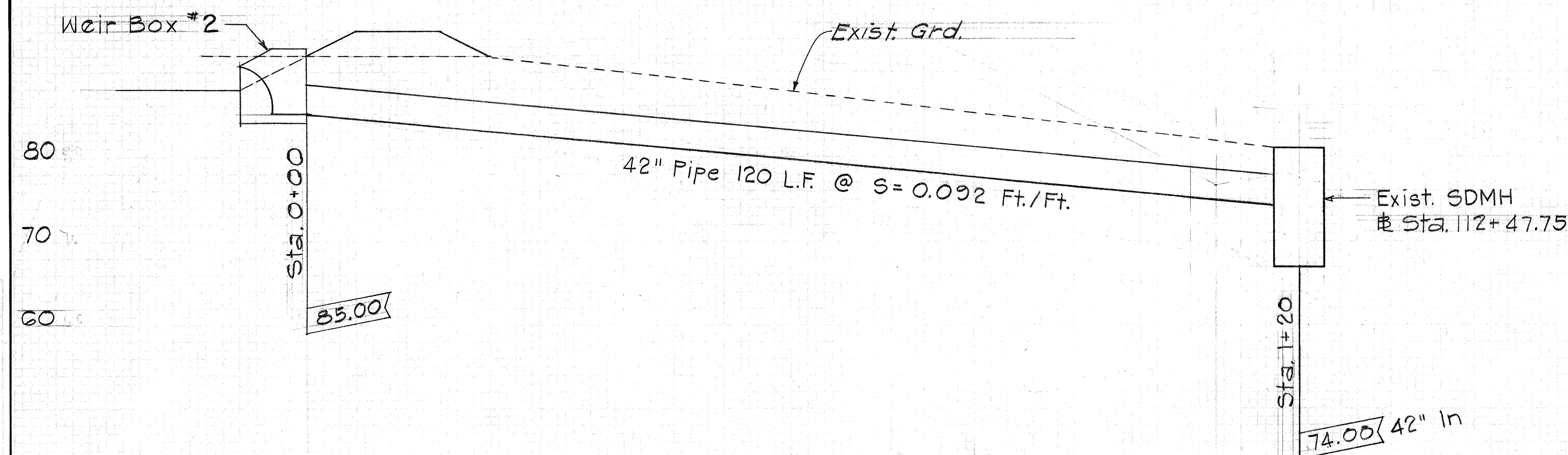
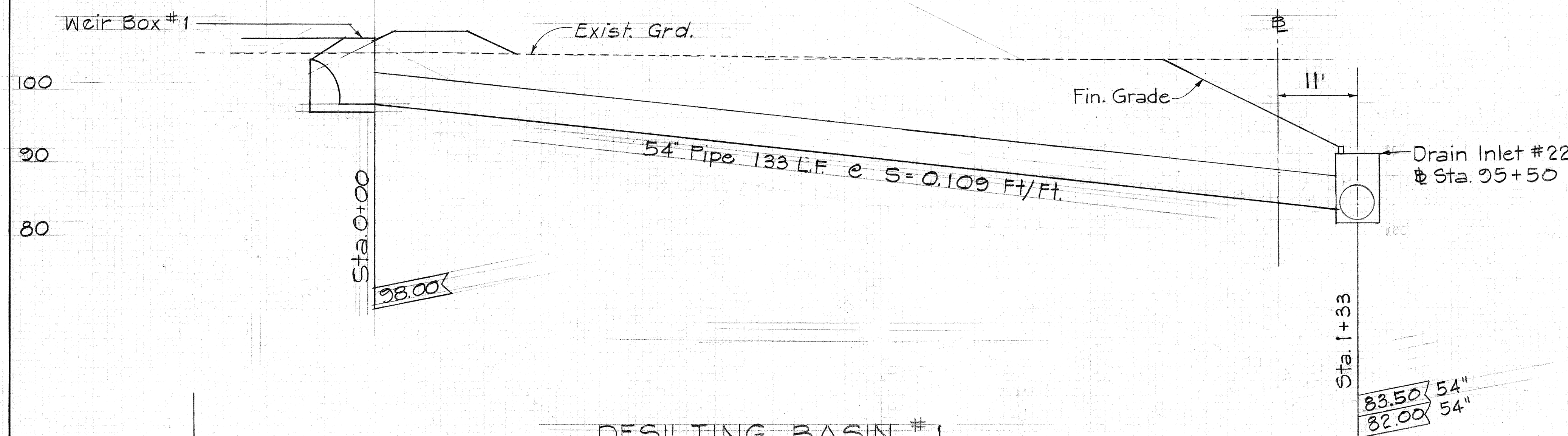


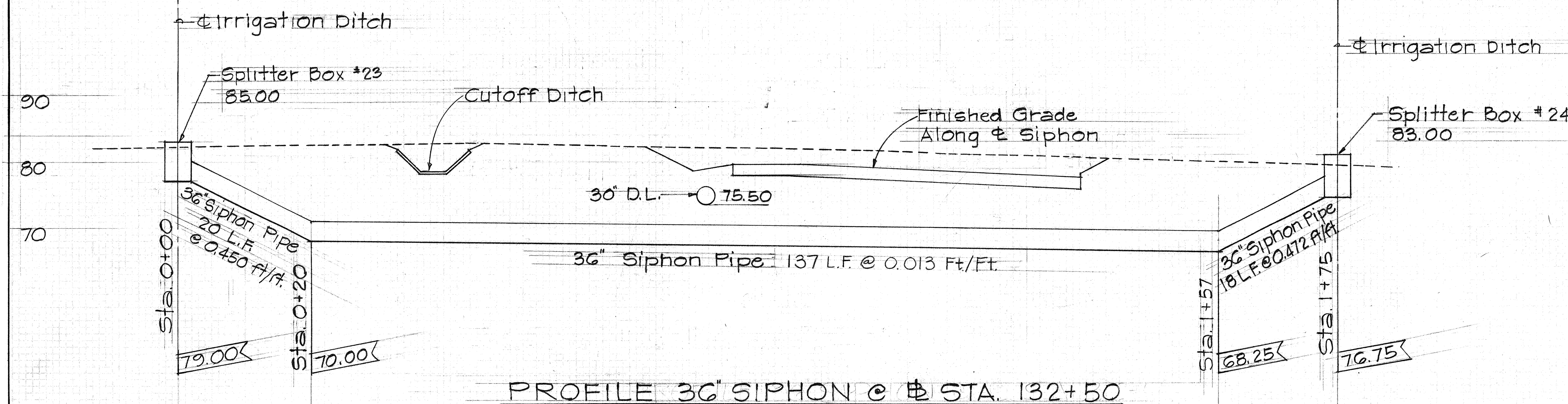
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	63	164



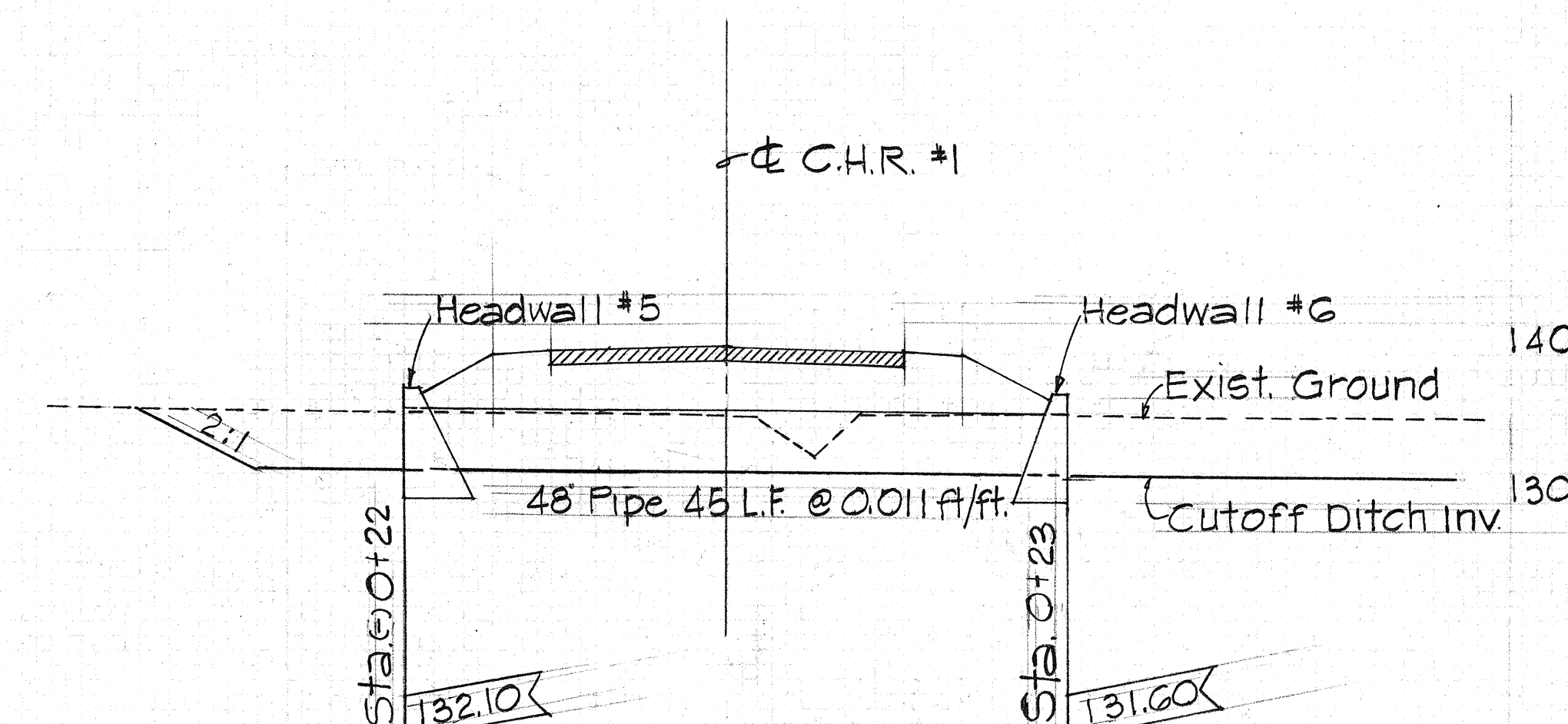
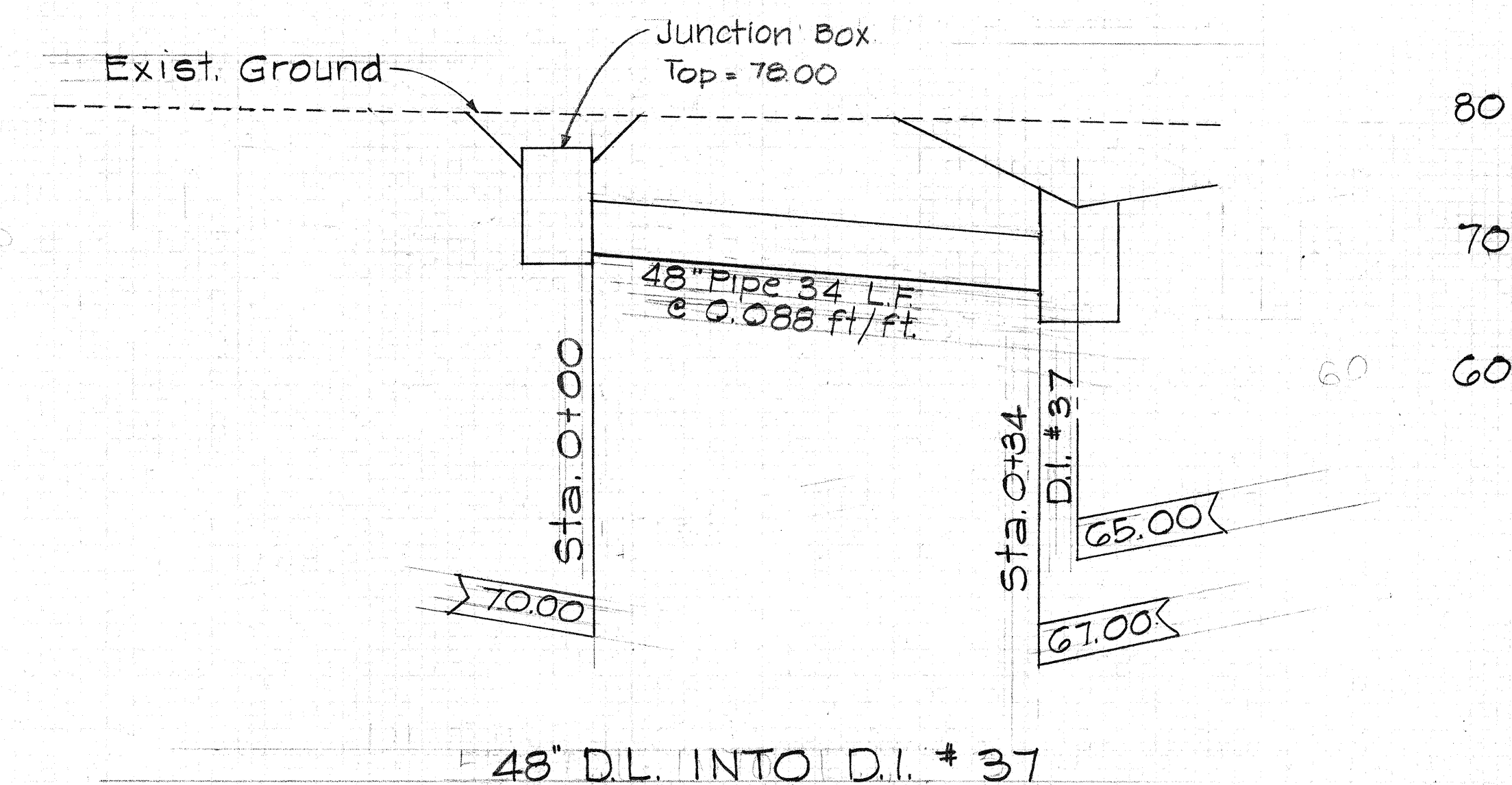
DESILTING BASIN #2



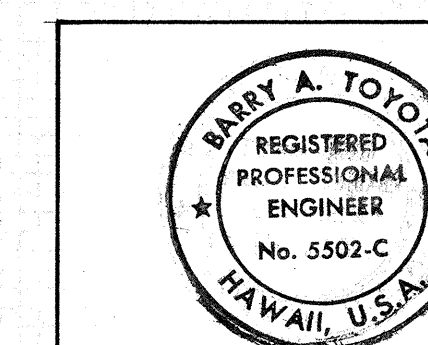
DESILTING BASIN #1



PROFILE 36" SIPHON @ STA. 132+50



48 INCH CULVERT @ C.H.R. #1 @ STA. 4+50 PROFILE

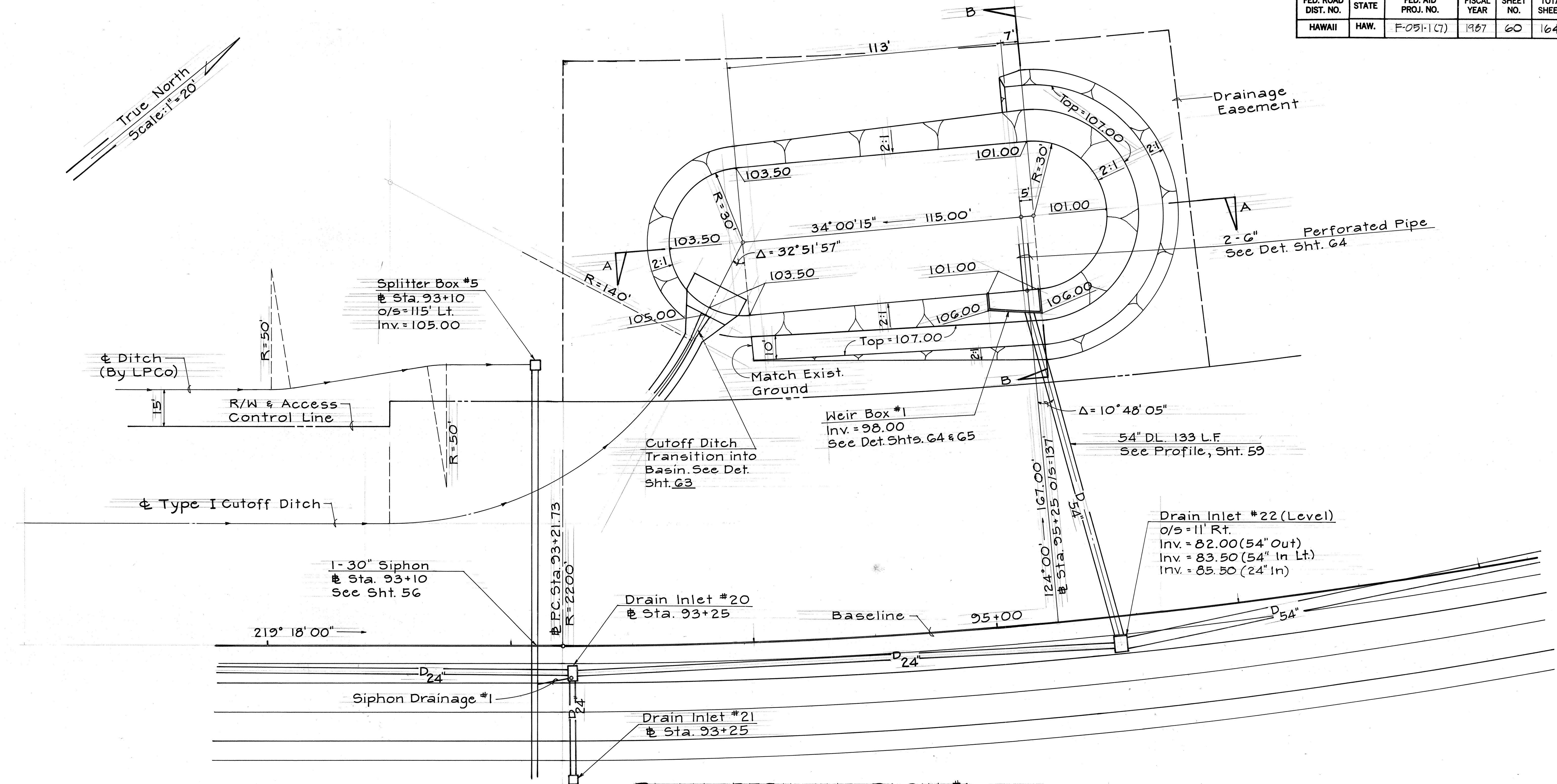


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 Barry A. Toyota
 Signature

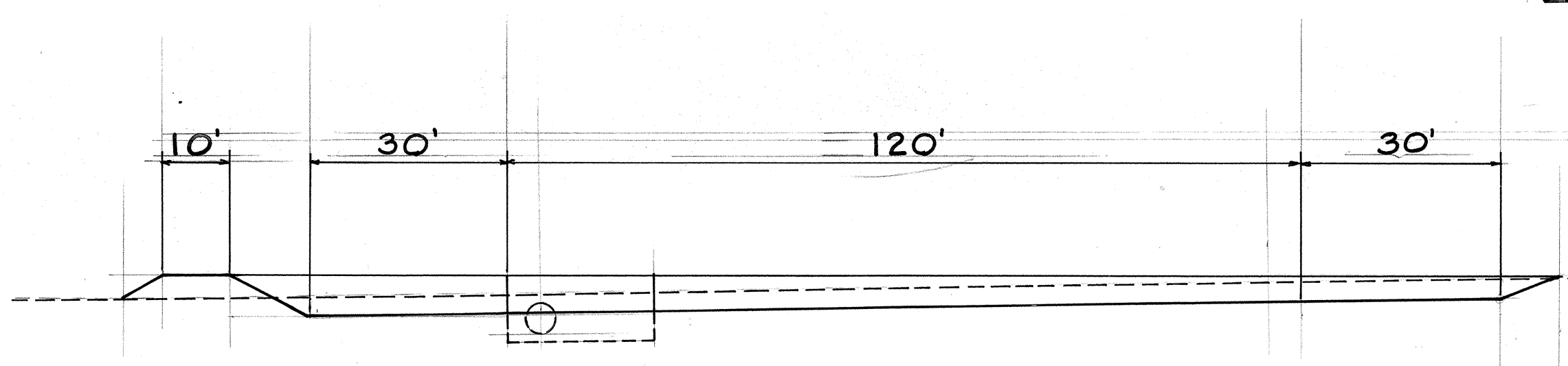
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
DRAIN PROFILES
 HANAMAULU ROAD & APPROACHES
 HANAMAULU - AHUKINI CUTOFF RD
 (Ahukini Road To Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: 1"=10' Date: Aug, 1986

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	60	164

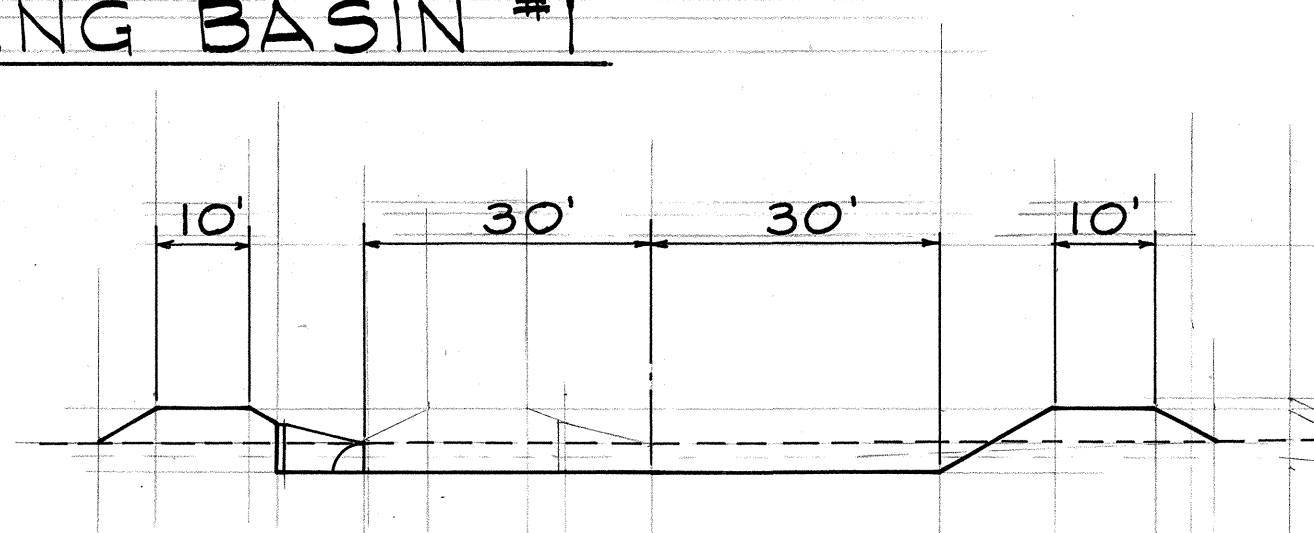
True North
Scale: 1" = 20'



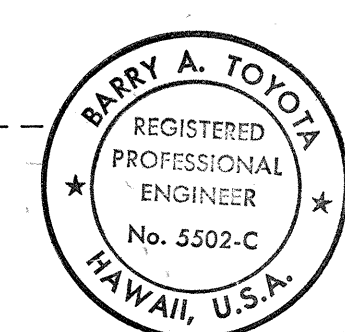
PLAN - DESILTING BASIN #1
Scale: 1" = 20'



SECTION "A-A"
Scale: 1" = 20'



SECTION "B-B"
Scale: 1" = 20'



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Signature: *Barry A. Toyota* Date: 10/1/87

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DESILTING BASIN #1
HANAMAULU ROAD & APPROACHES
HANAMAULU - AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986

SHEET NO. 2 OF 12 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	61	164

Provide Smooth Riding Connection to Existing Cane Haul Road

True North
Scale: 1" = 20'

Drainage Easement

& Ditch (By LPCO)

Construction Easement

Splitter Box #8
@ Sta. 115+81.86
o/s = 158.32 Lt.
Top = 98.00
Inv. = 92.00

Weir Box #2
Inv. = 85.00
See Det. Shts. G4 & G5

R/W & Access Control Line

42" D.L. 120 L.F.
See Profile Sht. 59
Verify

Match Exist. Ground Cutoff Ditch Transition into Basin. See Det. Sht. G3
2-G Perforated Pipes. See Detail Sht. G4

Maintenance Road
R/W & Access Control Line

Exist. SDMH
@ Sta. 112+47.75
o/s = G4 Lt.
Inv. = 67.70 (42" Out)
Inv. = 71.70 (30" In Rt)
Inv. = 74.00 (42" In)
Inv. = 69.50 (24" In)

& Type I Cutoff Ditch

1-30" Siphon
@ Sta. 115+81.86
See Sht. 57

Drain Inlet #29
@ Sta. 115+65

115+00

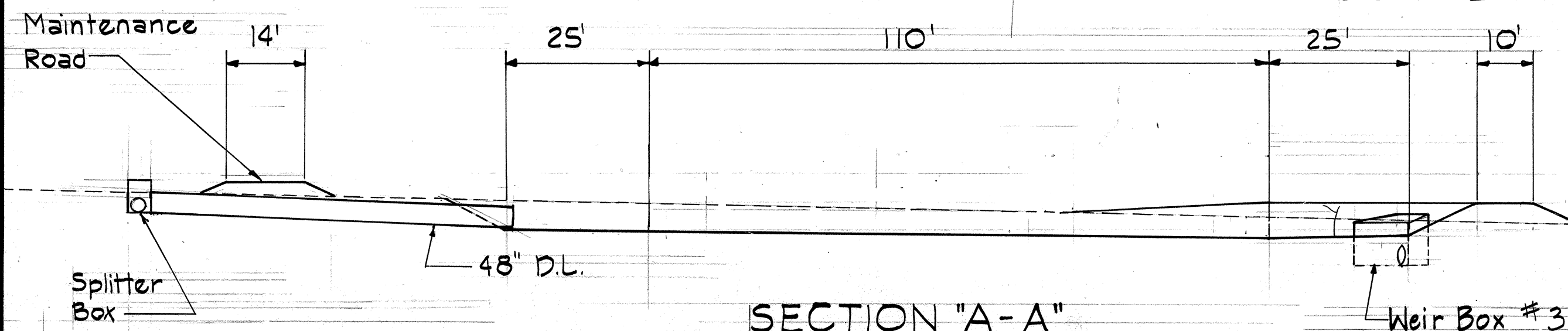
D24"
Exist. Drain Inlet #27
@ Sta. 112+47

Drain Inlet #30
@ Sta. 115+65

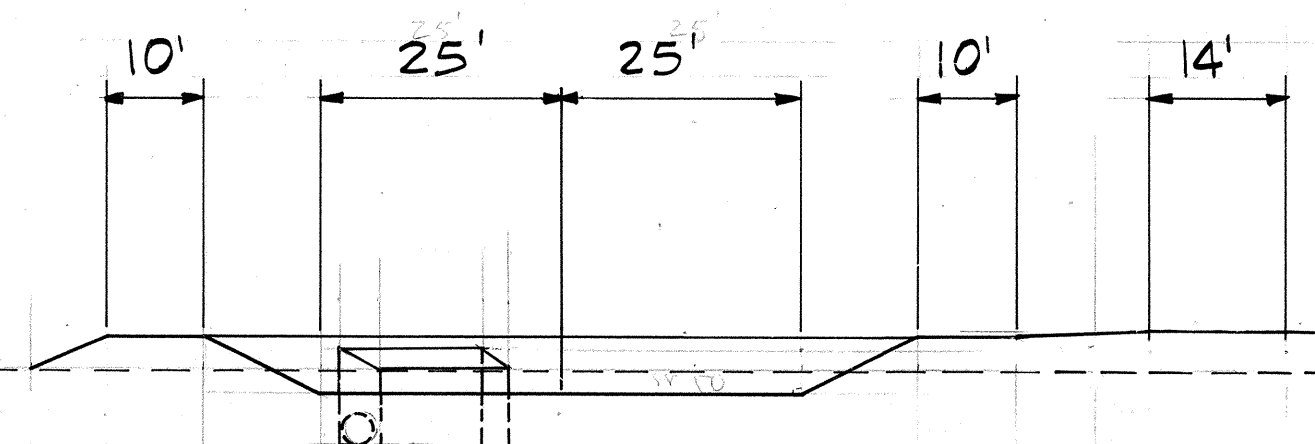
Siphon Drainage #2
See Detail Sht. 76

PLAN - DESILTING BASIN #2

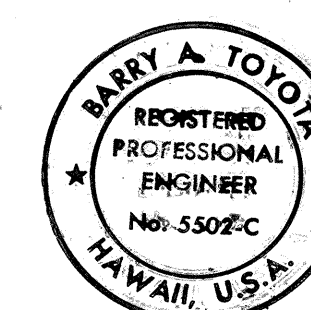
Scale: 1" = 20'



SECTION "A-A"
Scale: 1" = 20'



SECTION "B-B"
Scale: 1" = 20'



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Barry A. Toyota 0725/16
Signature

