.70	1.50	2.00				8"		2-SG1
S-4B	6.40				15.80	1.50	3.00				8"	S	2-SG1
S-5B	16.90	21.20	2.00	3.00	21.10	1.50	2.00				8"		2-SG1
S-6B	44.00	45.50	Siphon No. 7		54.00	1.50	2.00				8"	S	2-SG1
S-7B	43.00	51.80	24" R.C.P.		51.80	30" R.C.P.		51.80	1.50	2.00	8"	T	2-SG1
S-8B	29.00	43.50	1.5	2.00	43.50	2.00	2.00	-	-	-	8"	-	2-SG1
S-9B	27.30	39.70	2.00	2.00	-	-	-	32.30	Siphon No. 10		10"	-	3-SG1
S-10B	30.20	-	-	-	38.85 38.80	3.25 2.50	3.50 3.00	-	-	-	10"	-	3-SG1
S-11B	18.50	-	-	-	-	-	-	25.20	1.50	2.00	8"		2-SG1

DATE
SURVEY PLOTTED BY
DRAWN BY
CHECKED BY
NOTE BOOK
NO.

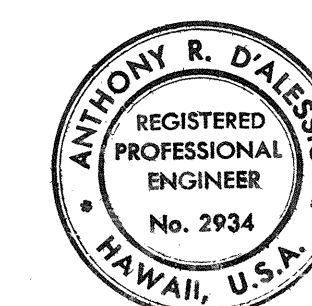
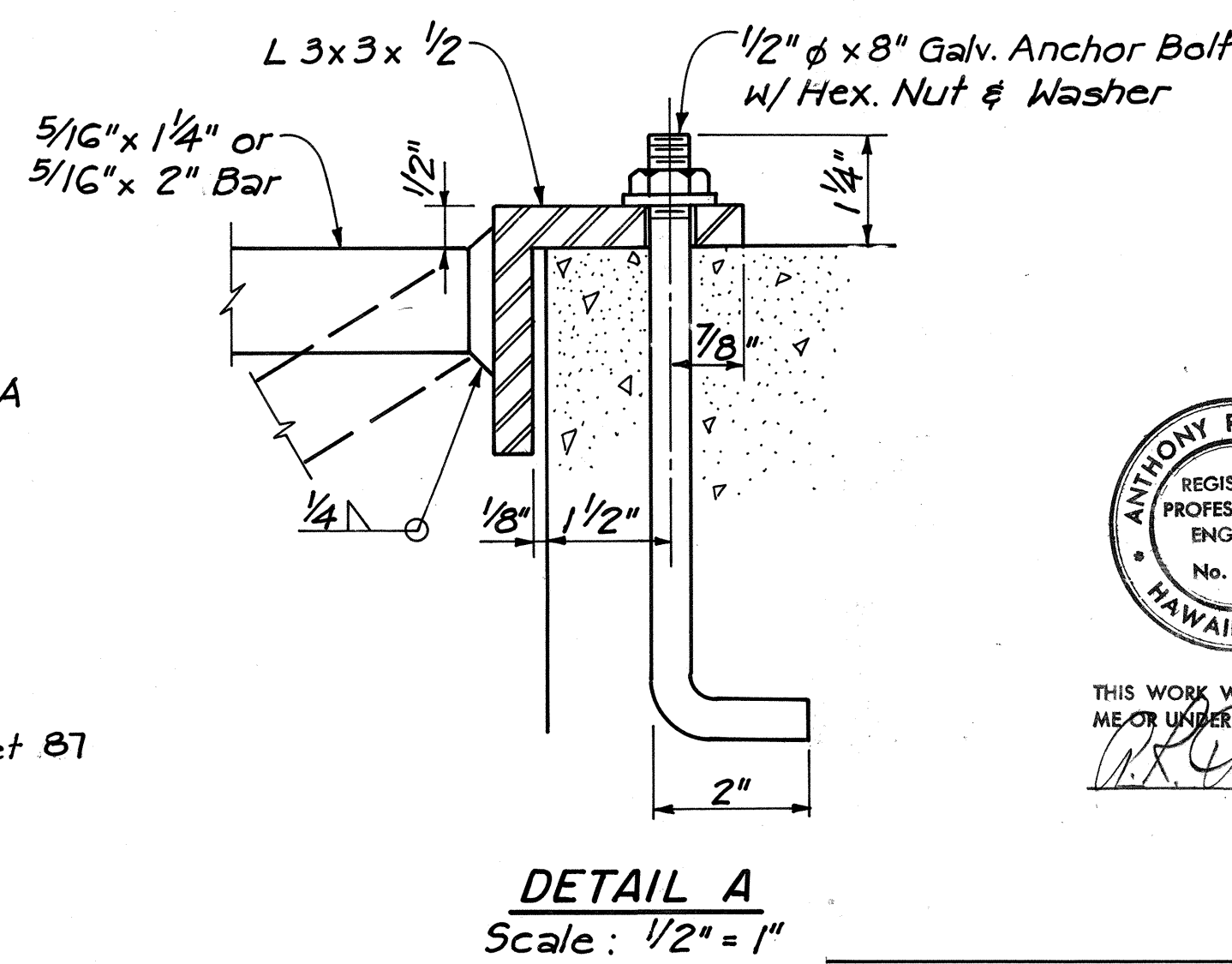
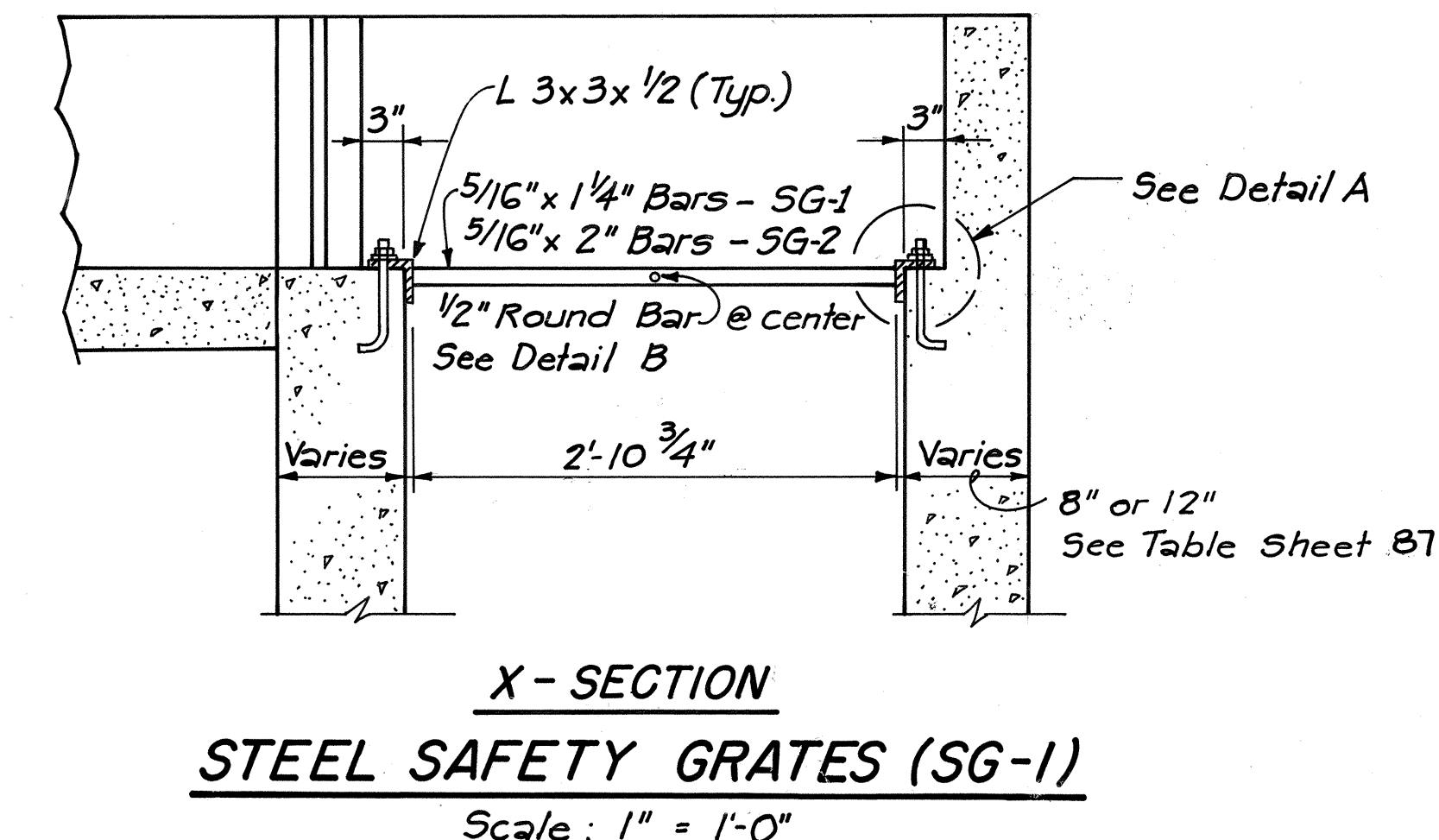
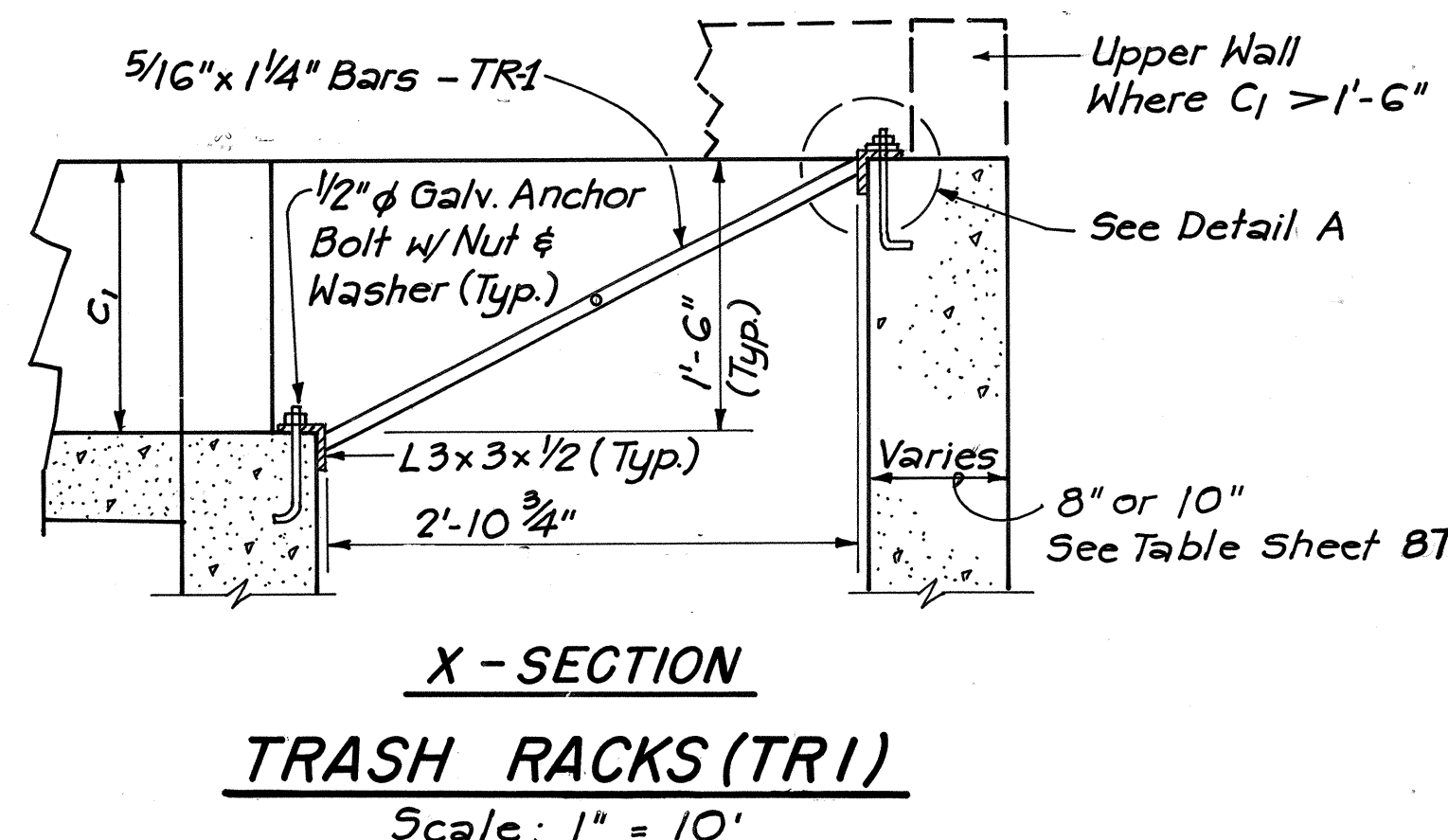
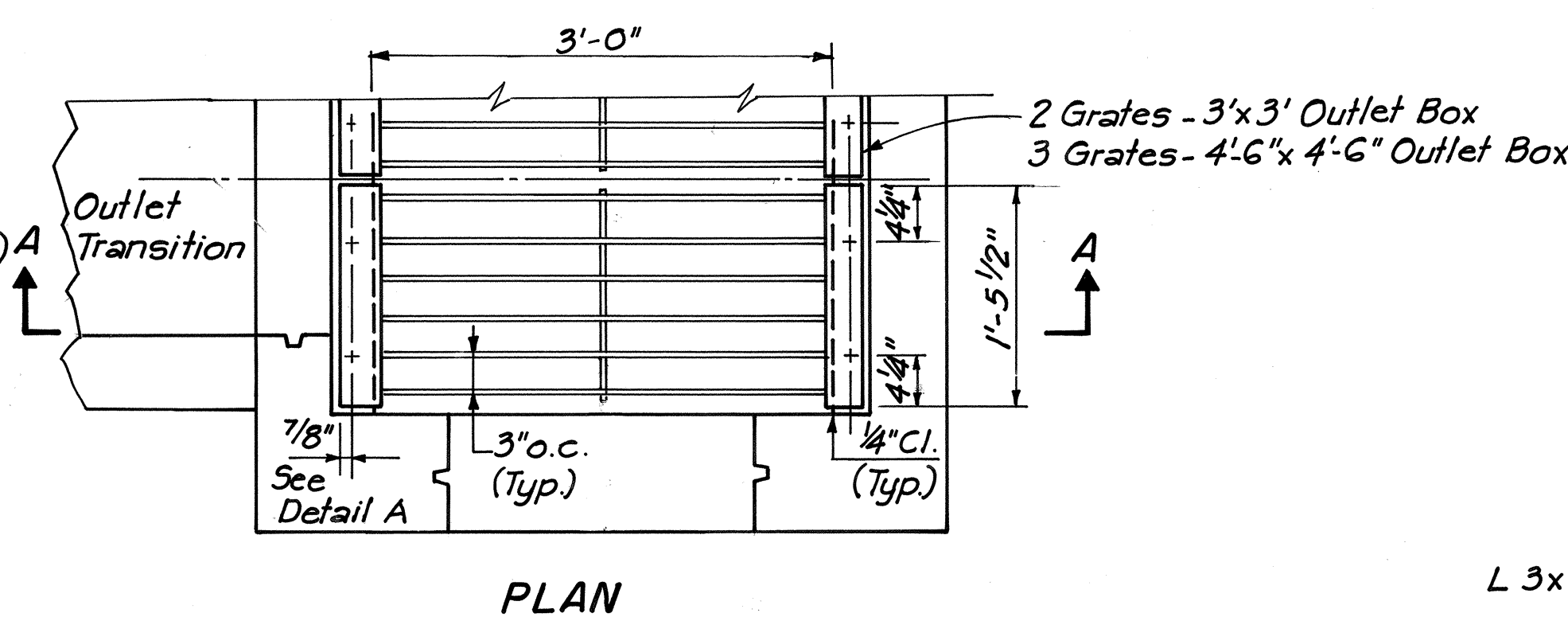
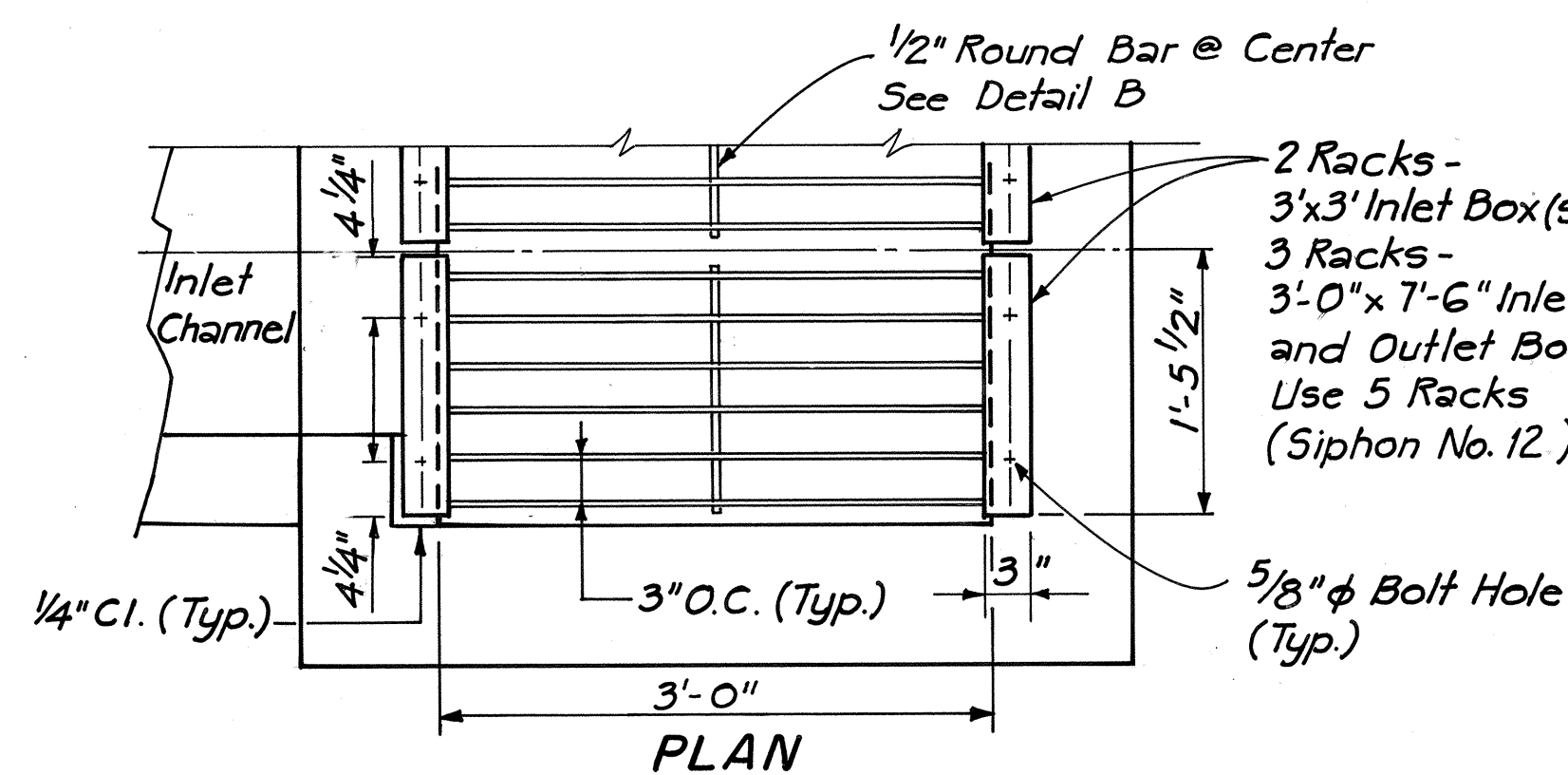
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HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	88	163



1. All concrete shall be Class A unless otherwise noted.
2. All reinforcing steel shall be ASTM A615 Grade 40
3. Grates and trash racks shall be fabricated of steel conforming to the requirements of ASTM A283, Grade D, and shall be hot dip galvanized after fabrication.
4. Manhole rungs at 12" o.c. are required in all structures where the depth from bottom of channel to top of floor slab exceeds 4'-6". One rung (12" from the bottom) is required if the depth is 4'-6" or less. For rung details, see sheet No. 30.
5. For Standard Gate Slot Detail, see Typical Outlet Box Plan, Sheet No. 87.