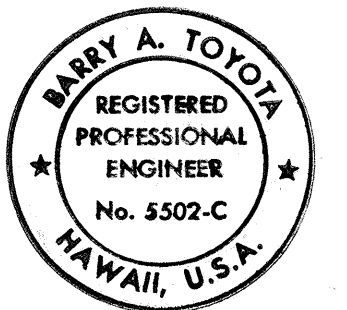
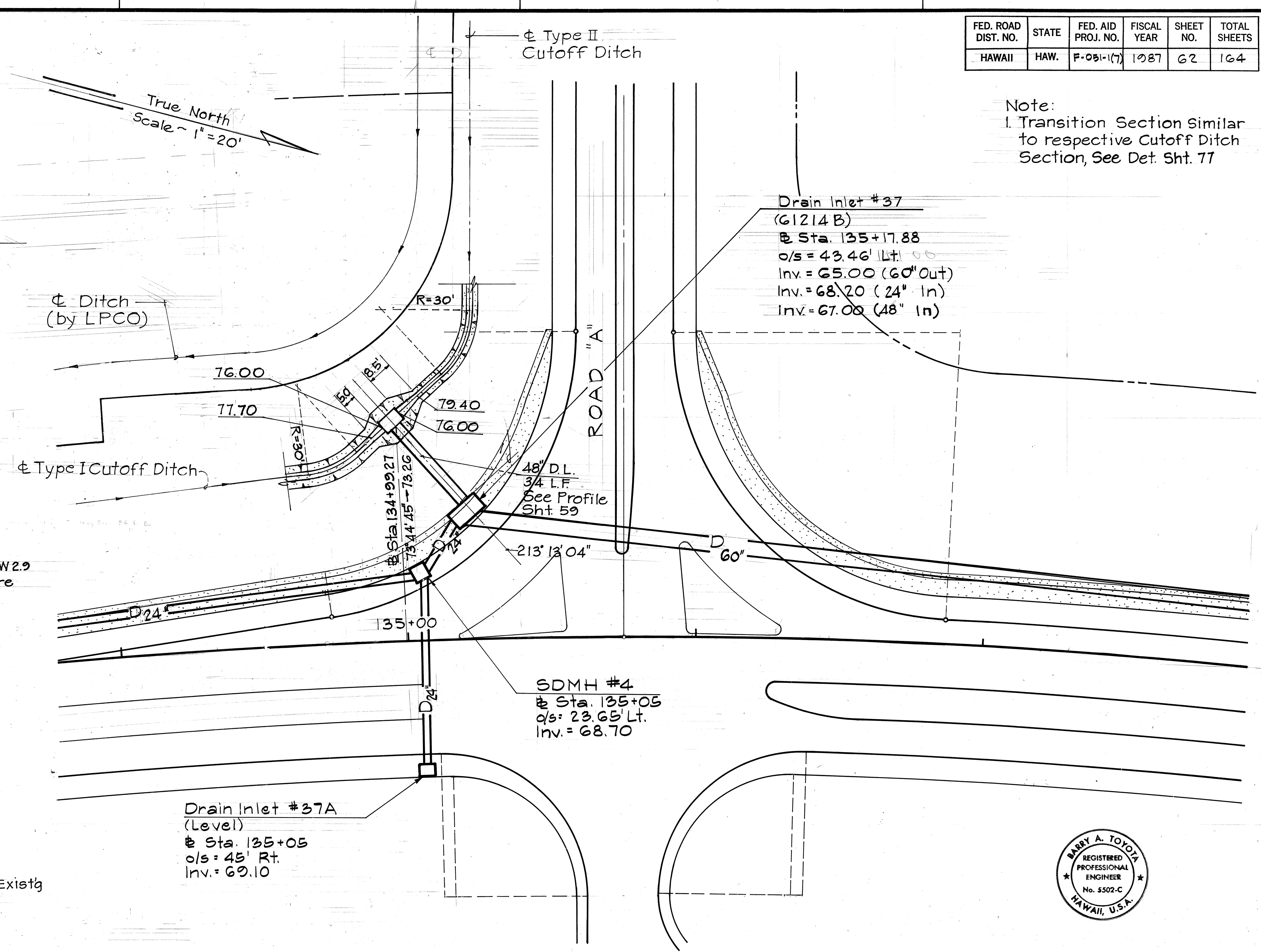
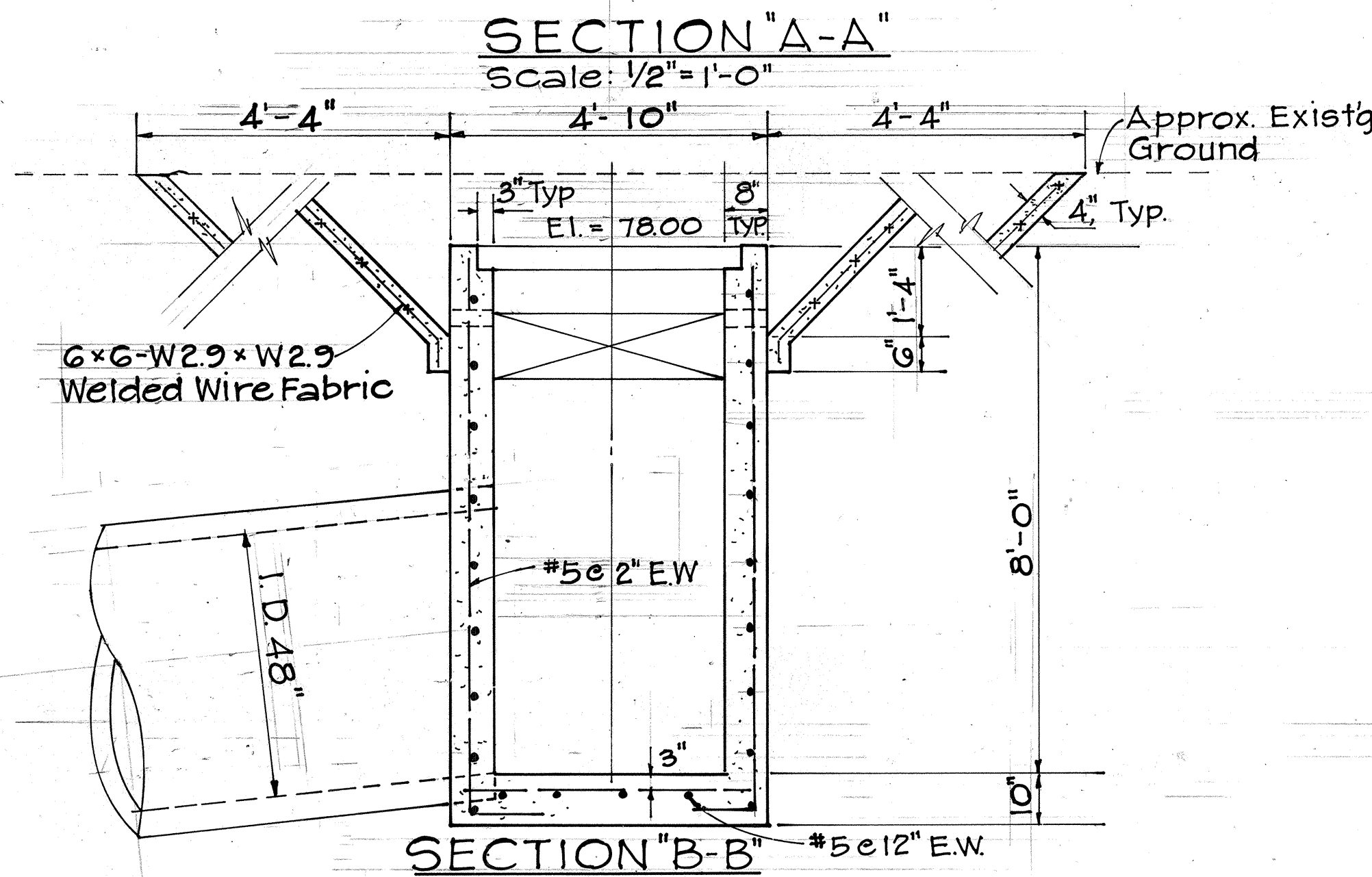
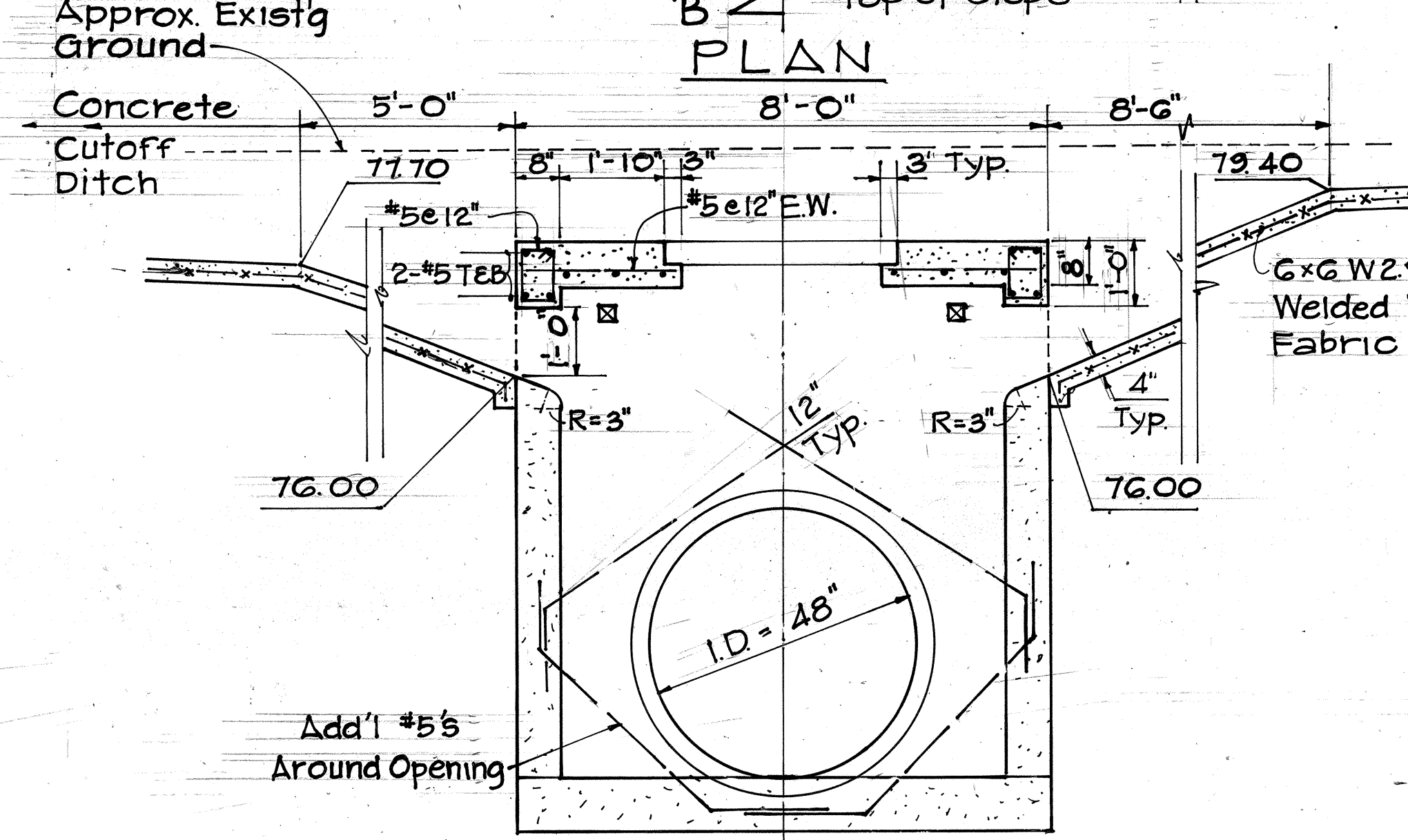
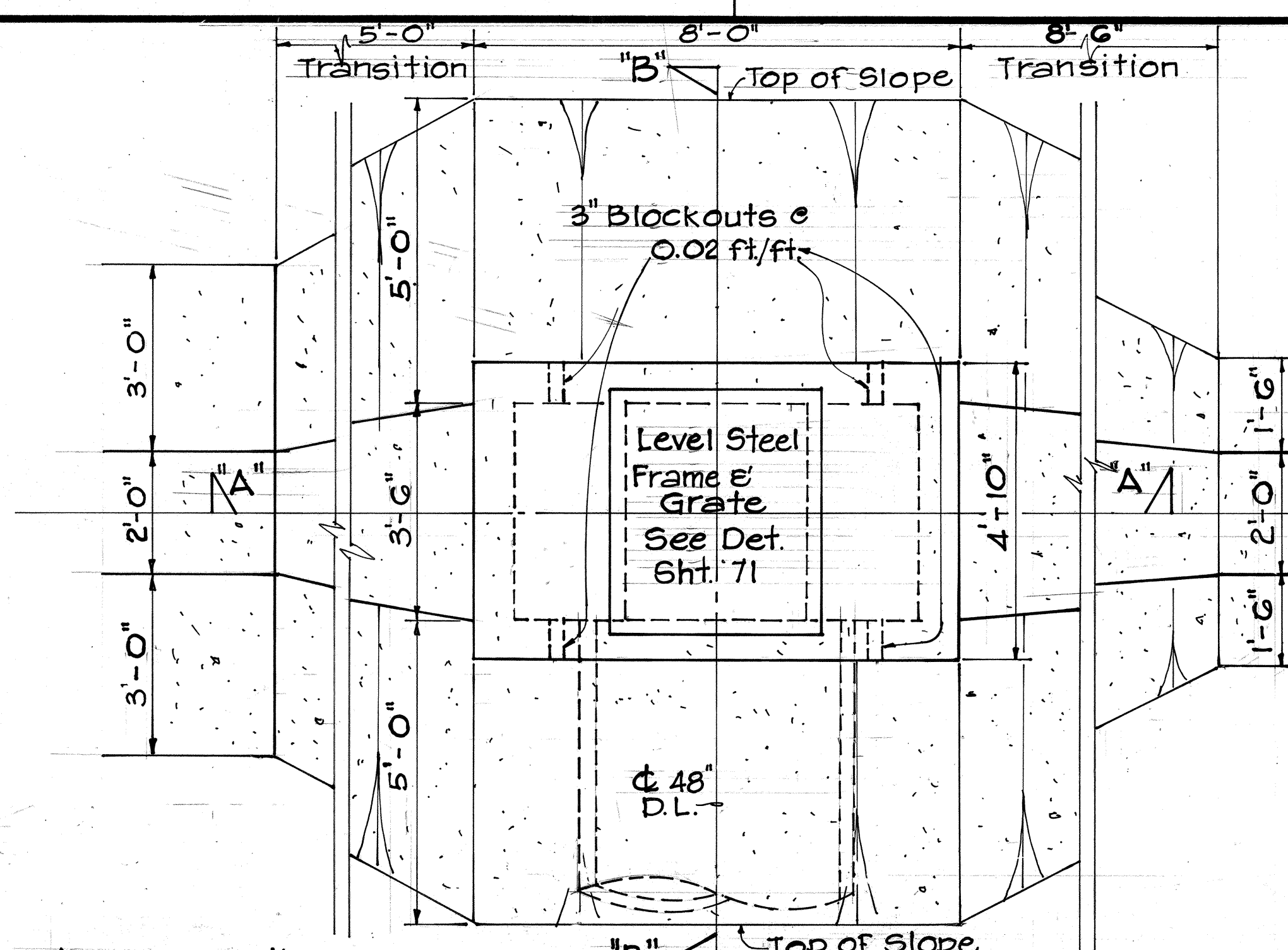
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DESILTING BASIN #2
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug. 1986

SHEET NO. 3 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	62	164

Note:
1. Transition Section Similar to respective Cutoff Ditch Section, See Det. Sht. 77



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UNDER MY SUPERVISION
Barry A. Toyota
Signature 8/25/86

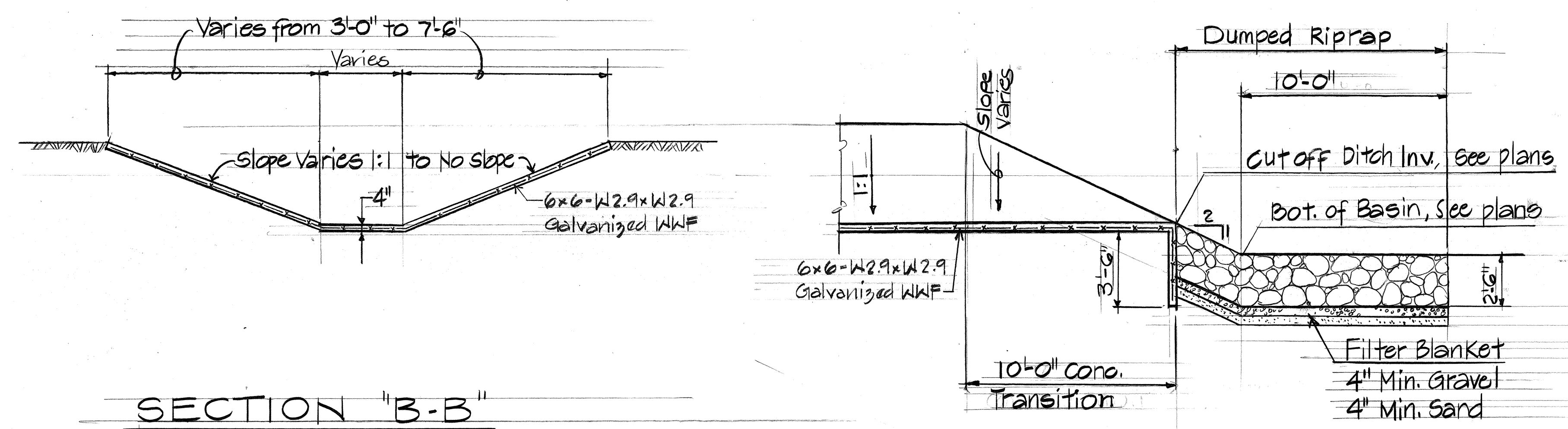
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

JUNCTION BOX DETAILS
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug. 1986

SHEET NO. 4 OF 10 SHEETS

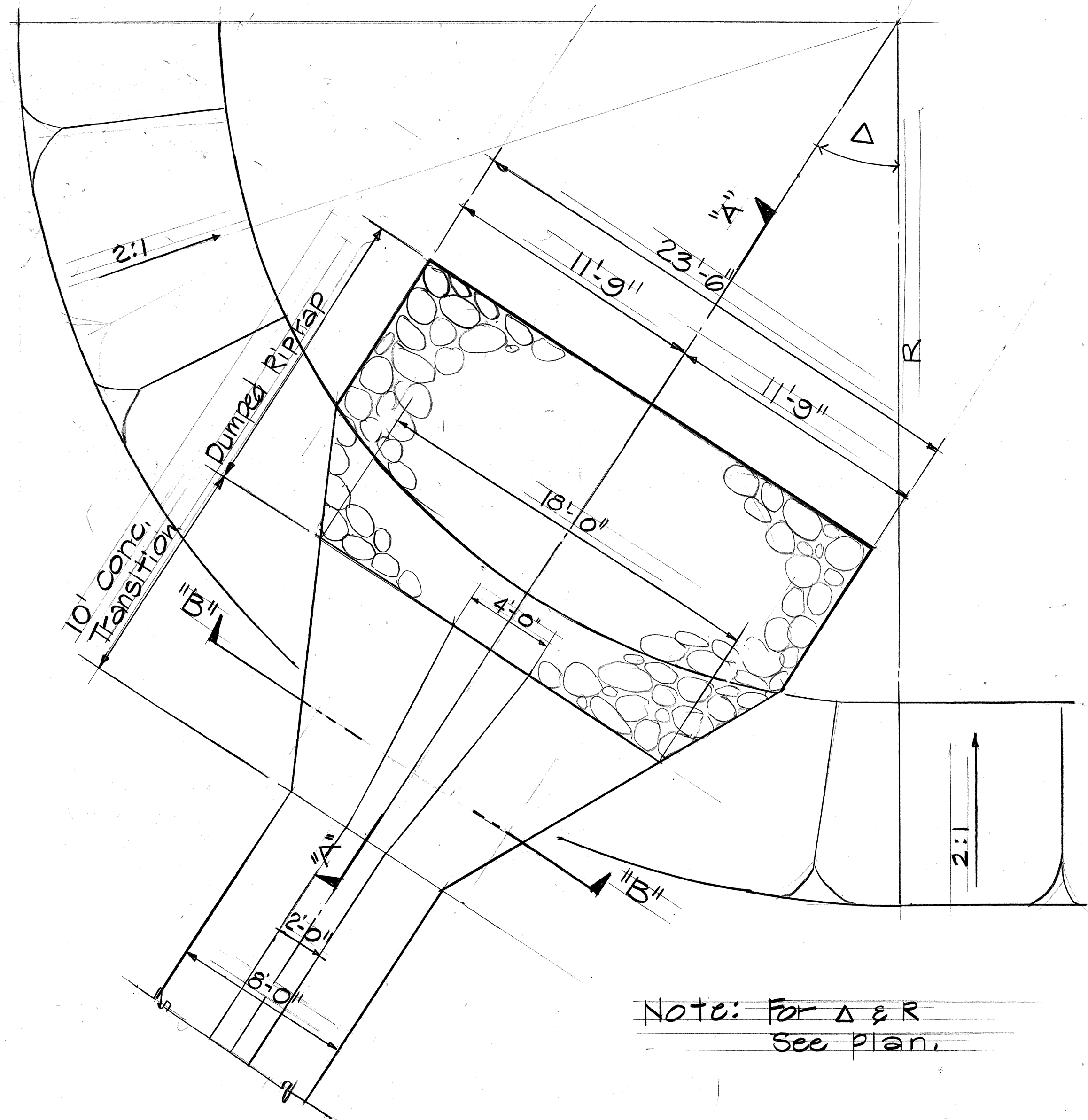
ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	63	164



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

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



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

CUT OFF DITCH TRANSITION INTO DESILTING BASIN DETAILS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

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Barry A. Toyota
1/26/87

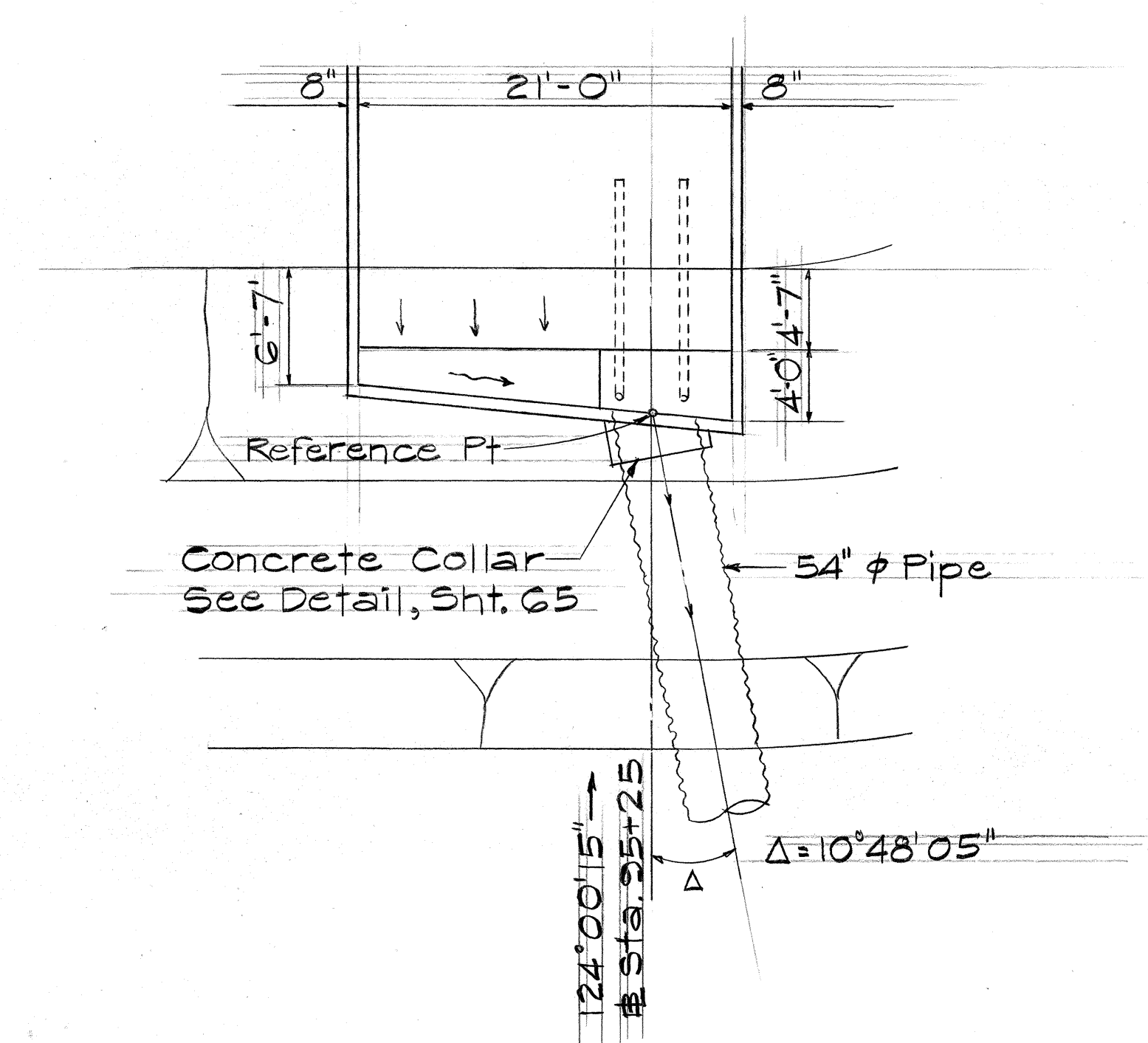
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CUT OFF DITCH TRANSITION INTO DESILTING BASIN DETAILS

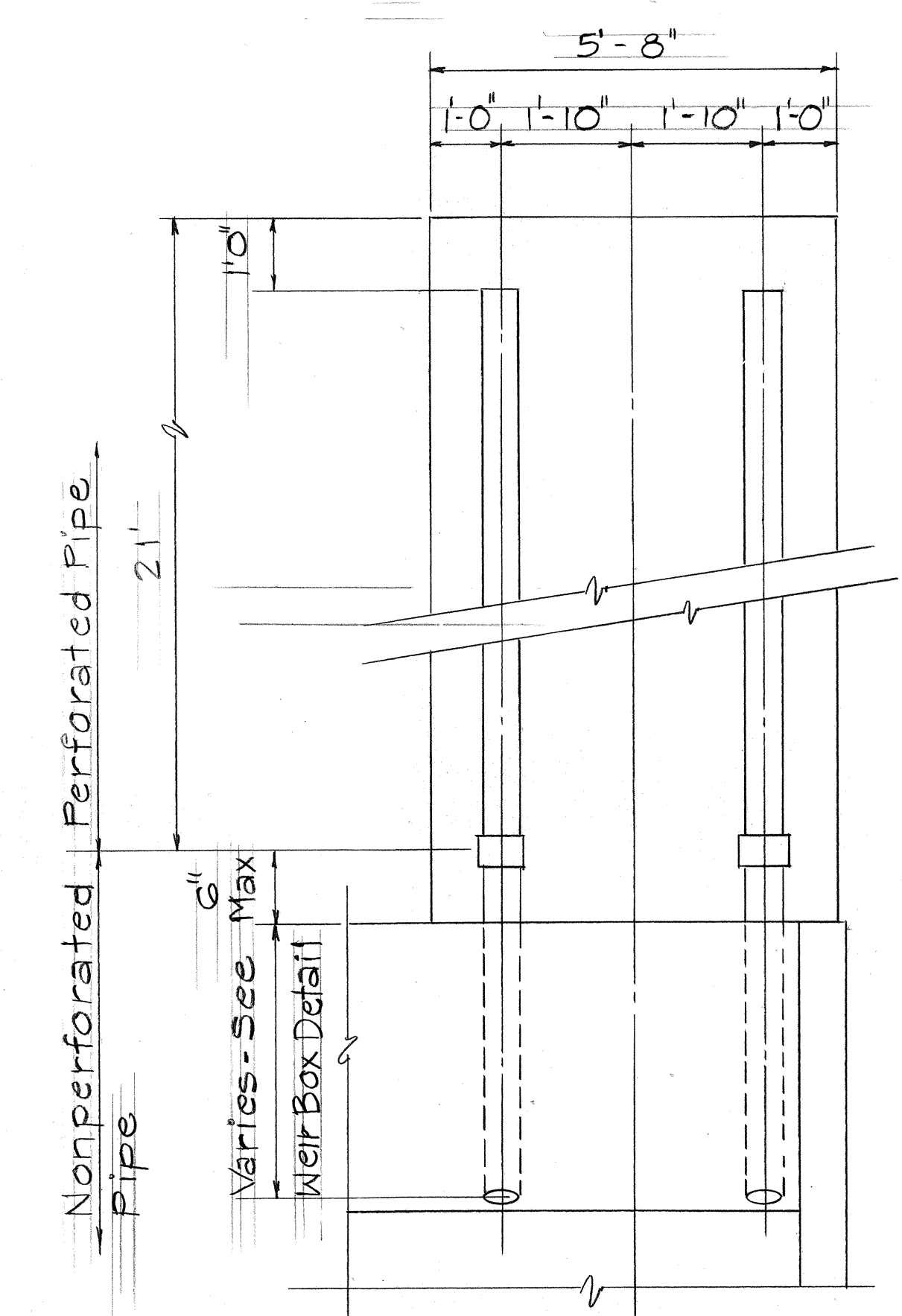
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF ROAD
(Ahukini Road To Kauai Hardwoods)
Federal Aid Project No. F-051-1(7)
Scale: As Noted Date: Jan. 1987

SHEET NO. 5 OF 10 SHEETS

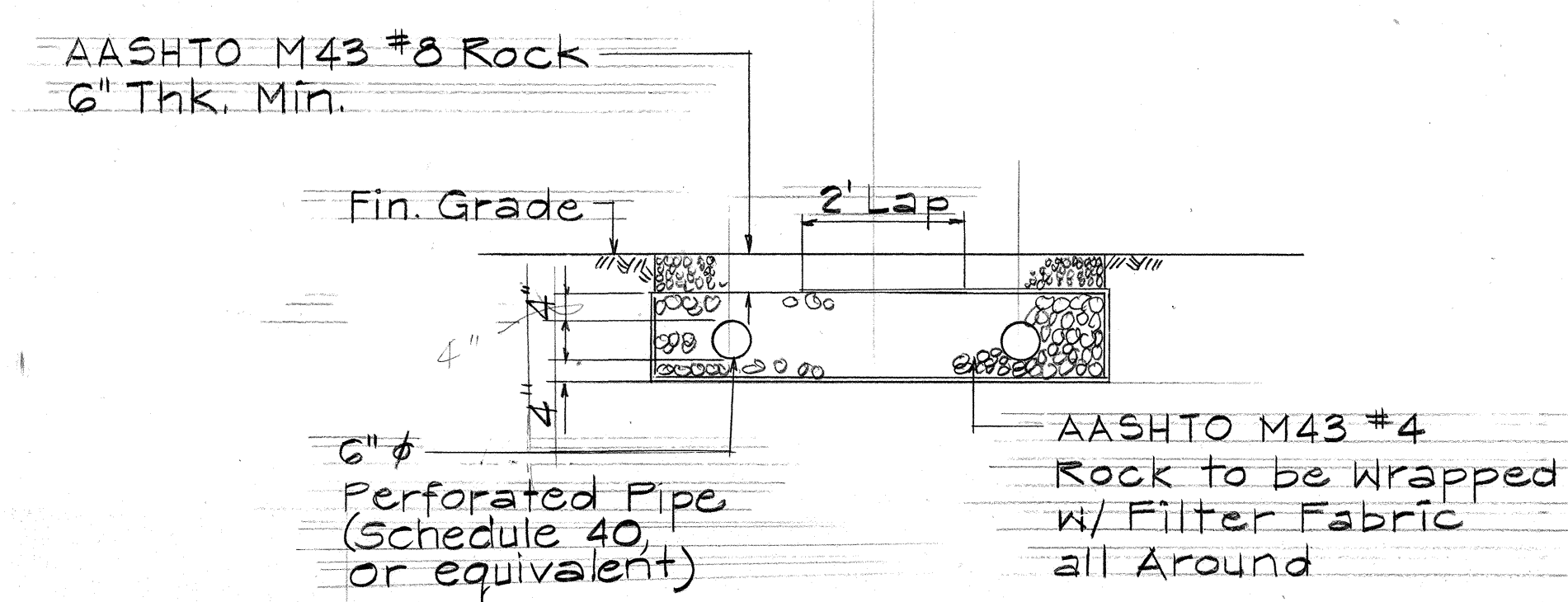
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	64	164



WEIR BOX #1 - PLAN
Scale: 1/8" = 1'-0"

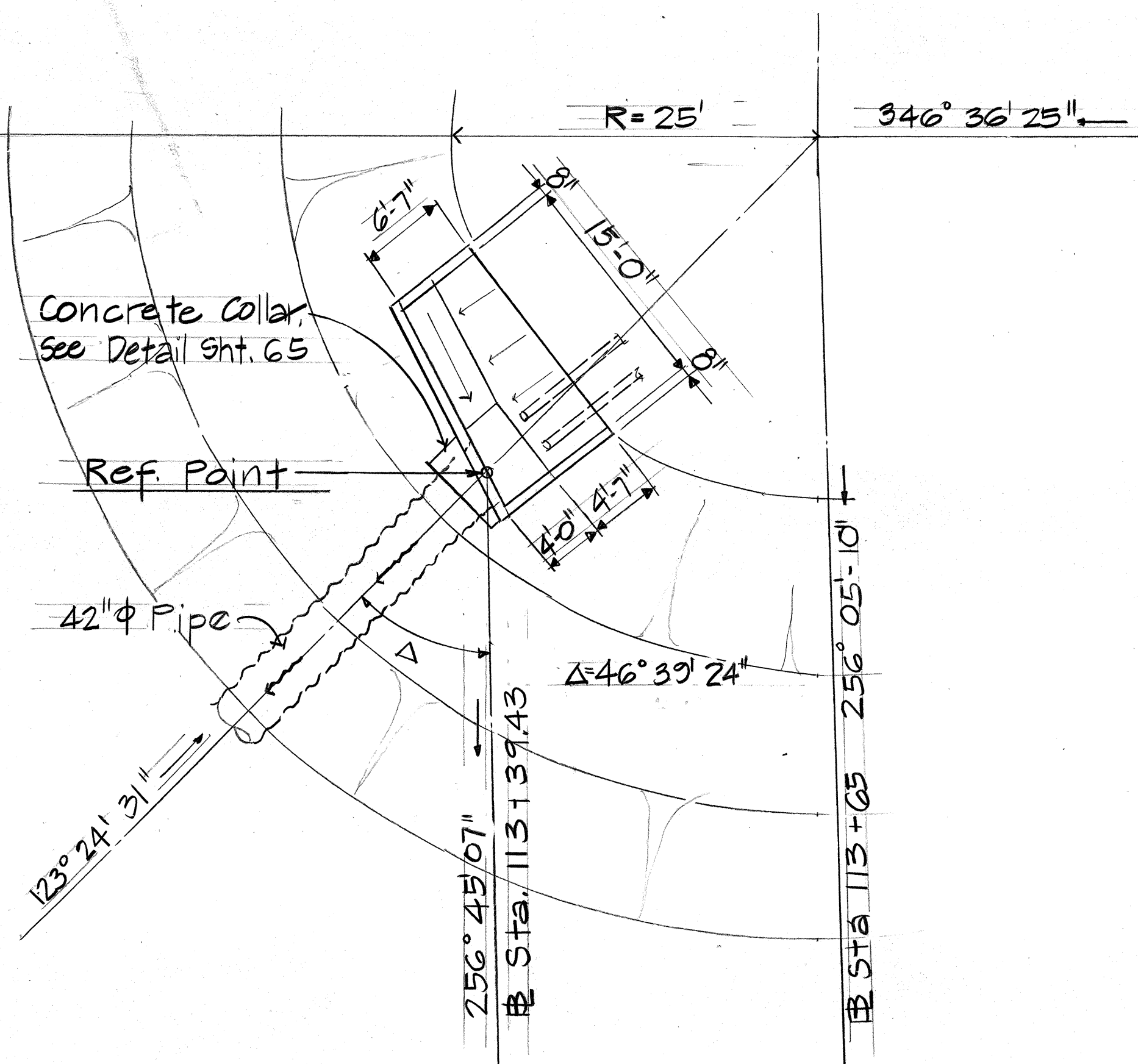


PLAN



SECTION

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



WEIR BOX #2 - PLAN
Scale: 1/8" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	



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Barry A. Toyota 8/24/86
Signature

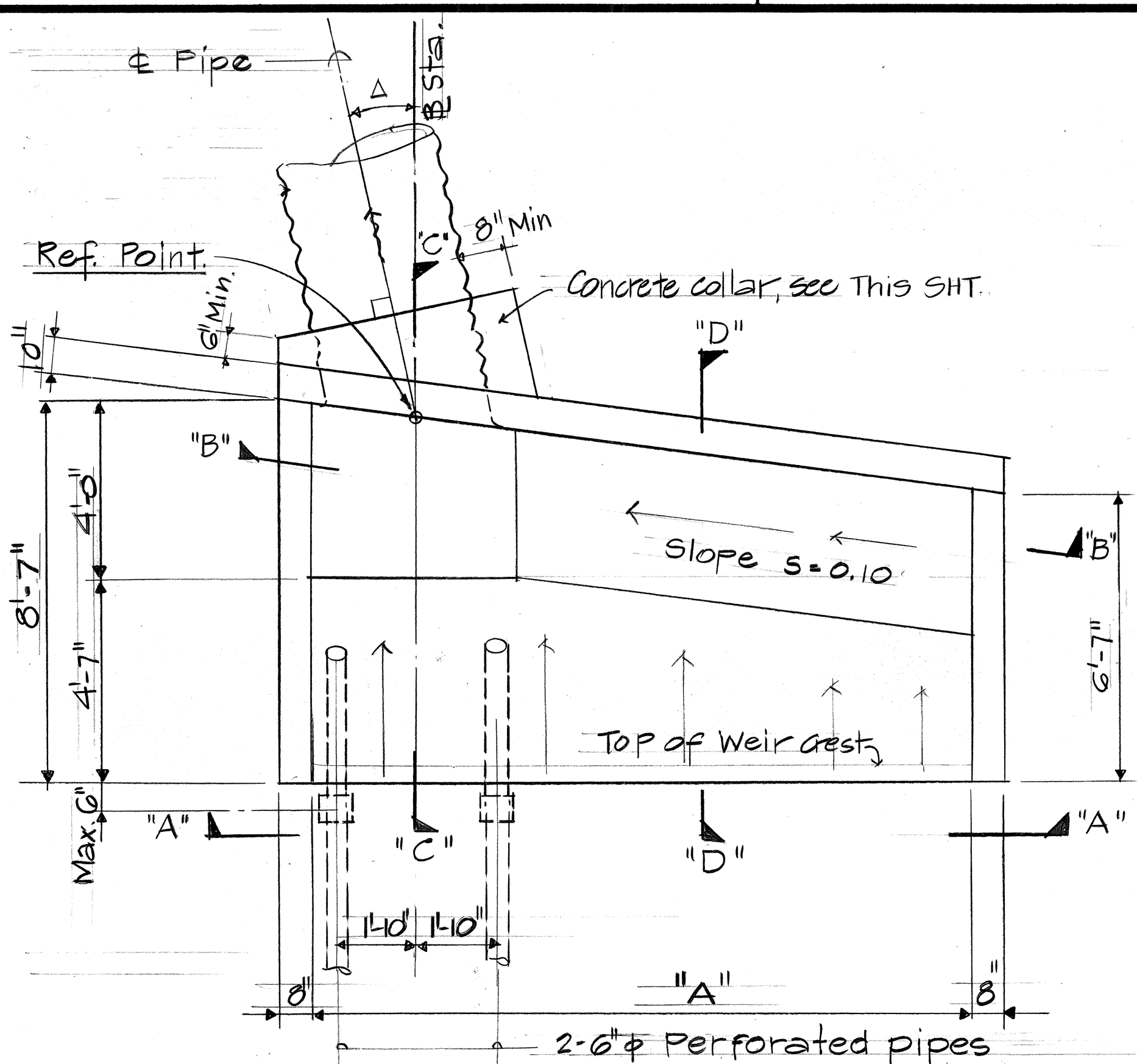
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WEIR BOXES PLAN

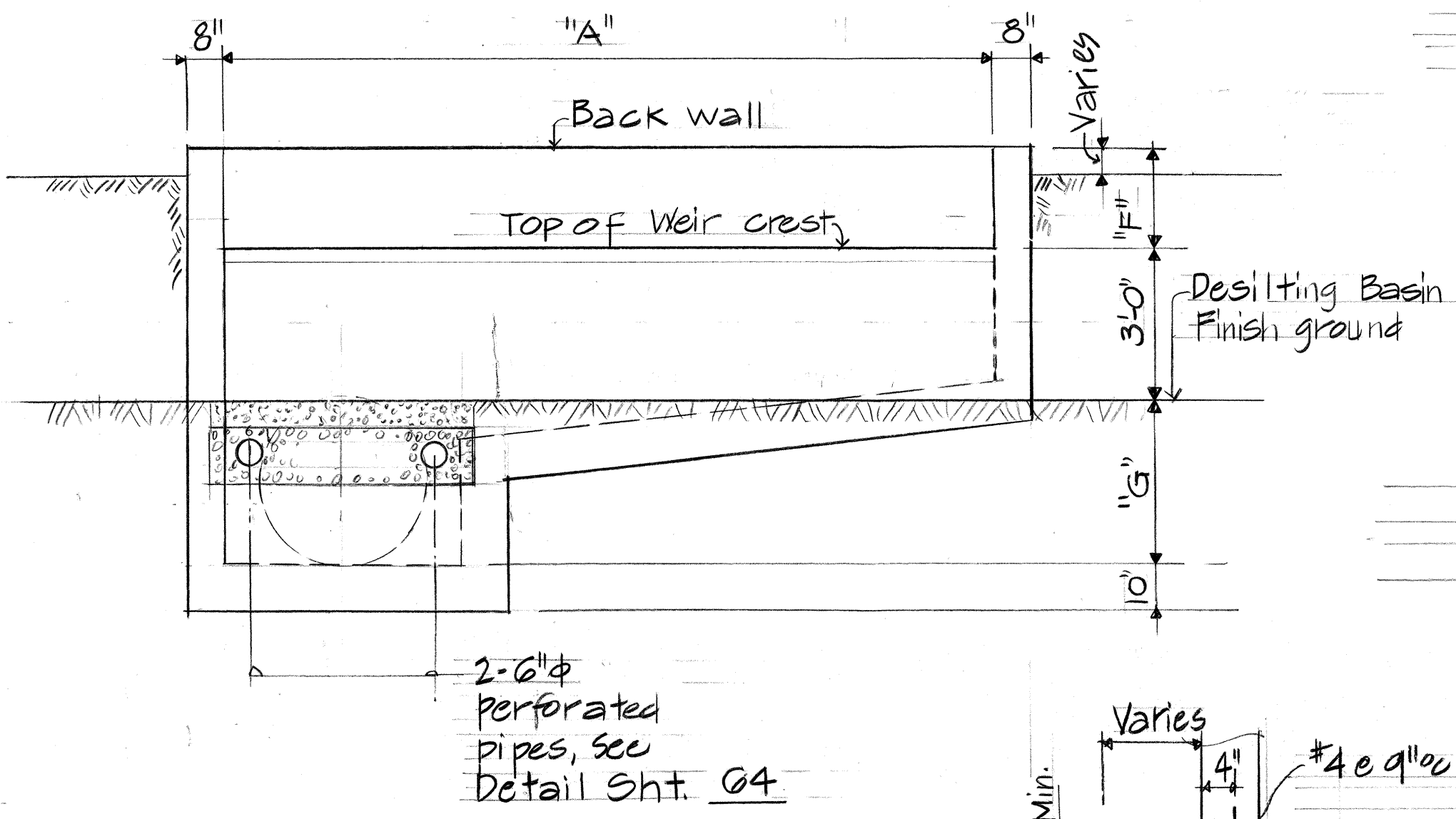
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As Shown Date: Aug., 1986

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	65	164

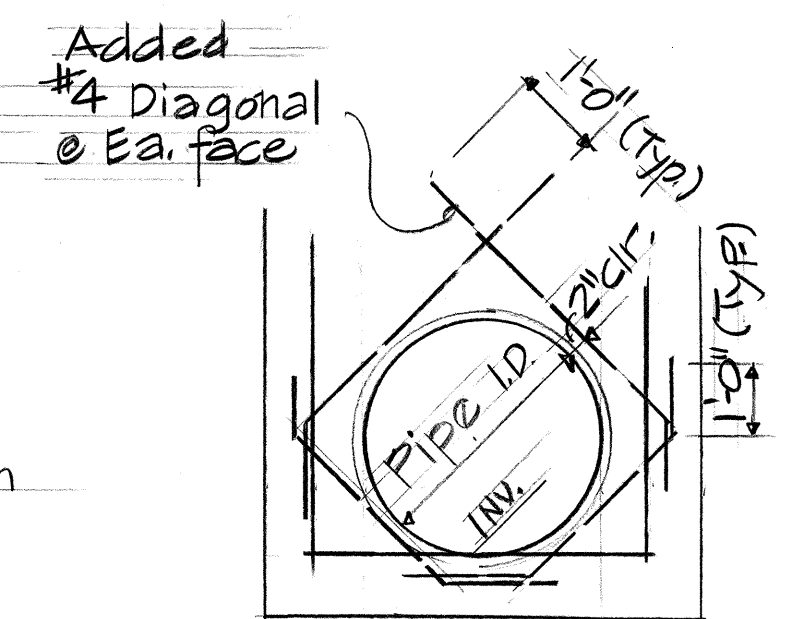
WEIR BOX SCHEDULE				
WEIR BOX	#1	#2		
STATION	95+25	113+39.39		
REF. SHT.				
PIPE DIA.	54" ϕ	42" ϕ		
A	10° 48' 05"	46° 30' 24"		
A	21'-0"	15'-0"		
B	7'-4"	5'-6"		
C	2'-0"	2'-0"		
D	9'-0"	8'-6"		
F	2'-0"	2'-0"		
G	4'-0"	3'-6"		



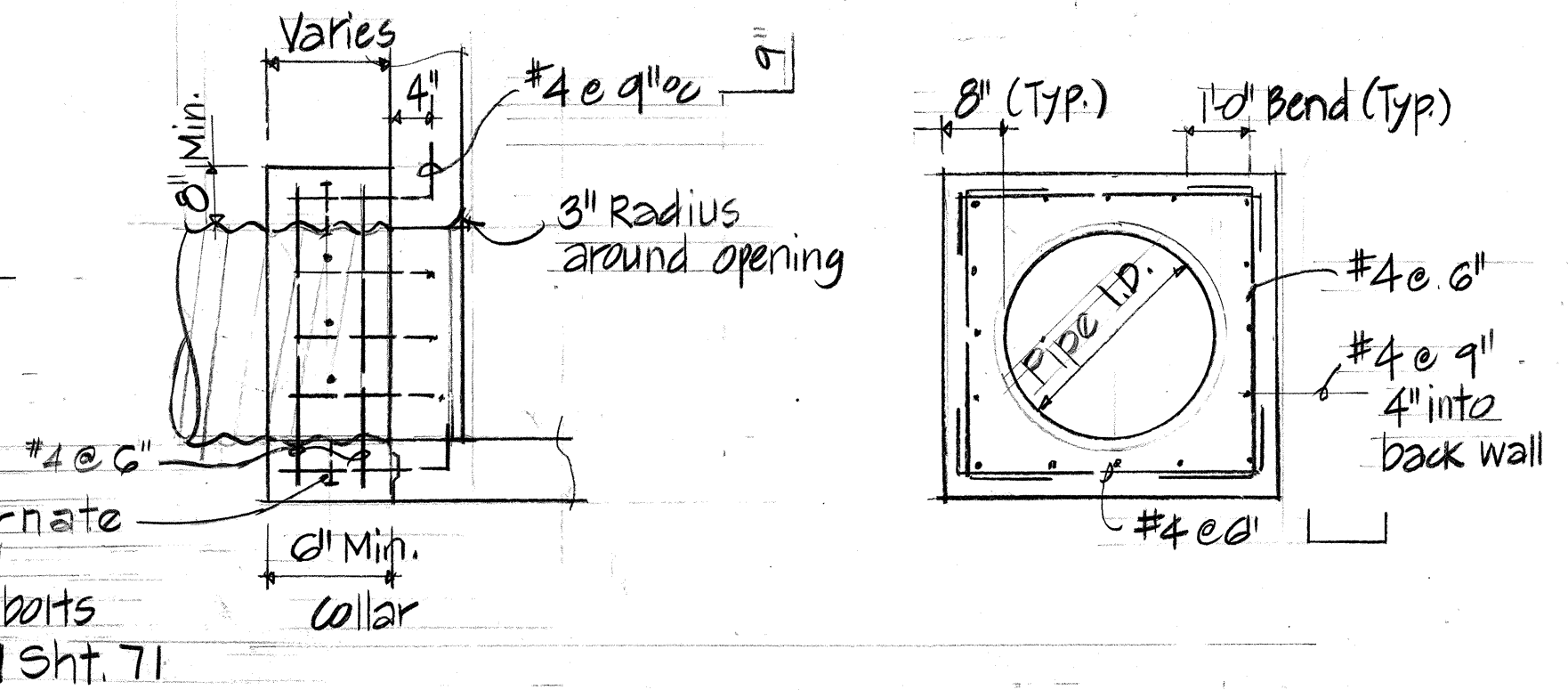
TYPICAL WEIR BOX - PLAN
Scale: $\frac{3}{8}" = 1'-0"$



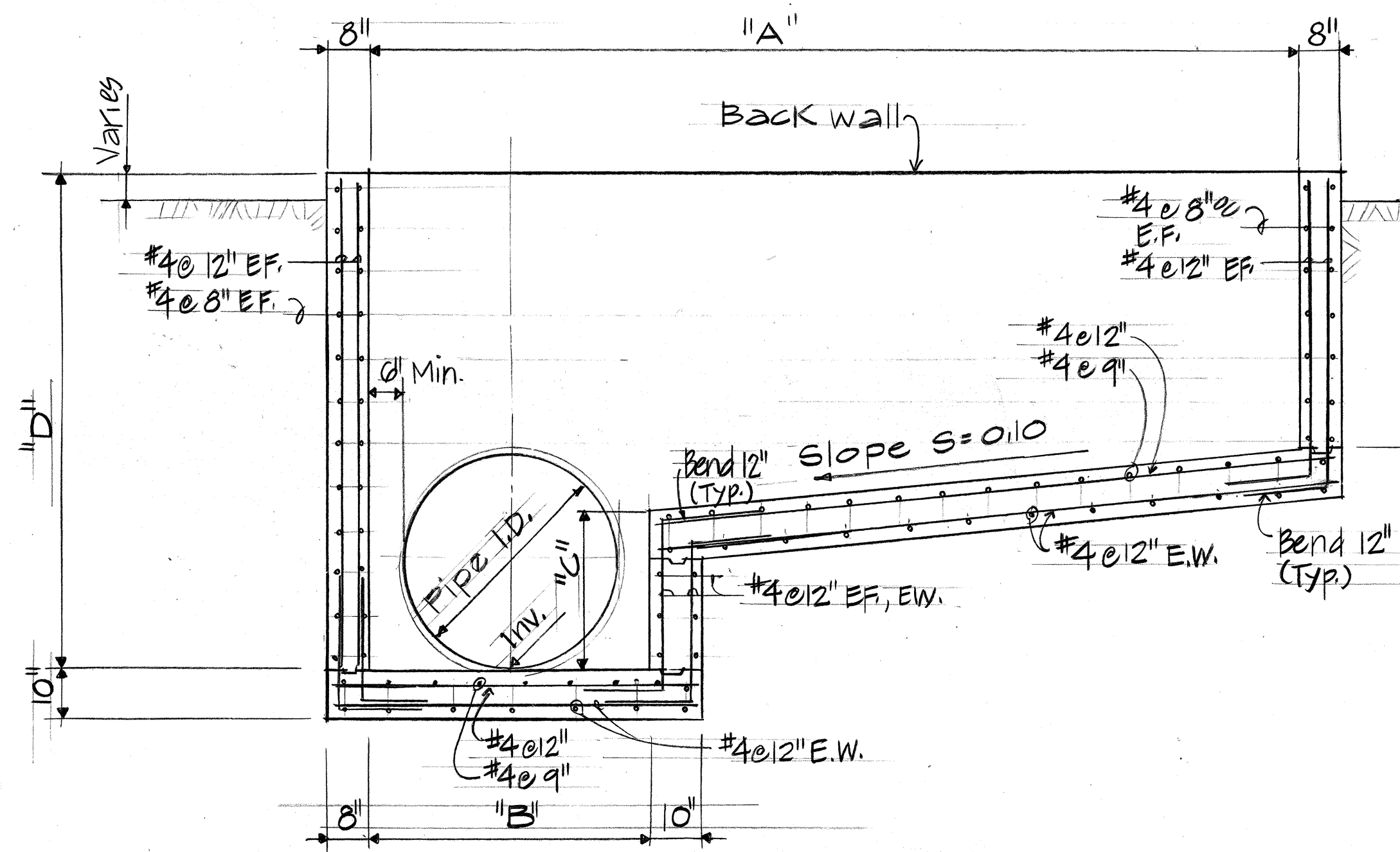
ELEVATION "A-A"
Scale: $\frac{3}{8}" = 1'-0"$



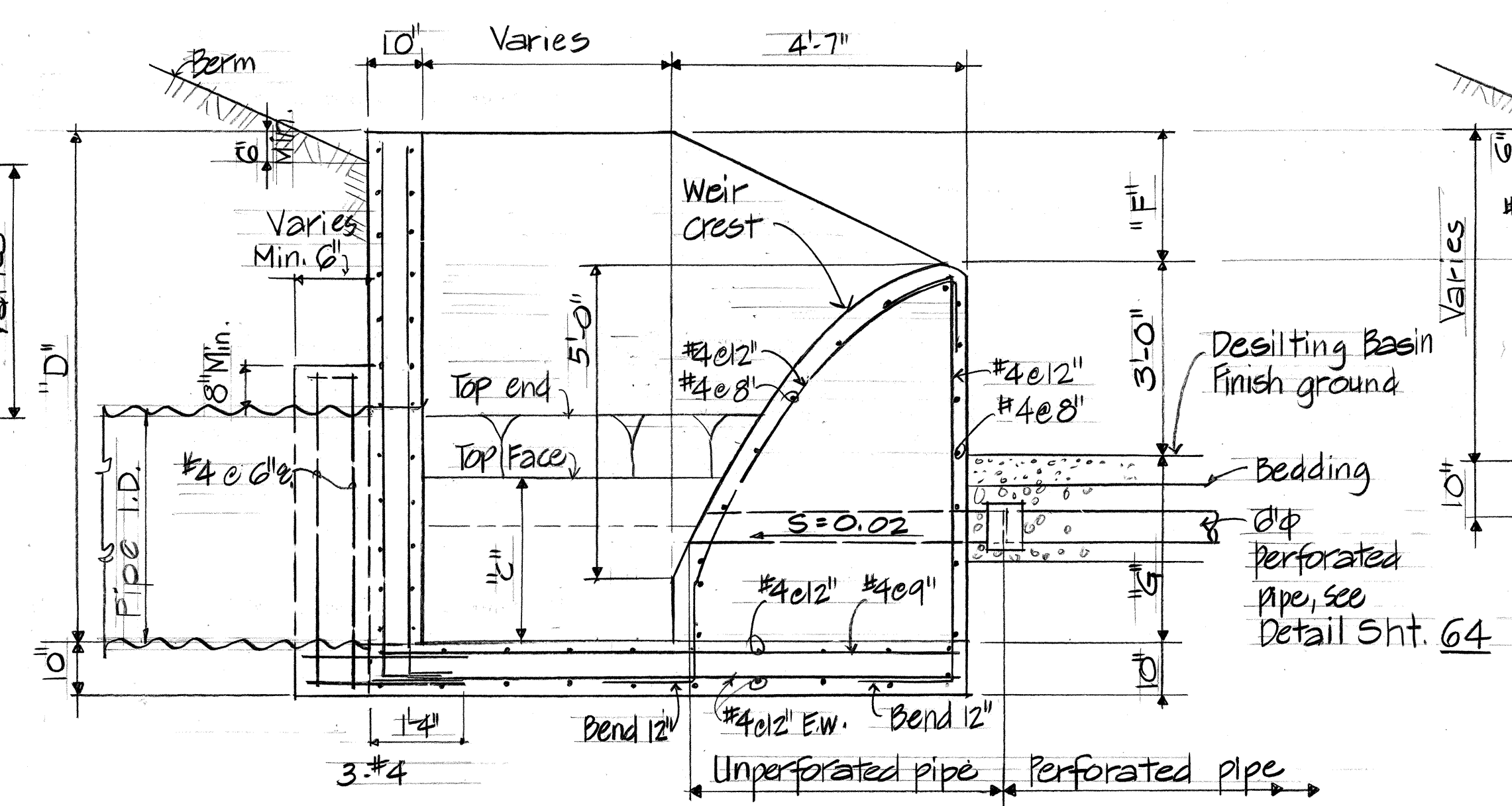
ADDED DIAGONAL REINF. AT PIPE ENTRY
TYPICAL DETAIL
Not to scale.



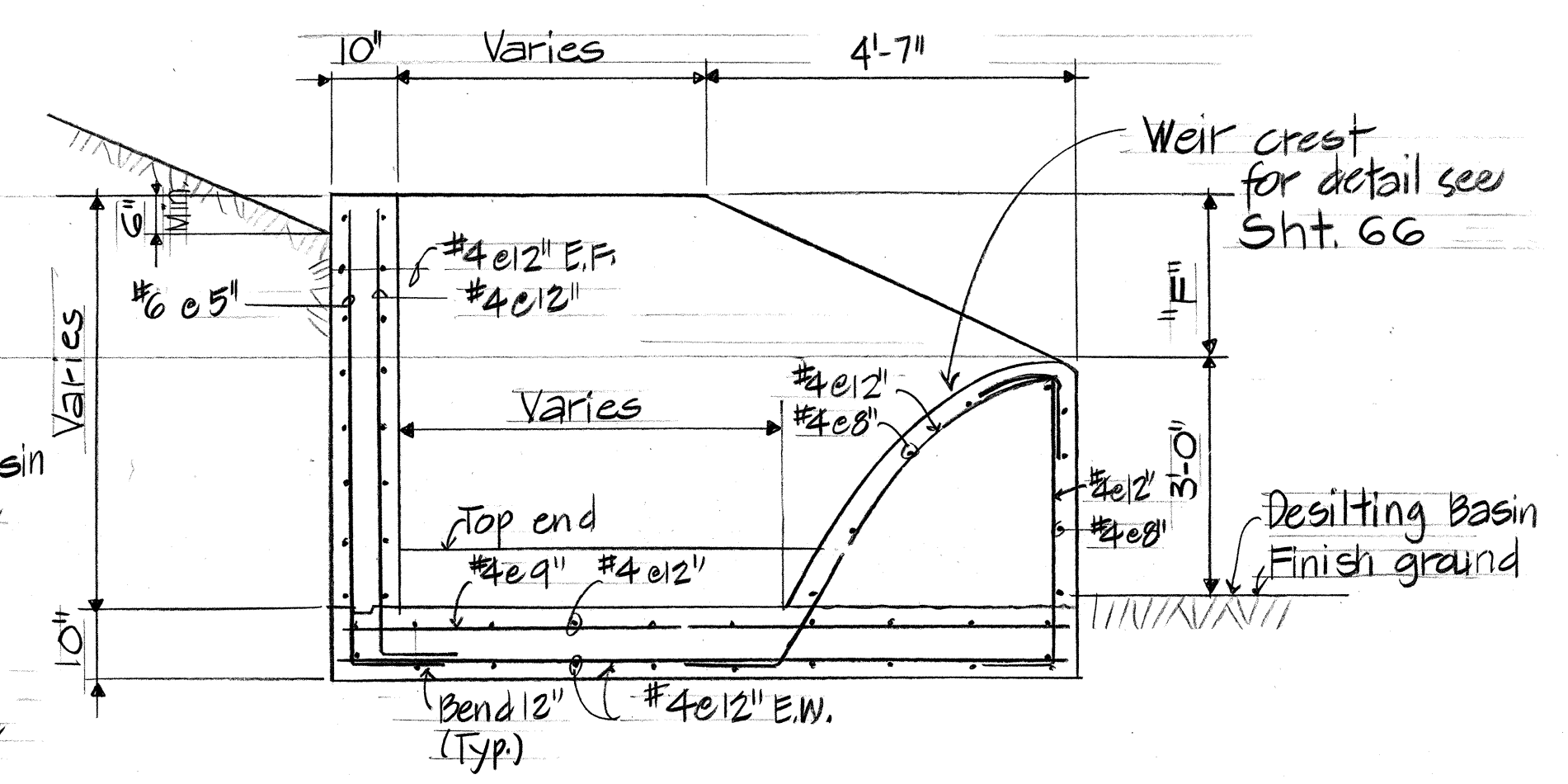
TYPICAL CONCRETE COLLAR DETAIL
Not to scale.



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

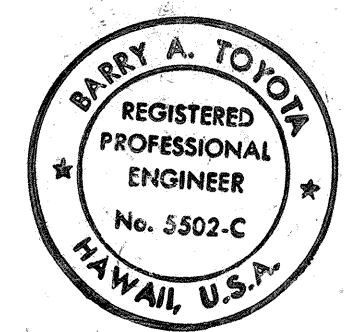


SECTION "C-C"
Scale: $\frac{1}{2}" = 1'-0"$



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

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	



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Barry A. Toyota 8/25/86
Signature Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WEIR BOX DETAILS
HANAMAULU ROAD & APPROACHES
HANAMAULU-AUKINI CUTOFF RD.
(Aukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug, 1986

SHEET NO. 7 OF 10 SHEETS

2'-1"

1'-3"

10 1/2"

4 1/2"

2 3/4"

1/4"

2 3/4"

4"

1/2"

10 1/2"

3/4"

1'-1 1/4"

1'-10 1/4"

1'-3"

R=4"

R=10 1/2"

R=1'-3"

R=2'-1 1/2"

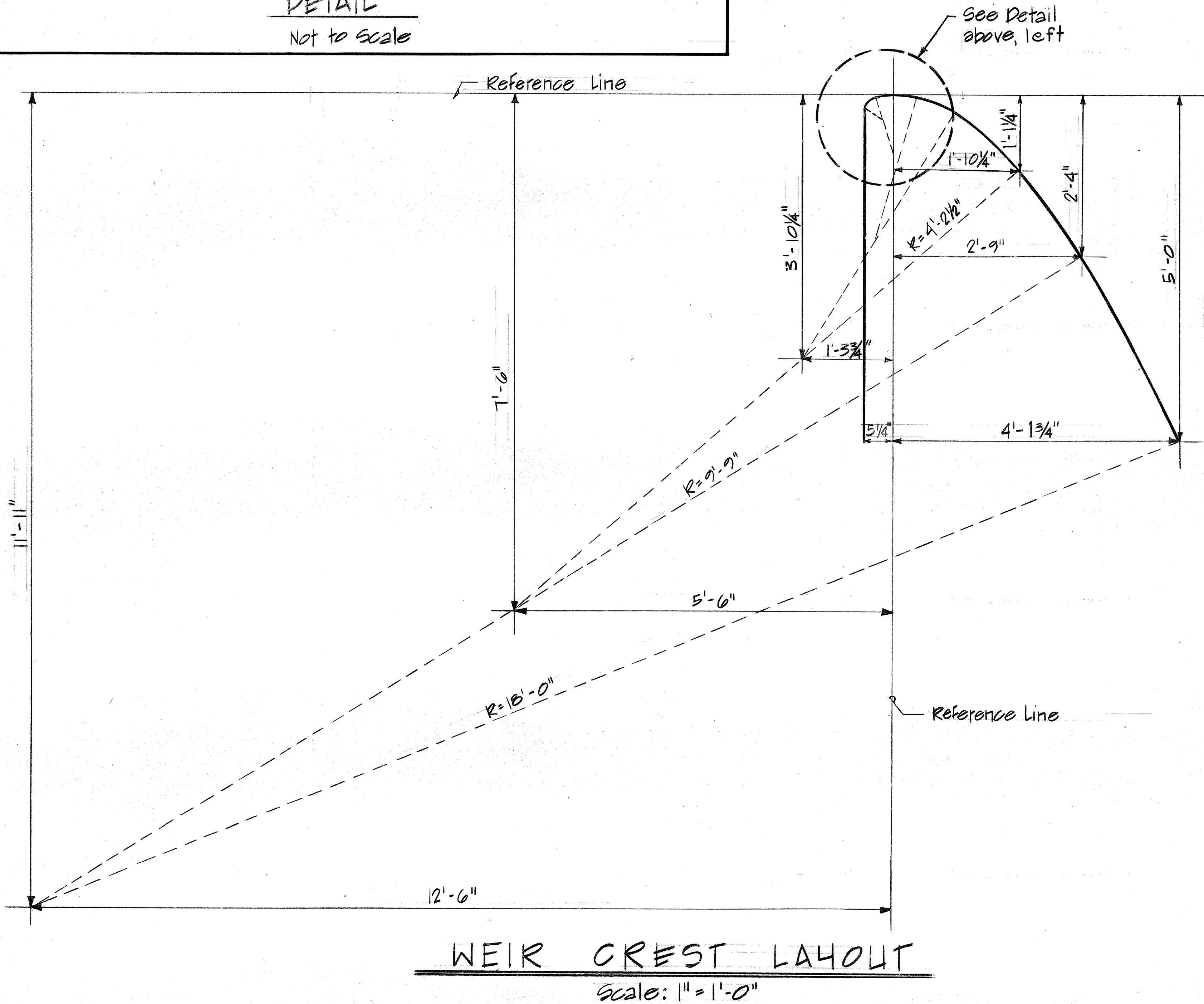
R=4'-2 1/2"

Reference Line

Reference Line

DETAIL

Not to Scale


$$d = 12''$$

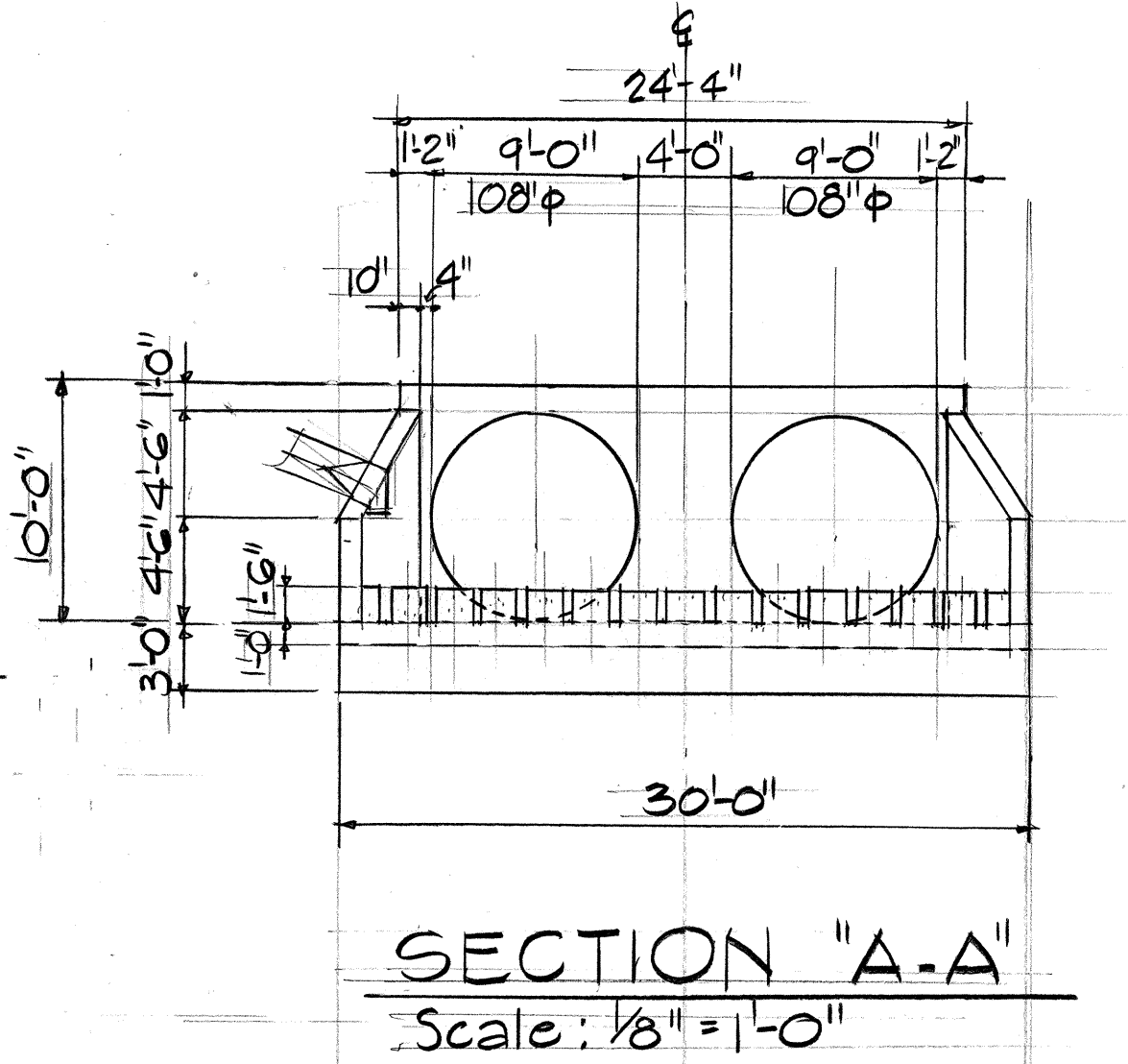
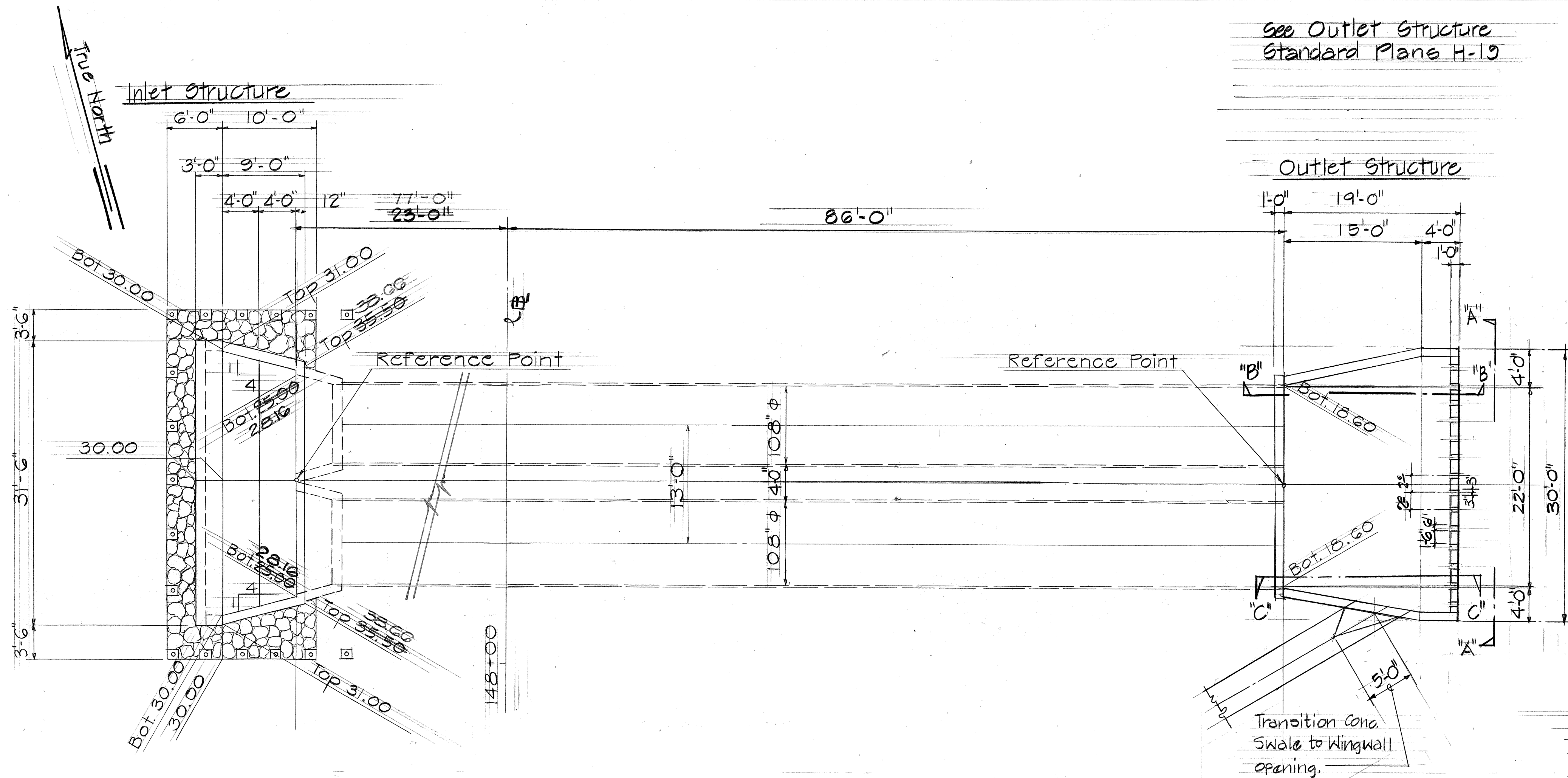
¢ Future Ditch

THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION.
Penny A. Jorgensen 8/25/18
Signature

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
WEIR CREST LAYOUT
& DRAINAGE SECTIONS
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD
(Ahukini Road To Kaula Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986

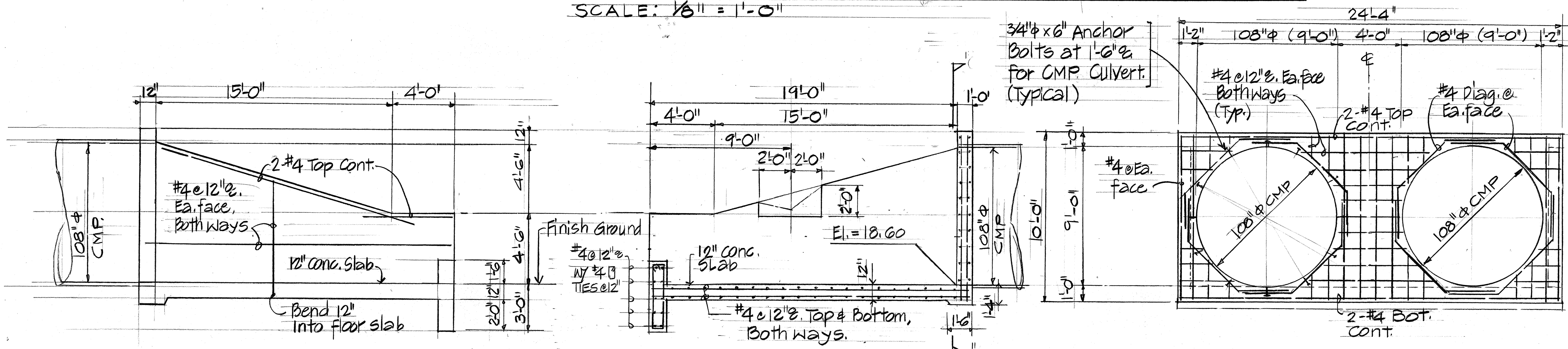
SHEET No. 8 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	67	164



INLET AND OUTLET STRUCTURE PLAN
 SCALE: 1/8" = 1'-0"

Notes: 1. For balance of details see Standard Plans H-19.



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

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

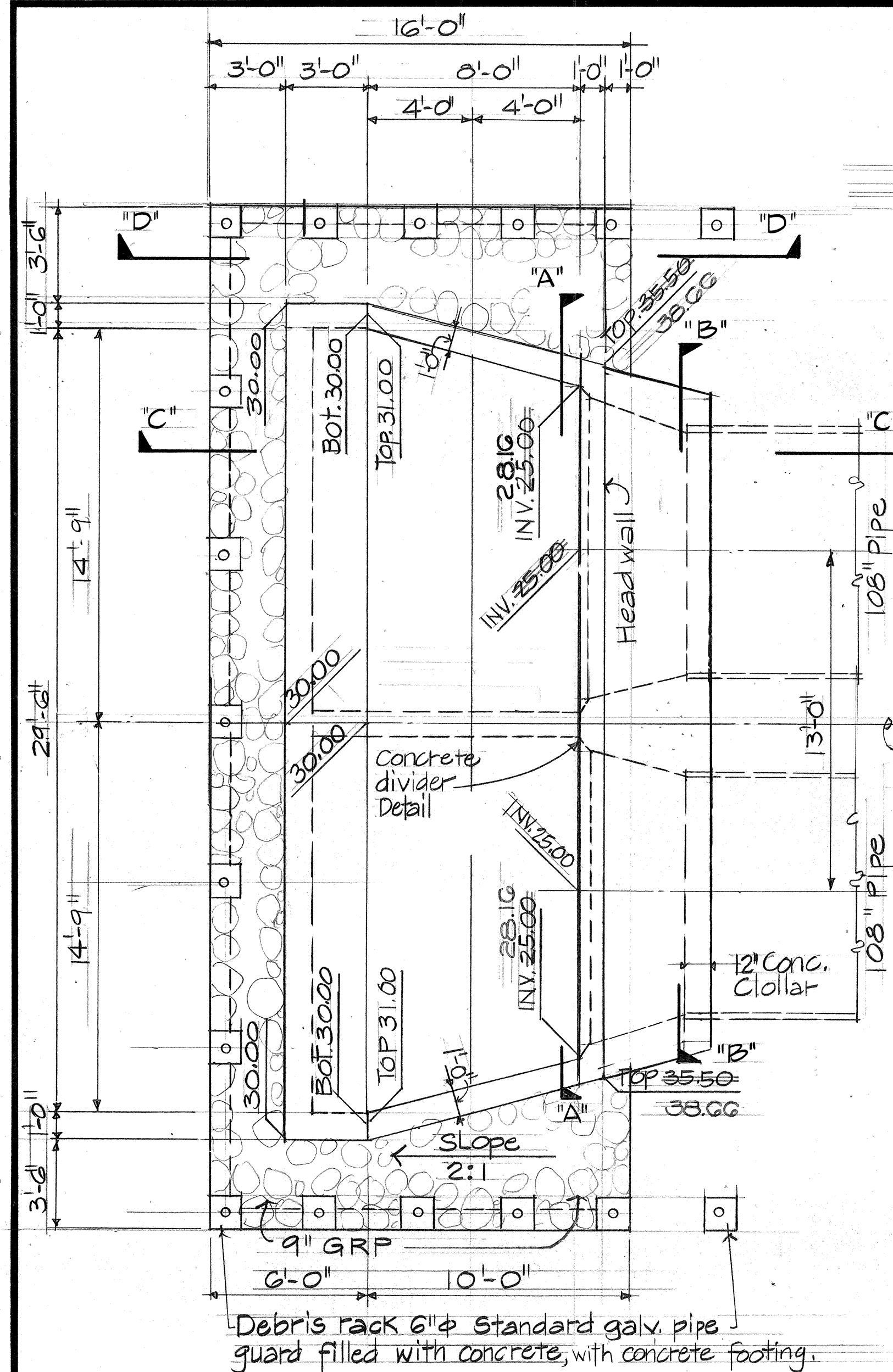
SECTION "D-D"
 Scale: 1/4" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
No.	