TYPICAL REINFORCING DETAILS



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Oahu Sugar Company Date

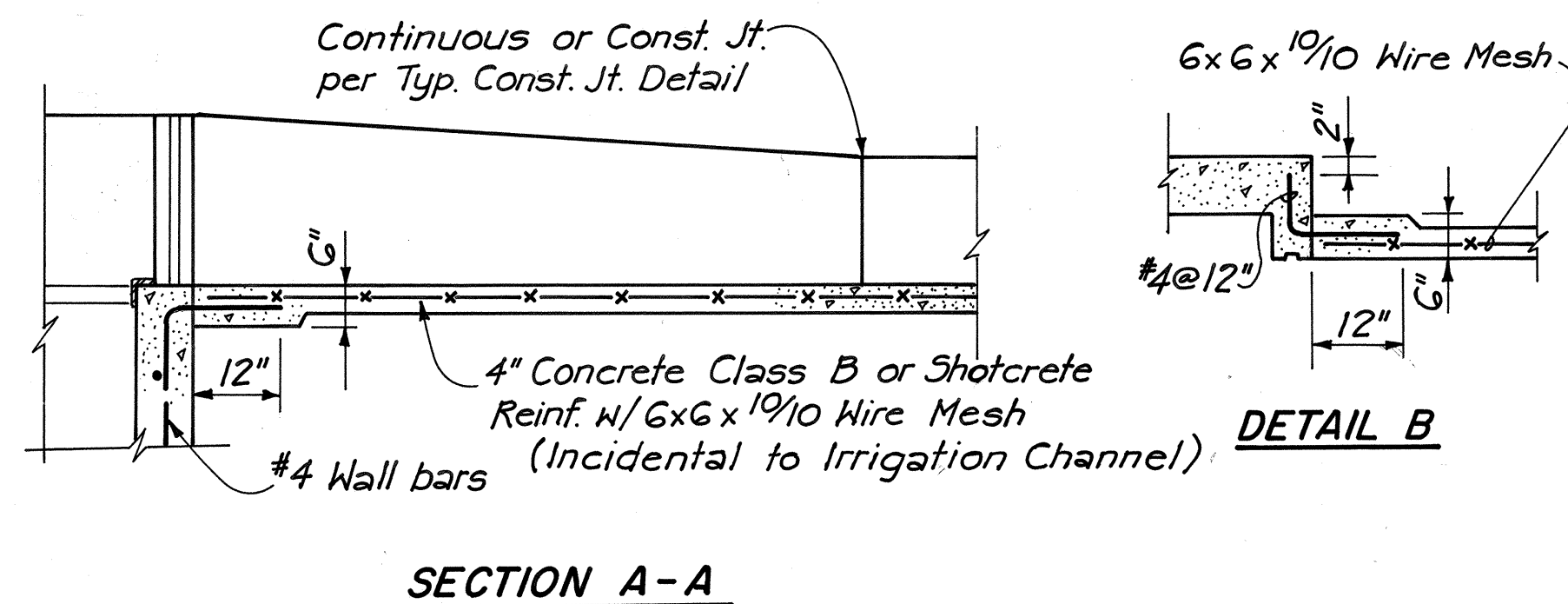
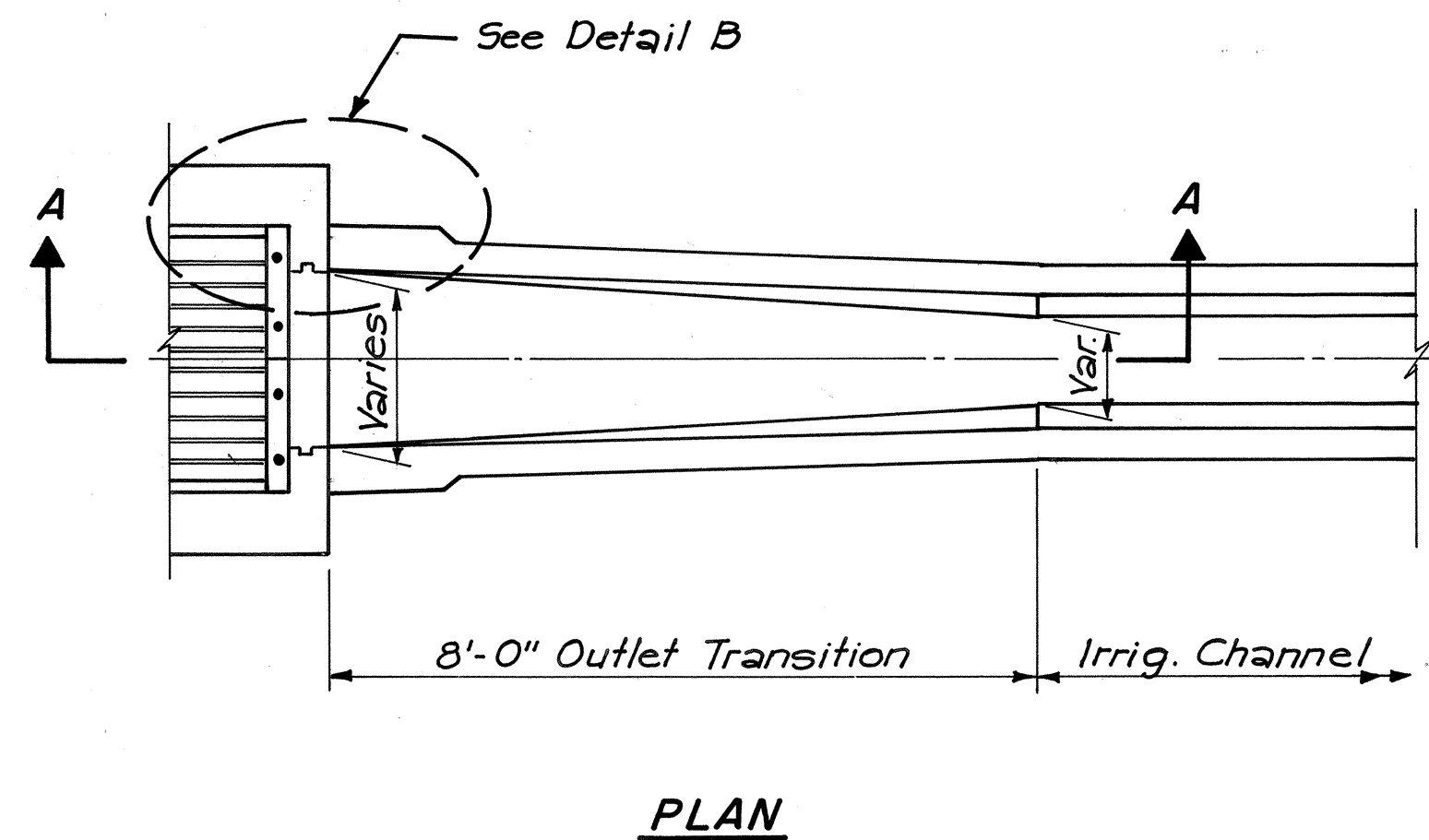
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION SYSTEM DETAILS

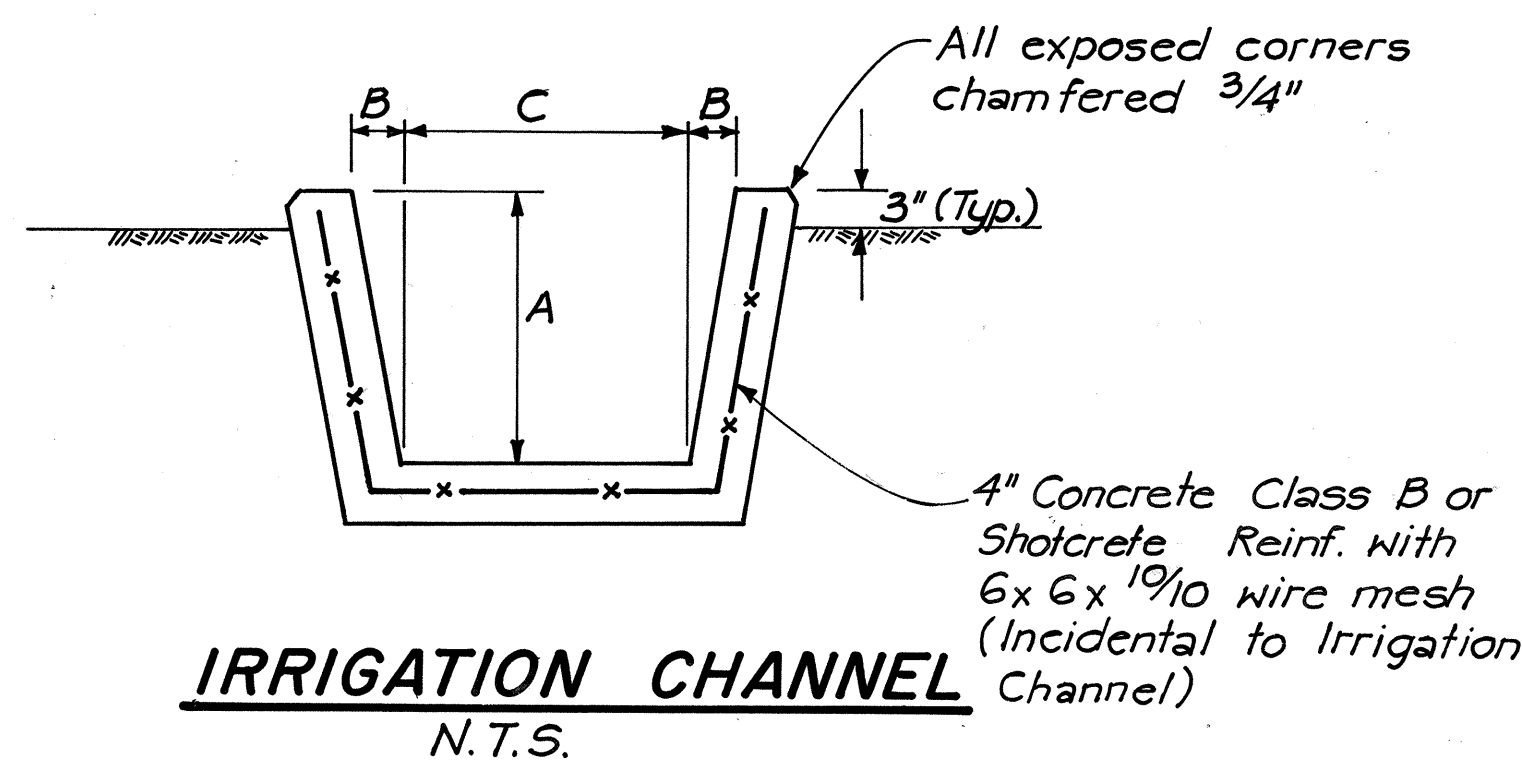
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN DATE: APRIL 1982
SHEET NO. 2 OF 3 SHEETS

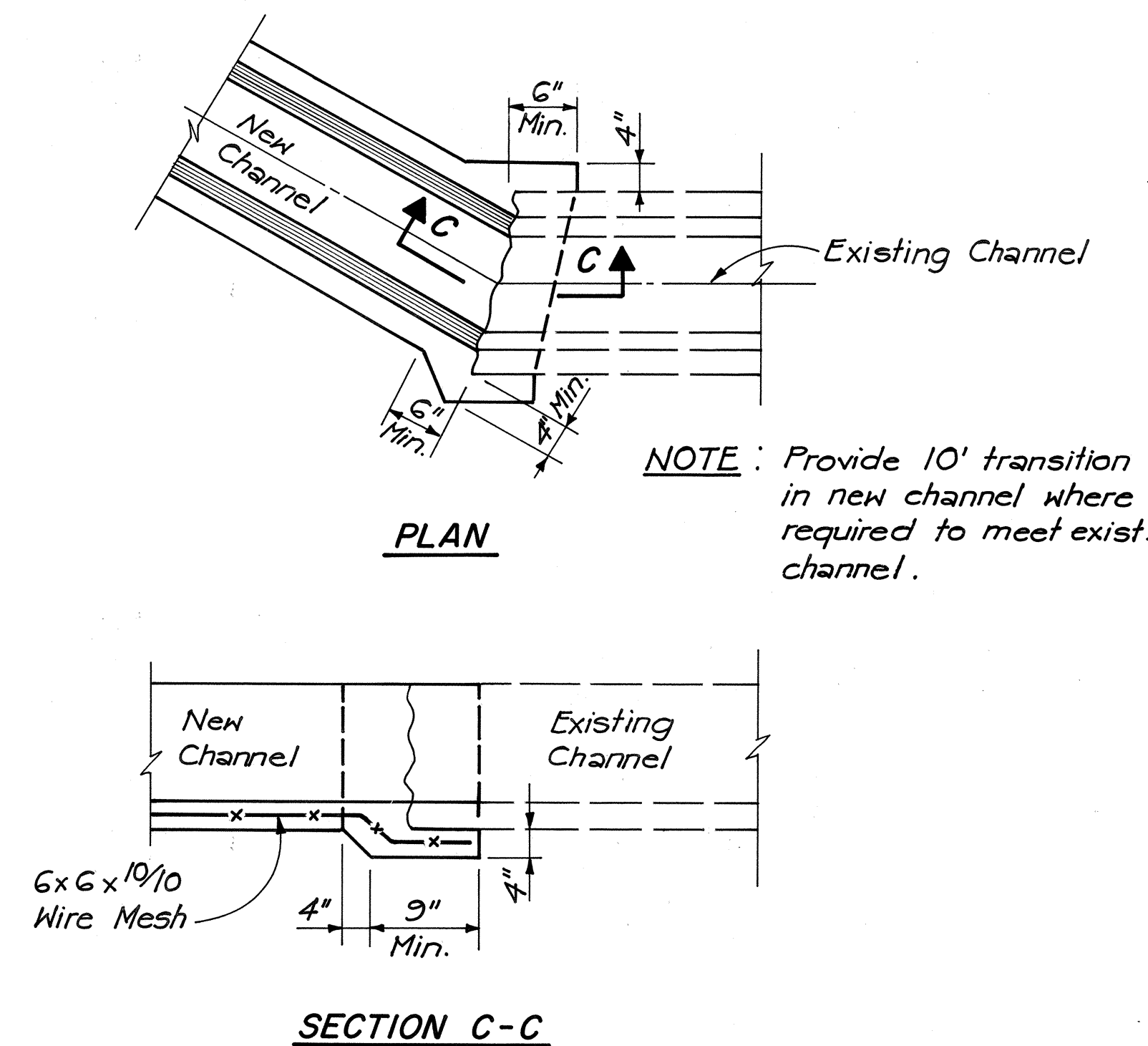
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	89	163



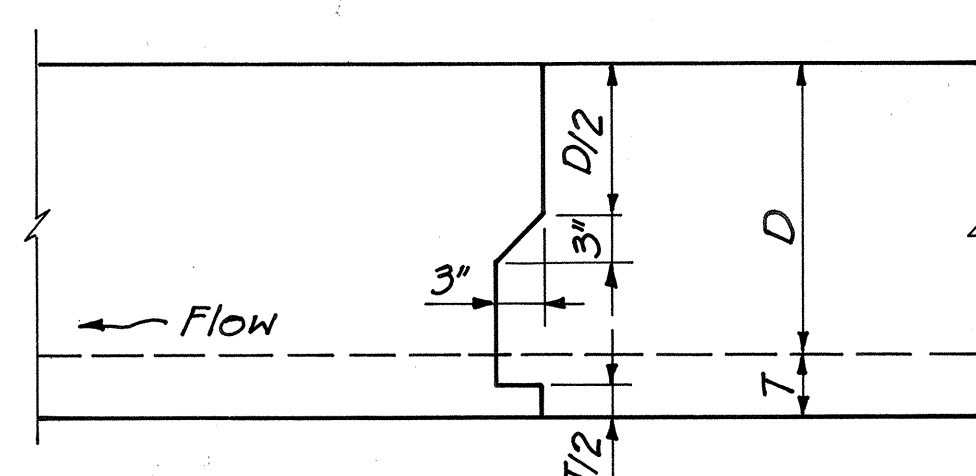
SIPHON OUTLET TRANSITION*
 * Inlet Transition Similar where required
 Scale: 1" = 2'-0"



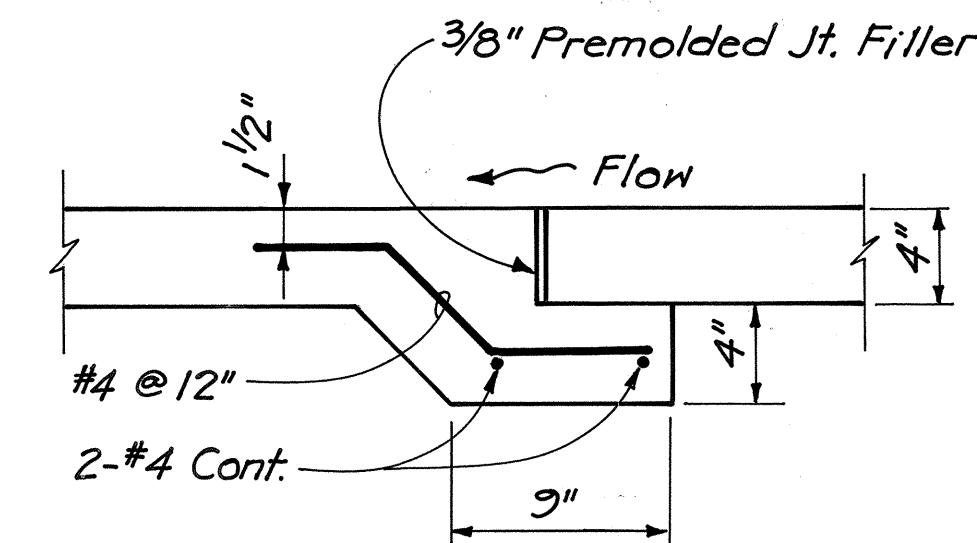
IRRIGATION CHANNEL DIMENSIONS (Feet)						
TYPE	A	B	C	CONCRETE	REINFORCING	EXCAVATION
1- I	1.5	.25	1.0	0.0570 CY/LF	0.8550 #/LF	0.1420 CY/LF
2- I	1.5	.25	1.5	0.0632 CY/LF	0.950 #/LF	0.1790 CY/LF
5 I	3.25	.96	2.83	0.1222 CY/LF	1.727 #/LF	0.5910 CY/LF