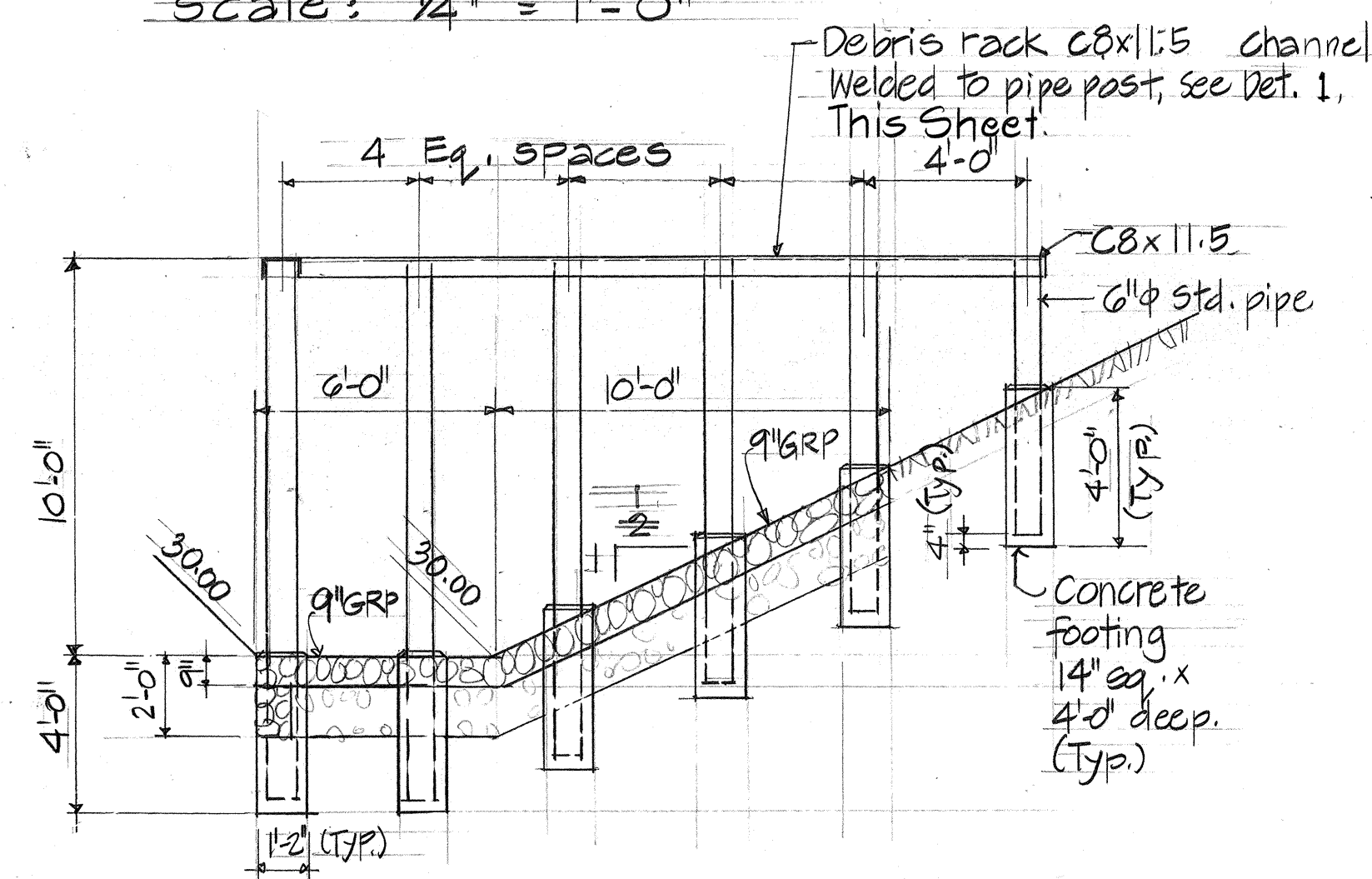
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Barry A. Toyota
 Signed 1/12/87

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
INLET AND OUTLET STRUCTURE
PLAN @ Sta. 148+20
 HANAMAULU ROAD & APPROACHES
 HANAMAULU-AHUKINI CUTOFF RD.
 (Ahukini Road To Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: As shown Date: Aug., 1986

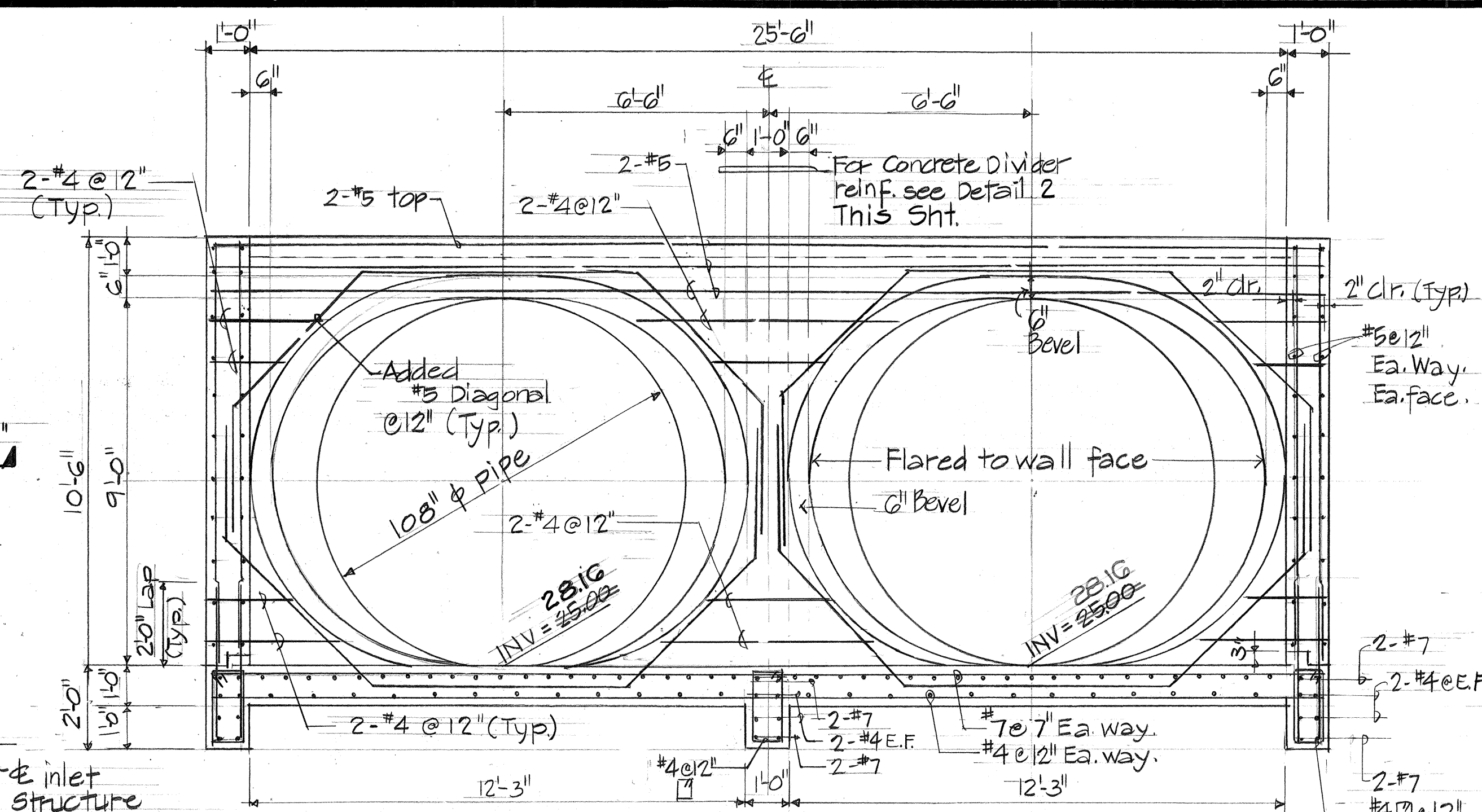
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1-1(7)	1987	68	164



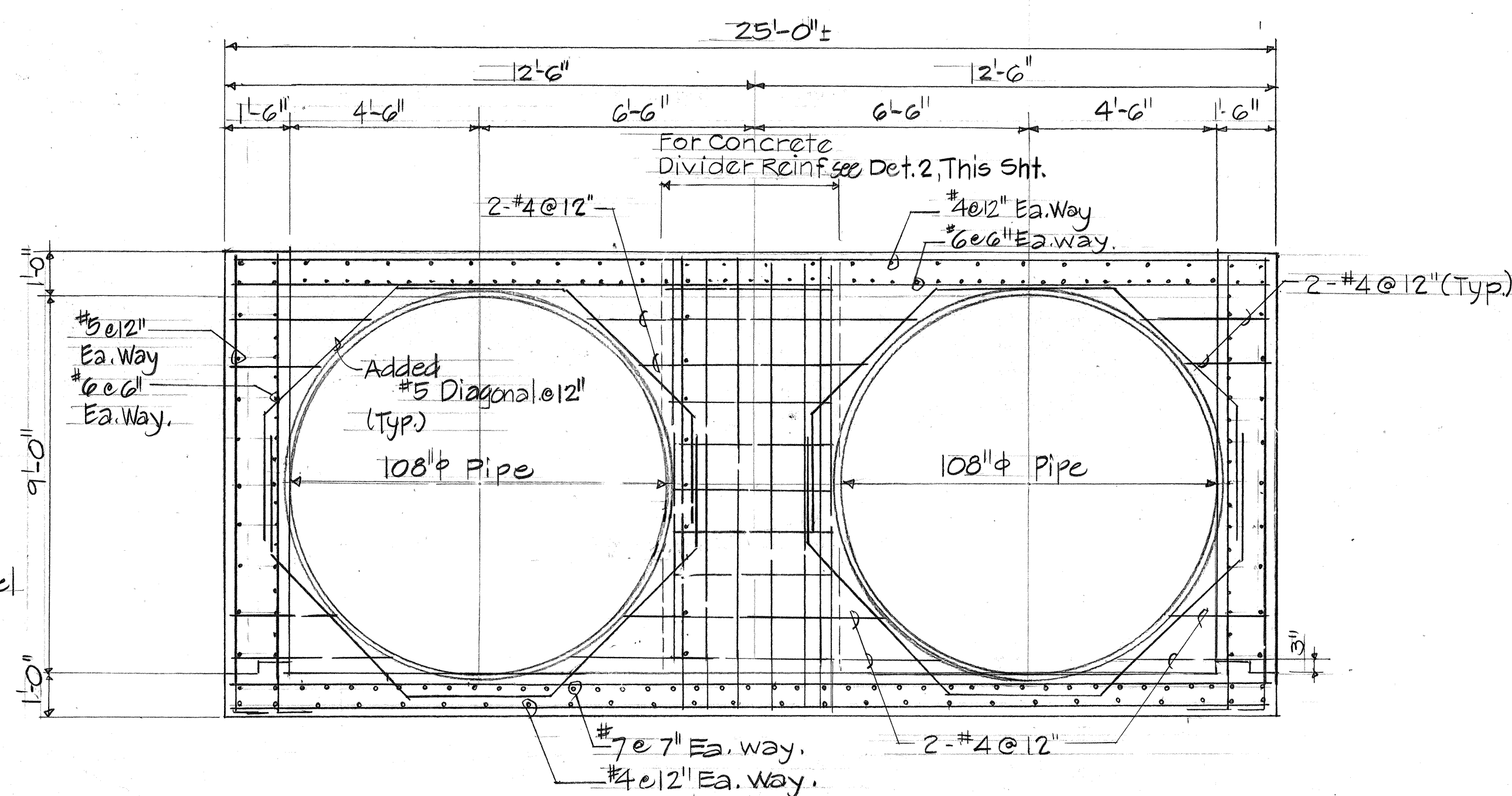
PLAN
Scale: $\frac{1}{4}" = 1'-0"$



SECTION "D-D"
Scale: $\frac{1}{4}'' = 1'-0''$

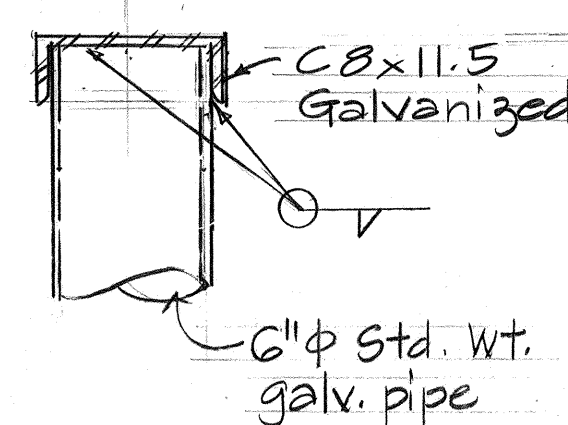


SECTION "A-A"
Scale: $\frac{3}{8}'' = 1'-0''$



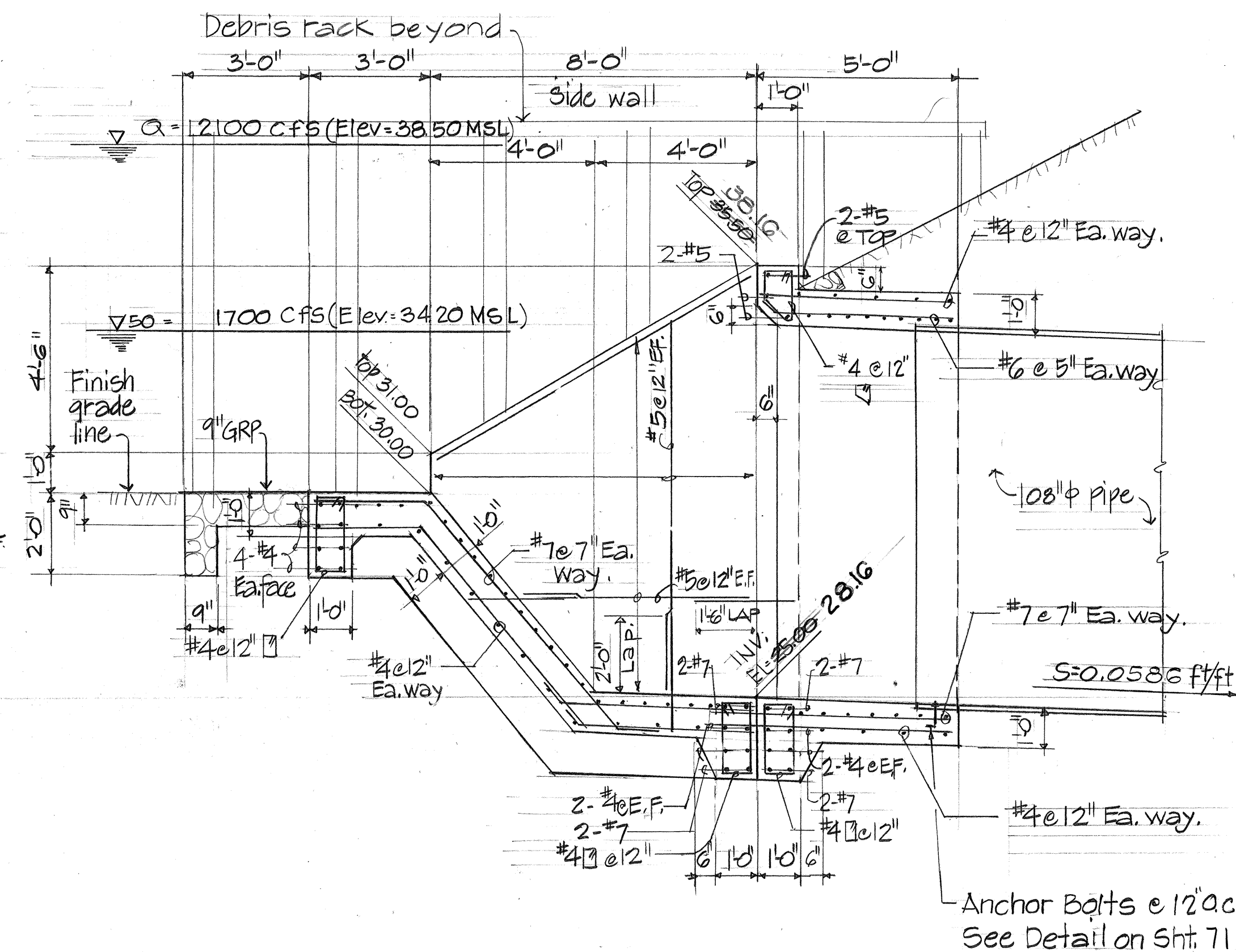
SECTION "B-B"

Scale: $\frac{3}{8}'' = 1'-0''$

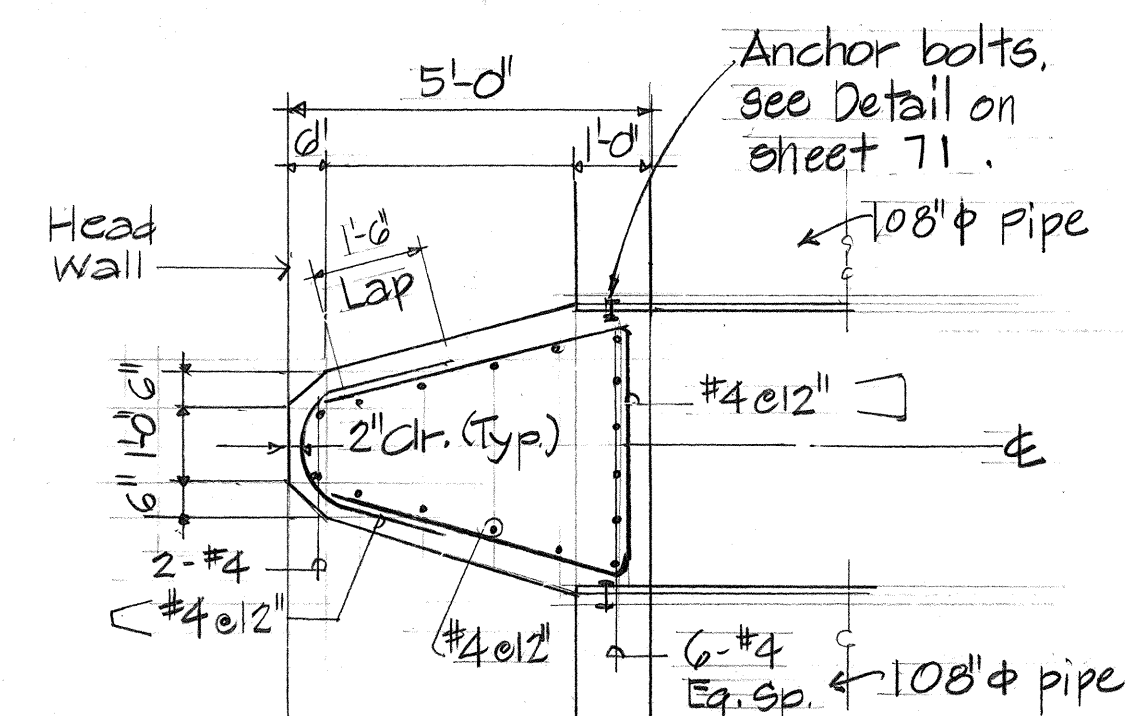


DETAIL 1
Scale: $1\frac{1}{2}'' = 1'-0''$

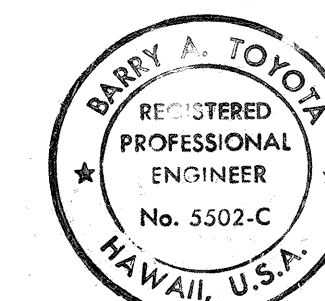
Note:
All Weld shall be Painted
with High Zinc Dust Content
Paint.



SECTION "C-C"
Scale: $\frac{3}{8}'' = 1'-0''$



CONCRETE DIVIDER DET. 2
Scale: $\frac{3}{8}'' = 1'-0''$



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UNDER MY SUPERVISION.
James A. Tugala 8/25/86

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

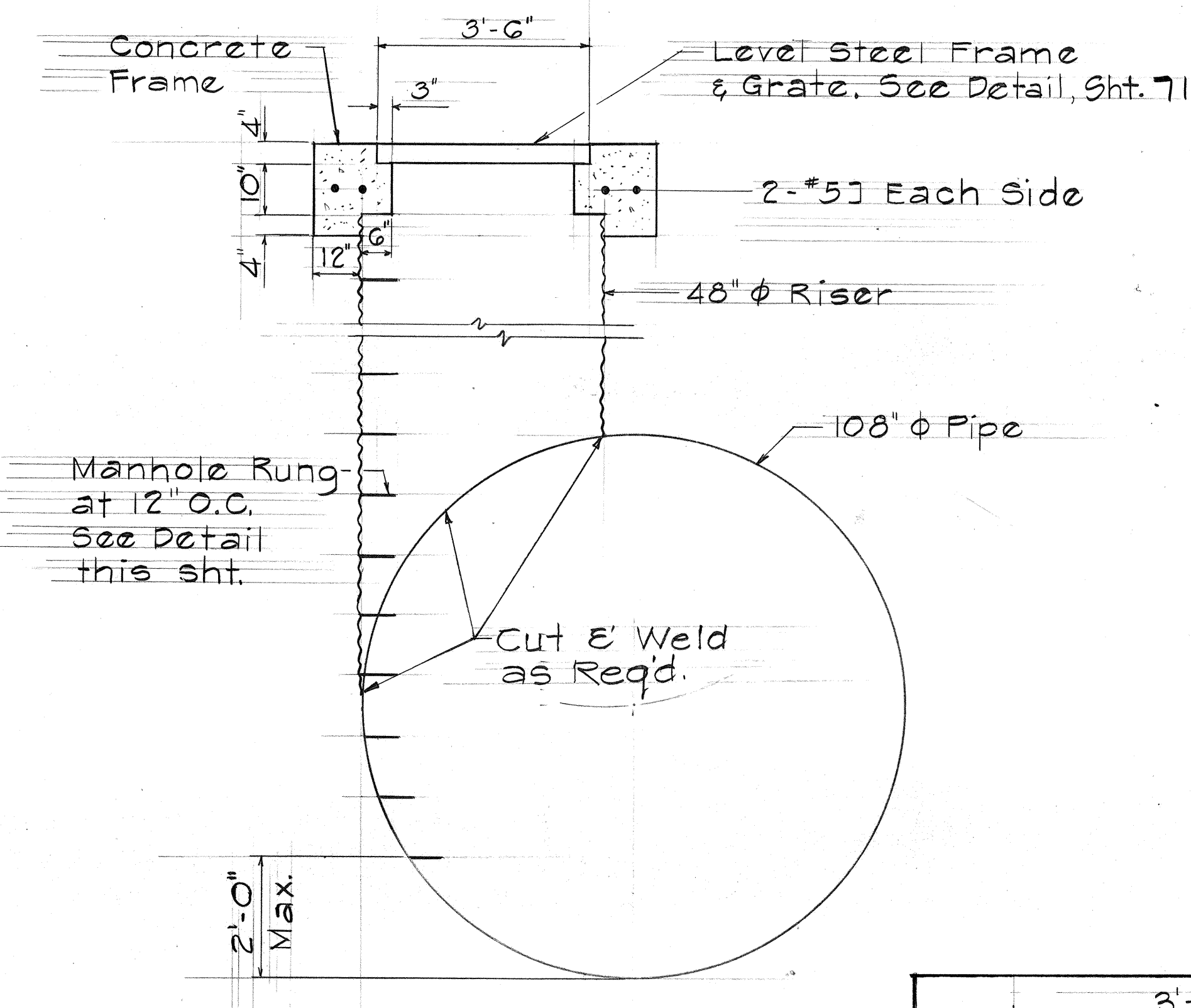
INLET STRUCTURE PLAN SECTIONS, AND DETAILS

AT STA. 148+20
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.

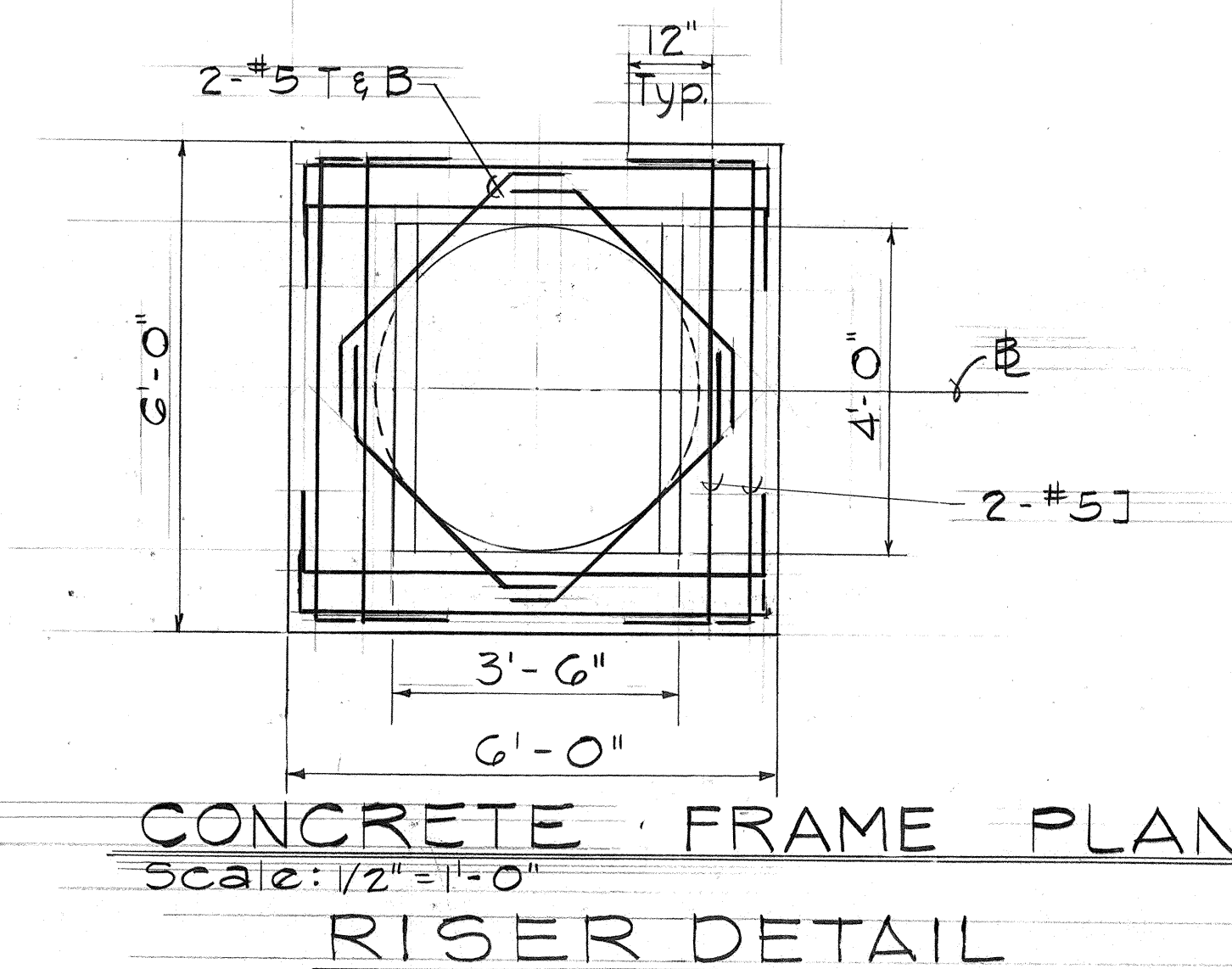
(Ahukini Road To Kauai Hardwoods
Federal Aid Proj. No. F-05-1(7)
Scale: As shown Date: Aug. 198

SHEET No. 10 OF 19 SHEETS

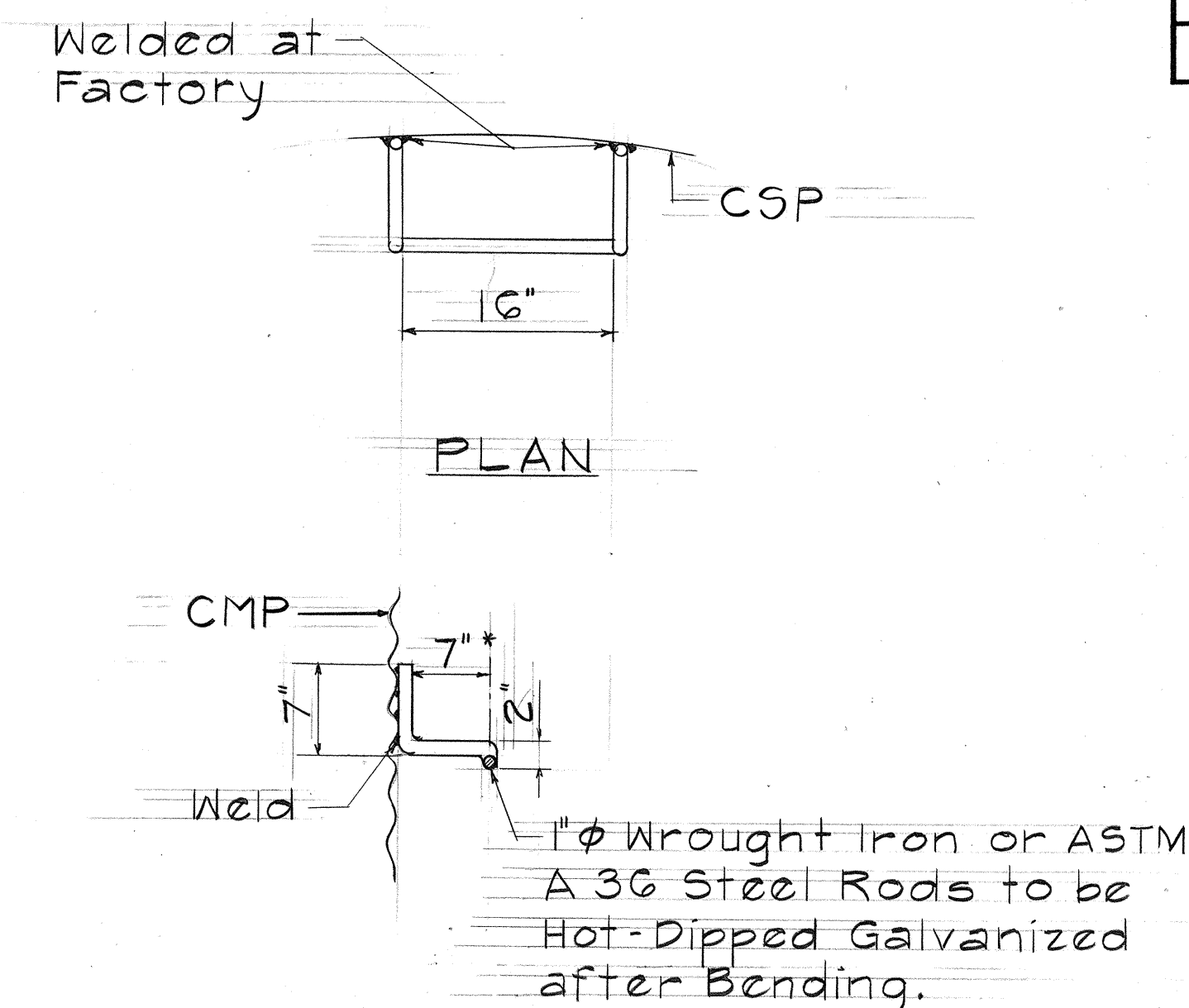
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	69	164



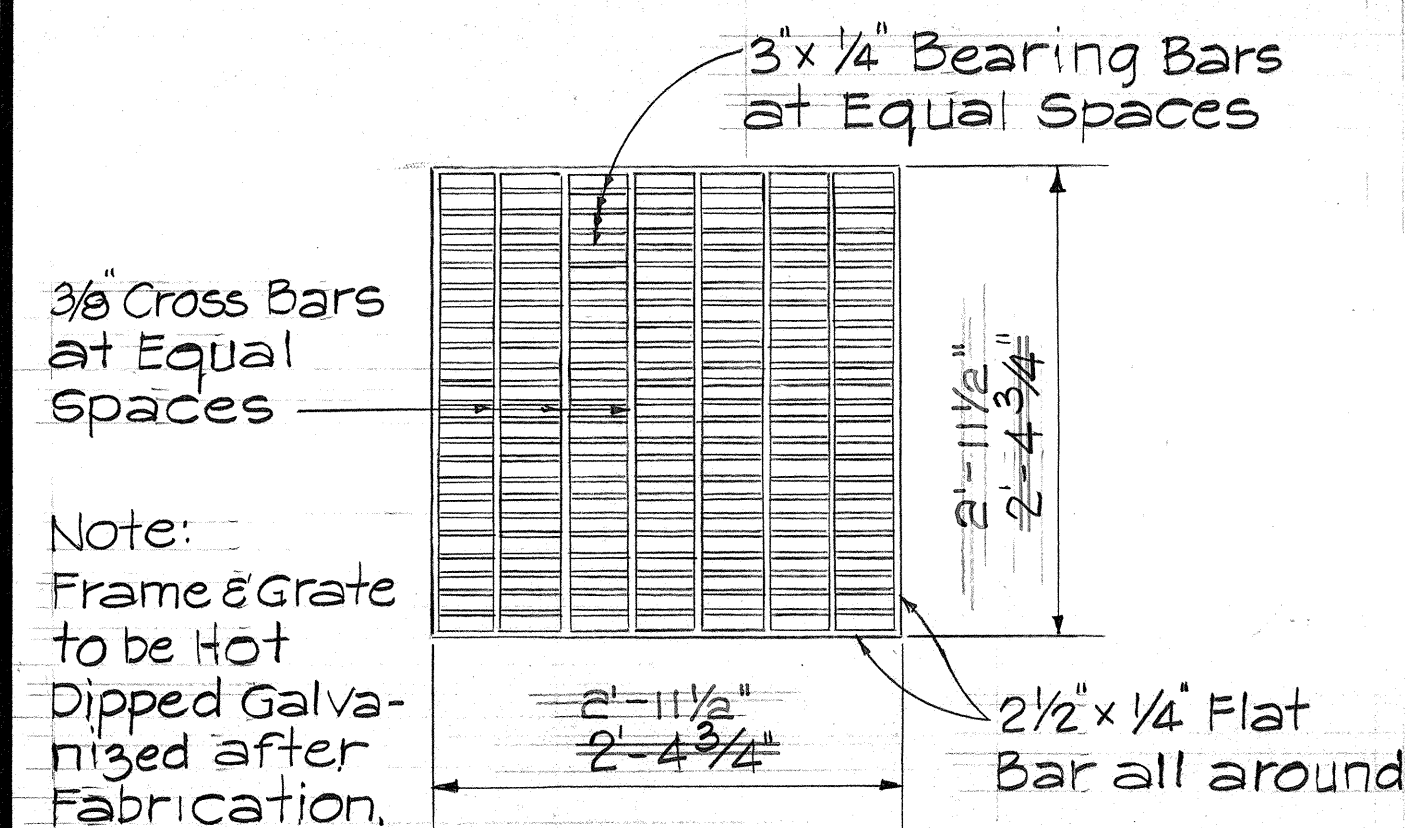
SECTION
Scale: 1/2" = 1'-0"