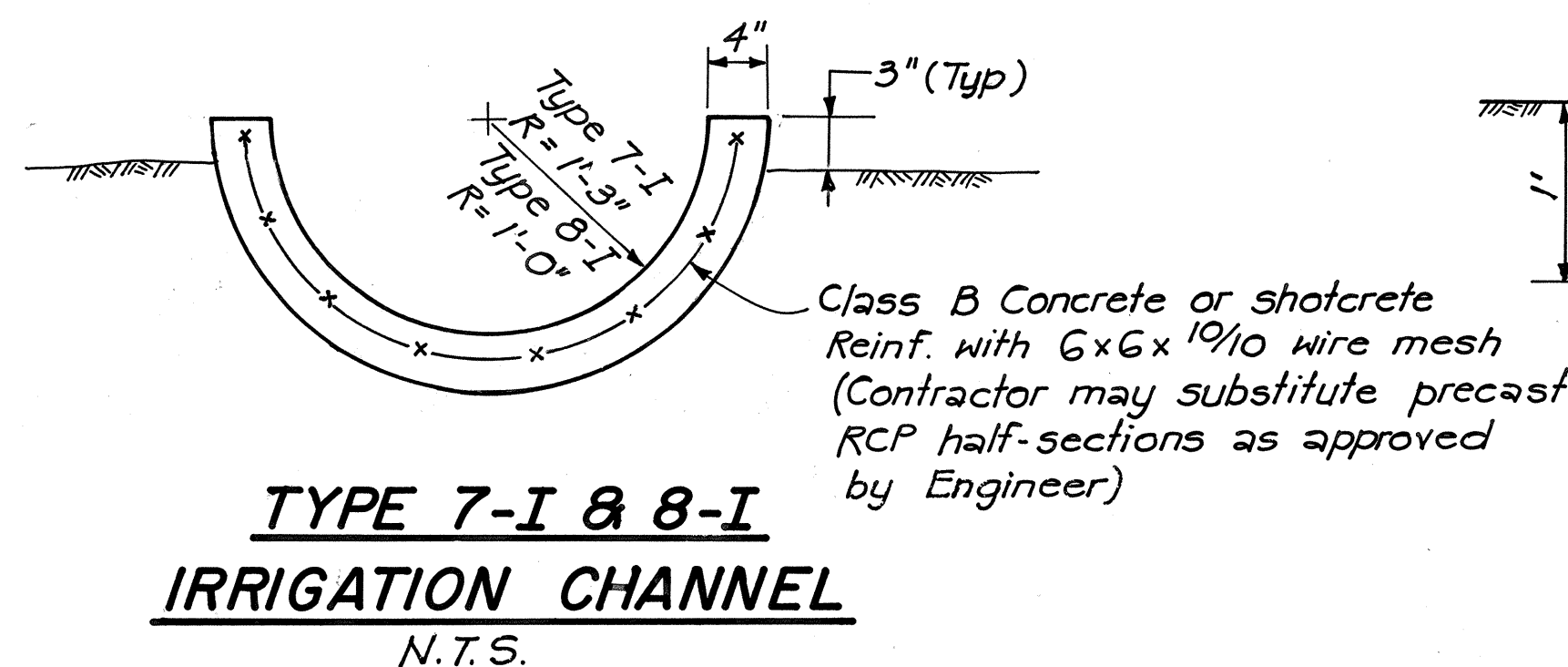
CONNECTION TO EXISTING CHANNEL
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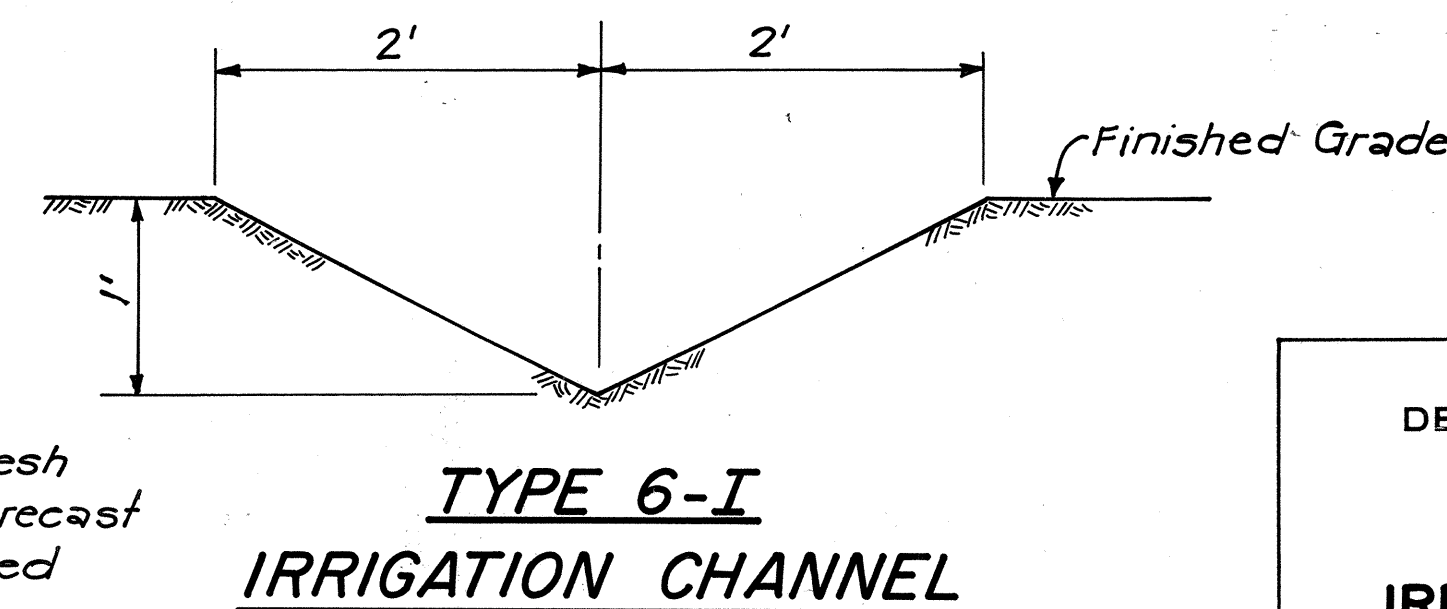
TYP. CONSTRUCTION JT. @ 30' O.C.
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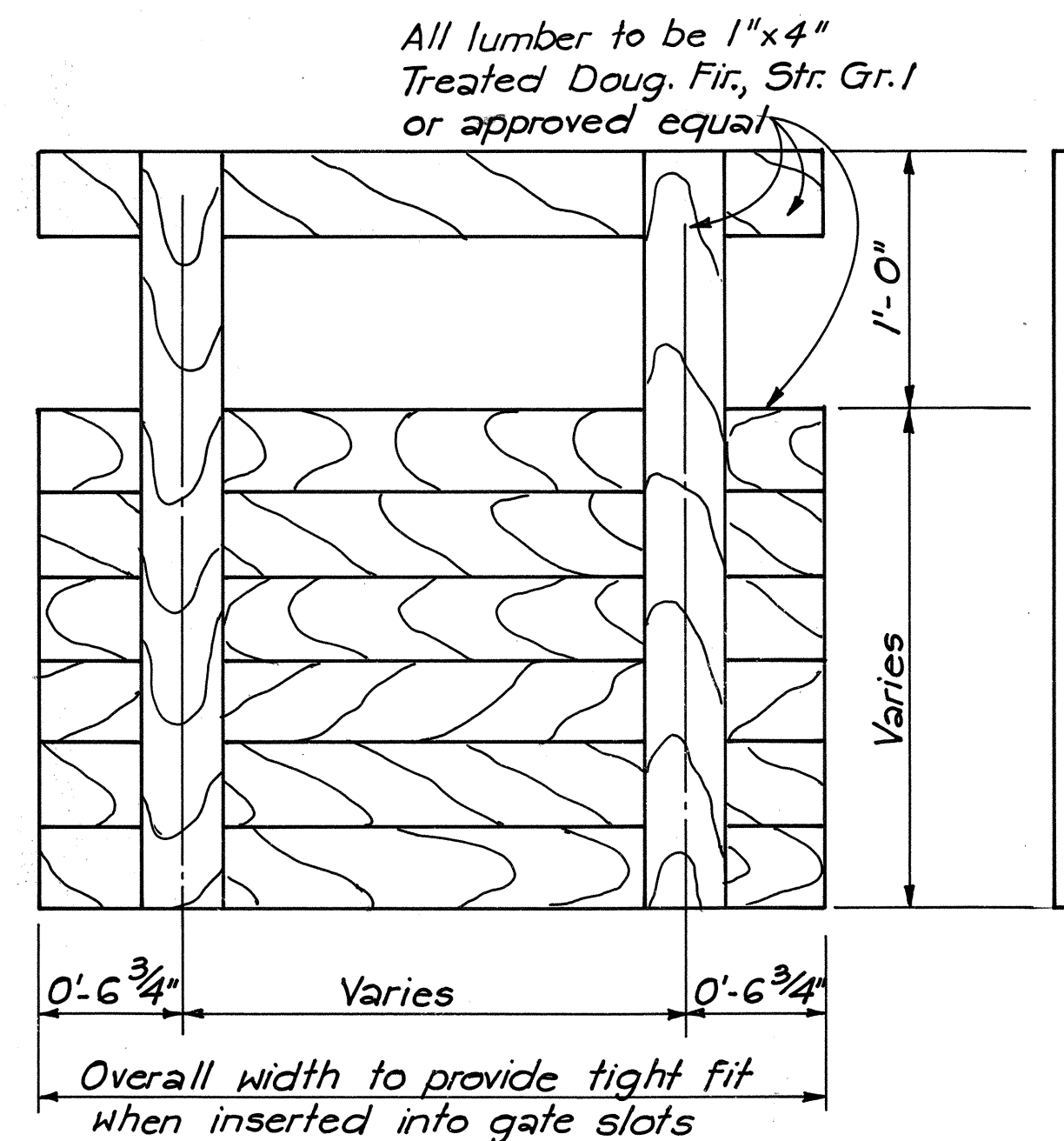
TYP. EXPANSION JT. @ 90' O.C.
 N.T.S.



TYPE 7-I & 8-I
IRRIGATION CHANNEL
 N.T.S.

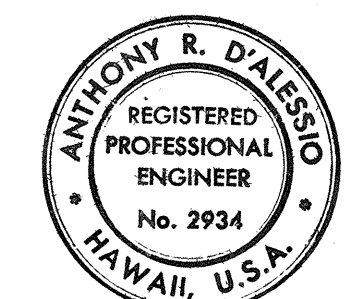


TYPE 6-I
IRRIGATION CHANNEL



WOOD GATE DETAIL
 Scale: 1 1/2" = 1'-0"

DATE	REVISION



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[Signature]

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

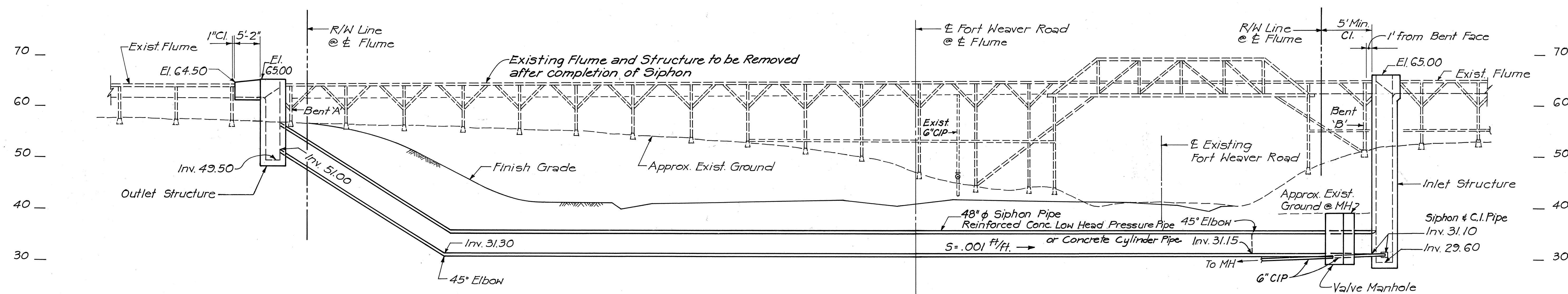
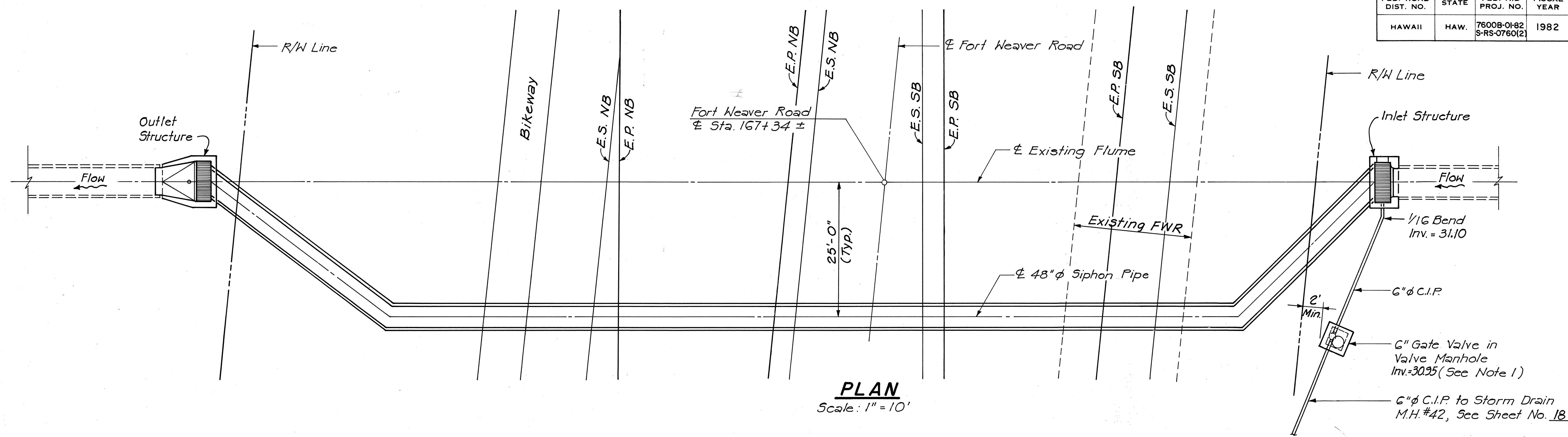
IRRIGATION CHANNEL DETAILS

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: AS SHOWN DATE: APRIL 1982
SHEET NO. 3 OF 3 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
NO.	

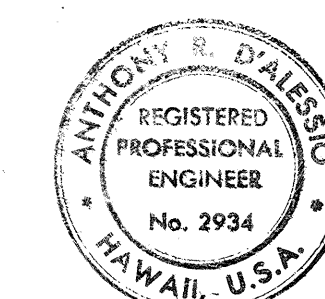
Oahu Sugar Company Date

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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NOTES:

- For Details of Valve Manhole, See Sheet 92.
- The Storm Drainage System from MH #42 to the outfall at Sta. 158+00 shall be completed prior to completion and operation of the Siphon.
- Flow in the existing flume shall be maintained at all times prior to interruption for siphon completion as described hereafter. The siphon and all appurtenances shall be complete and fully operational within seven days from the time of initial interruption of the flume. The Contractor shall submit to the Engineer for approval at least seven days prior to flume interruption a detailed CPM schedule covering the period from the initial interruption of the flume to the completion of the siphon and its appurtenances. The Contractor shall be fully responsible for ensuring that flow is interrupted for no more than seven days, and shall be solely liable for any damages resulting from flow interruption exceeding the seven-day limit.
- Suggested Construction Staging:**
 - Construct temporary bent supports at bents 'A' and 'B' and at other bents as required by planned construction method. Construct traffic detours.
 - Construct lower sections of inlet and outlet structures and construct siphon barrel, valve manhole and 6" CIP drain line. Submit schedule for flow interruption period.
 - Interrupt flow. Complete construction of inlet and outlet structures. Remove temporary supports.
 - Demolish and remove existing flume and structure from Bent 'A' to Bent 'B'.
- Two traffic lanes shall be maintained open at all times.
- Siphon Pipe shall be Reinforced Concrete Low-Head Pressure Pipe or Concrete Cylinder Pipe.
- Sheeting or bracing for inlet structure excavation shall be designed by a Professional Engineer registered by the State of Hawaii as qualified in the Structural Branch. The design shall be submitted to the State Engineer for approval prior to the commencement of its construction.



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A.R. [Signature]

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIPHON NO. 12
F.W.R. @ STA. 167+34 ±

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

SCALE: AS SHOWN DATE: APRIL 1982

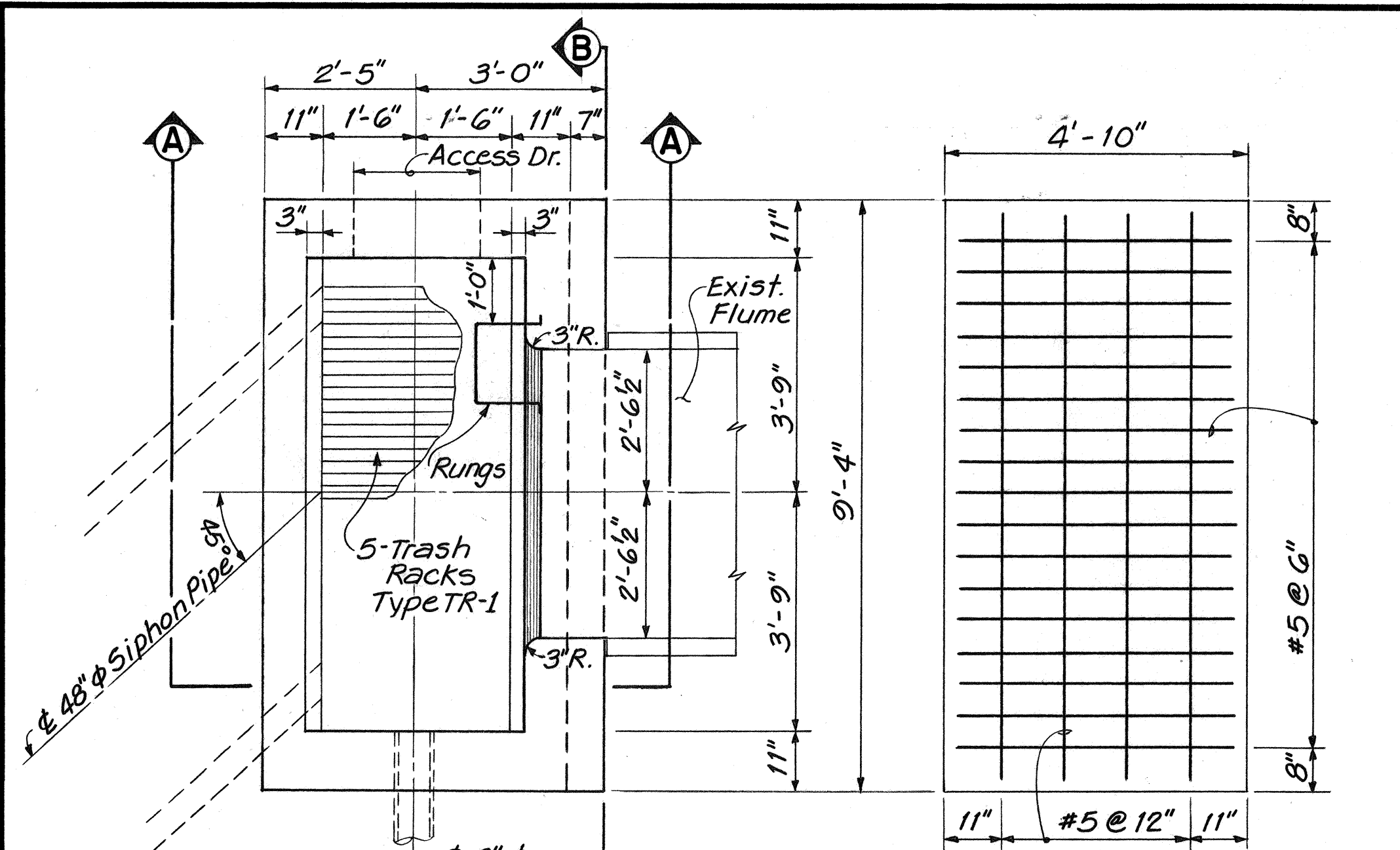
SHEET NO. 1 OF 3 SHEETS

Oahu Sugar Company Date

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-0-82 S-RS-0760(2)	1982	91	163

STRUCTURAL GENERAL NOTES

- Design Stresses:
Concrete: $f_c' = 3,000$ psi $n = 9$
 $f_c = 1,200$ psi
Reinforcing Steel: $f_s = 20,000$ psi
- Material:
(a) All concrete shall be Class A unless otherwise noted.
(b) All reinforcing steel shall be ASTM A615 Grade 40.
(c) All structural steel members shall be A36 and hot dipped galvanized after fabrication.
(d) All bolts shall be ASTM A307.
- The portion of structure from upper construction joint to top end shall be completed within 7 days. High early strength concrete shall be used so that the concrete will develop a strength of $f_c' = 3,000$ psi within the limited time of construction. Payment per Class A Concrete.
- For architectural treatments of all exterior exposed surface see Sheet No. 92.
- For trash racks type TR-1 details see Sheet No. 88.
- For rung details see standard detail on Sheet No. 30.
- The Contractor shall verify the existing flume invert elevations.
- All exposed corners shall be chamfered $\frac{3}{4} \times \frac{3}{4}$ unless otherwise noted.
- All valve or pipe mounting rods, anchor bolts, nuts, and washers shall be shop galvanized. All cut edges of the existing flume shall be field galvanized.
- For details of 6" C.I.P. Drain See Sheet No. 18.
- For details of Gate Valve Manhole and Gate Valve Anchor Blocks see Sheet No. 92.
- For Siphon Trench Pay Limits see sheet No. 27. For C.I.P. Pay Limits see Special Provisions.

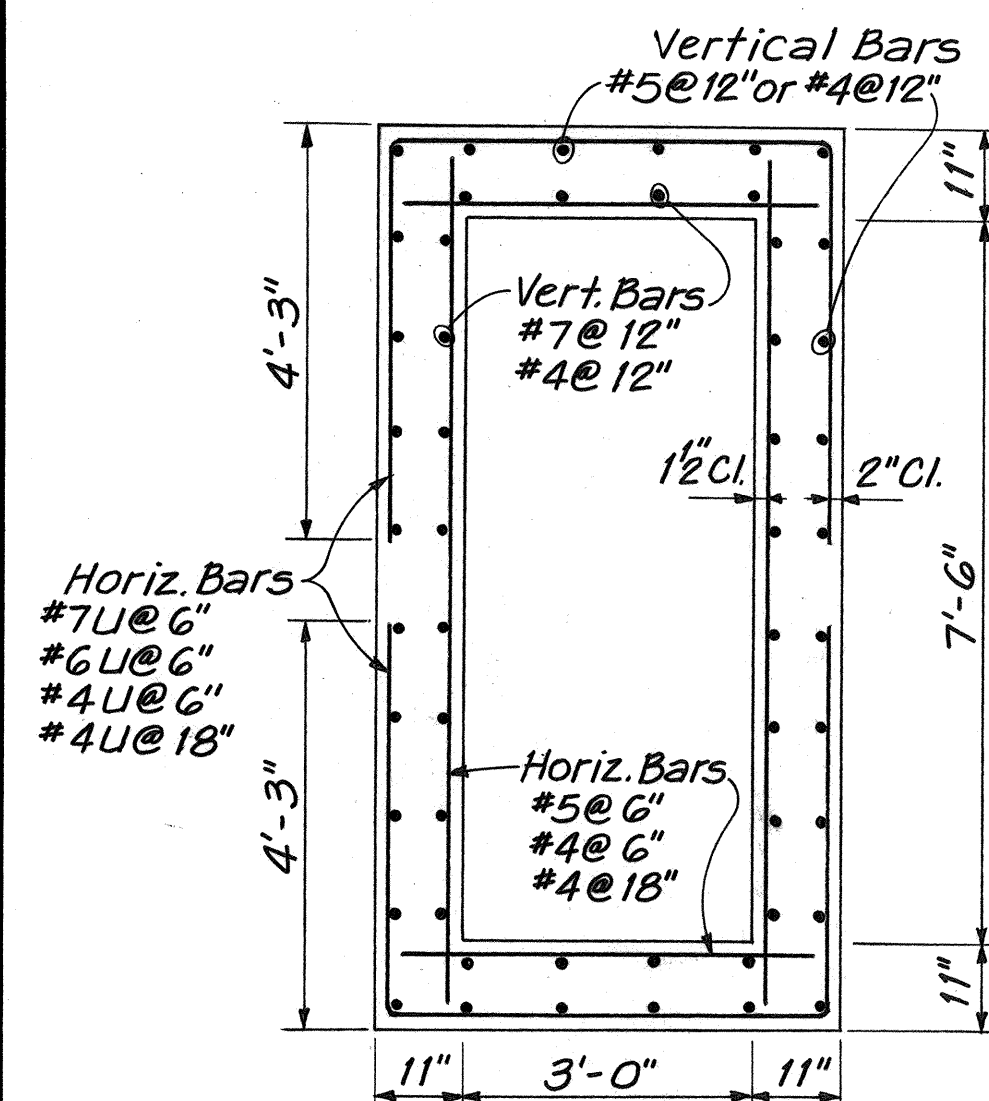


FLOOR SLAB REINF. PLAN

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

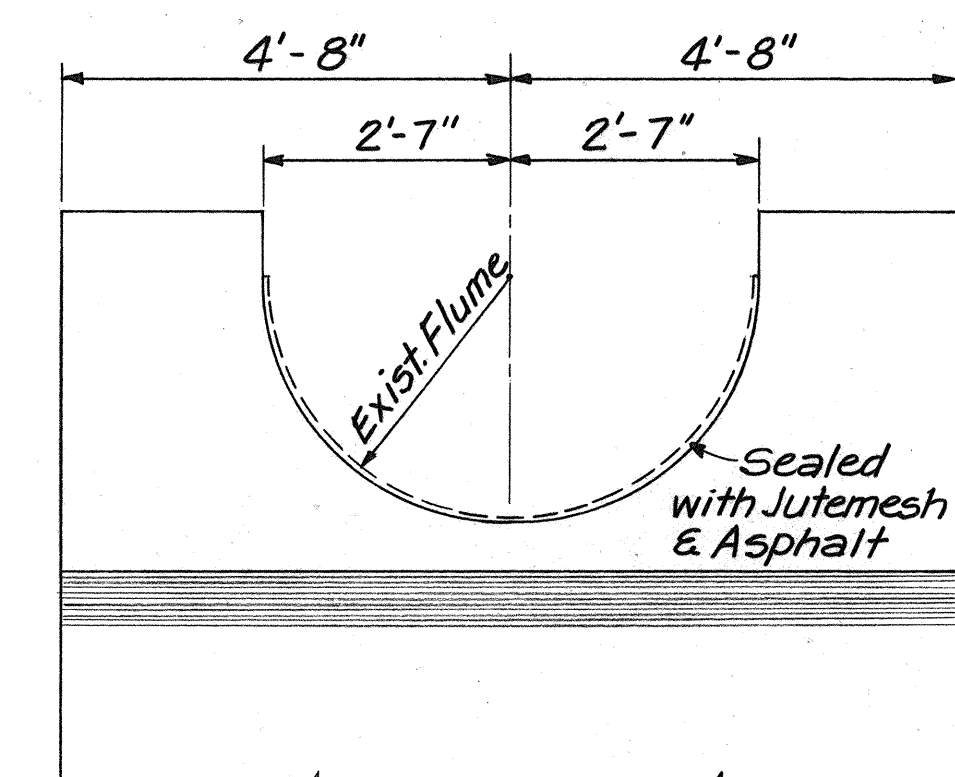
INLET PLAN

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



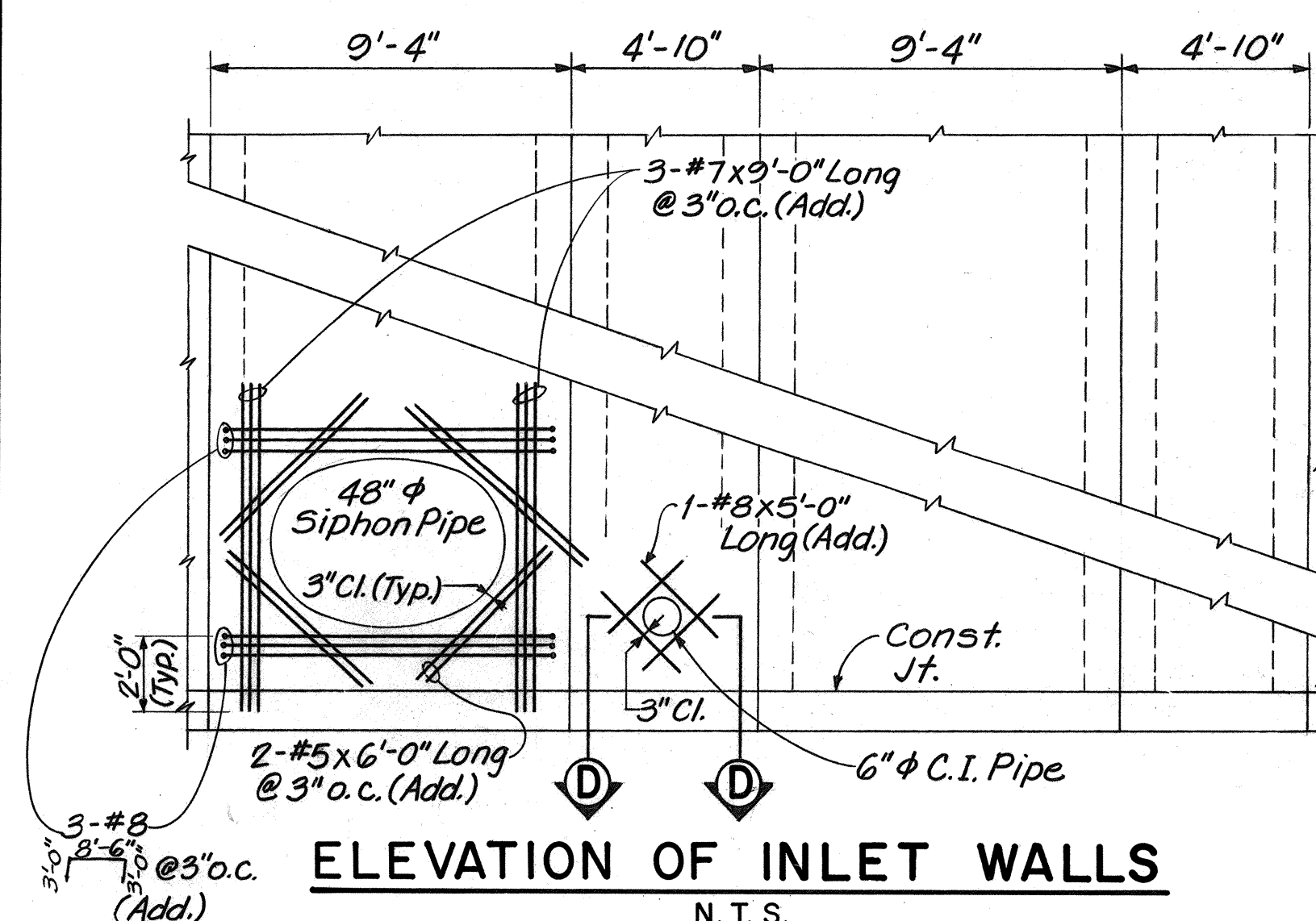
INLET TYPICAL SECTION

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



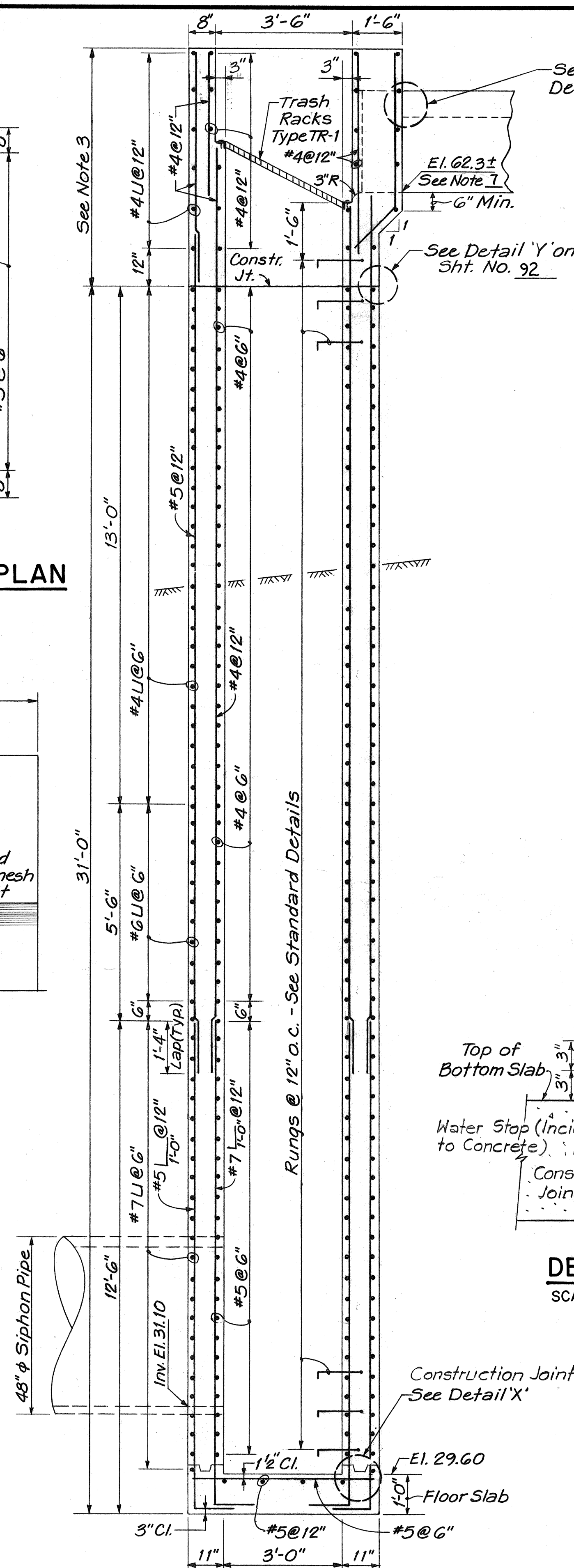
SECTION B-B

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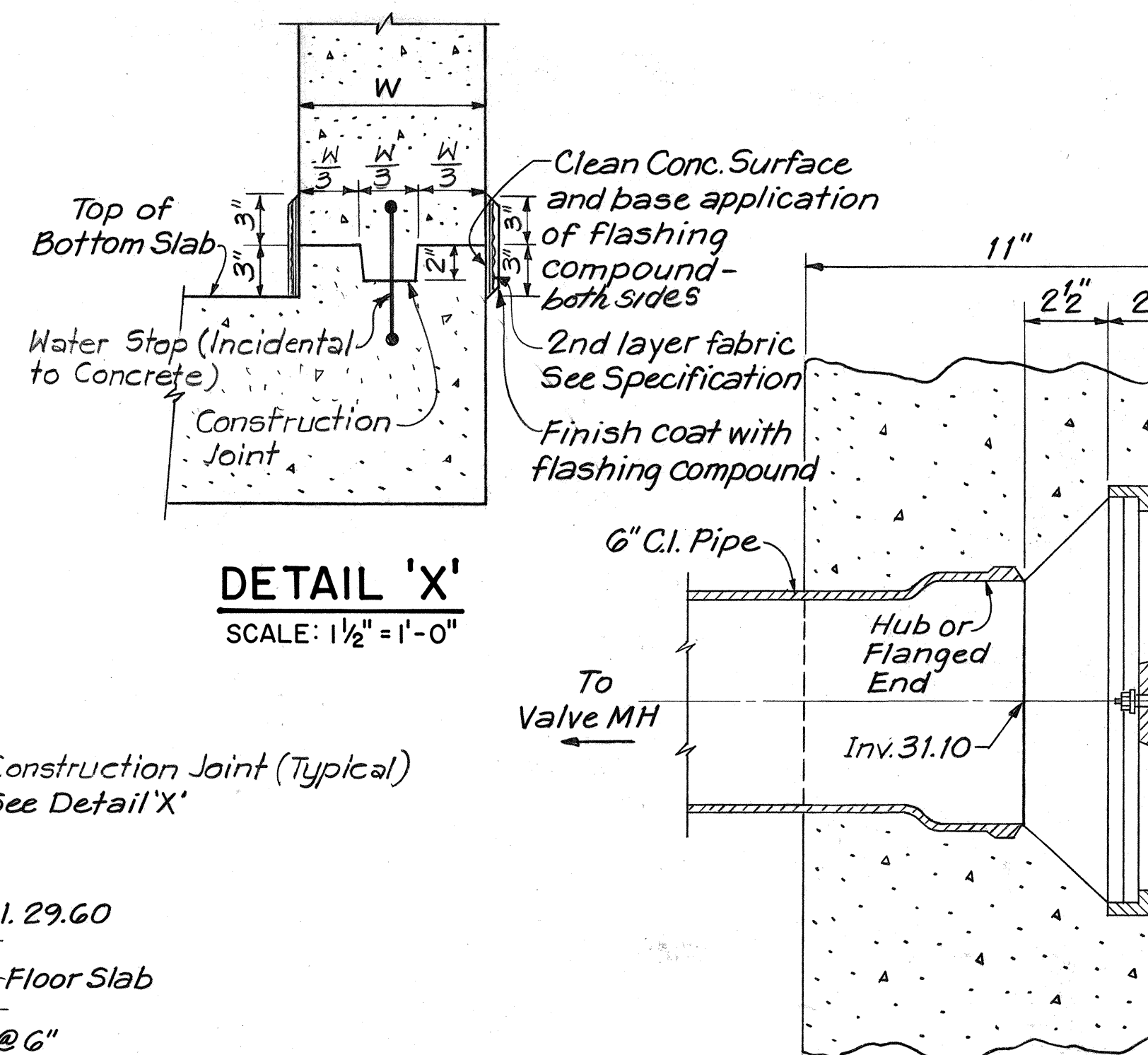
ELEVATION OF INLET WALLS