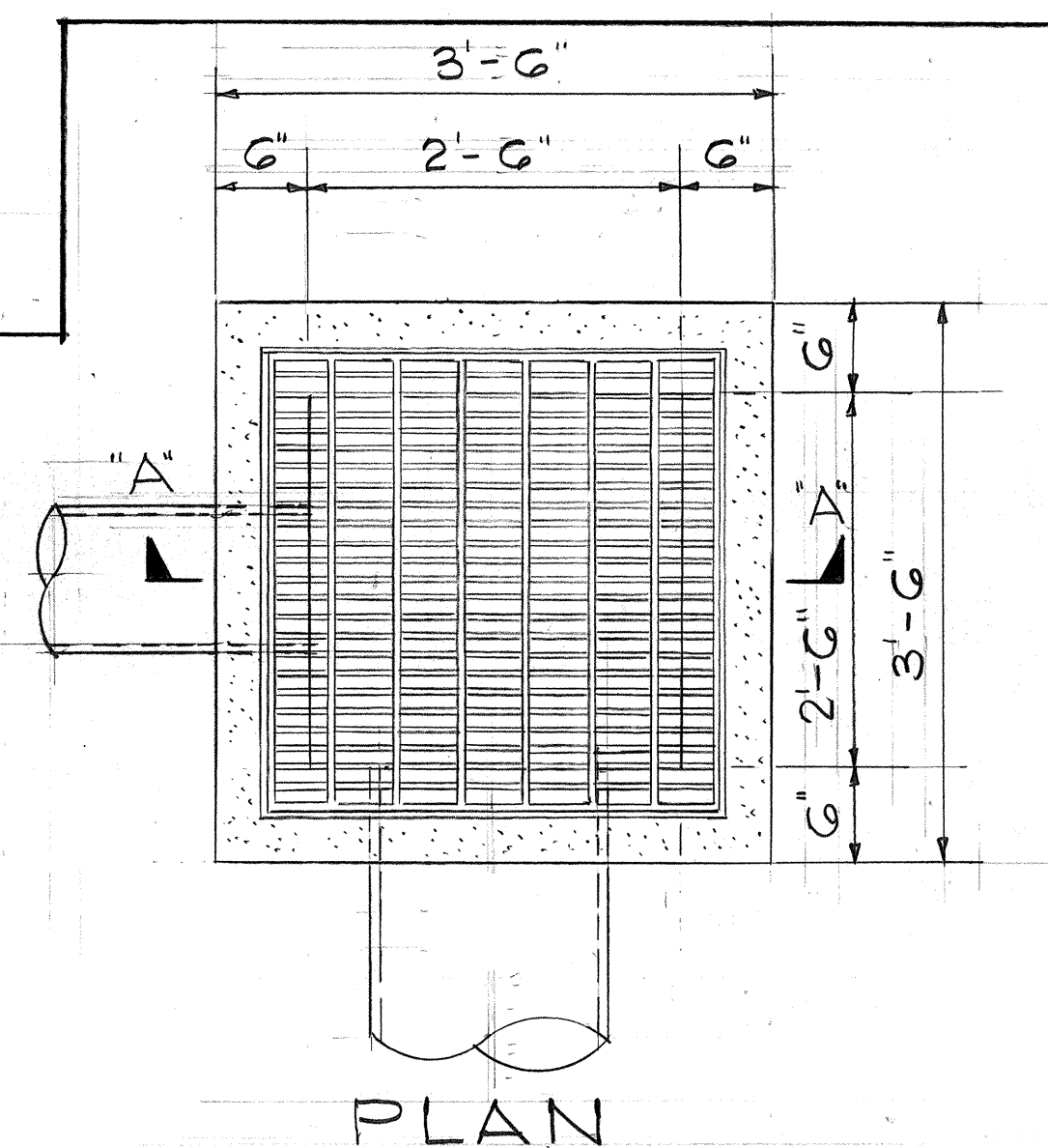
CONCRETE FRAME PLAN
Scale: 1/2" = 1'-0"
RISER DETAIL



RUNG DETAILS
Scale: 1" = 1'-0"

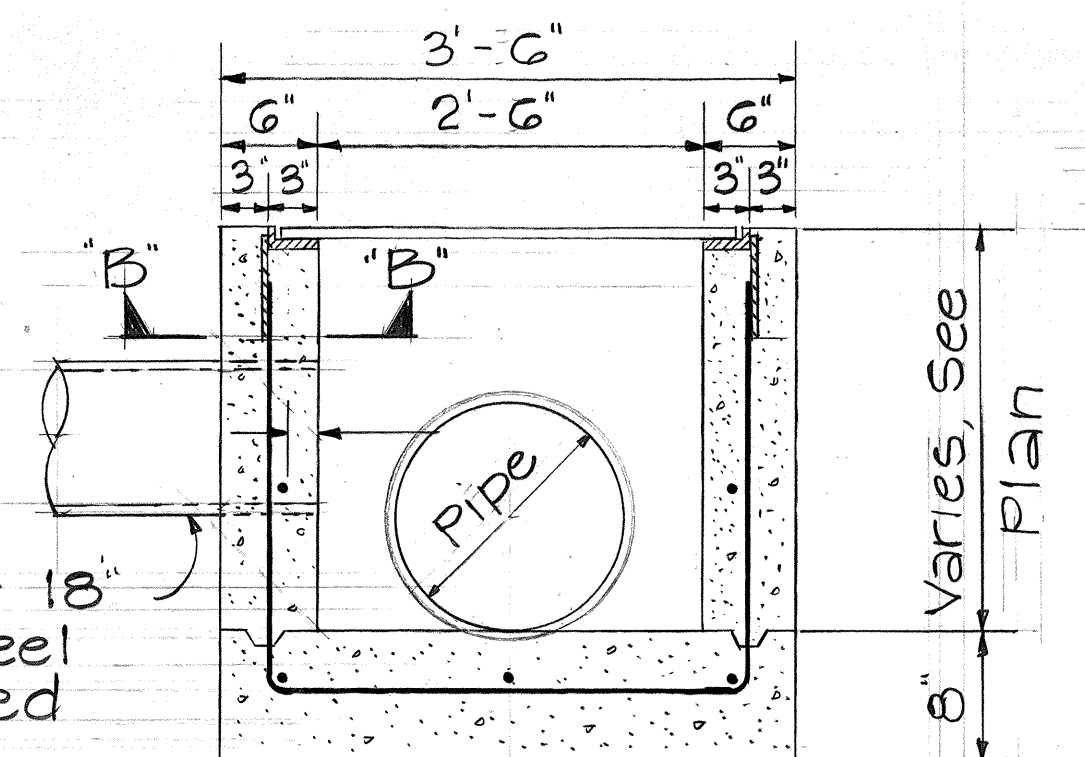
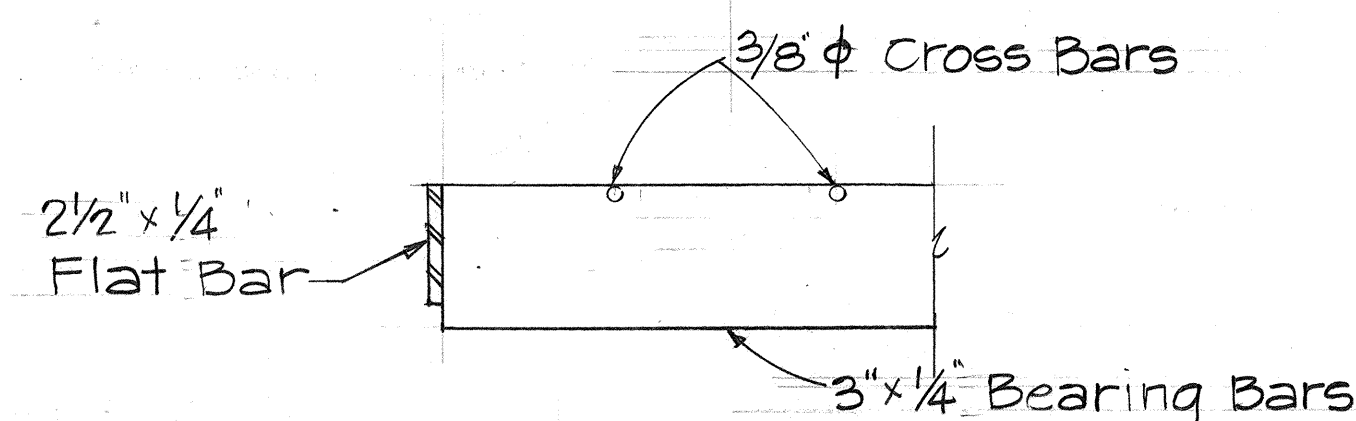


PLAN-WELDED GRATE
Not to Scale

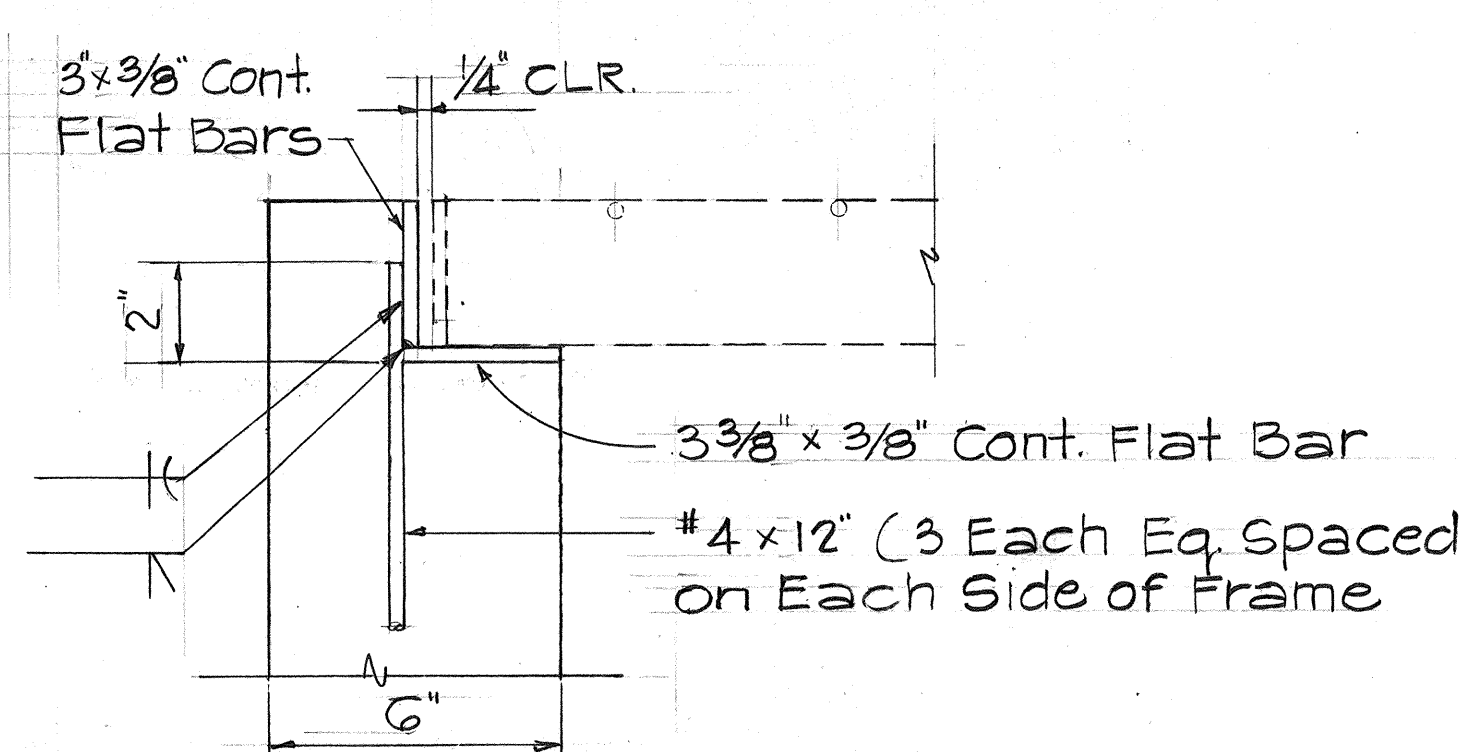


PLAN

Note:
For Pipe Reinforcing, Add #5 Diagonal Bars each Face, Similar to Section "C-C" Sht. 70.

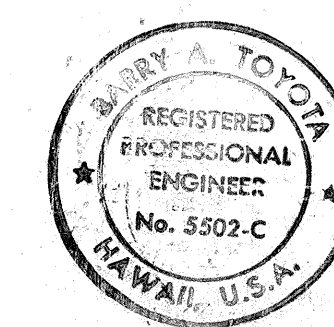


SECTION "A-A"



SECTION "B-B"

GRATED BOX DETAIL
Not to Scale

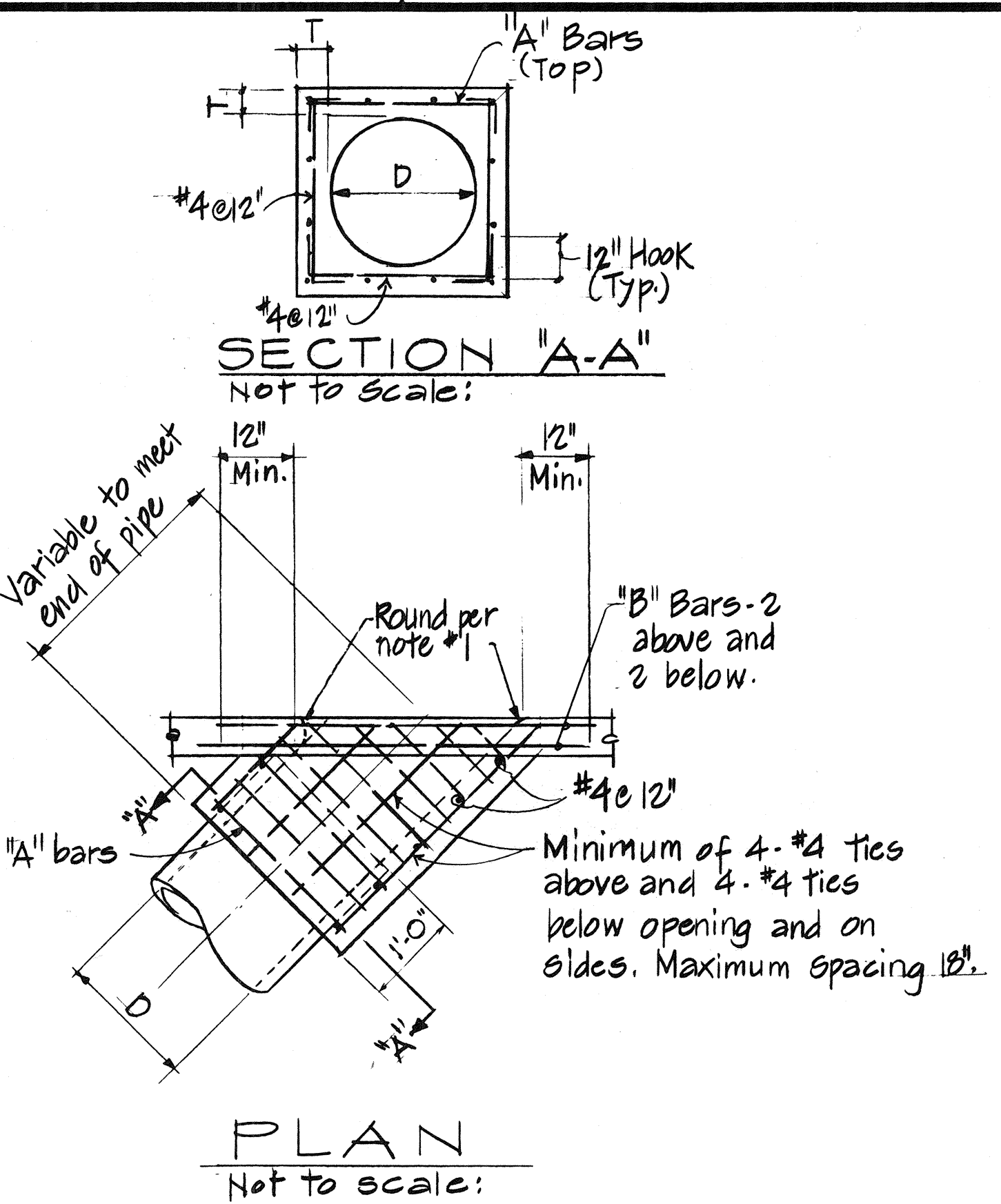


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Barry A. Toyota

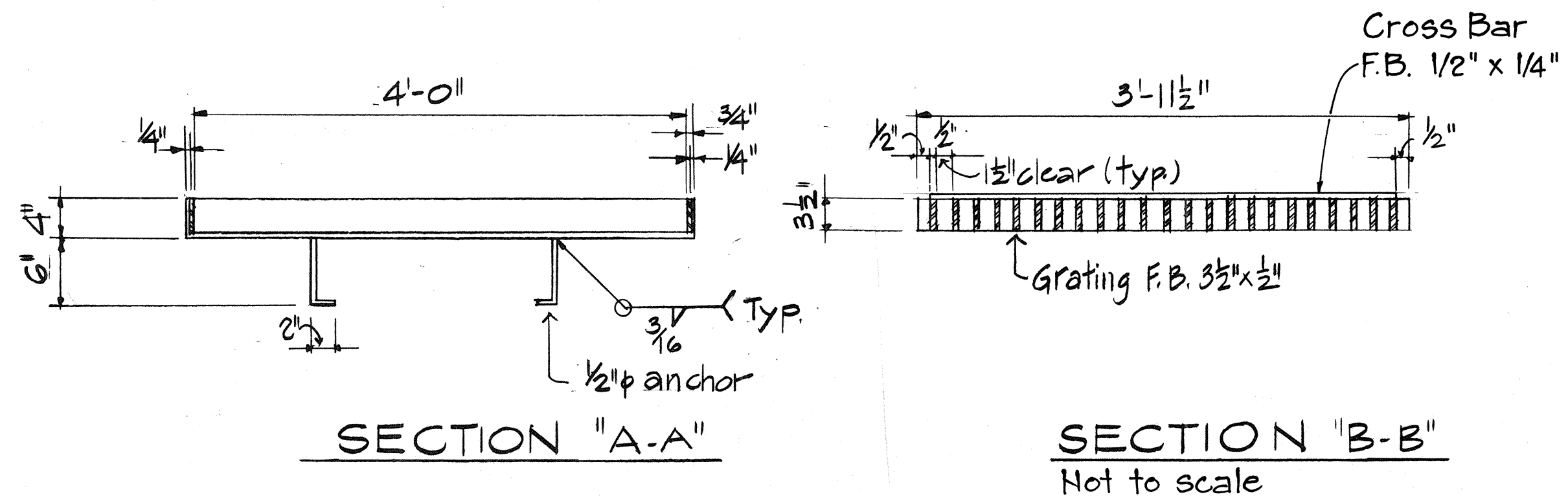
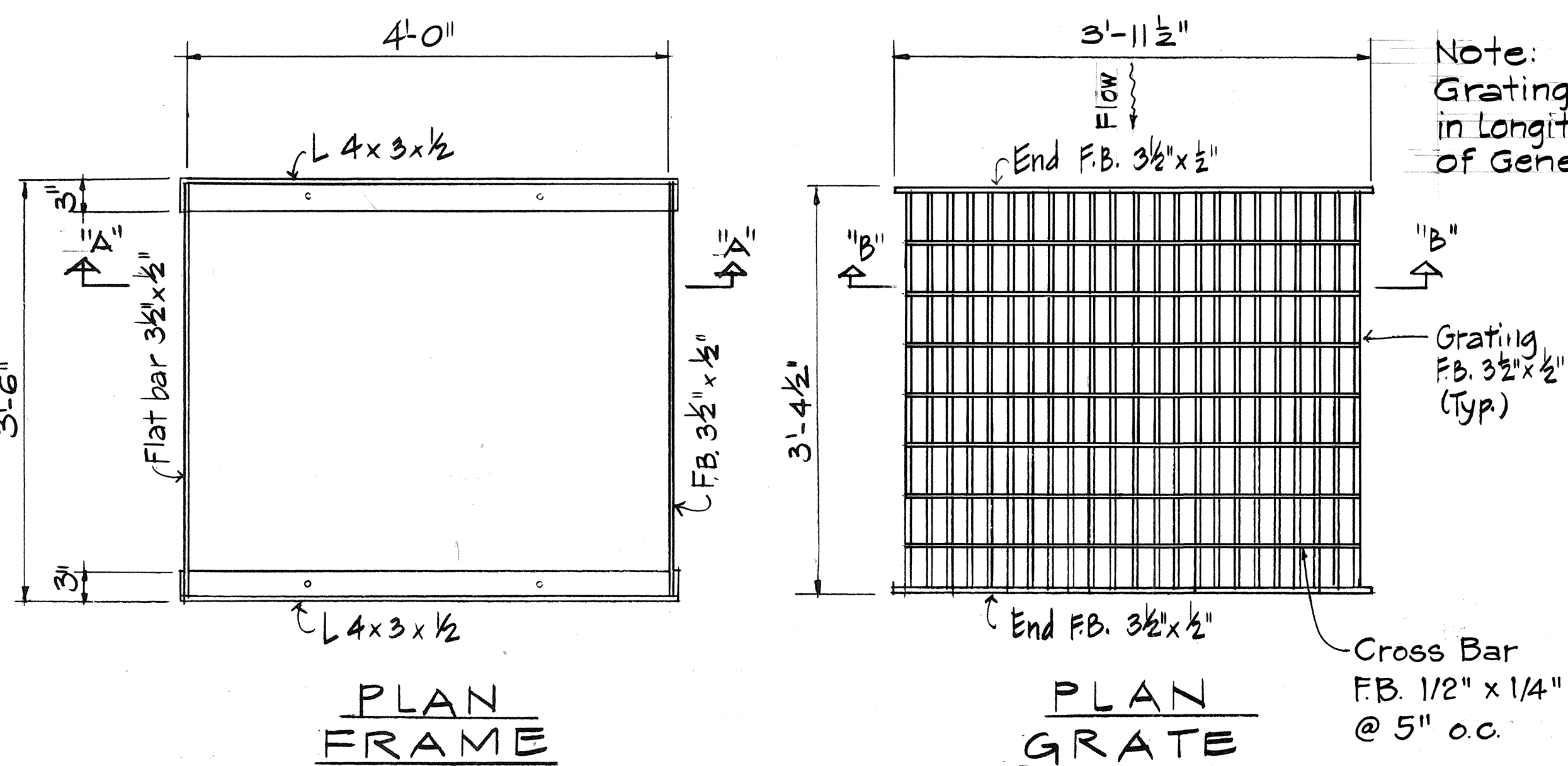
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RISER & GRATED BOX DETAILS	
HANAMAULU ROAD & APPROACHES HANAMAULU - AHUKINI CUTOFF ROAD (Ahukini Road to Kauai Hardwoods) Federal Aid Proj. No. F-051-1(7) Scale: As shown Date: Aug., 1986	
SHEET NO. 11 OF 19 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	71	164

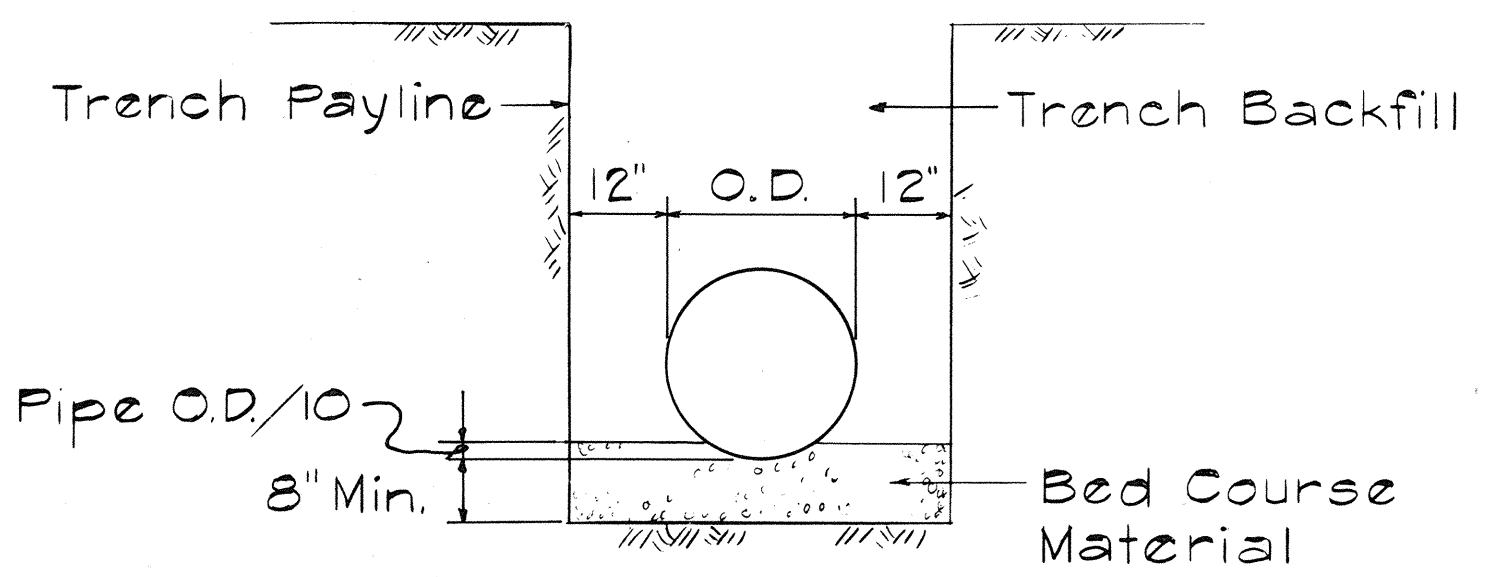
D	T	"A" bar	"B" bar
24"	6"		
27"	6 1/2"	#4 @ 6"	#5
30"	7"		
33"	7"		
36"	7 1/2"		
39"	8"		
42"	8"		
45"	8"		
48"	8"		
51"	8"		
54"	8"		
57"	10"	#5 @ 6"	#6
60"	10"		
63"	10"		
66"	11"		
69"	11"		
72"	11"		



- Notes:
1. Round edge of outlet 3" radius.
 2. Reinforcement shall be 1 1/2 inches clear from the face of concrete.
 3. "D" is interior diameter (I.D.) of pipe.
 4. Grate & Frame shall be Galvanized after Fabrication.

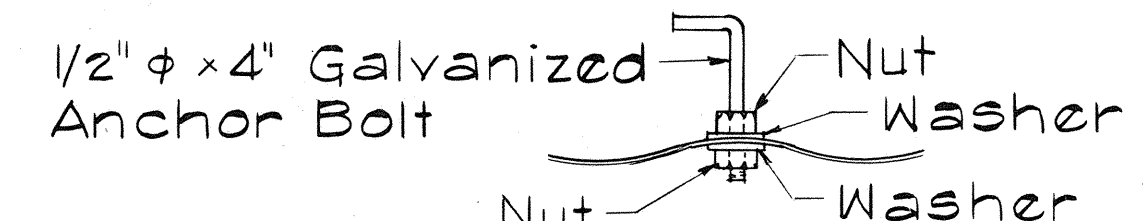


LEVEL STEEL FRAME & GRATE
Scale: 1" = 1'-0"



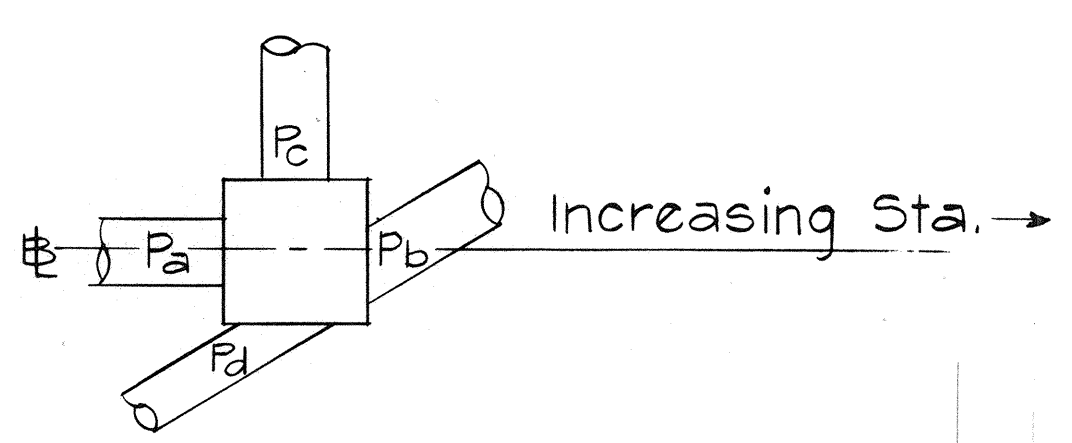
TYPICAL TRENCH SECTION
Scale: 1/2" = 1'-0"

1/2" x 4" Anchor Bolt w/Washers and Nuts. Galvanized, Maximum Spacing 12" O.C. Around Perimeter of Pipe



CSP OR ALUMINUM ALTERNATE ANCHOR BOLT DETAIL
NTS

STRUCTURE	STA.	JUNCTION STRUCTURE REQUIRED			
		Pa	Pb	Pc	Pd
D.I. #1	55+06.32		X		
D.I. #2	57+26.07		X		
D.I. #22	95+50			X	
D.I. #37	135+17.88	X			X
D.I. #38	138+00		X		
SDMH #2	58+00			X	X

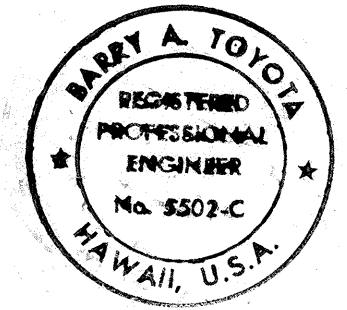
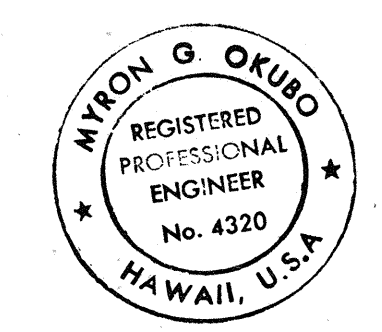


PIPE KEY PLAN
No Scale

* D.I. Denotes Drain Inlet.

JUNCTION STRUCTURE DETAIL

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
No.	

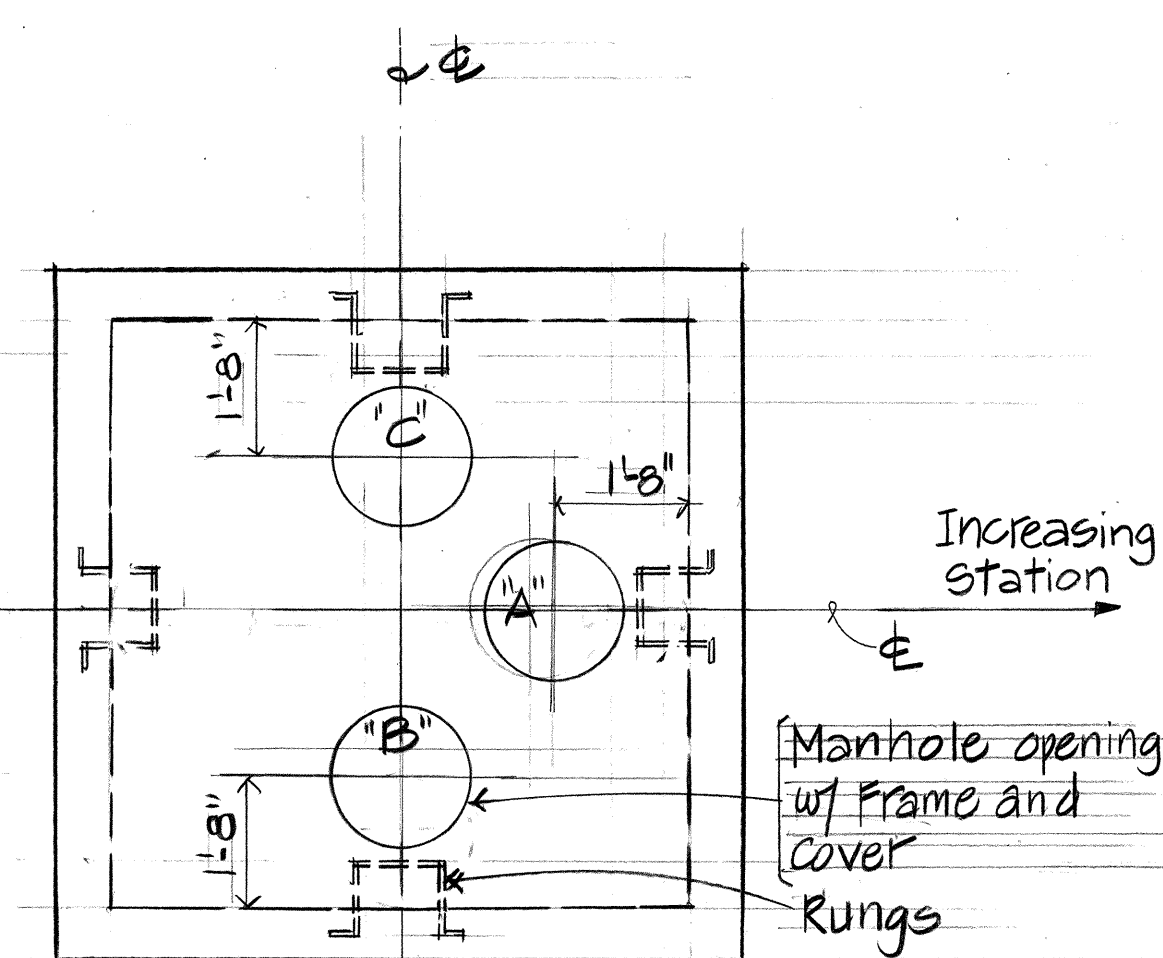
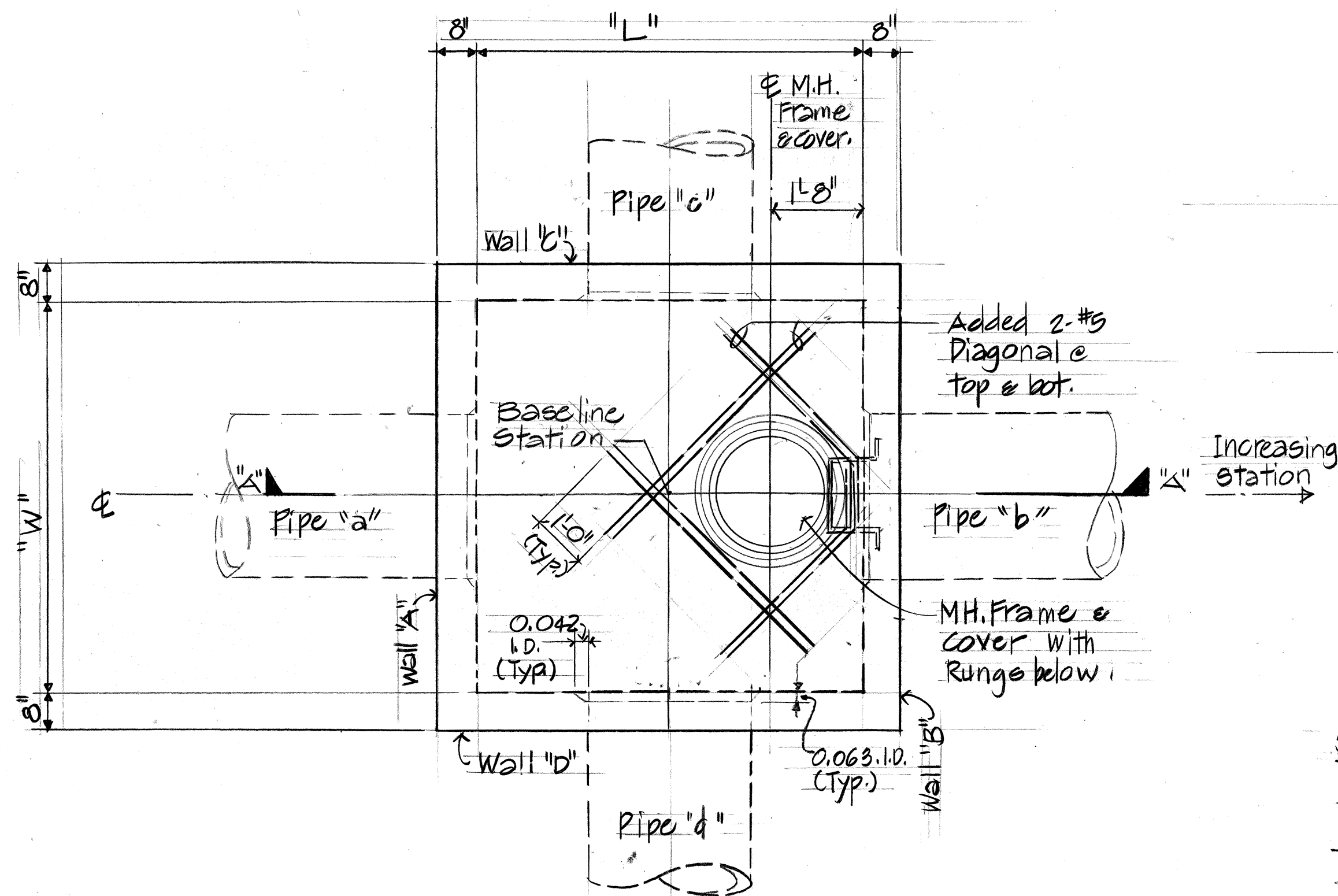


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Myron G. Okubo

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Signature: Barry A. Toyota

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAIN INLET STRUCTURE DETAILS
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF ROAD
(Ahukini Road to Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown. Date: Aug. 1986
SHEET No. 13 OF 10 SHEETS

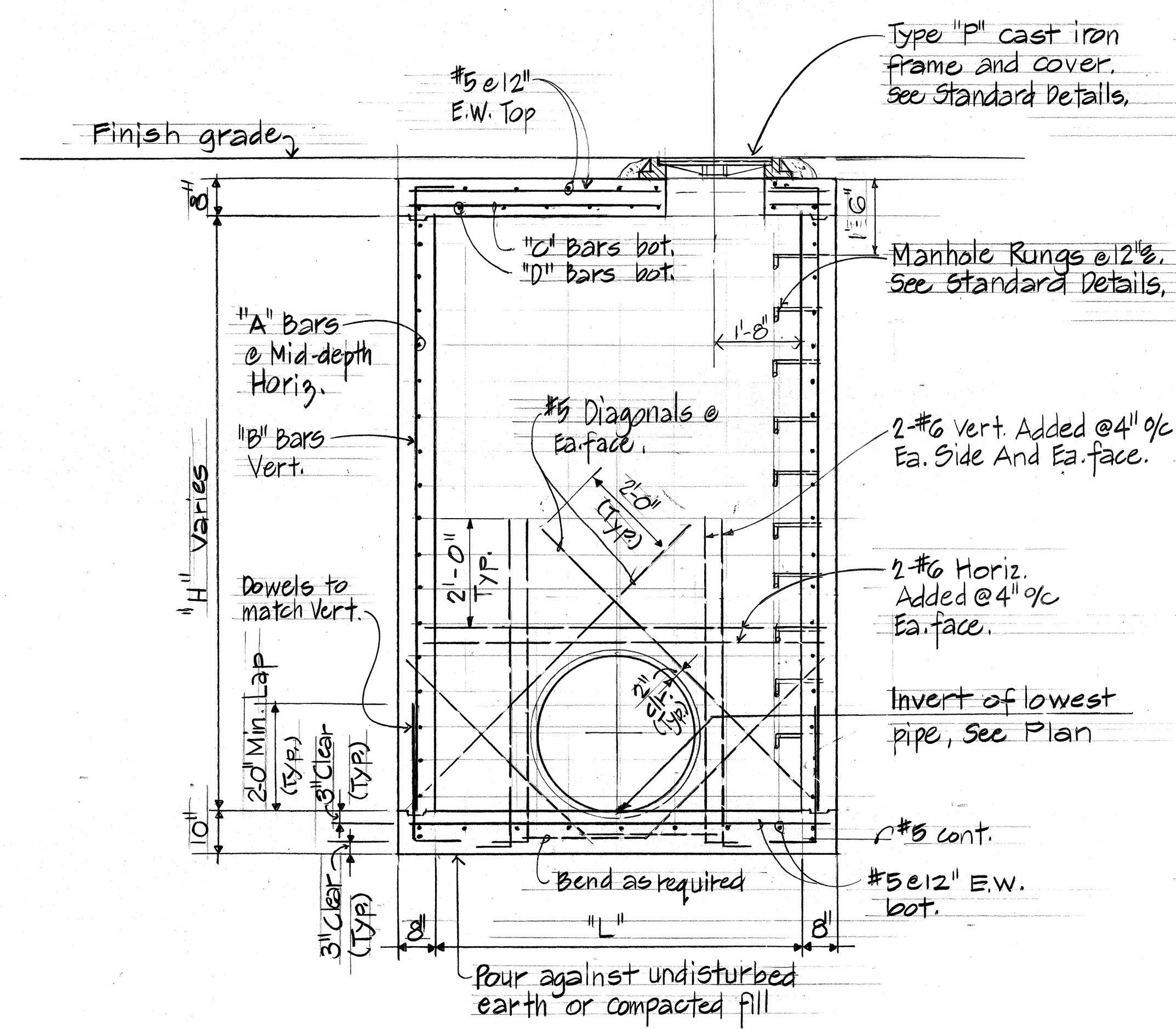
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	72	164



MANHOLE SCHEDULE												
Manhole No.	Location	Station	Manhole size		Bars				Pipe size I.D.			
			L	W	"A"	"B"	"C"	"D"	"a"	"b"	"c"	"d"
1	"B"	55+33	4'-0"	4'-0"	#5 @ 12"	#5 @ 12"	#5 @ 10"	#5 @ 10"	24"	36"	* 24"	-
2	"A"	57+40	4'-6"	4'-6"	#5 @ 12"	#5 @ 12"	#5 @ 10"	#5 @ 10"	36"	-	24"/Js.	36"/Js.
4	"C"	135+05	4'-0"	4'-6"	#5 @ 12"	#5 @ 12"	#5 @ 10"	#5 @ 10"	30"	30"	-	24"

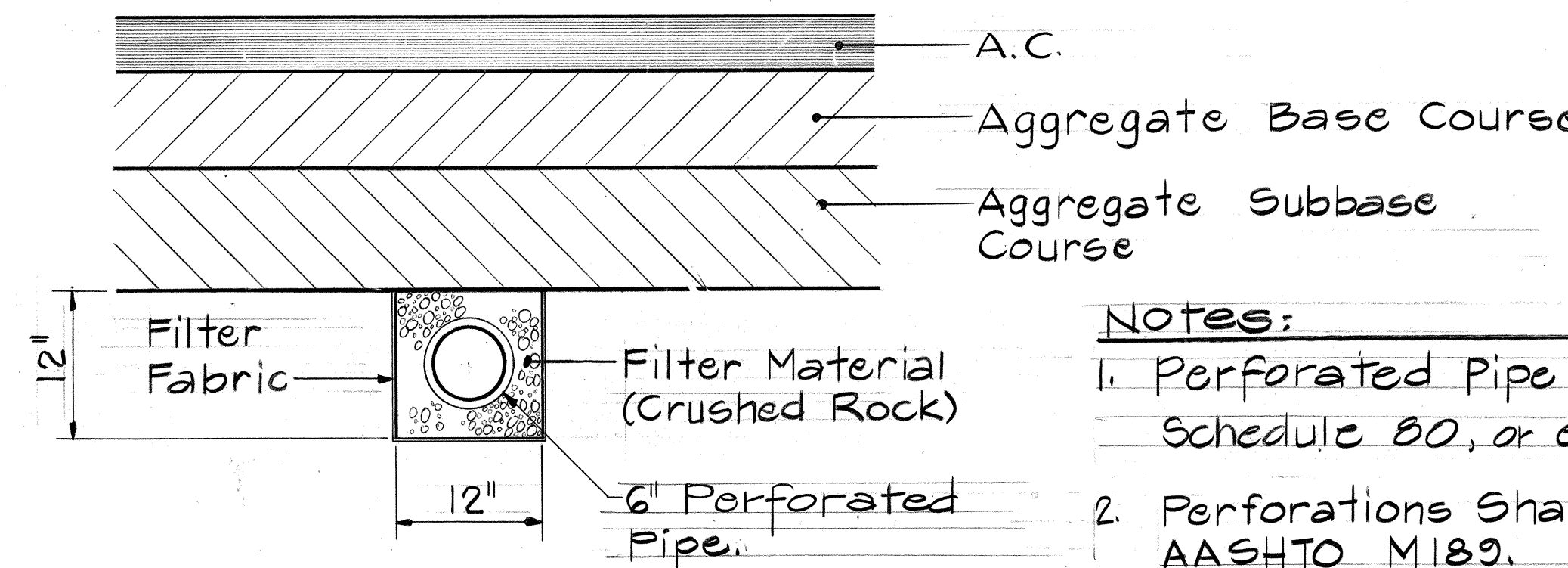
Js. Denotes "Junction Structure" required, see sheet 71 for Details.
 * Existing Pipe

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



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

STORM DRAIN MANHOLE DETAIL



FILTER FABRIC UNDERDRAIN DETAIL
 Scale: 1" = 1'-0"

- Notes:
1. Perforated Pipe shall be Schedule 80, or equivalent.
 2. Perforations Shall Conform to AASHTO M189.
 3. Underdrain Shall be Considered Incidental to Drainage System.

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 Harry A. Toyota
 REGISTERED PROFESSIONAL ENGINEER
 No. 5502-C
 HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STORM DRAIN MANHOLE &
MISCELLANEOUS DETAILS

HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF ROAD
(Ahukini Road to Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: Aug., 1986

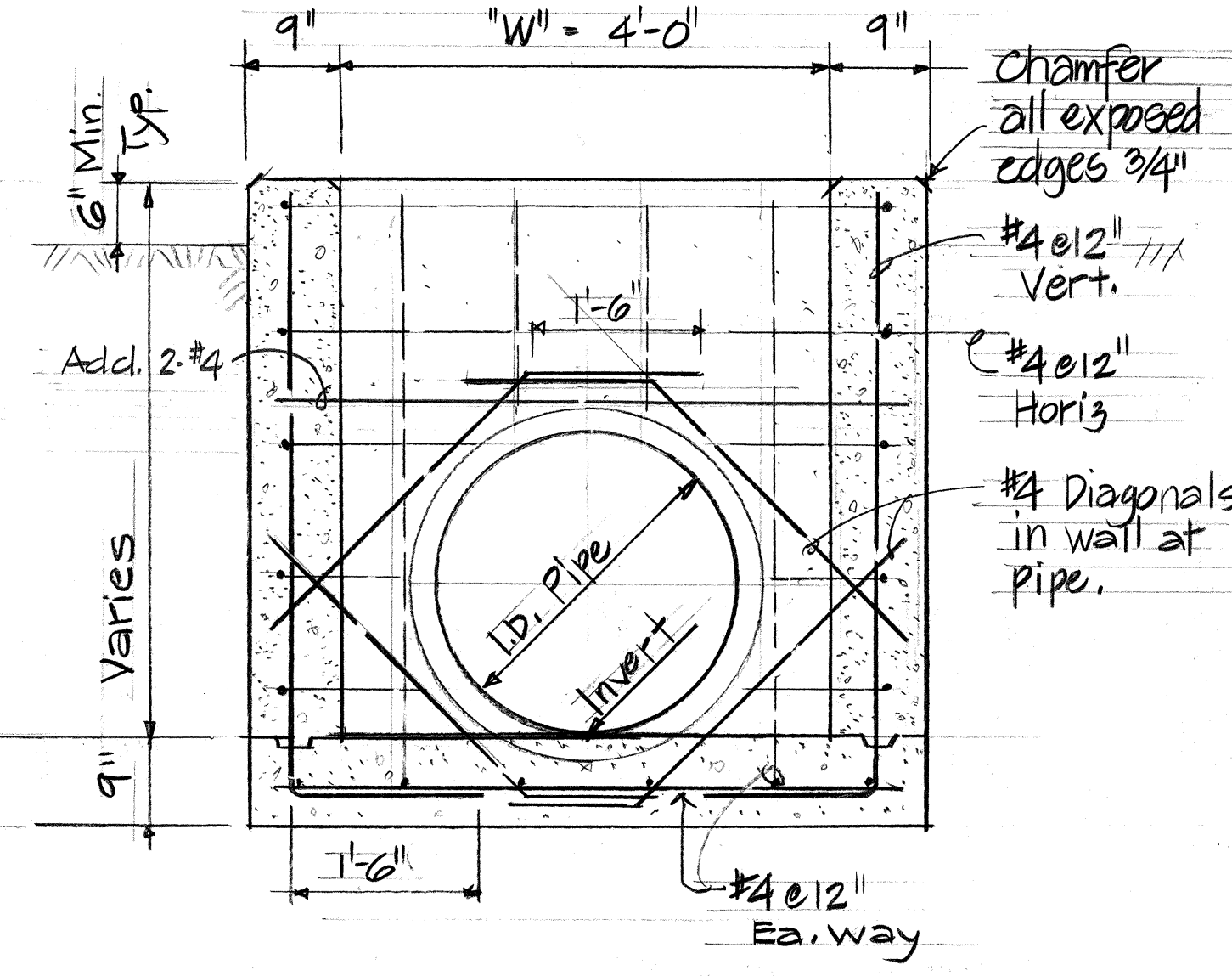
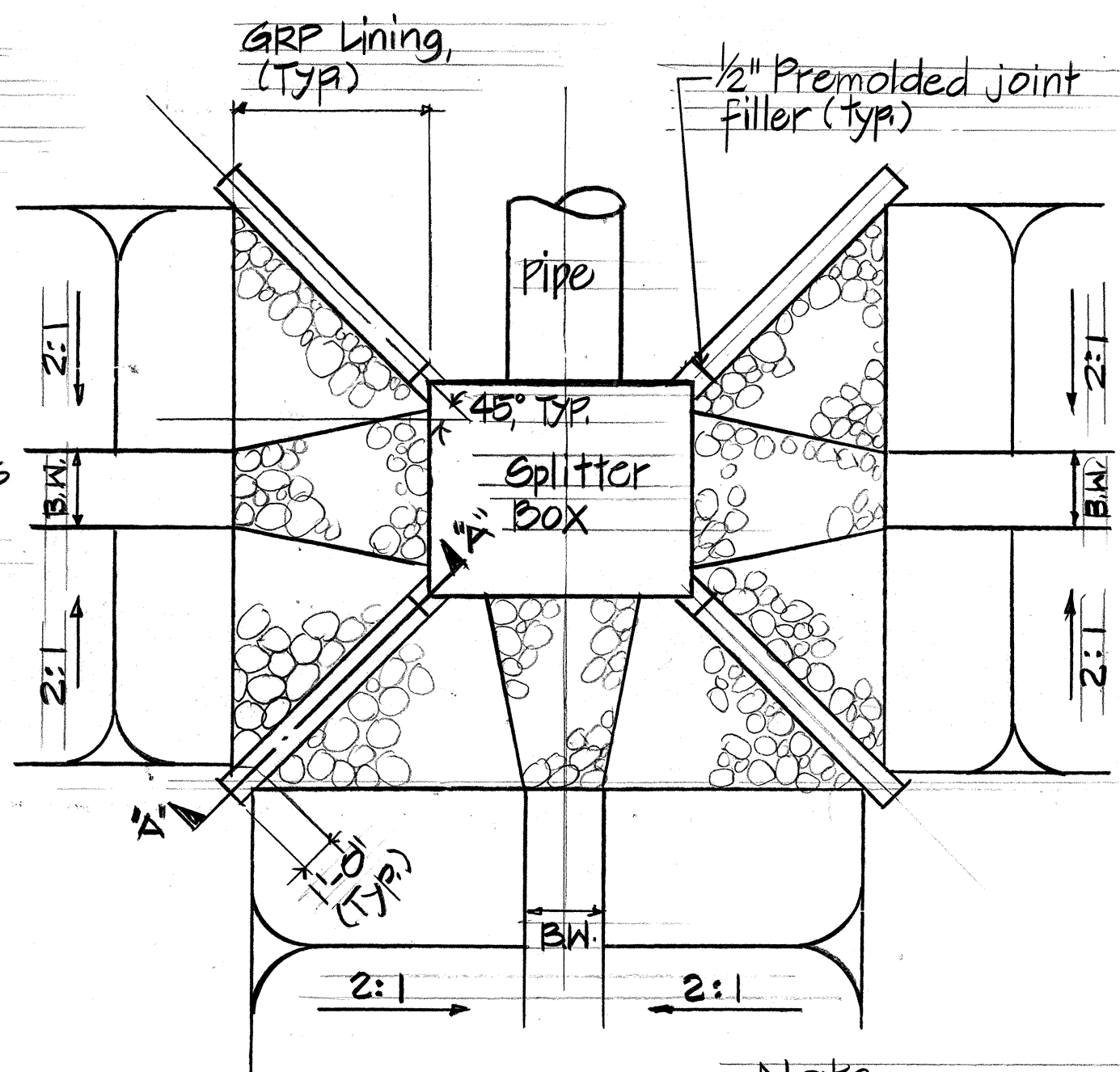
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	73	164

SPLITTER BOX WALL SCHEDULE						
BOX NO	INVERT	NO. OF WALLS	WALL			
			A	B	C	D
1	161.50	4	Open	Open	Closed	30" pipe
2	158.00	4	Open	"	30" pipe	Closed
3	151.50	4	42" pipe	"	Open	30" pipe
4	151.50	3	30" pipe	"	30" pipe	Open
5	105.00	2	Open	Closed	Closed	30" pipe
6	104.00	4	"	Open	30" pipe	Open
7	90.00	4	"	"	Closed	30" pipe
8	92.00	3	48" pipe	Open	Open	30" pipe
9	89.00	4	Open	Open	30" pipe	Closed
10	89.50	4	Closed	30" pipe	Open	Open
11	89.50	4	30" pipe	Closed	"	"
12	96.00	4	Closed	30" pipe	"	"
13	95.50	4	30" pipe	"	Open	"
14	95.00	4	Open	Open	30" pipe	"
15	84.00	3	"	Closed	Open	30" pipe
16	84.00	4	"	Open	30" pipe	Open
17	86.50	2	30" pipe	"	Closed	30" pipe
18	87.00	4	Open	"	30" pipe	Closed
19	85.50	3	"	Closed	Open	Closed
20	86.00	3	Open	Open	30" pipe	Open
21	70.00	2	Closed	Closed	Open	Closed
22	70.00	4	30" pipe	Closed	Open	30" pipe
23	70.00	4	Closed	Open	Closed	30" pipe
24	76.75	4	Open	"	30" pipe	Closed

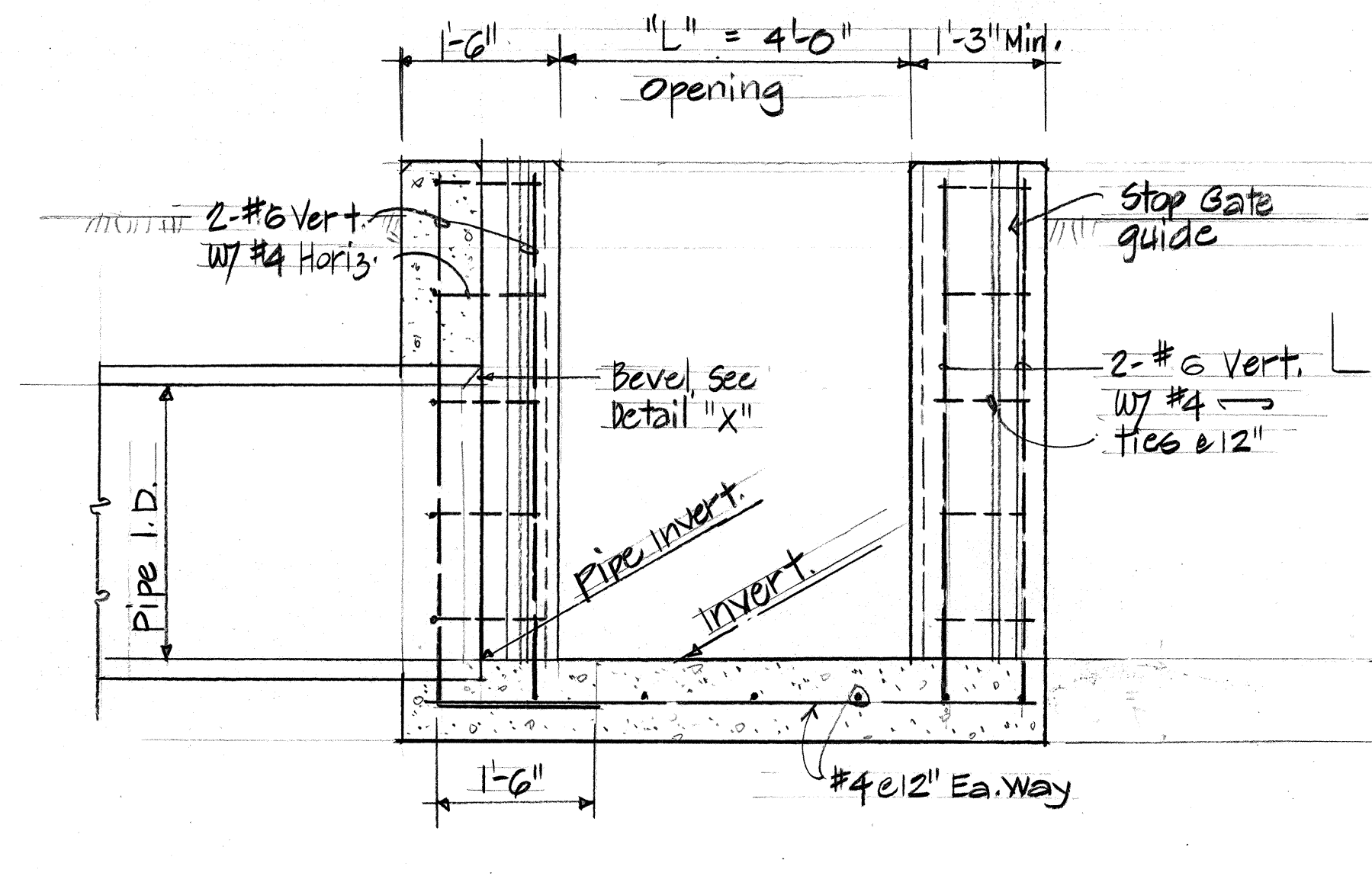
- * With Junction Structure.
- See plans for Splitter Box 3, 4, 8 and 17, Sht. 74.
 - Center pipe between L or W unless otherwise indicated.
 - Note orientation of stop gate guides with direction of flow.
 - For Splitter Box #'s 11, 14 and 16, B.W. = 2'
 - For Splitter Box #'s 12 and 13, B.W. = 4'.

Notes:
 (1) For conditions at specific Splitter Box, see Splitter Box Wall Schedule Table.
 (2) For Section "A-A", see Sht. 74.

TYPICAL PLAN
 Not to Scale

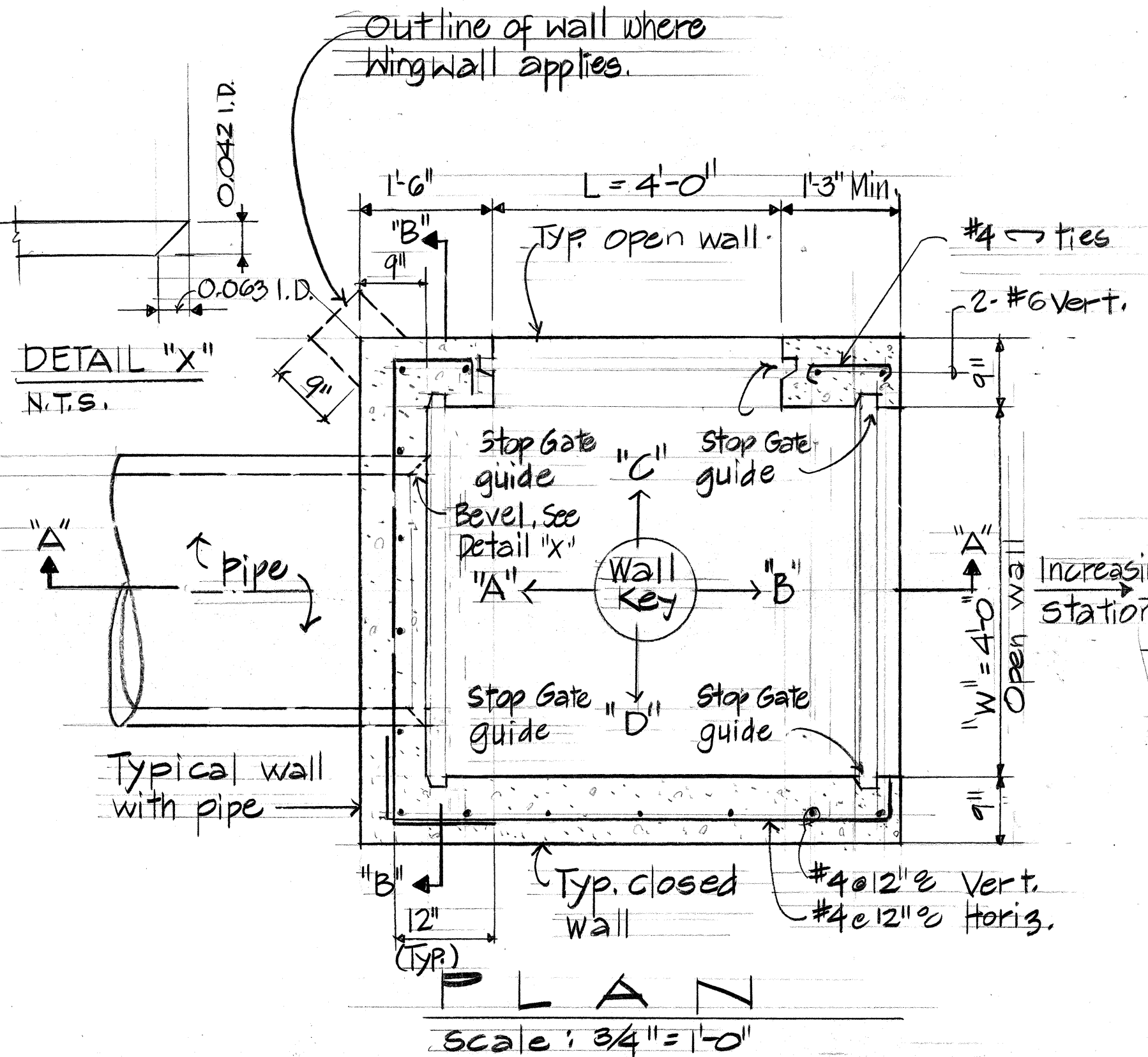
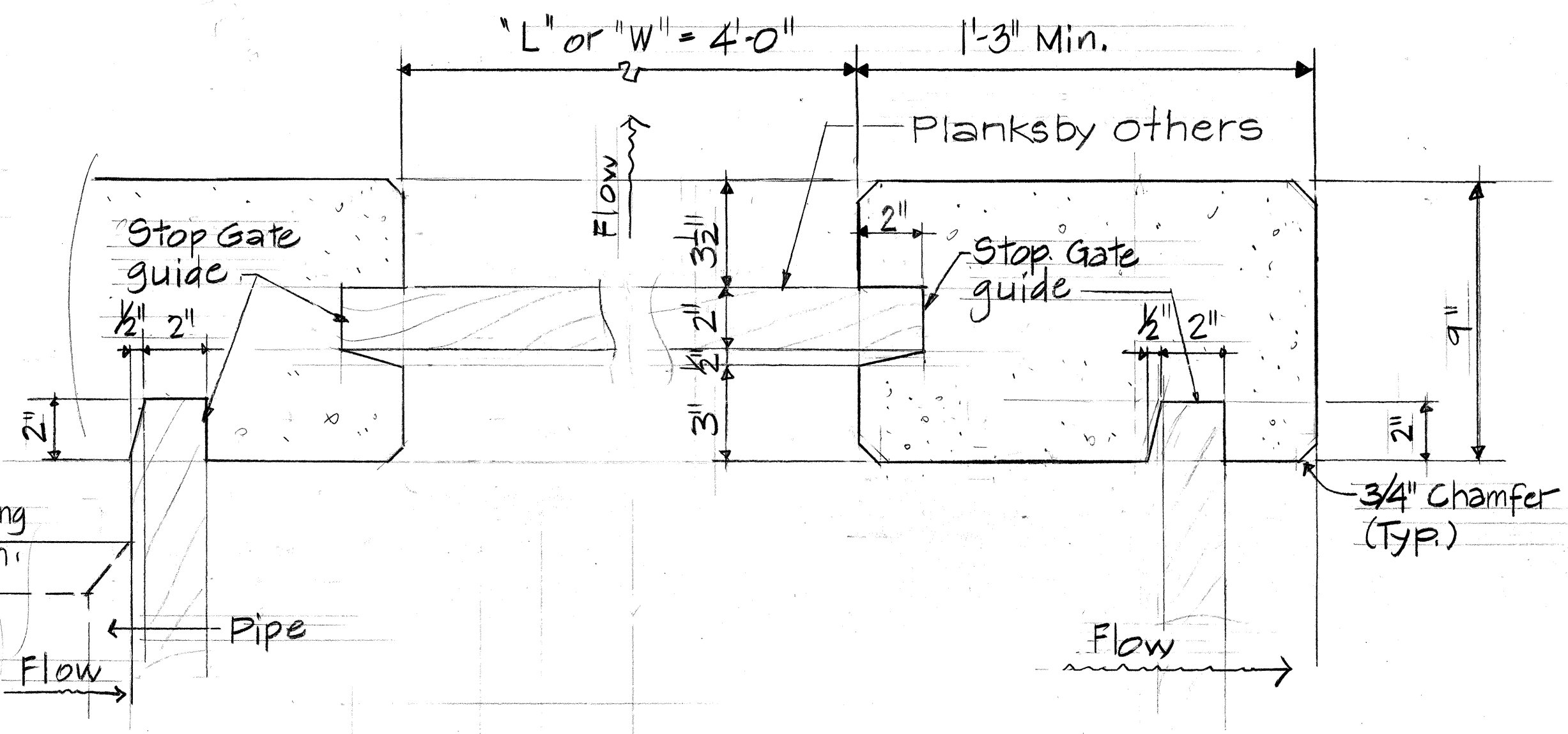


SECTION "B-B"
 Scale: 3/4" = 1'-0"



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

STOP GATE GUIDE DETAIL
 Scale: 3" = 1'-0"



SPLITTER BOX DETAILS

9/15/87	Revised Invert at Splitter Box #1 8\"
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

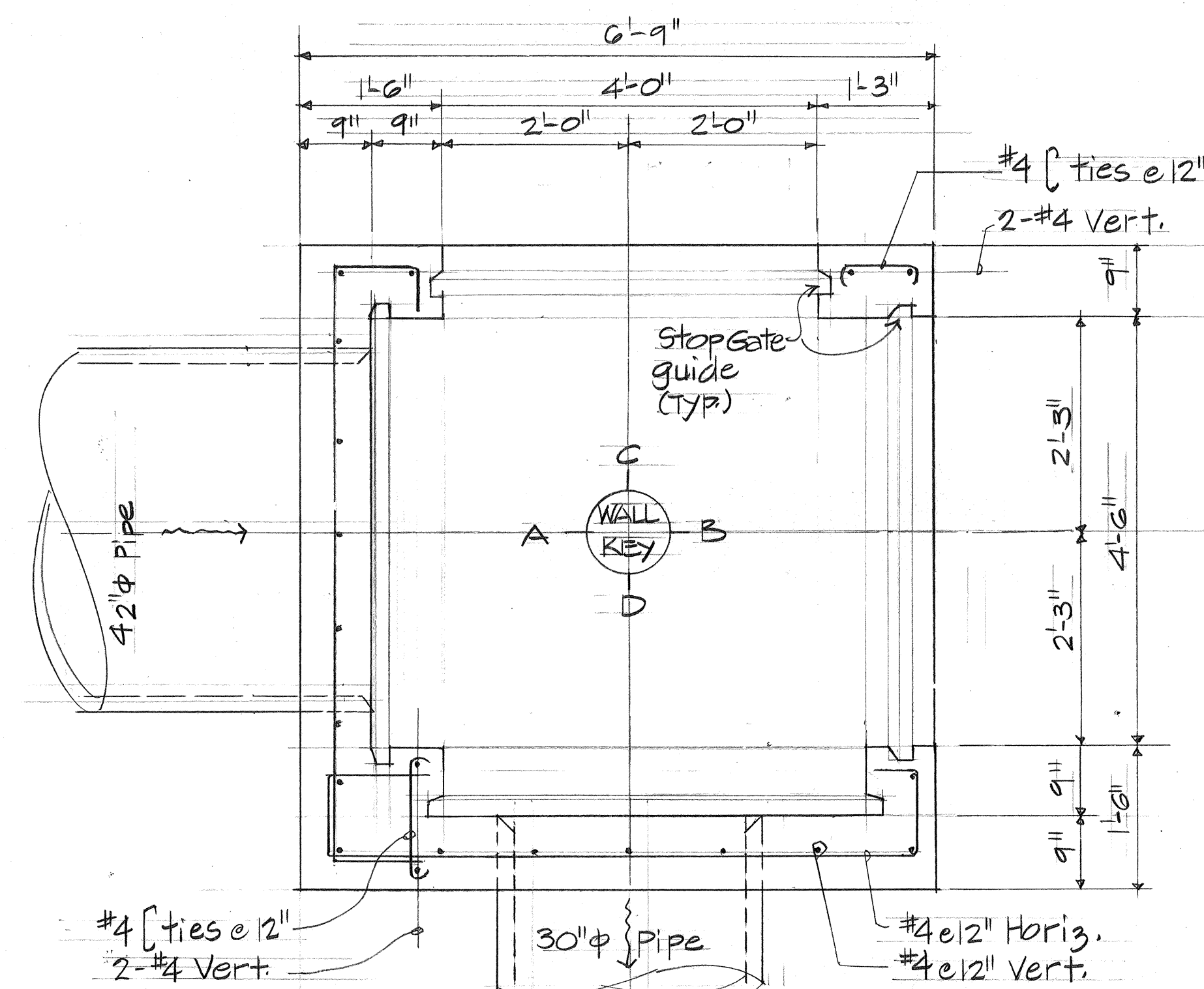
SPLITTER BOX DETAILS

HANAMAULU ROAD & APPROACHES
 HANAMAULU-AHUKINI CUTOFF ROAD
 (Ahukini Road to Kauai Hardwoods)
 Federal Aid Proj. No. F-051-1(7)
 Scale: As Shown. Date: Aug., 1986

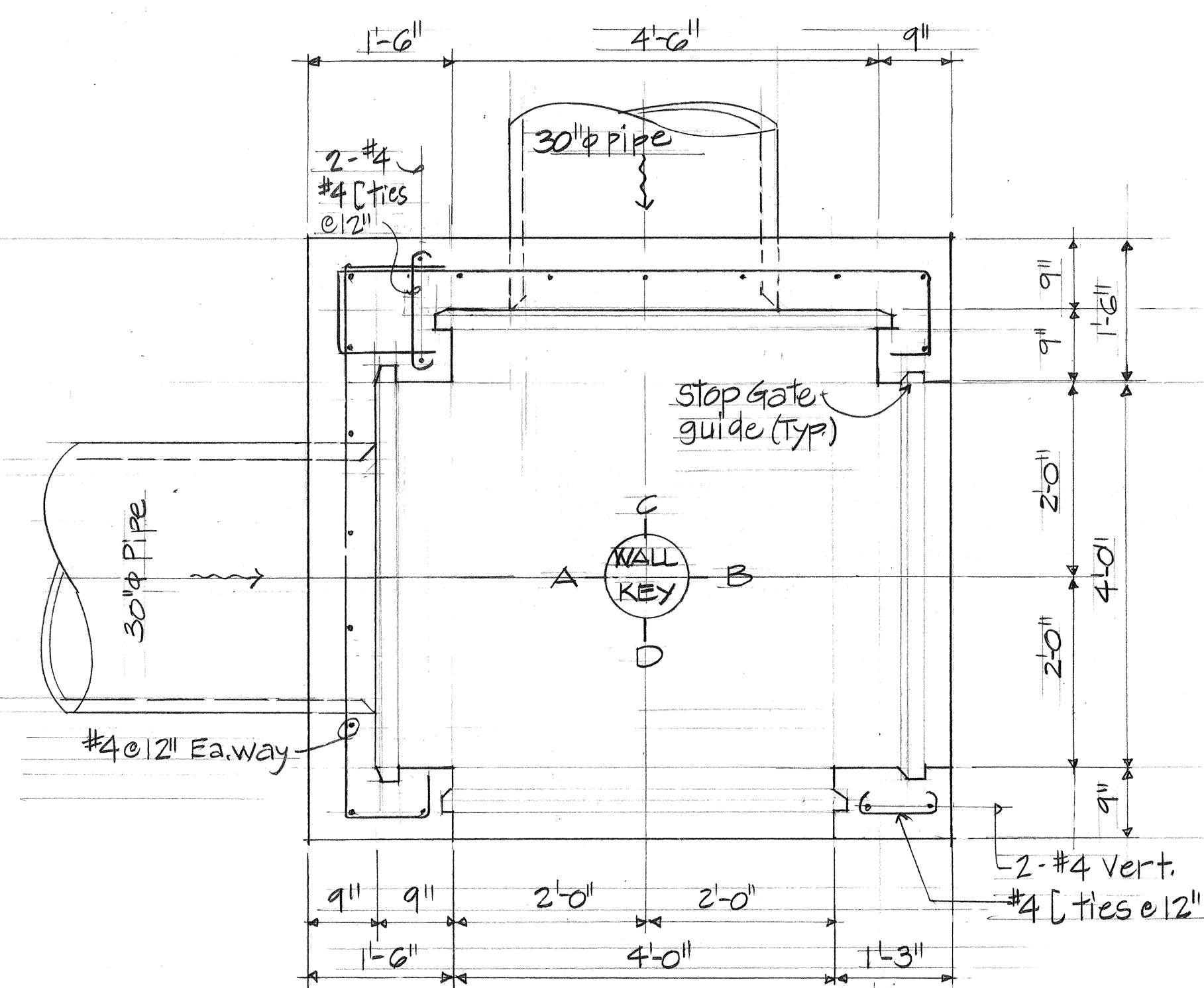
SHEET NO. 15 OF 10 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
NO.	