N. T. S.



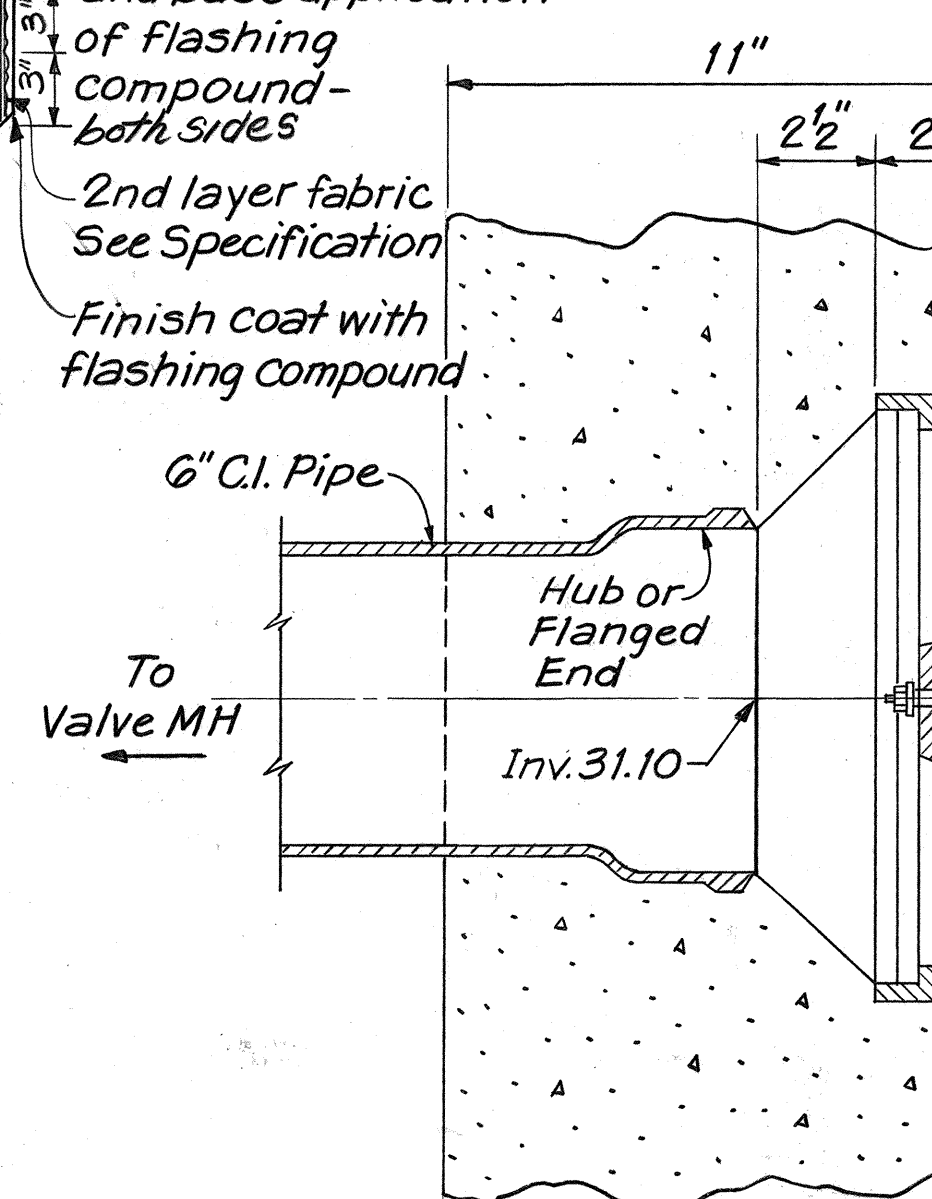
SECTION A-A

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



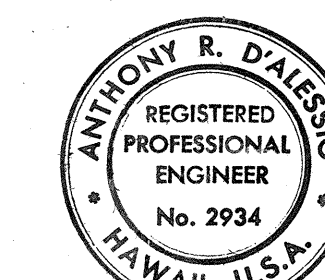
DETAIL 'X'

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



SECTION D-D

SCALE: $3'' = 1'-0''$



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STATE OF HAWAII
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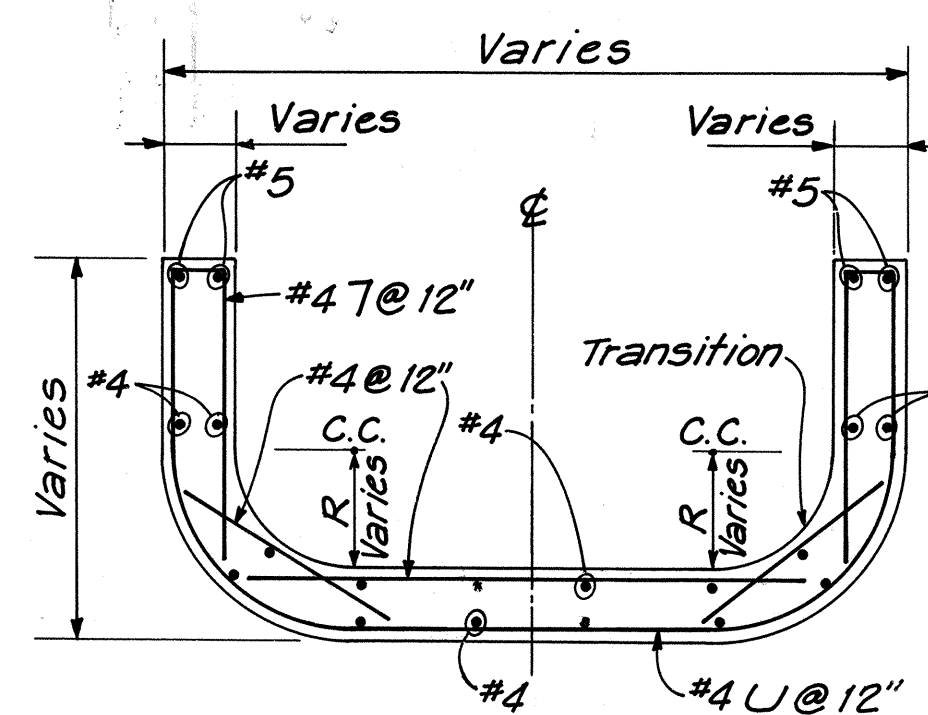
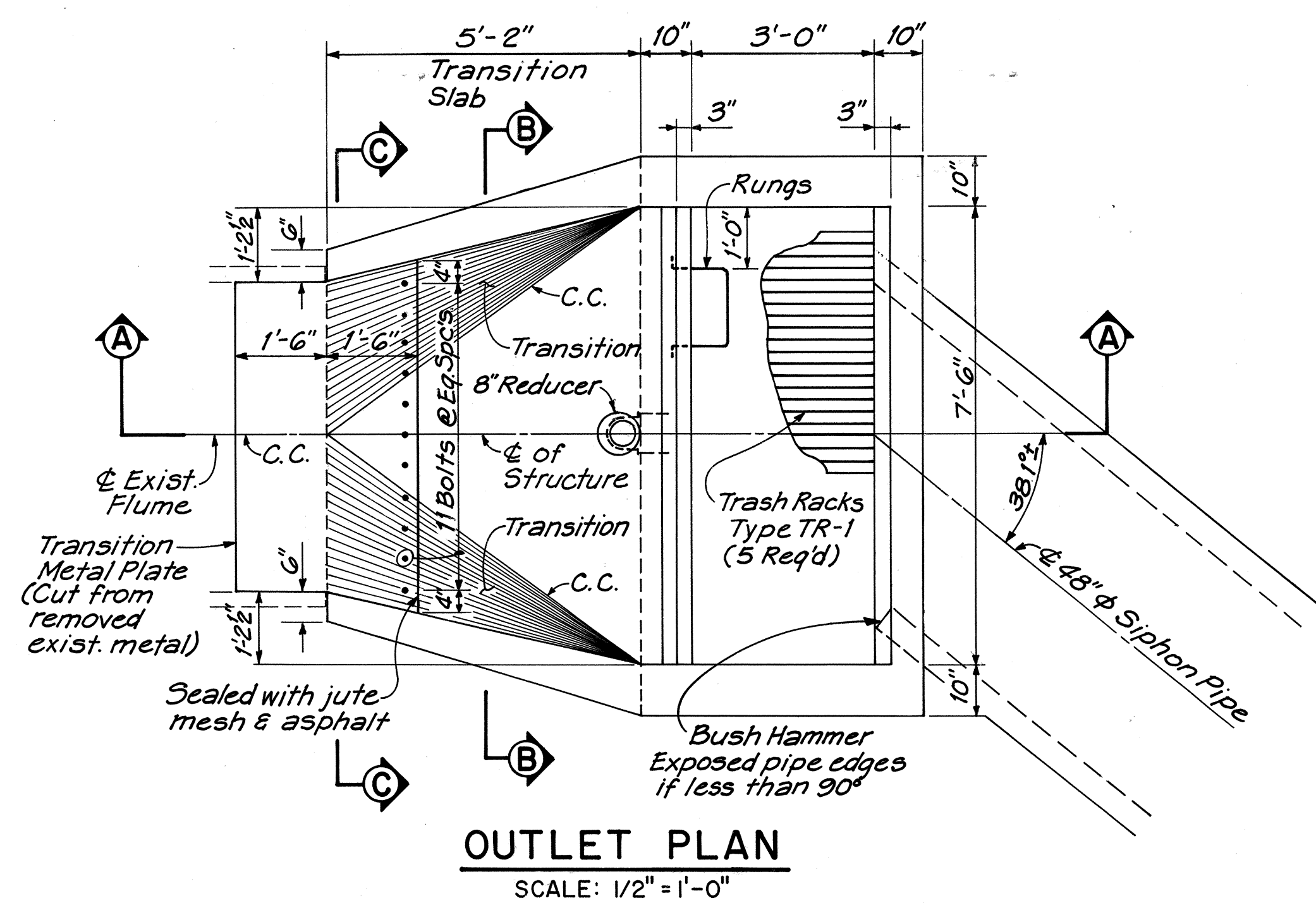
SIPHON NO. 12 DETAILS
INLET STRUCTURE S- 12 A

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

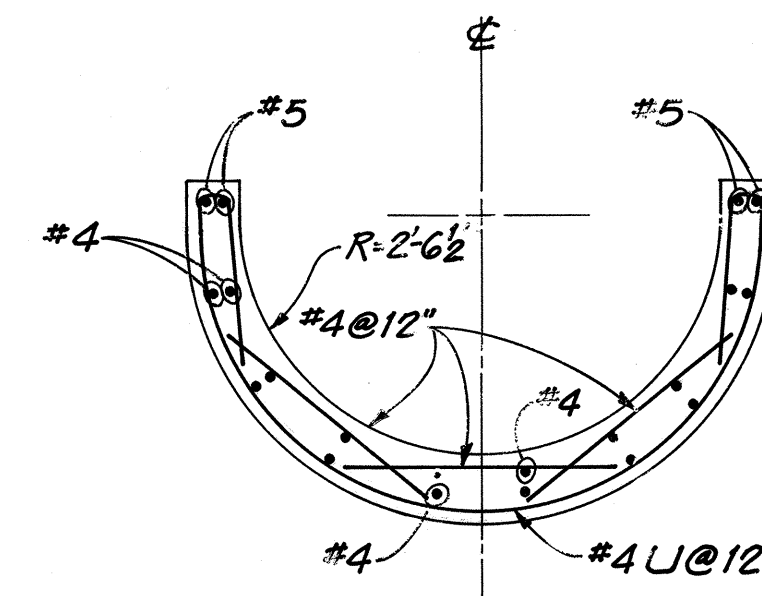
SCALE: AS SHOWN DATE: APRIL 1982

SHEET NO. 2 OF 3 SHEETS

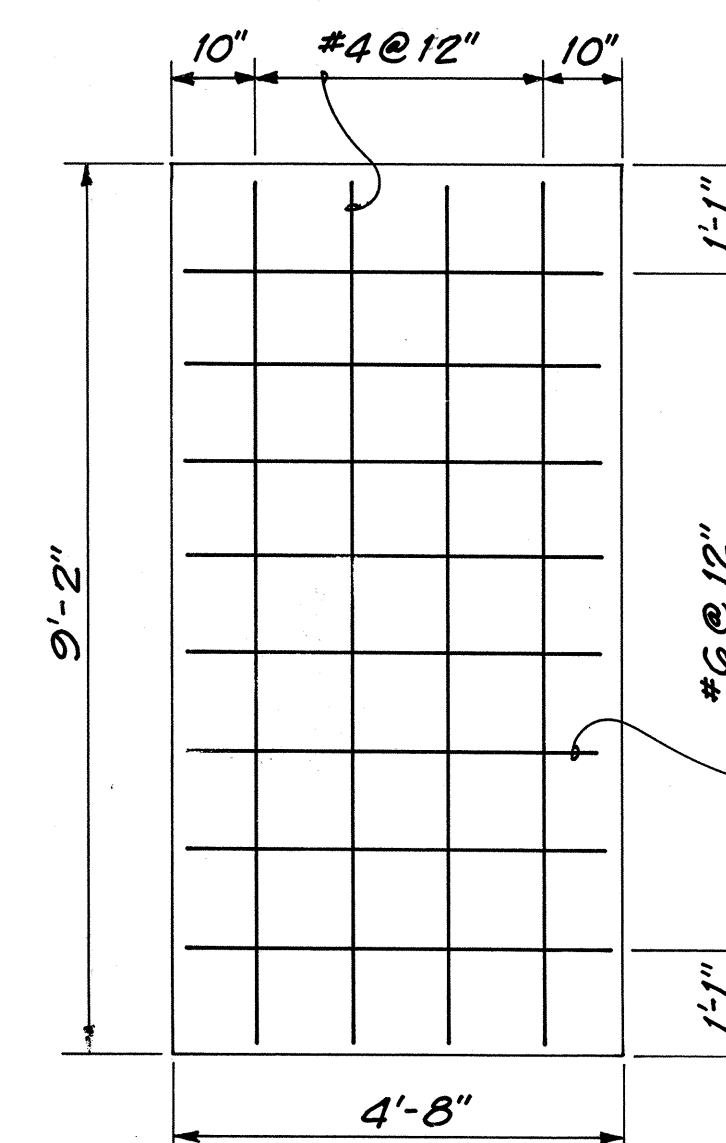
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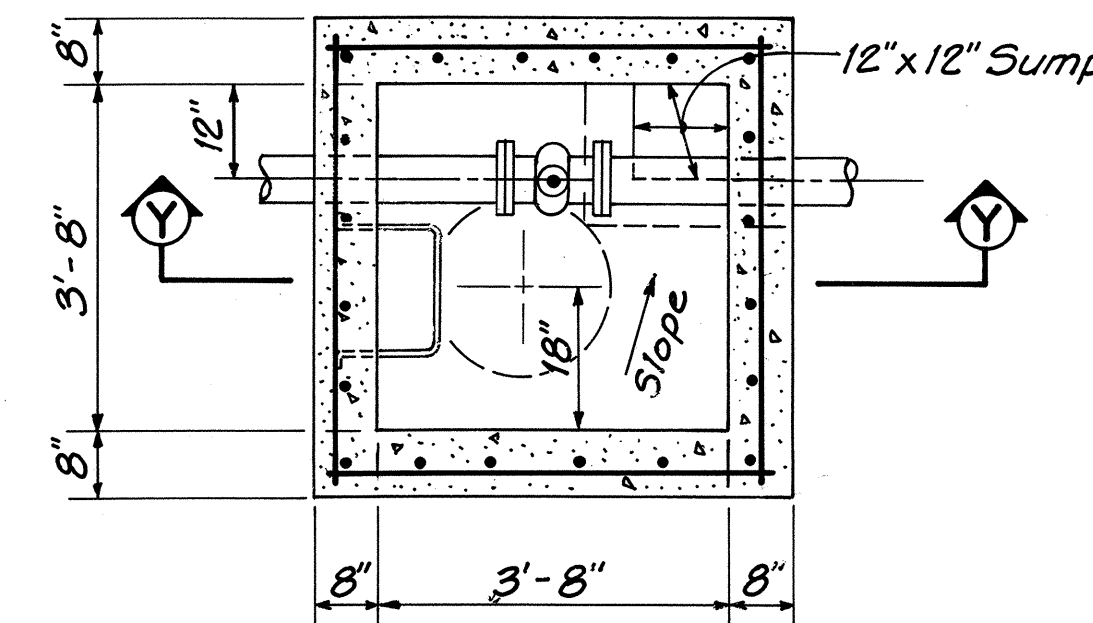
SECTION B-B
SCALE: 1/2" = 1'-0"



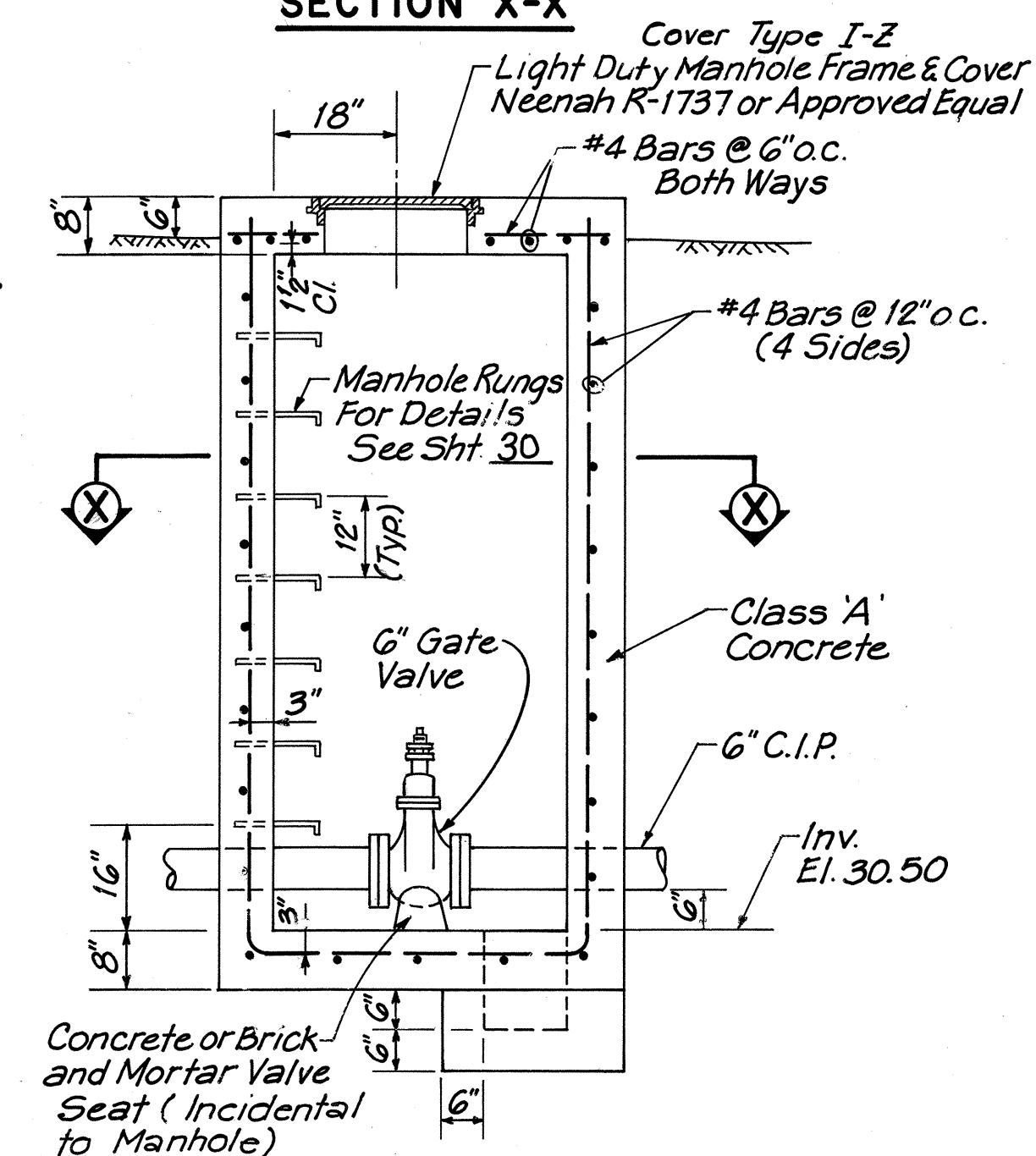
SECTION C-C
SCALE: 1/2" = 1'-0"