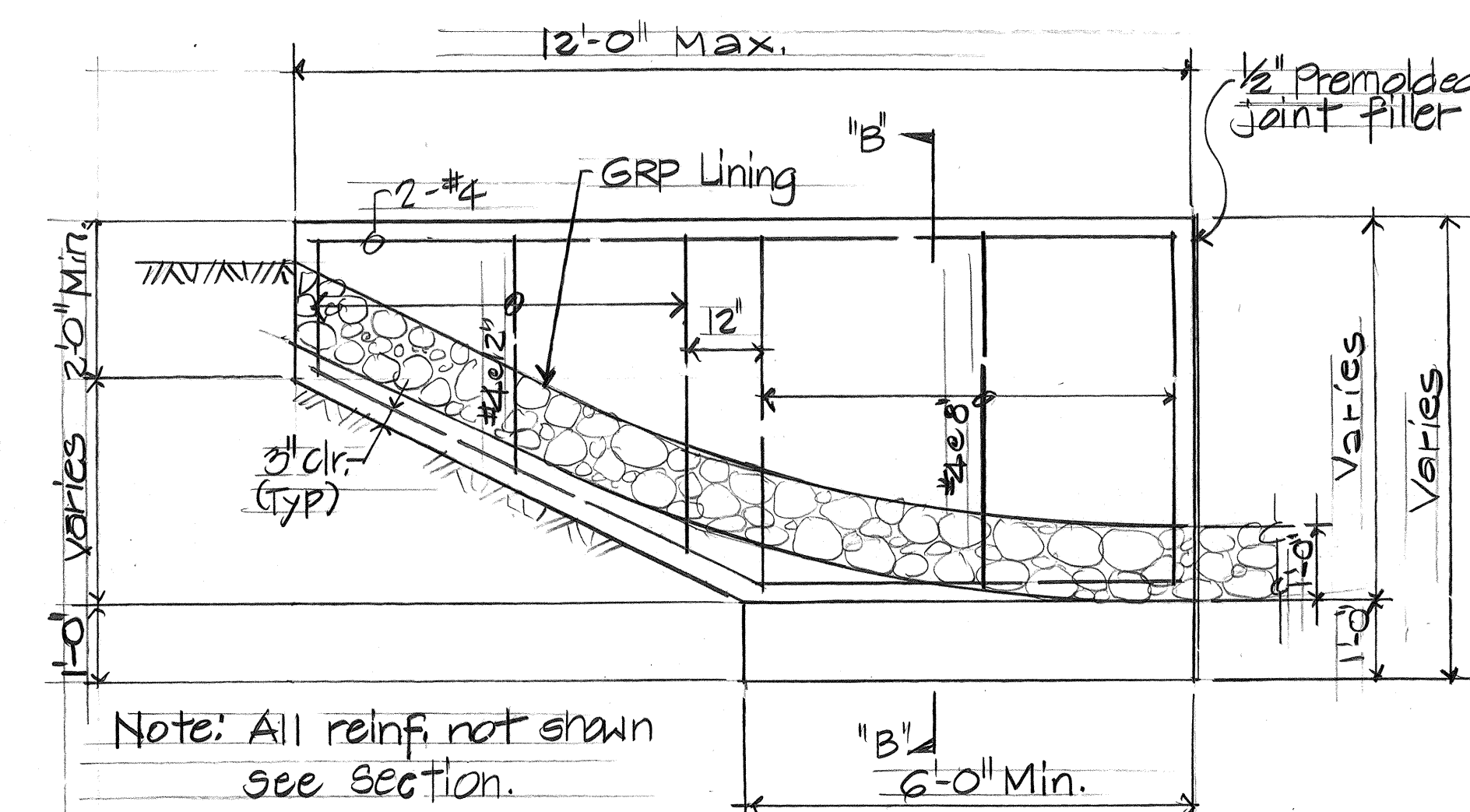
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-(7)	1987	74	164



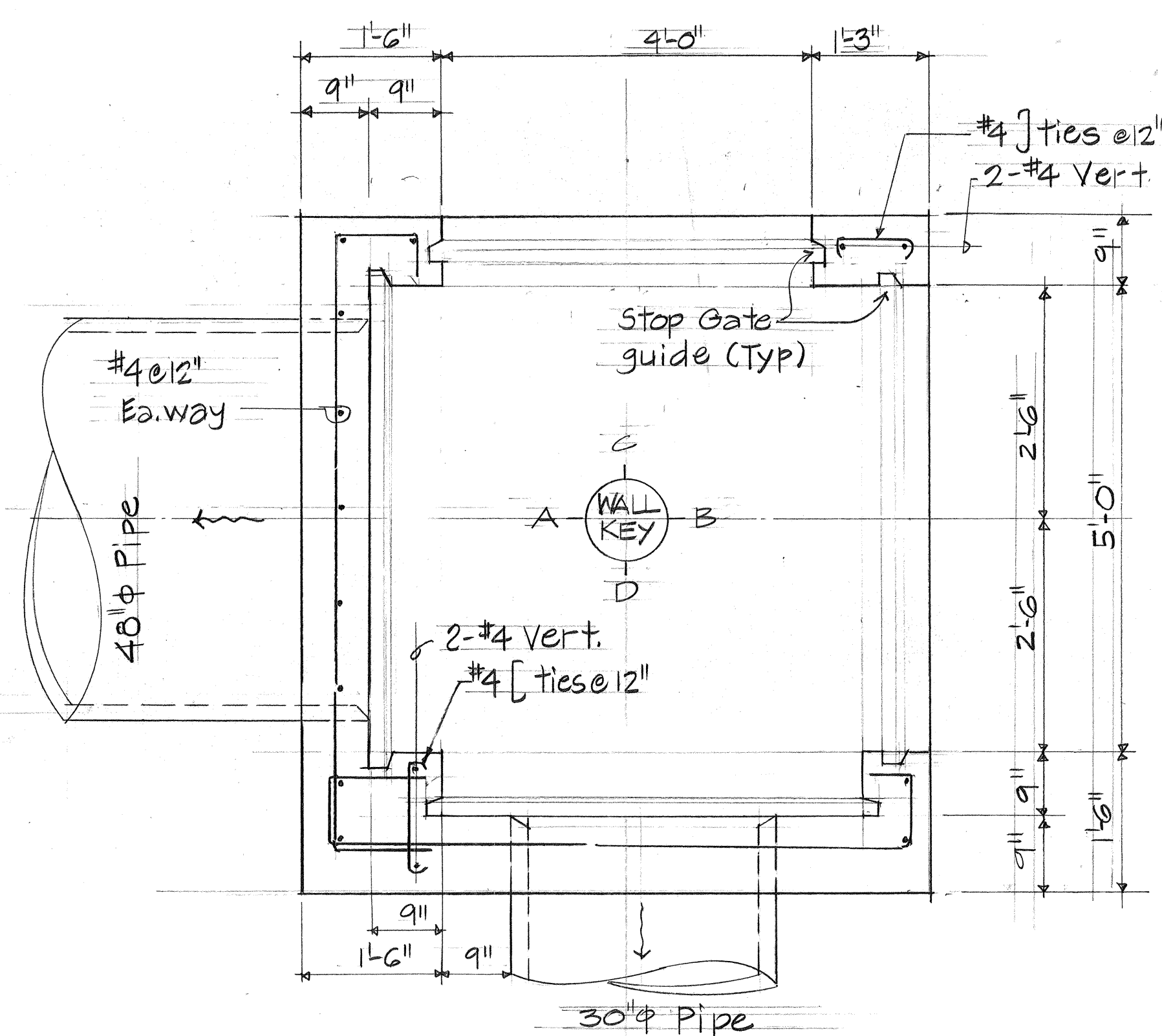
PLAN
SPLITTER BOX #3
Scale $\frac{3}{4}" = 1'-0"$



PLAN
SPLITTER BOX #4
scale $\frac{3}{4}" = 1'-0"$



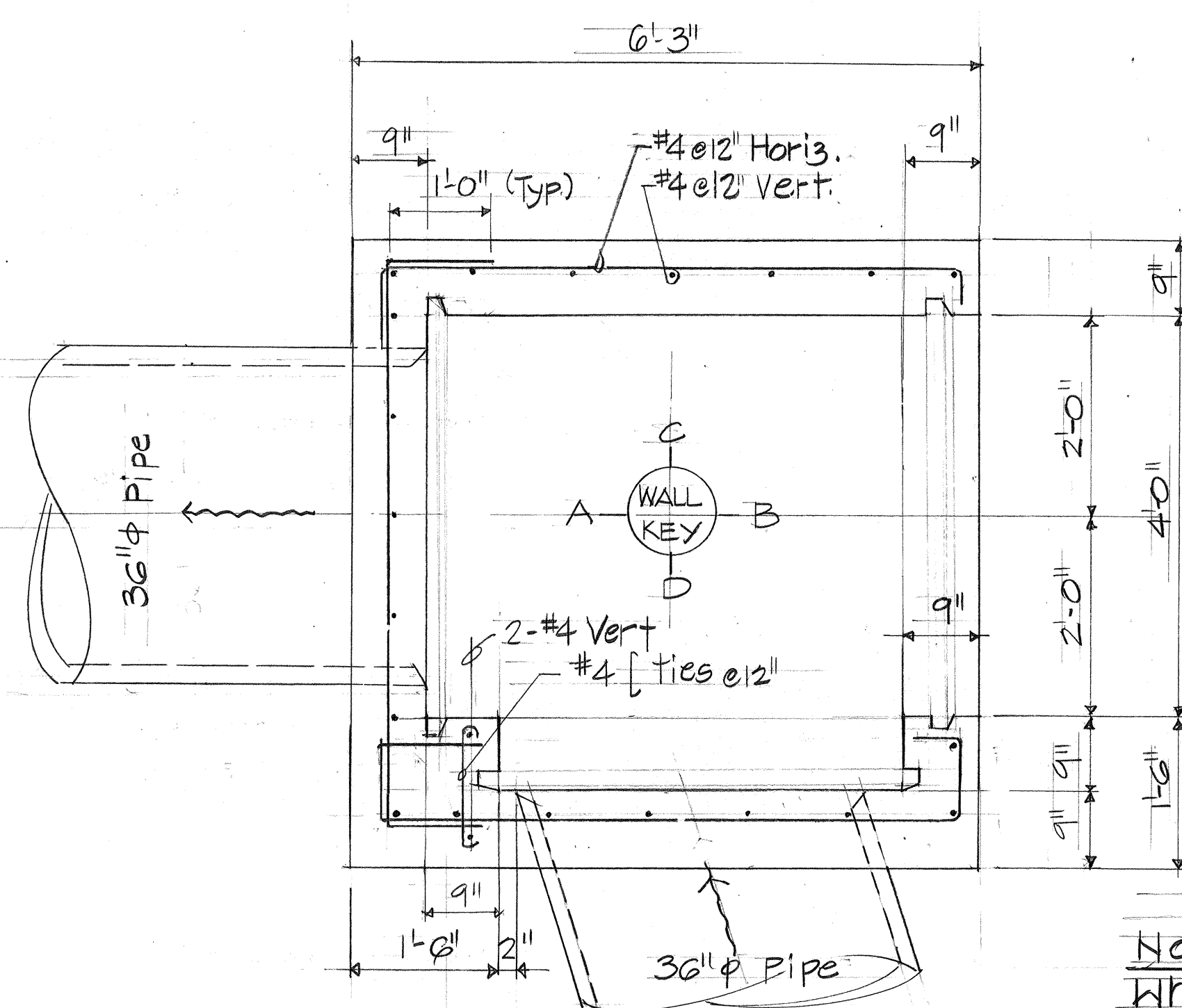
SECTION "A-A" - TYPICAL WING WALL
Scale: $\frac{1}{2}'' = 1'-0''$



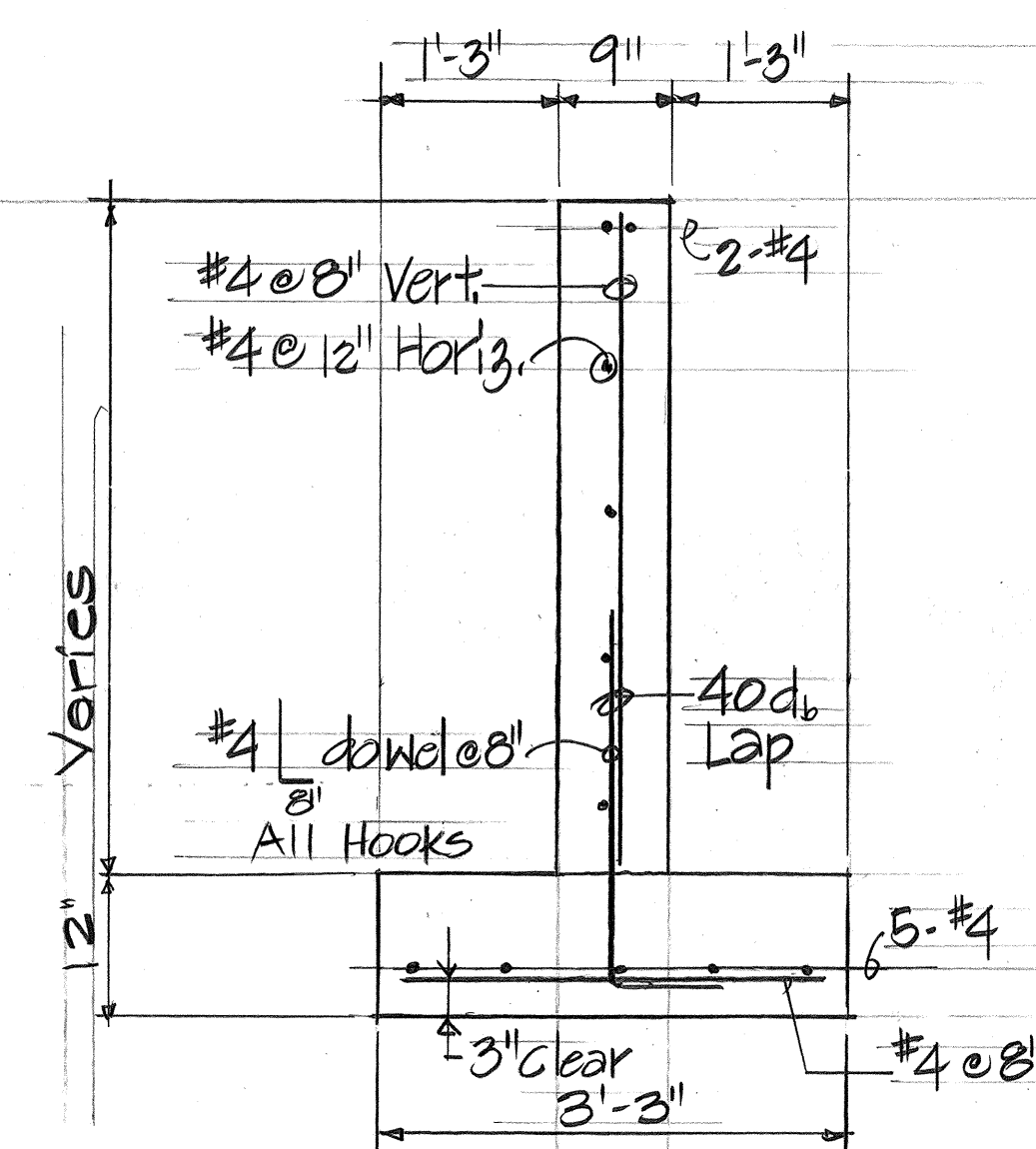
PLAN

SPLITTER BOX #8

Scale 3/4" = 1'-0"

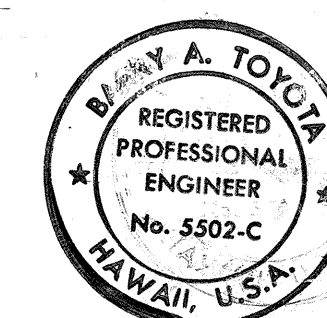


PLAN
SPLITTER BOX #17
Scale $3/4" = 1'-0"$



SECTION "B-B"
TYPICAL WINGWALL DETAILS FOR
SPLITTER BOXES
Scale: 3/4" = 1'-0"

Note:
Where Kingwalls apply,
construct 9" wall corner
projection, see plan,
sh.t. 73



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UNDER MY SUPERVISION,
Mary A. Joyce 6/25/68
Signature

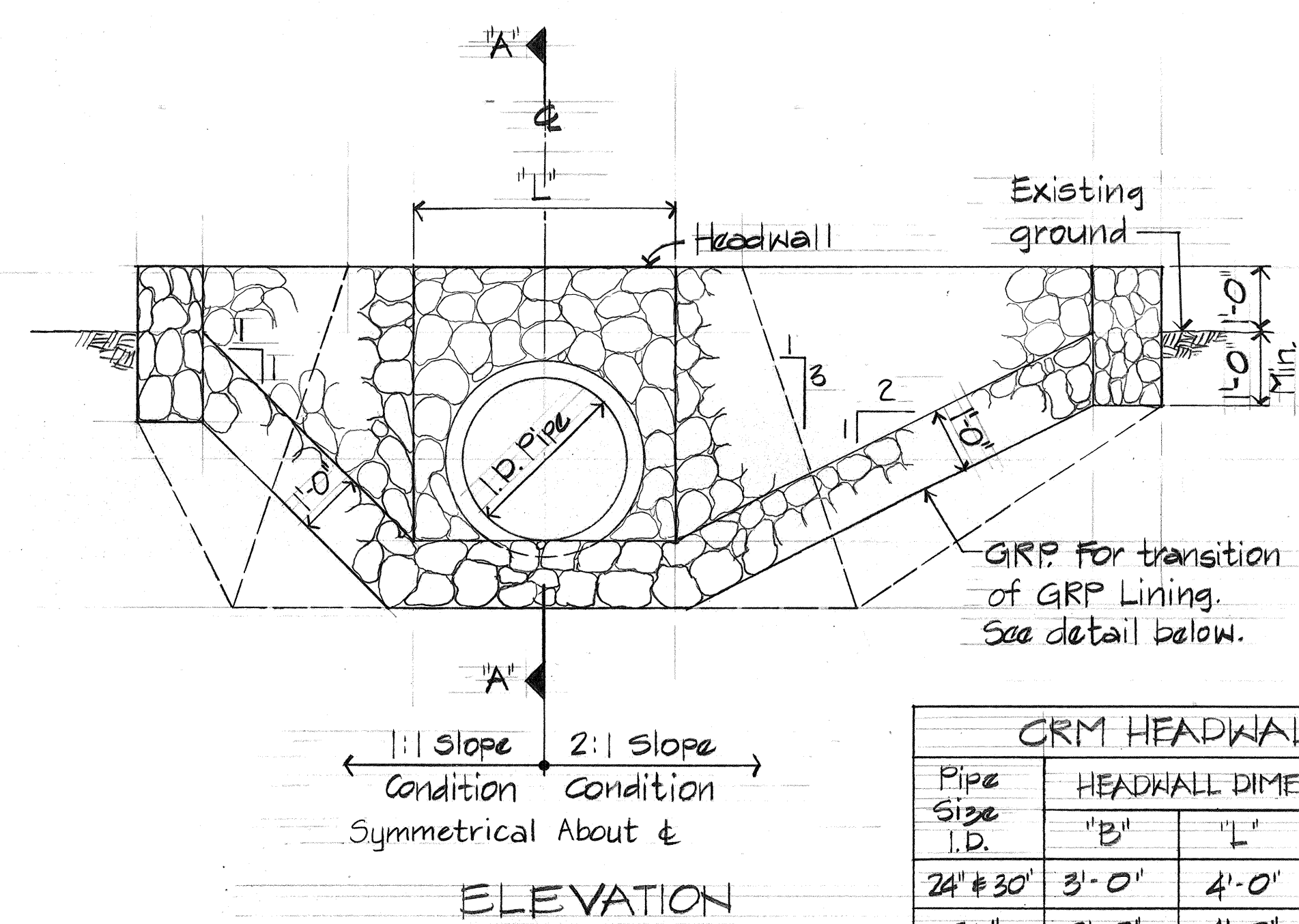
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPLITTER BOX PLANS

HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road To Kauai Hardwoods)
Federal Aid Proj. No. F-05-1(7)
Scale: AS SHOWN Date: Aug, 1986

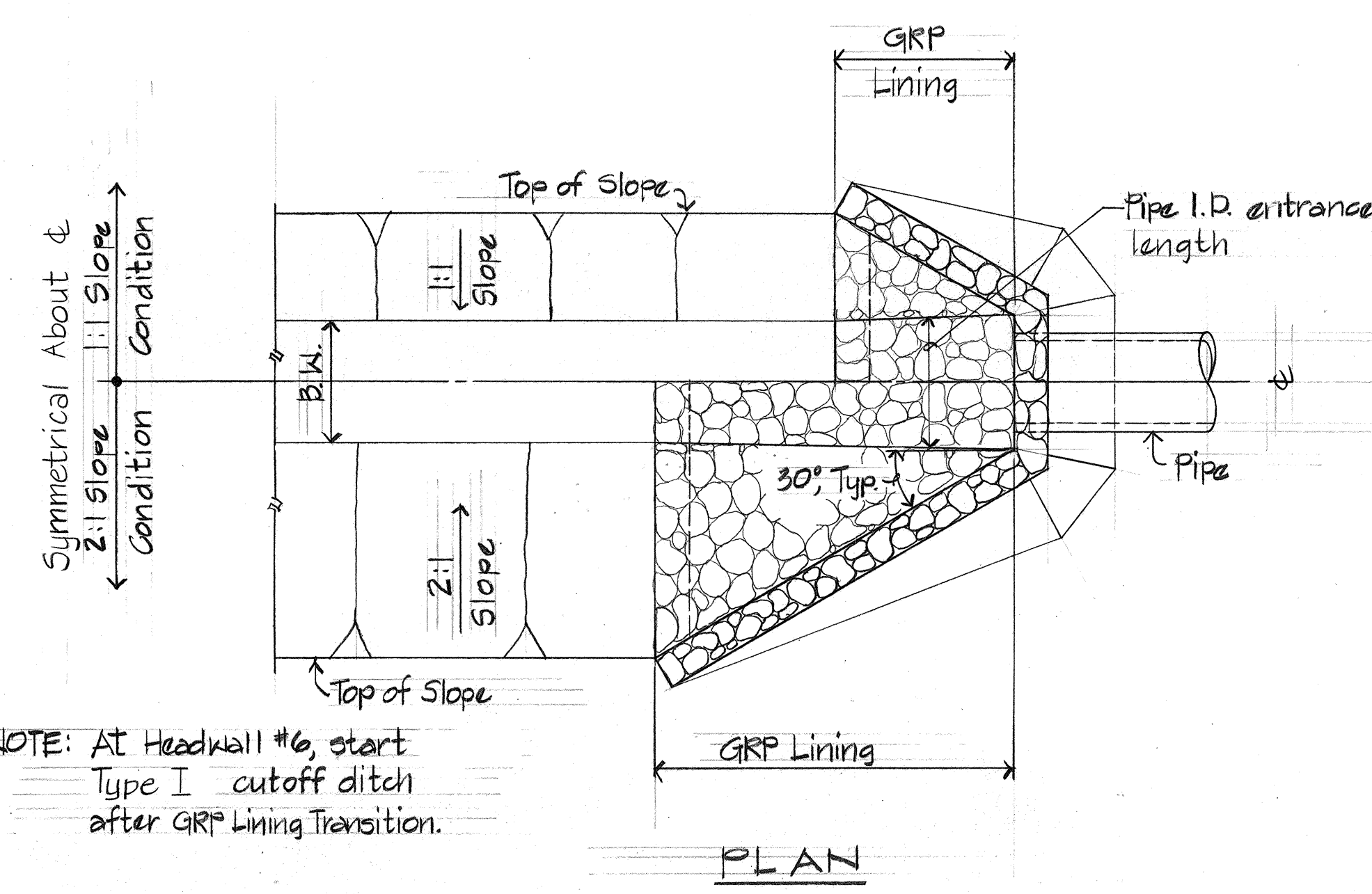
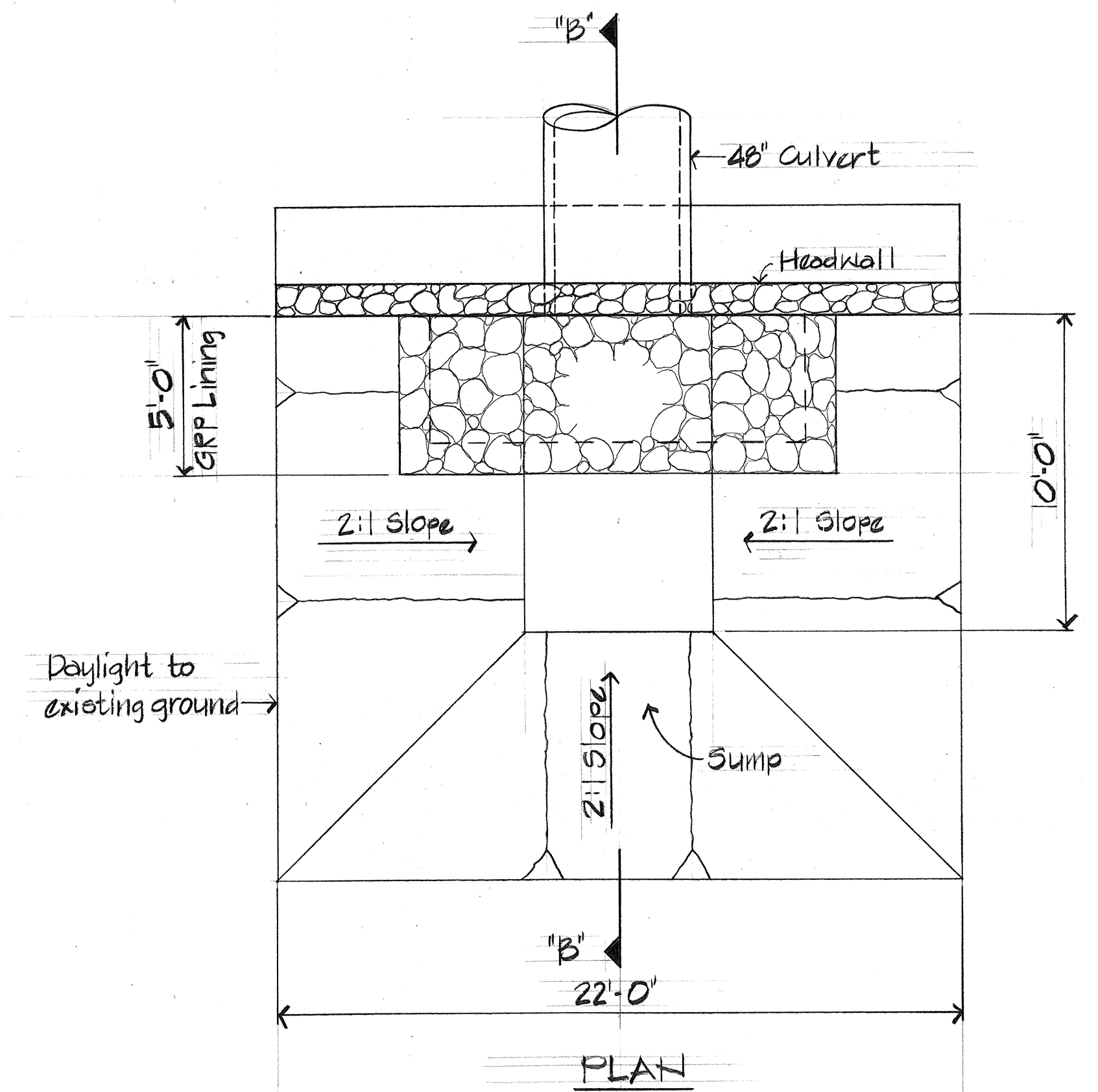
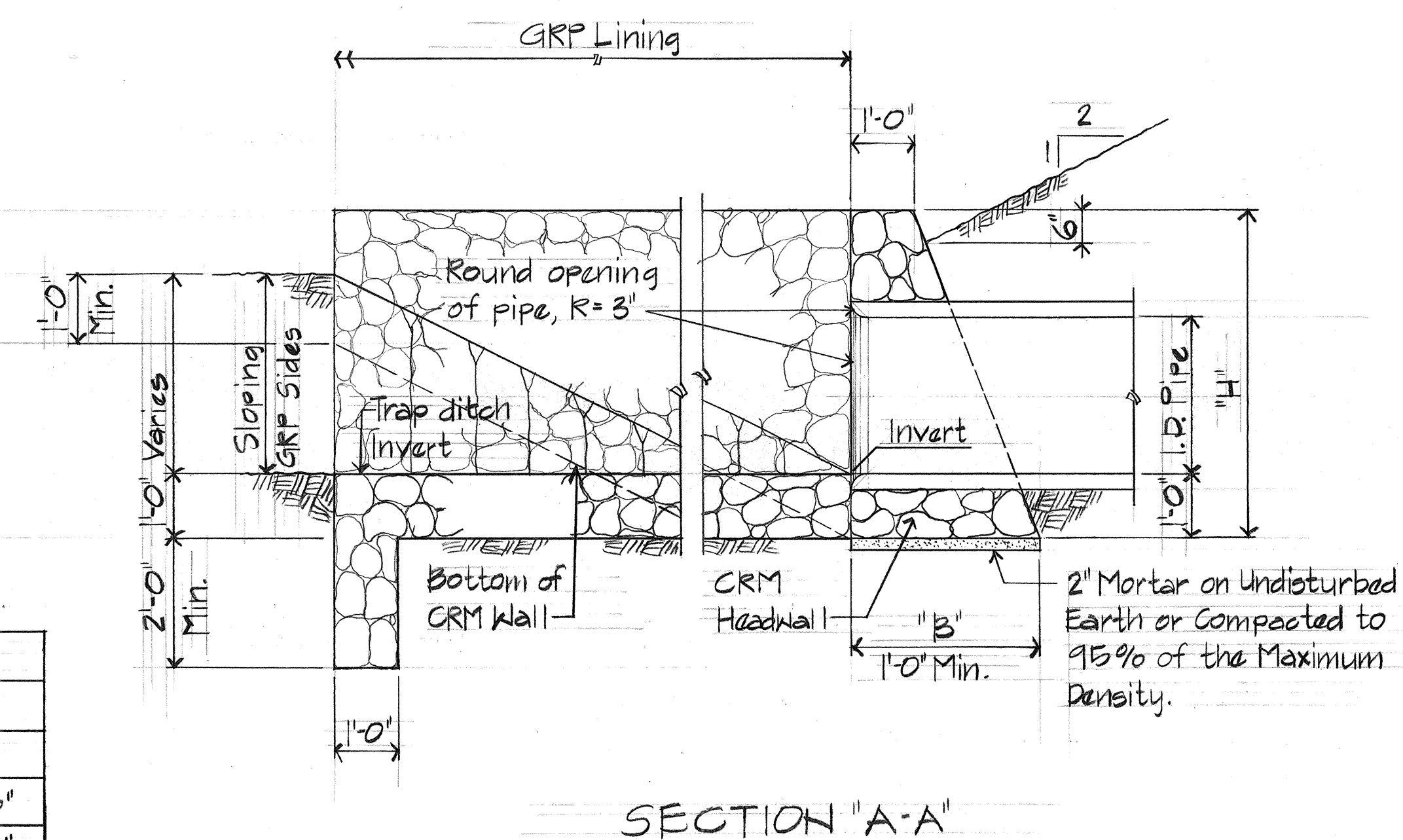
SHEET No. 16 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	75	164



CRM HEADWALL				
Pipe Size I.D.	HEADWALL DIMENSION			
"B"	"L"	"H"		
24" # 30"	3'-0"	4'-0"	5'-6"	
36"	3'-0"	4'-0"	5'-6"	
42"	3'-0"	4'-6"	5'-6"	
48"	3'-6"	5'-0"	6'-6"	