FLOOR SLAB REINFORCING PLAN
SCALE 1/2" = 1'-0"

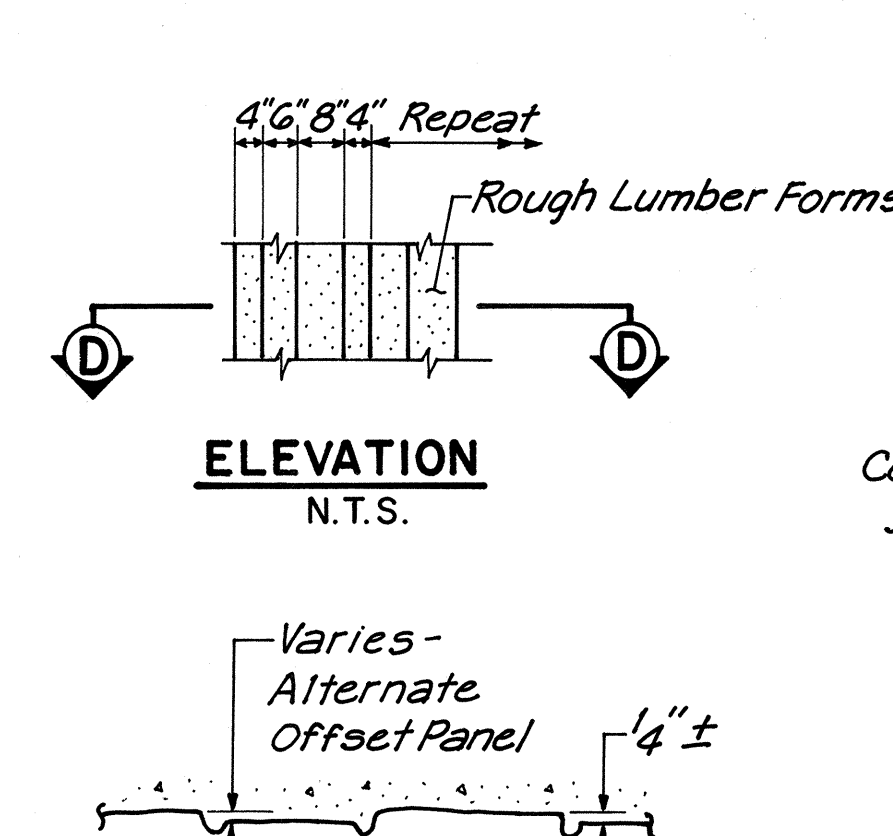


SECTION X-X

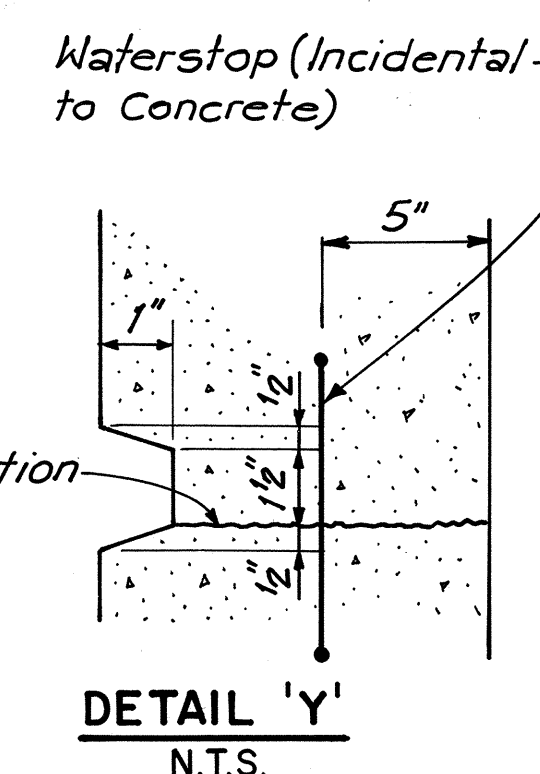


SECTION Y-Y

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



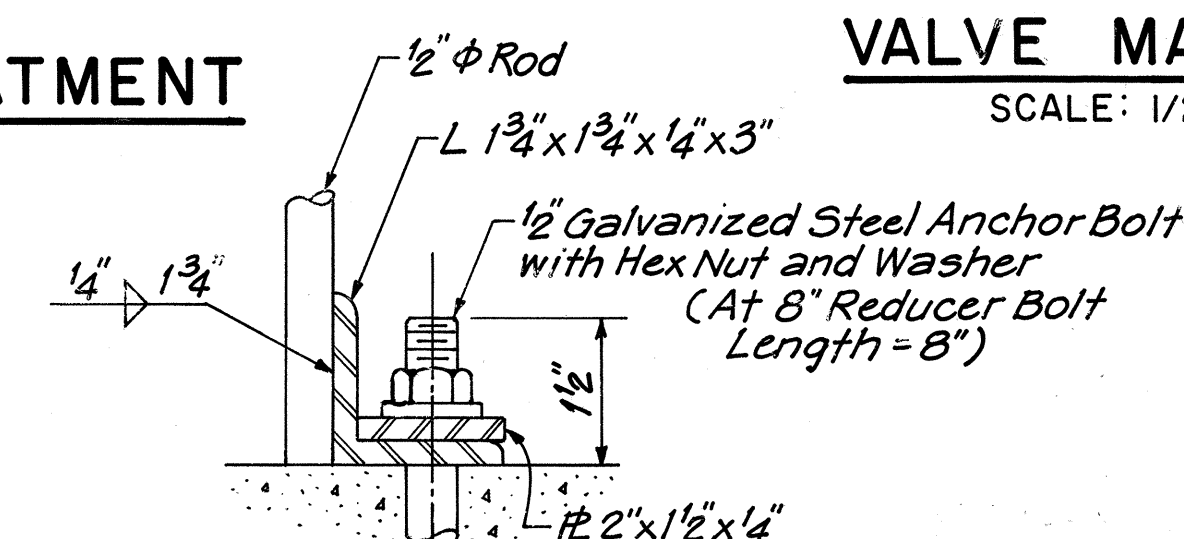
ELEVATION
N.T.S.



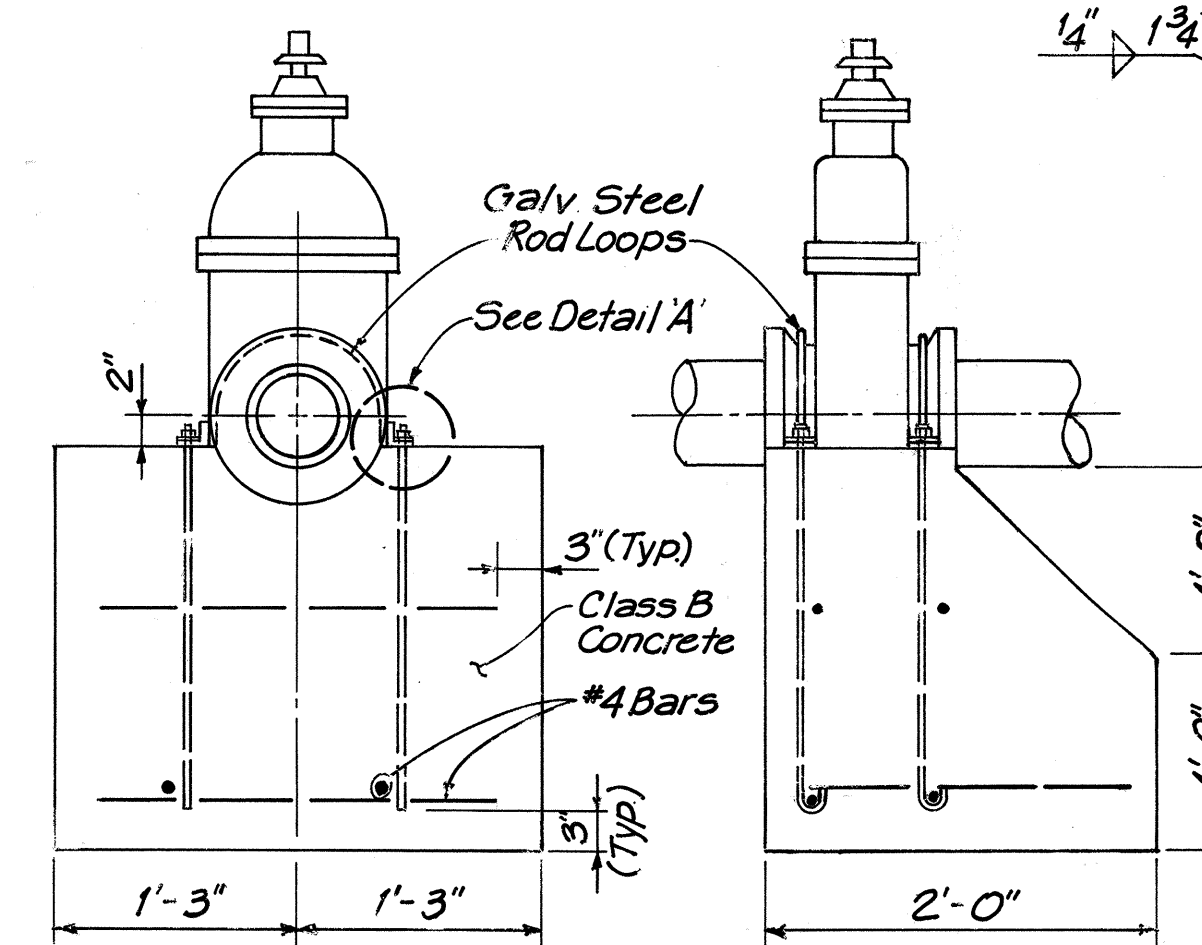
DETAIL 'Y'
N.T.S.

SECTION D-D
N.T.S.

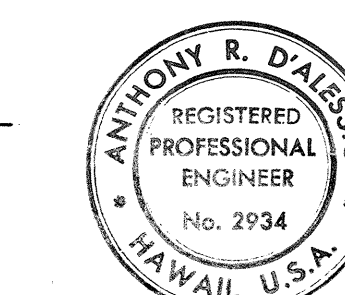
ARCHITECTURAL TREATMENT



DETAIL 'A'
SCALE: 1/2" = 1"



GATE VALVE ANCHOR BLOCK
SCALE: 1" = 1'-0"



THIS WORK WAS PREPARED BY
ME ~~ON~~ UNDER MY SUPERVISION

For Notes, see Sheet 91

Oahu Sugar Company
Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

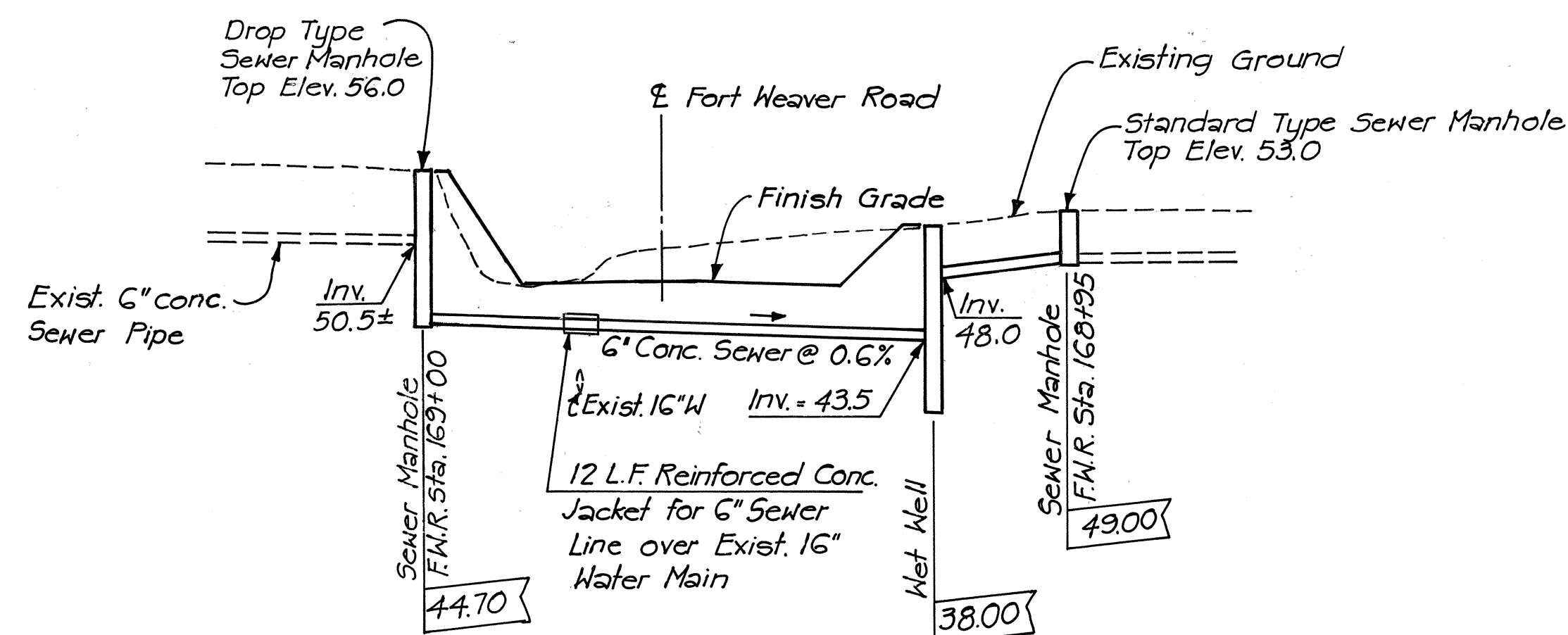
SIPHON NO. 12 DETAILS
OUTLET STRUCTURE S-12B

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

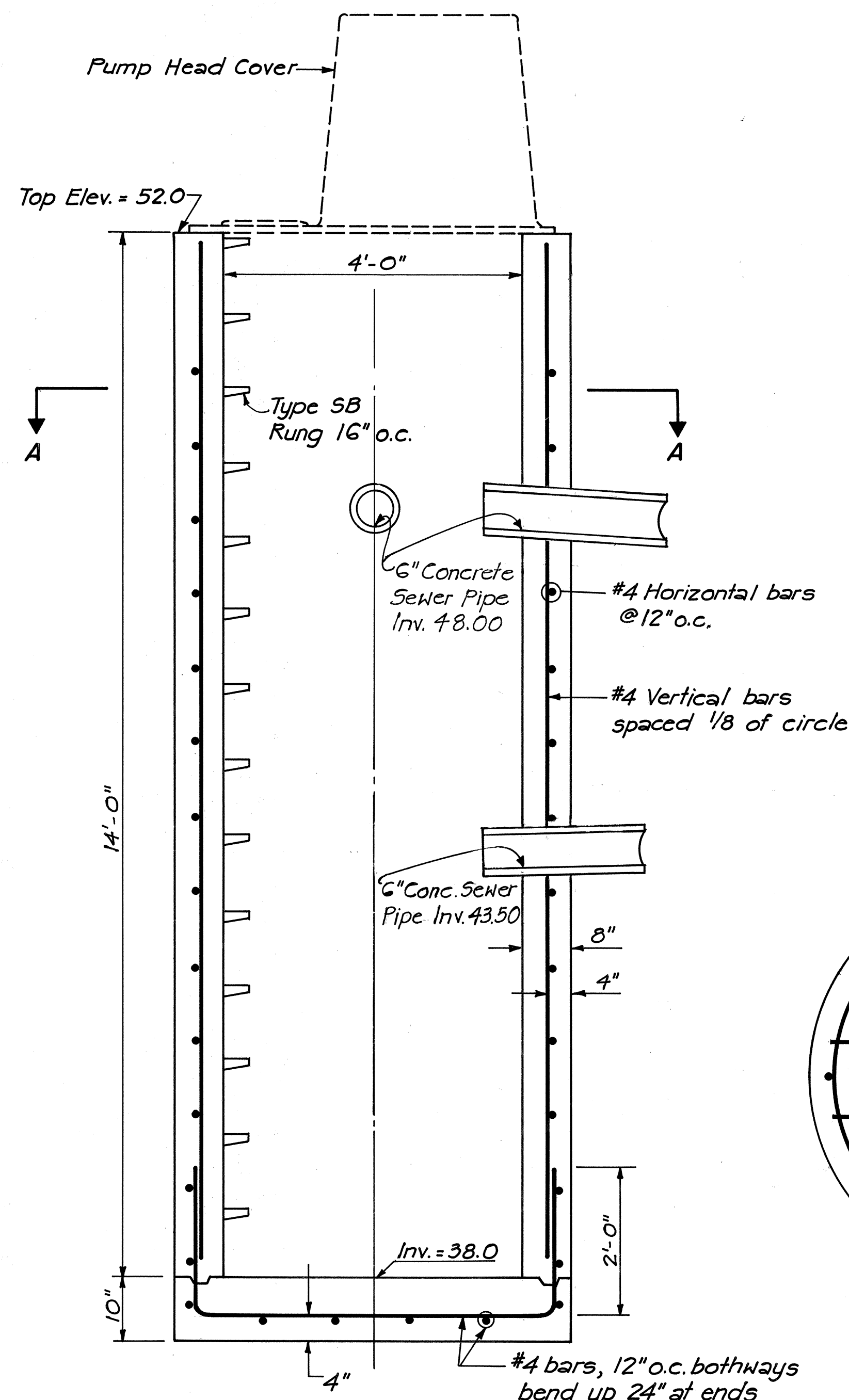
SCALE : AS SHOWN DATE : APRIL 1982
SHEET No. 3 OF 3 SHEETS

92

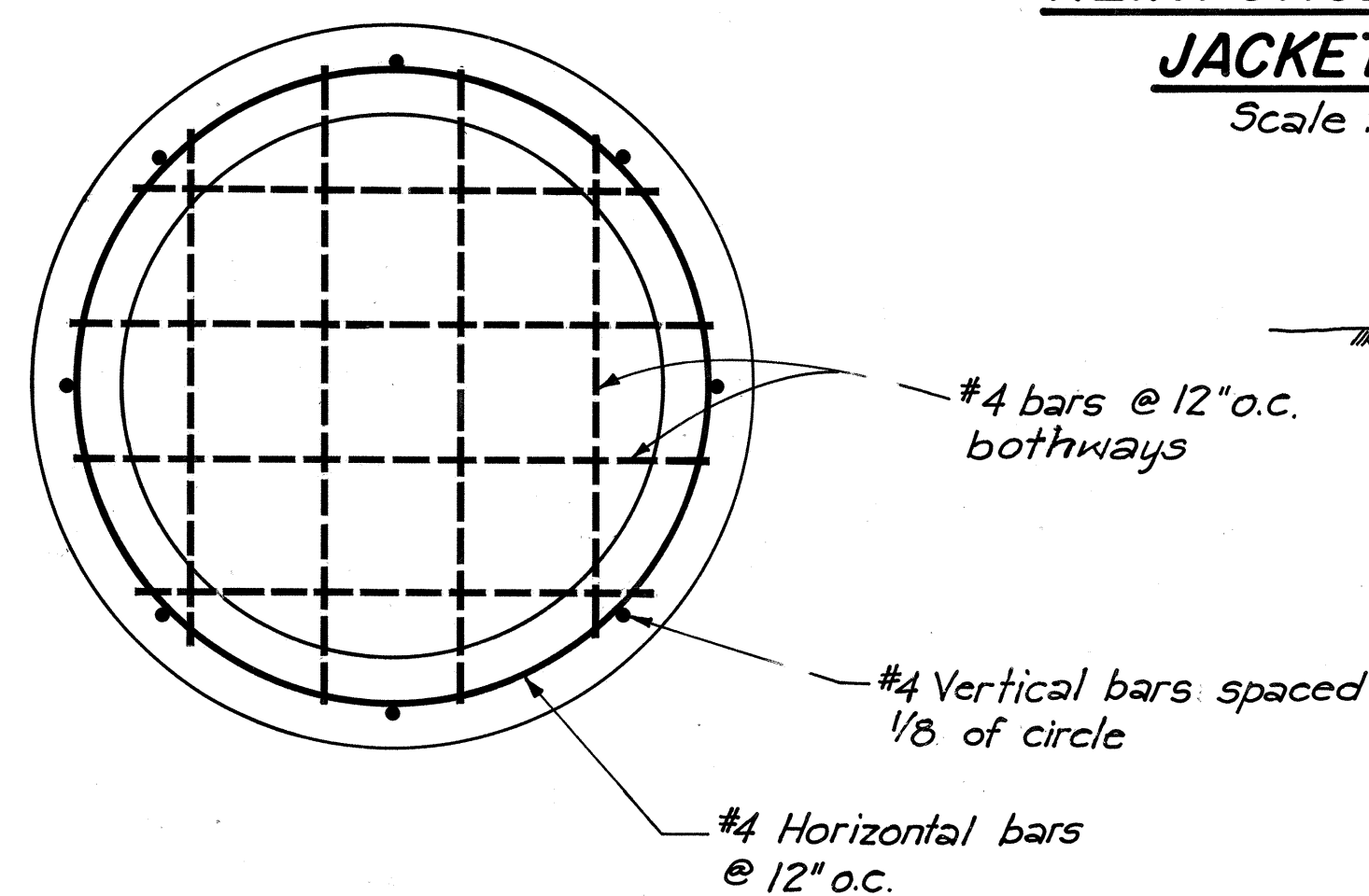
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7600B-01-82 S-RS-0760(2)	1982	93	163



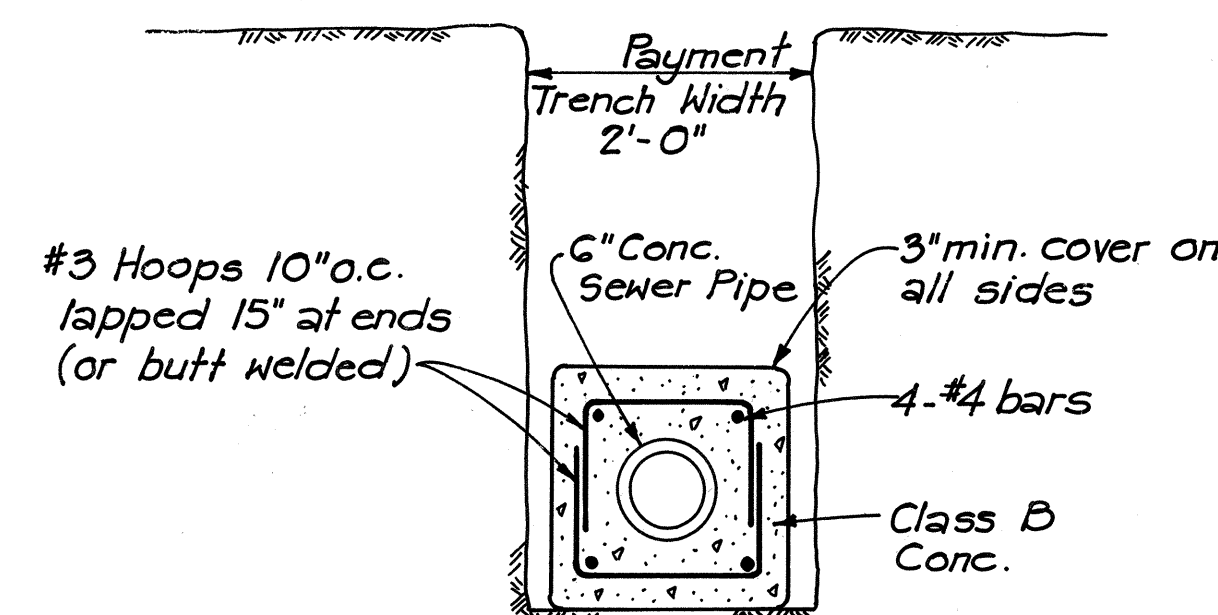
**PROFILE OF RELOCATED
OAHU SUGAR COMPANY SEWER LINES**
Scale: Horiz. 1" = 50'
Vert. 1" = 10'



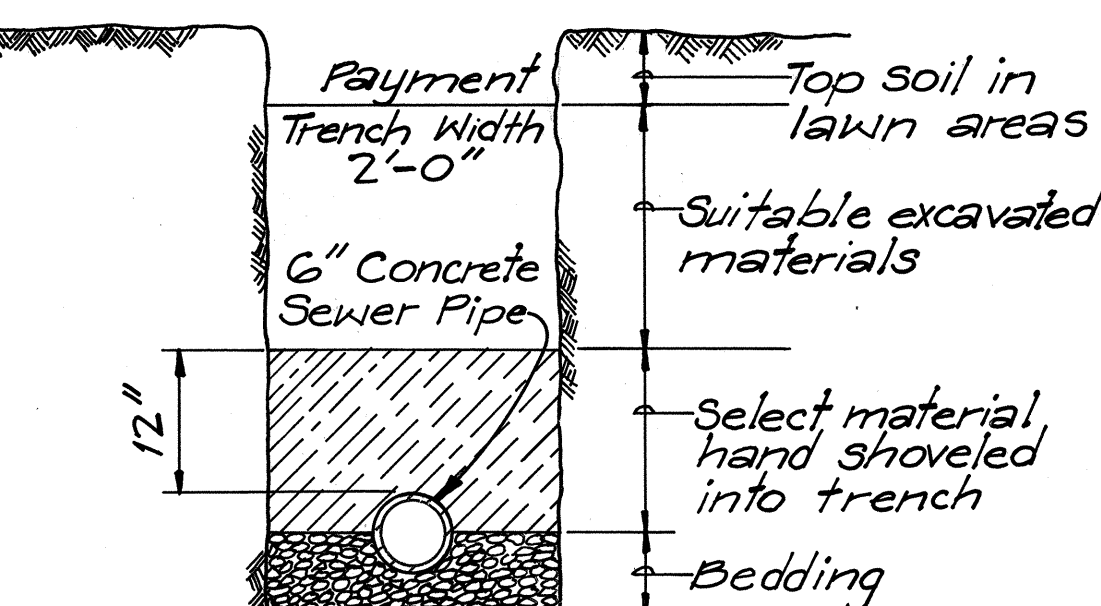
**WET WELL
OAHU SUGAR COMPANY
SEWERAGE PUMP STATION**
Scale: 3/4" = 1'-0"



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



**REINFORCED CONCRETE
JACKET DETAILS**
Scale: 3/4" = 1'-0"

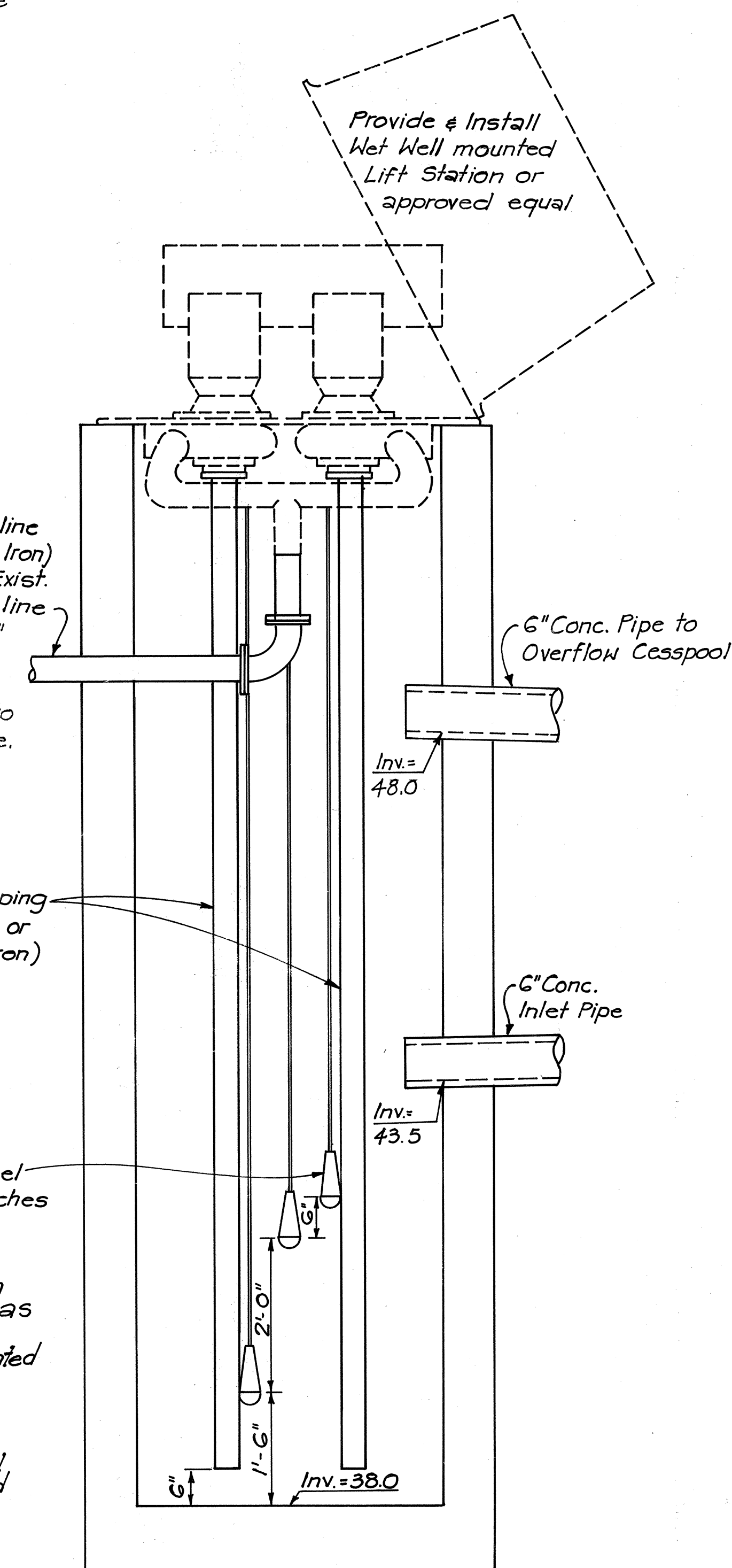


NOTE: Bedding & Backfill incidental to 6" Concrete Sewer Pipe
TRENCHING DETAIL
N.T.S.

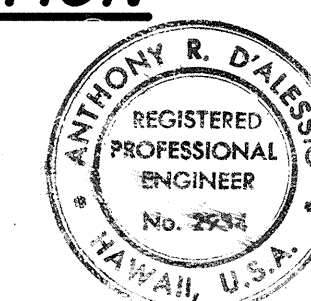
4" Discharge line (Steel or Cast Iron) Connect to Exist. 8" discharge line Provide 4"x8" Expansion Coupling at connection to existing pipe.

Provide 4" Suction Piping (150 lb Steel or 125 lb Cast Iron)

Wet Well Level Control Switches



PUMP & PIPING ELEVATION
Scale: 3/4" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
[Signature]

Oahu Sugar Company

Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

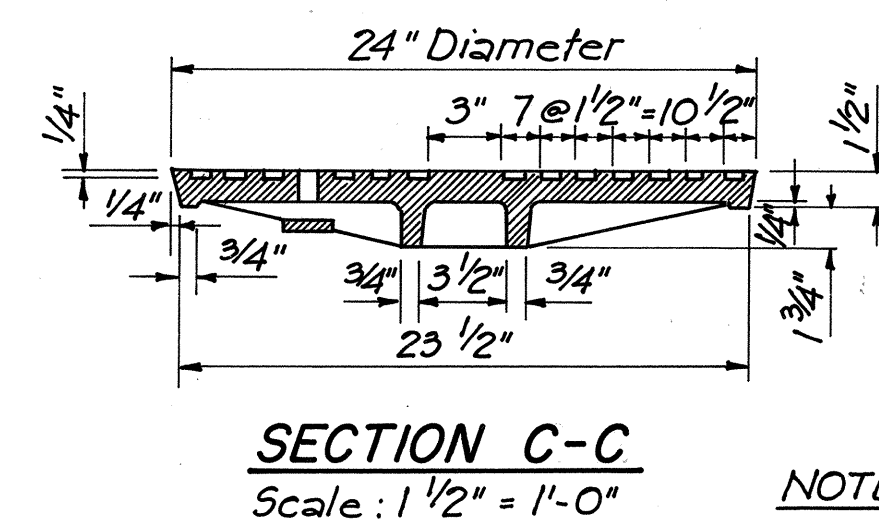
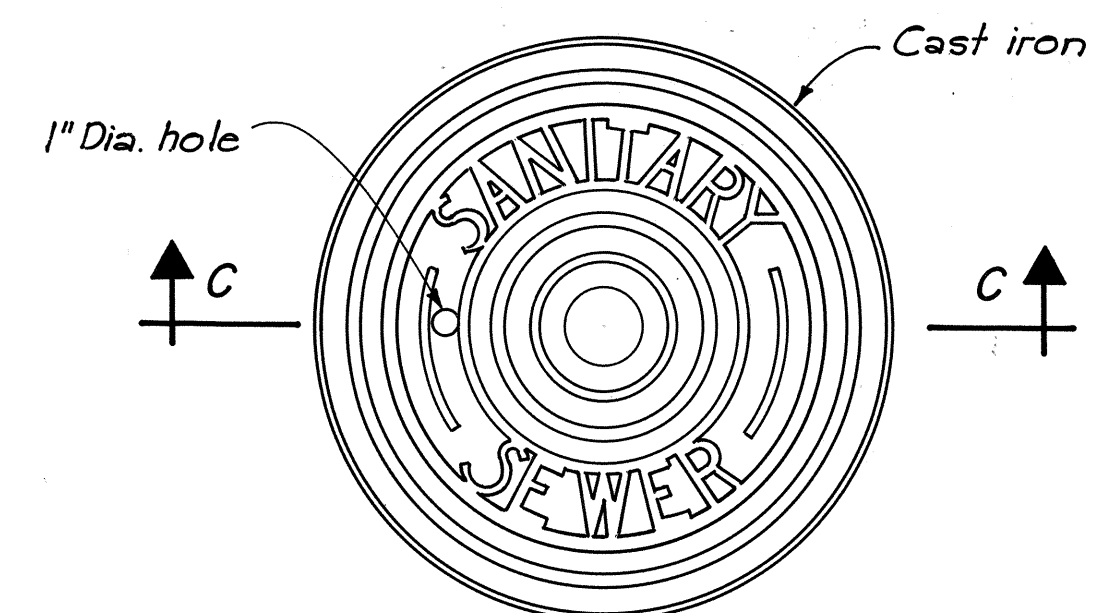
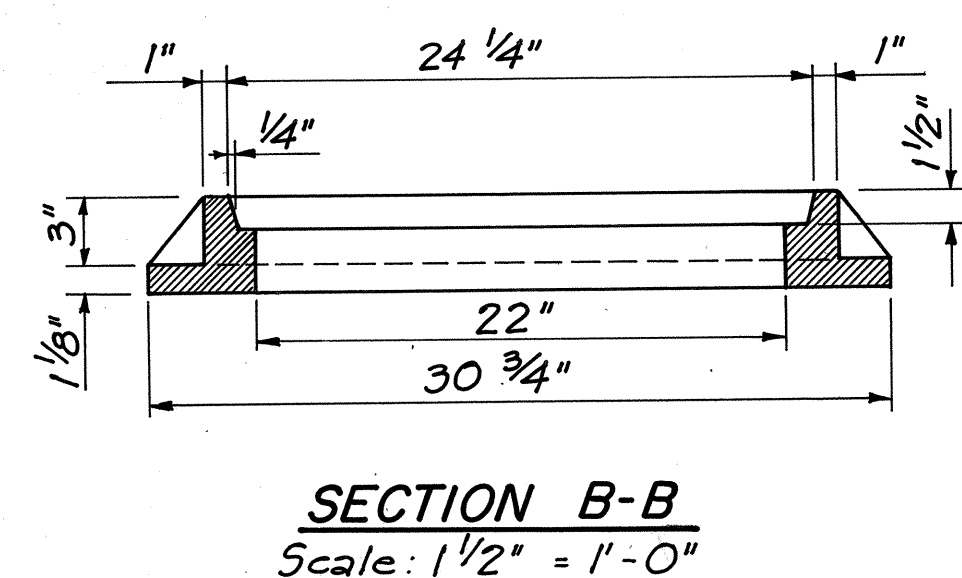
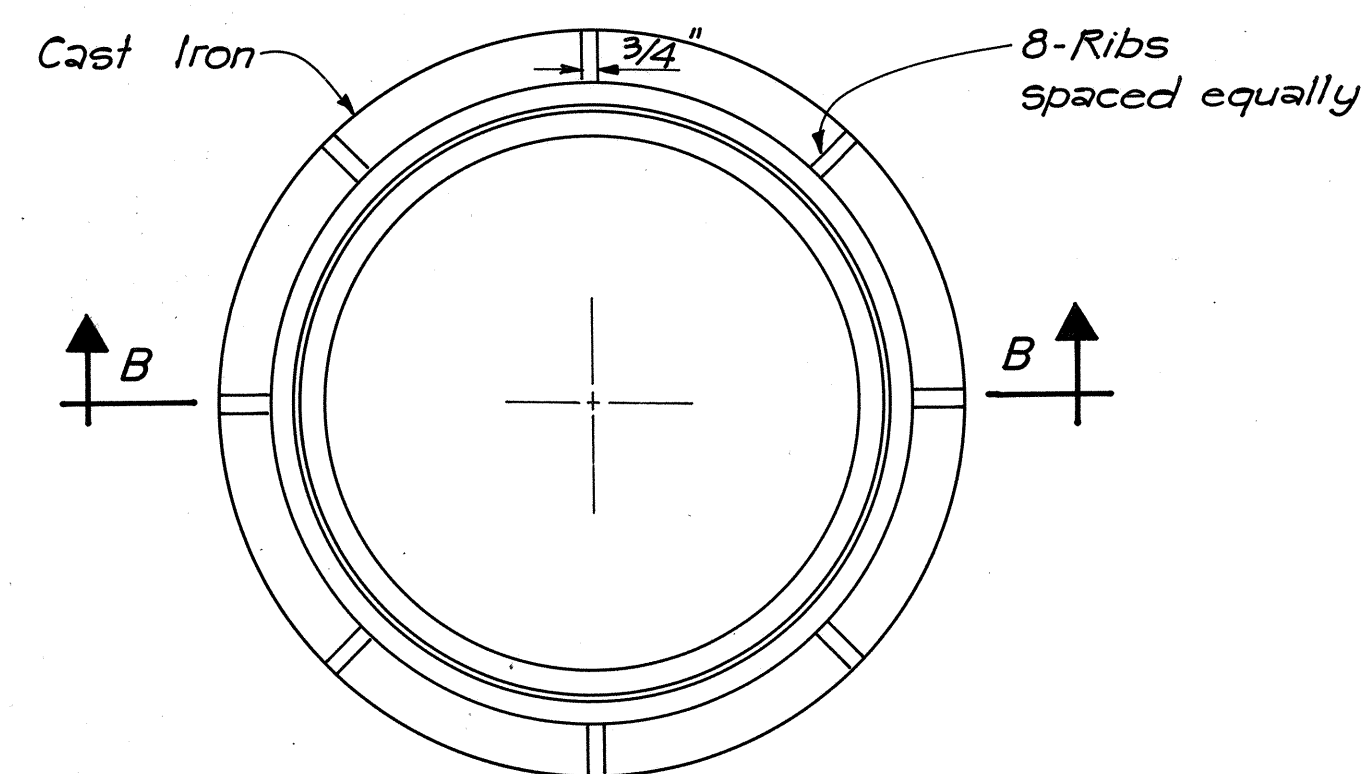
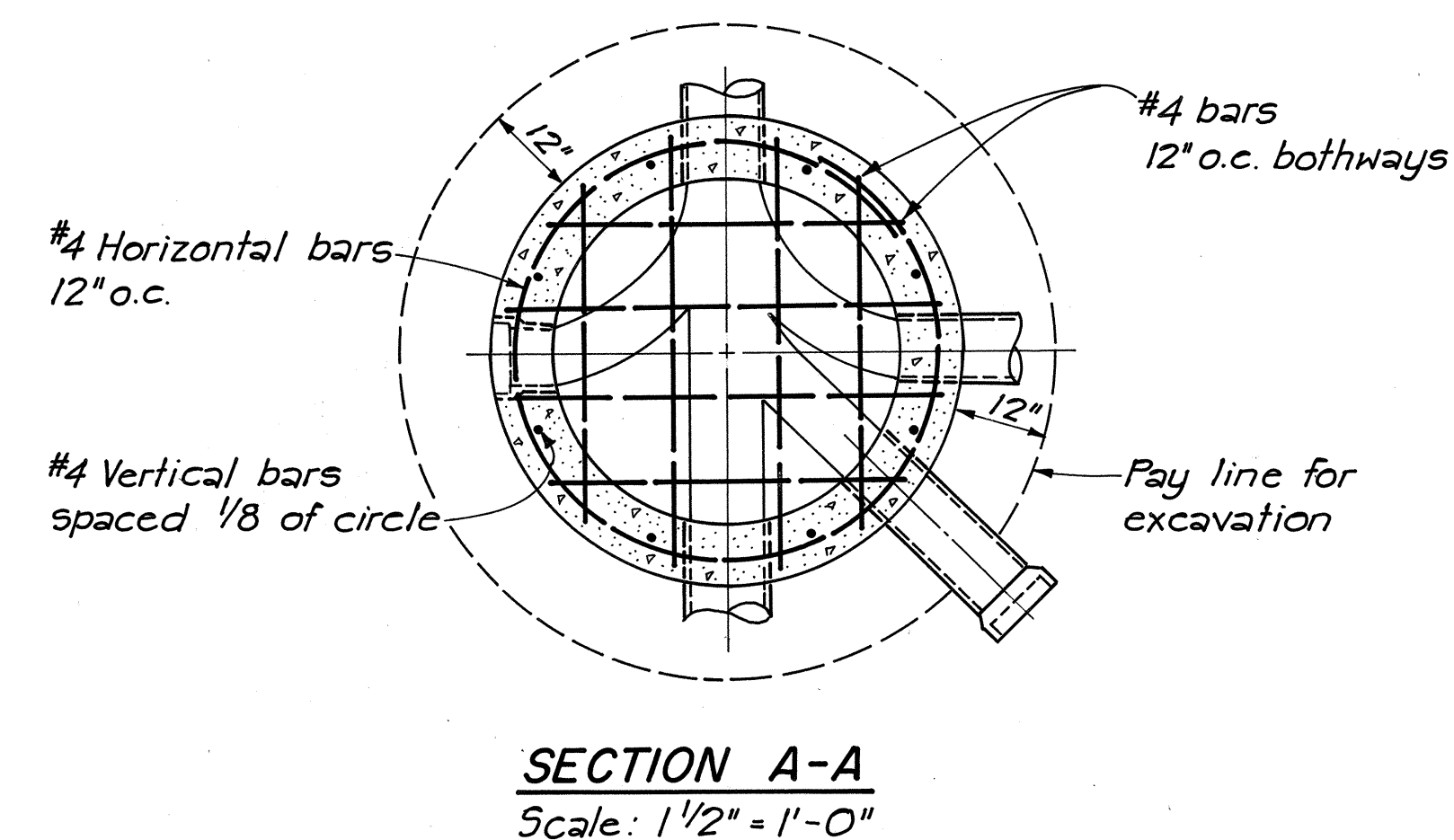
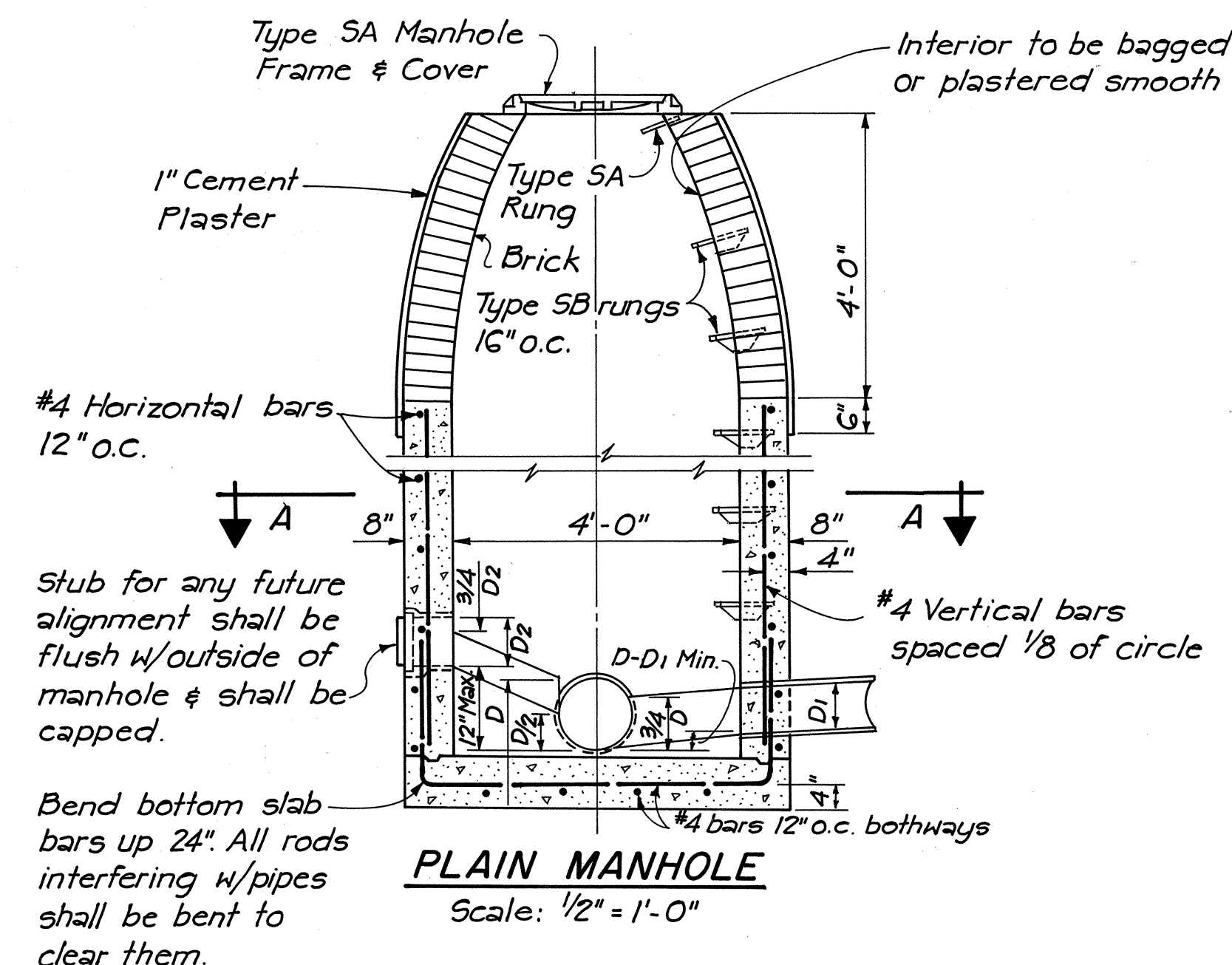
**SEWERAGE PUMP STATION
DETAILS**

FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD

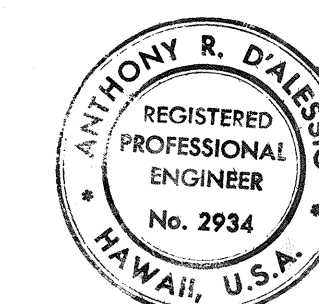
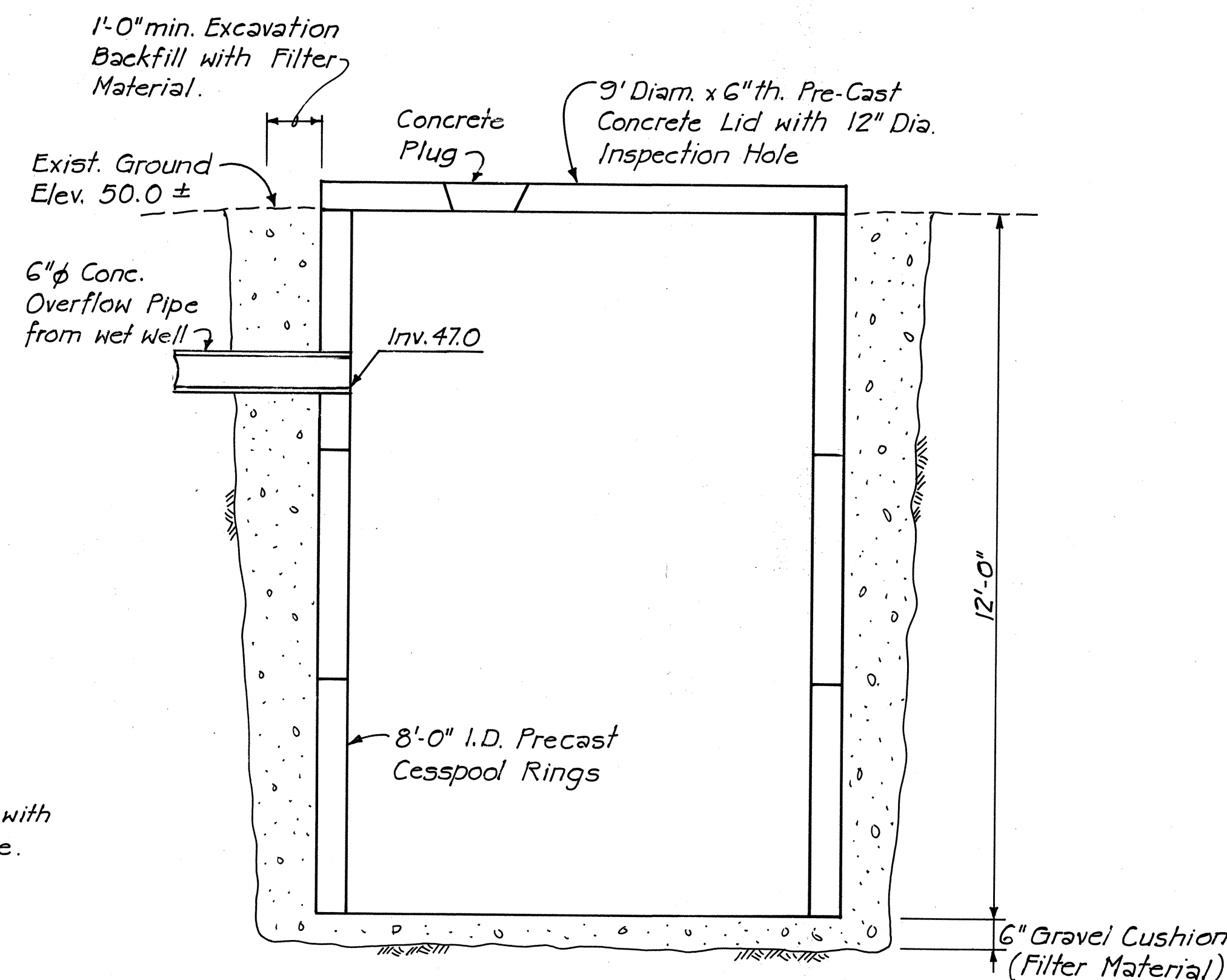
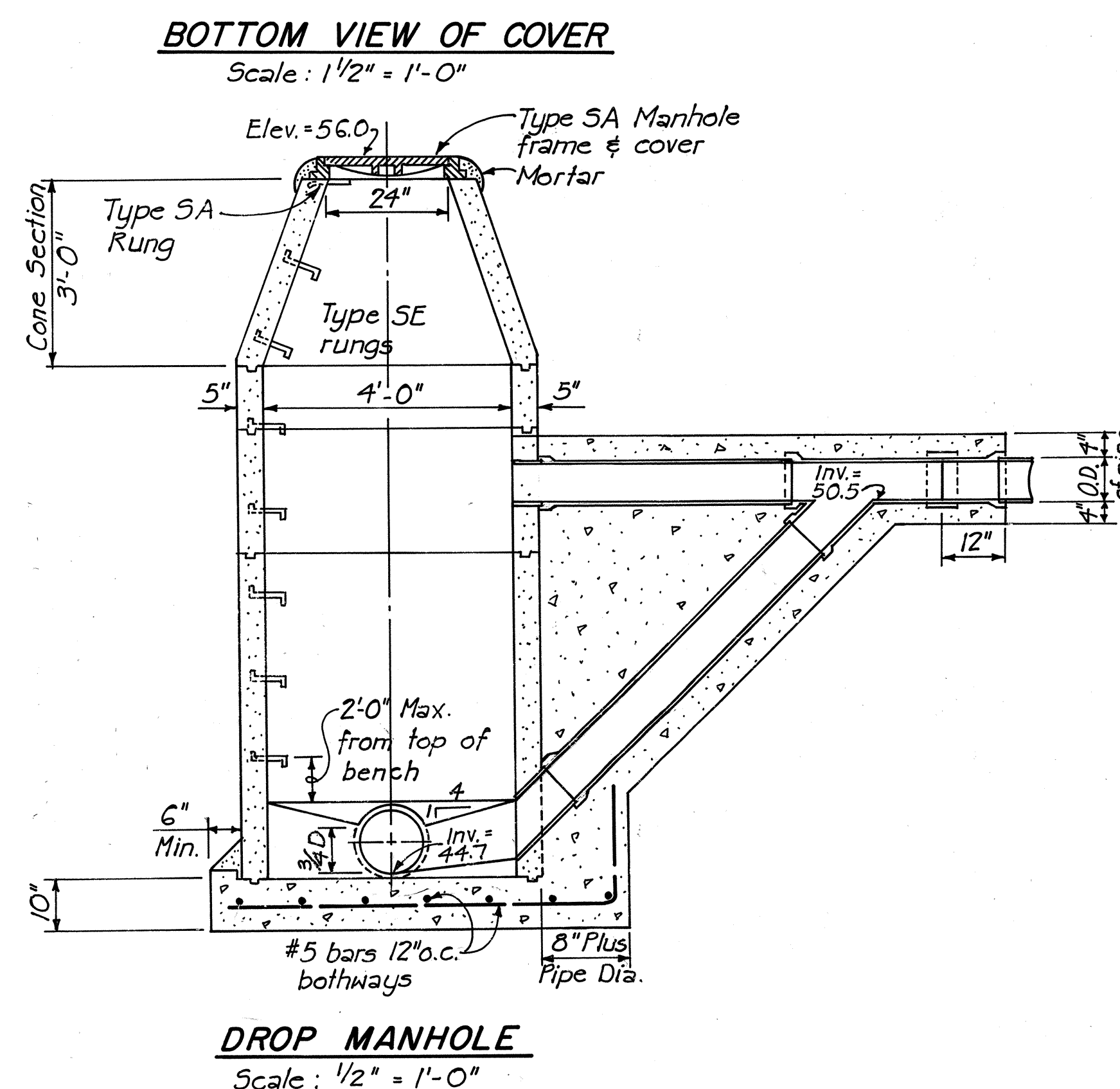
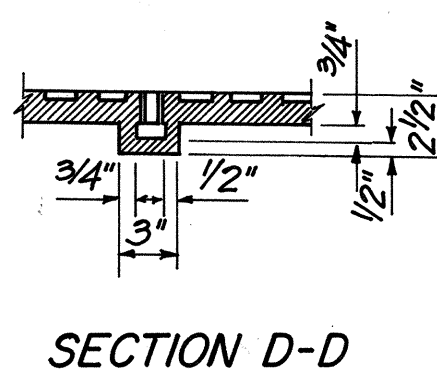
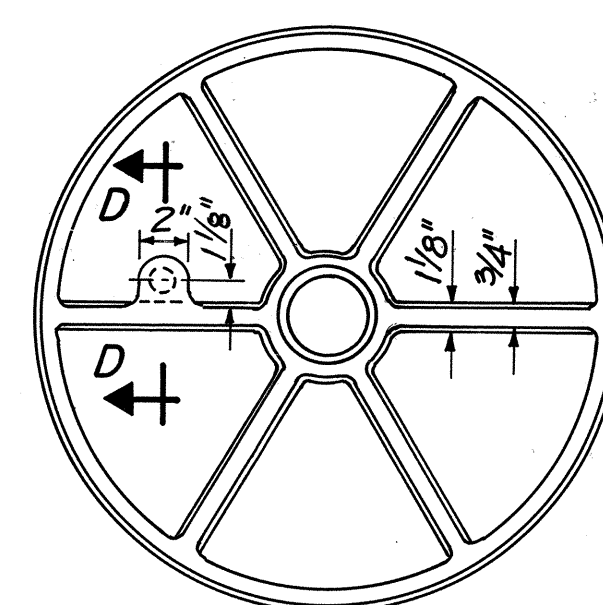
SCALE: AS SHOWN DATE: APRIL 1982

SHEET NO. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	76008-01-82 S-RS-0760(2)	1982	94	163



NOTE:
This cover is used with the SA or SD Frame.



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Anthony R. Dalesio

Oahu Sugar Company Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SEWER MANHOLE DETAILS
FORT WEAVER ROAD
VICINITY OF MANGO TREE ROAD
TO THE VICINITY OF RENTON ROAD
SCALE: AS SHOWN DATE: APRIL 1982
SHEET NO. 1 OF 1 SHEETS