CRM HEADWALL DETAIL
Scale: 1/2" = 1'-0"

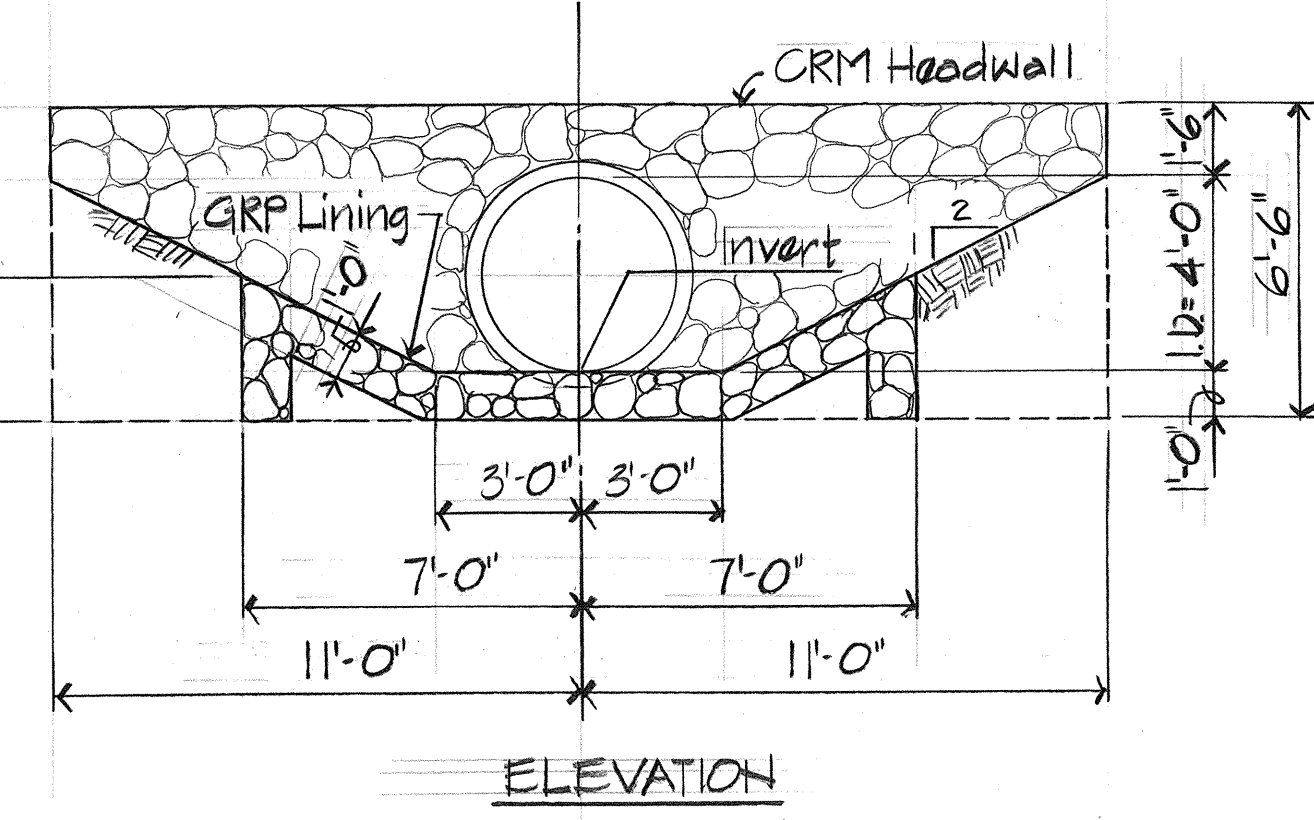
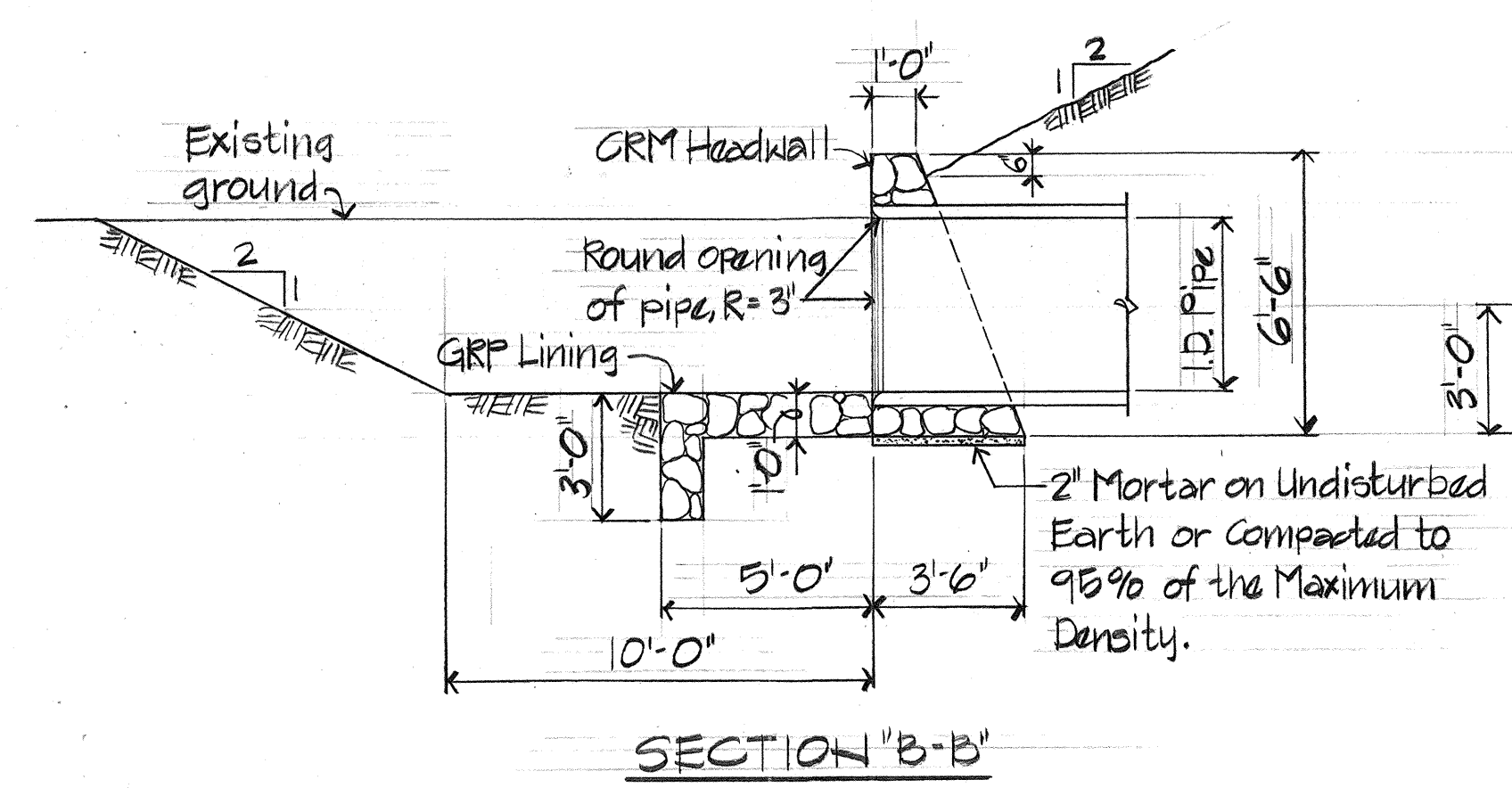


NOTE: At Headwall #6, start Type I cutoff ditch after GRP Lining Transition.

GRP LINING TRANSITION DETAIL FOR CRM HEADWALL
Scale: 1/4" = 1'-0"

HEADWALL INVERT ELEVATION SCHEDULE	
HEADWALL NO.	INVERT
1	160.00
2	133.00
3	132.00
4	86.50
5	132.10
6	131.60
7	72.50

- NOTES:
- For Headwall #1 B.W. = 4'
 - For existing Pitches, use 10' Transition back to Existing Ditch after construction of GRP Lining Transition.



HEADWALL #5 and SUMP DETAIL
Scale: 1/4" = 1'-0"

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

BARRY A. TOJOK
REGISTERED PROFESSIONAL ENGINEER
No. 5502-C
HAWAII, U.S.A.

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Jany A. Tojok
1/20/87

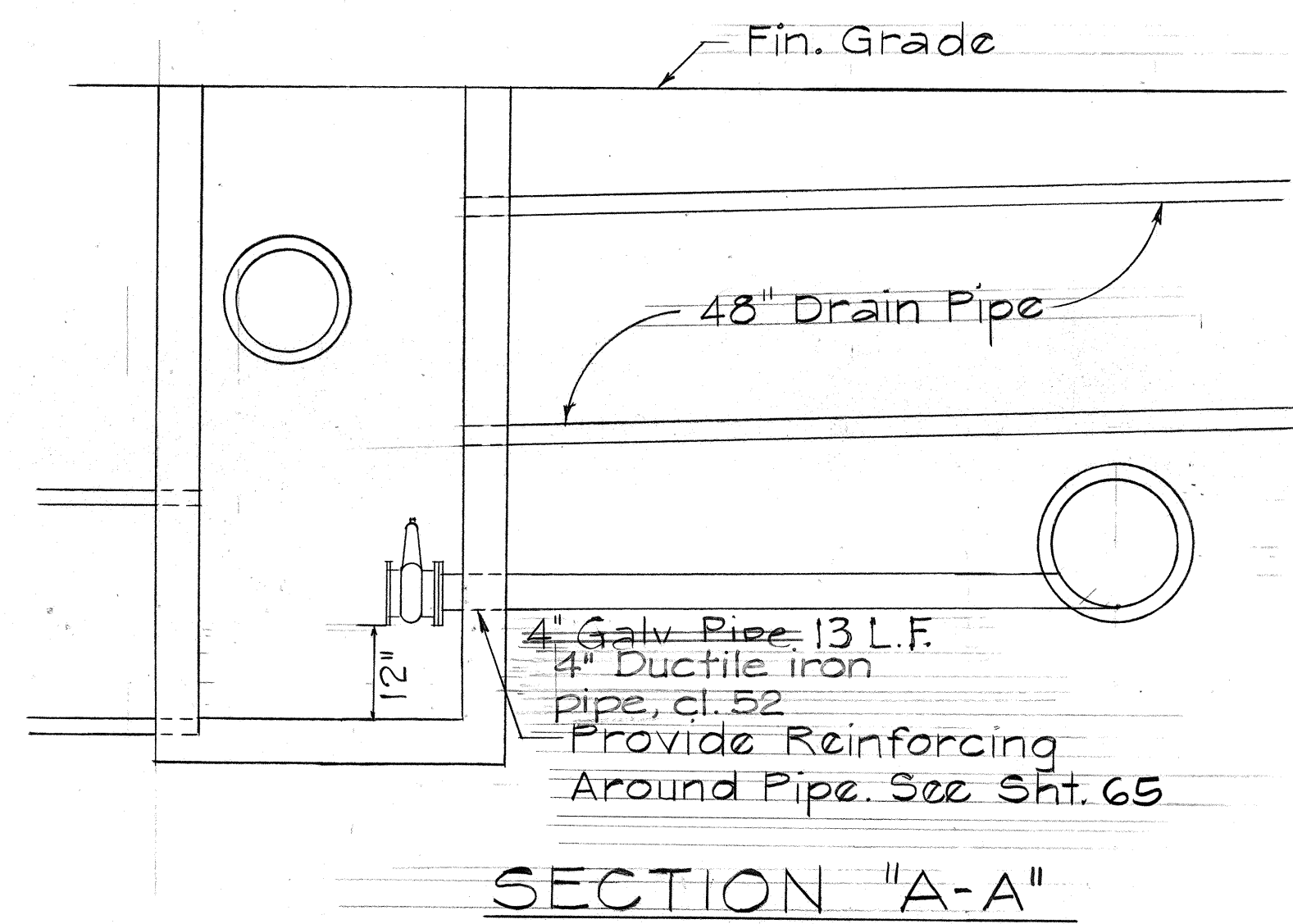
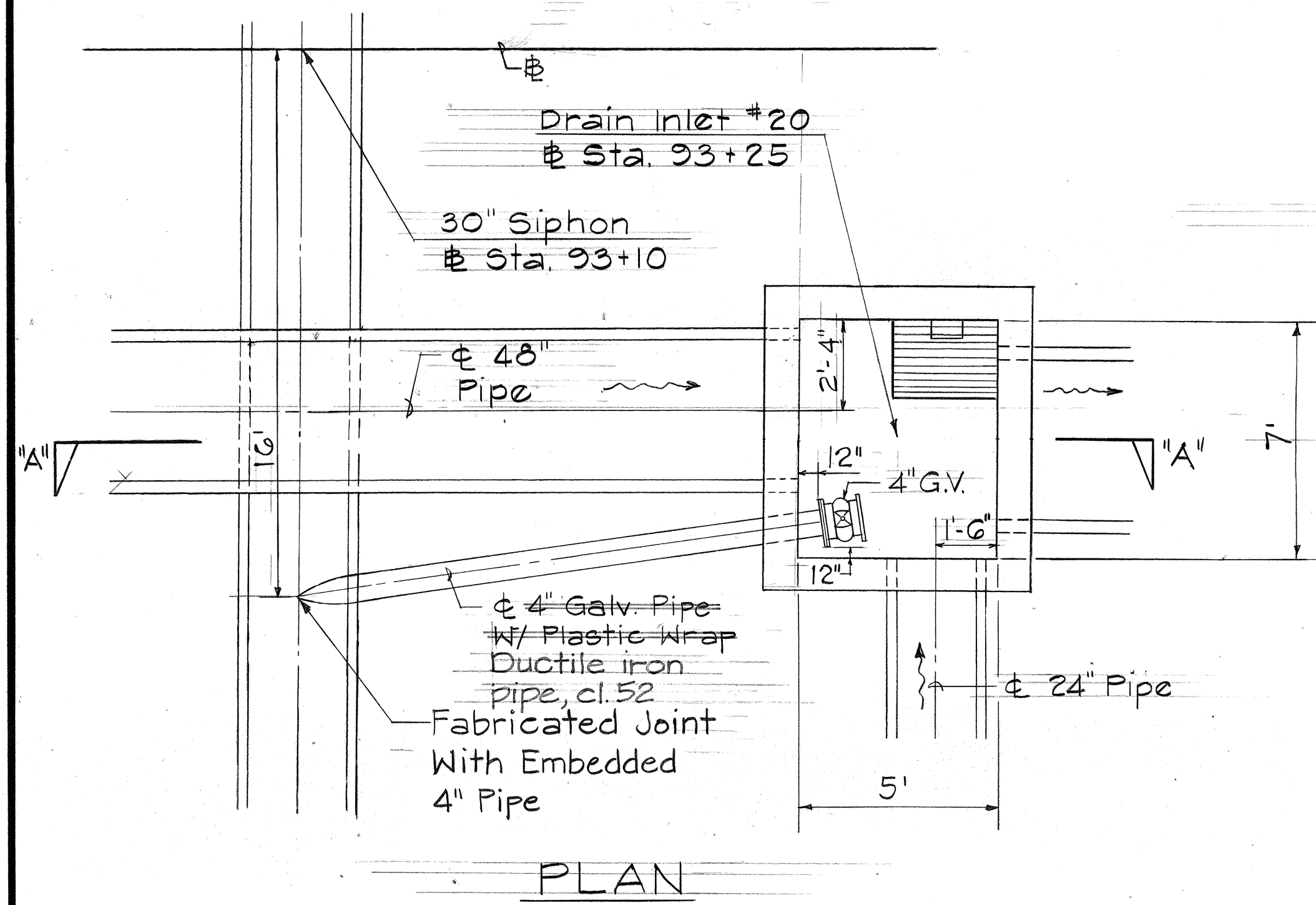
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CRM HEADWALL & GROOVED
END CONNECTING DETAIL

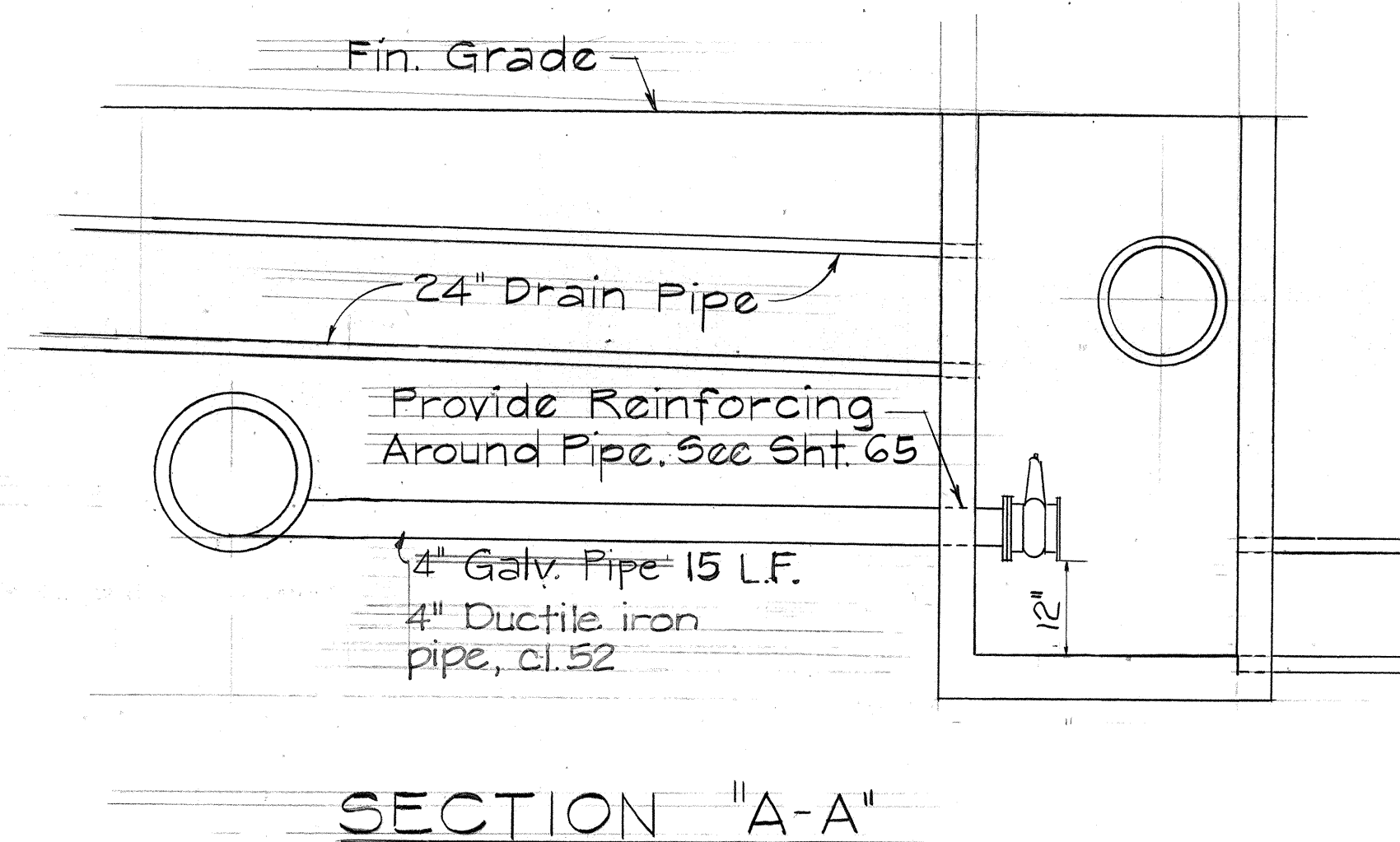
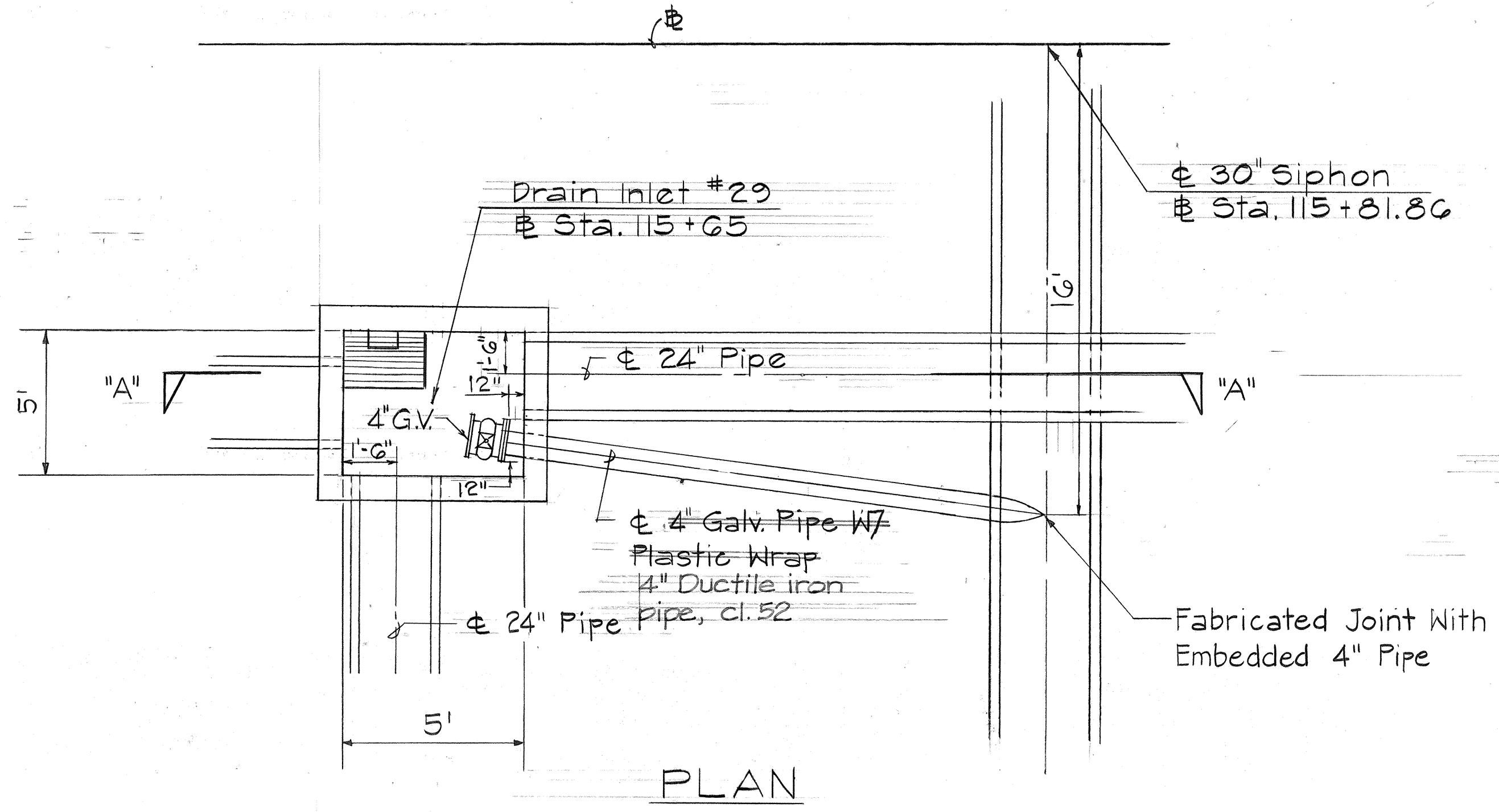
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF ROAD
(Ahukini Road to Kawai Hardwoods)
Federal Aid Project No. F-051-1(7)
Scale: As shown Date: Jan. 1987

SHEET No. 17 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	76	164



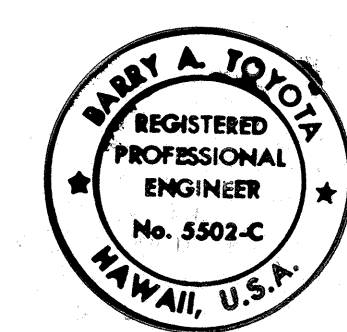
SIPHON DRAINAGE #1
Not To Scale



SIPHON DRAINAGE #2
Not To Scale

- Notes:
1. Provide 2 Foot "Tee" Handle Valve Operating Wrench with Socket to Fit Wrench Nut for Each Valve installed.
 2. 4" Gate Valves Shall Be Mechanical Joint.
 3. Contractor shall submit shop drawings of fabricated joint for approval.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	



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Barry A. Ito 8/25/86

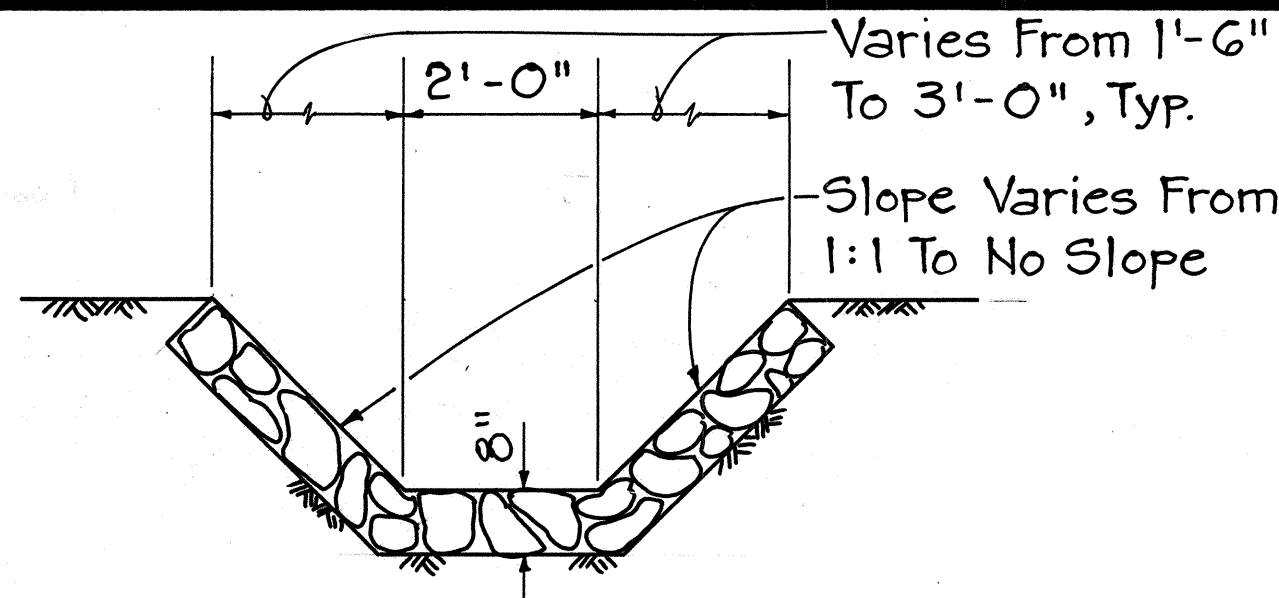
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIPHON DRAINAGE

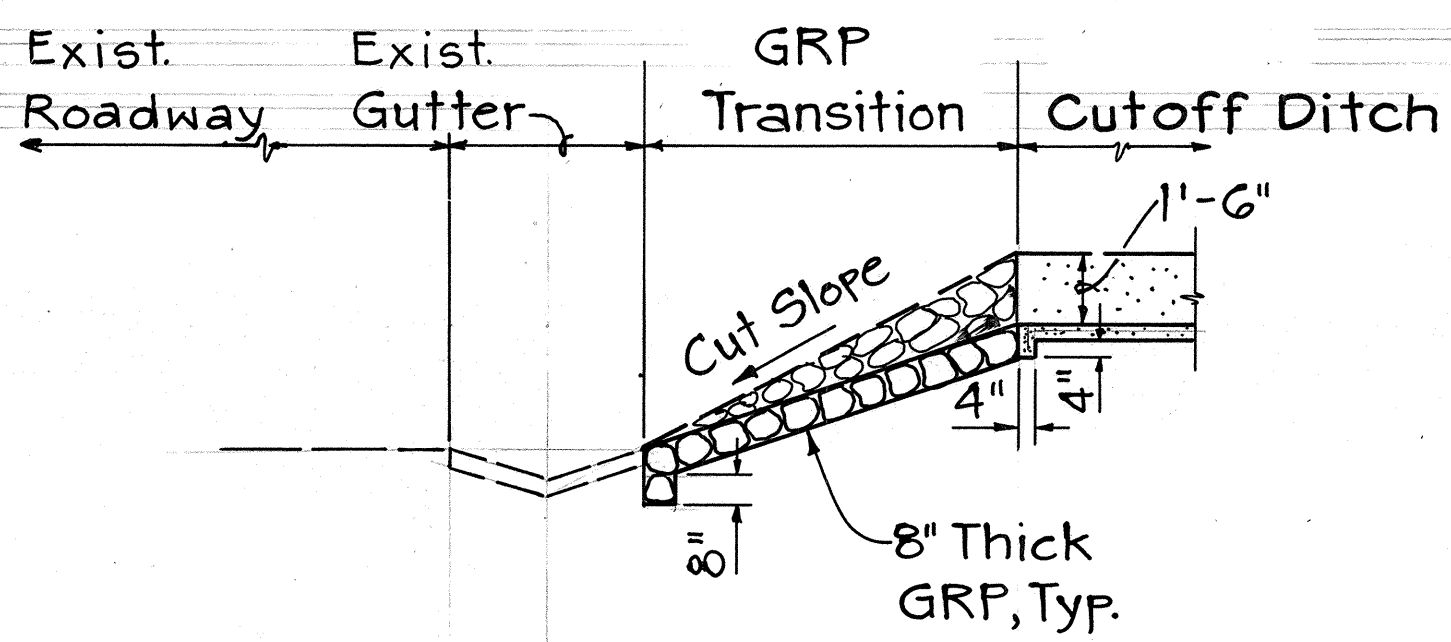
HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF RD.
(Ahukini Road to Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As Shown Date: Aug, 1986

SHEET NO. 18 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-051-1(7)	1987	77	164

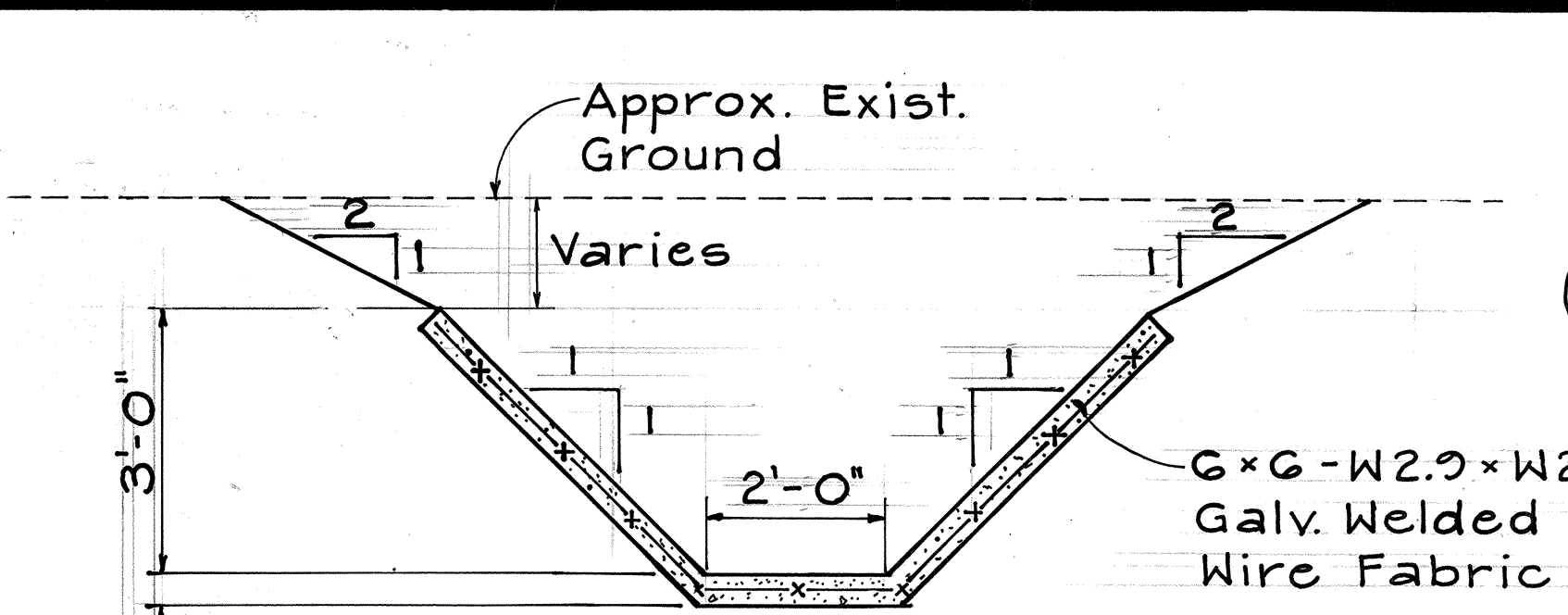


SECTION "B-B"



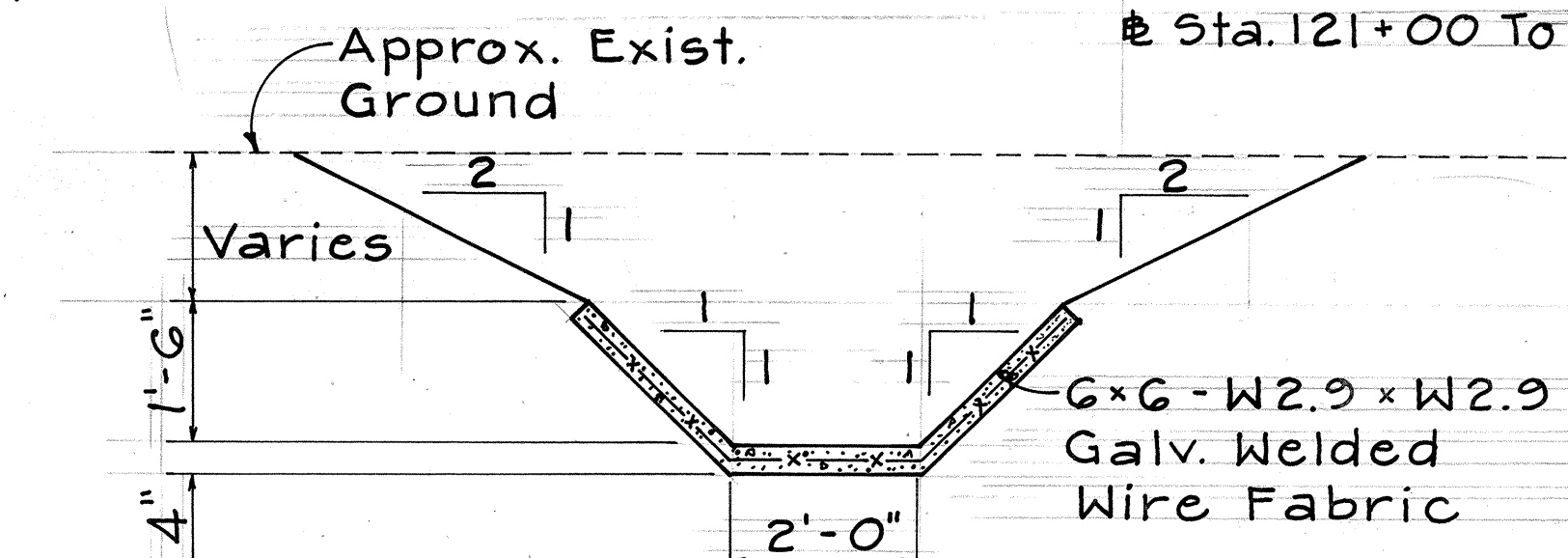
SECTION "A-A"

Note:
GRP Work to be
Incidental to Cutoff
Ditch.



TYPE I
CUTOFF DITCH

Note:
Minimum Slope = 0.0075 ft/ft For
Sta. 74+58 To Desilting Basin #1,
Sta. 121+00 To Desilting Basin #2, &
Sta. 121+00 To 134+93 (Junction Box)



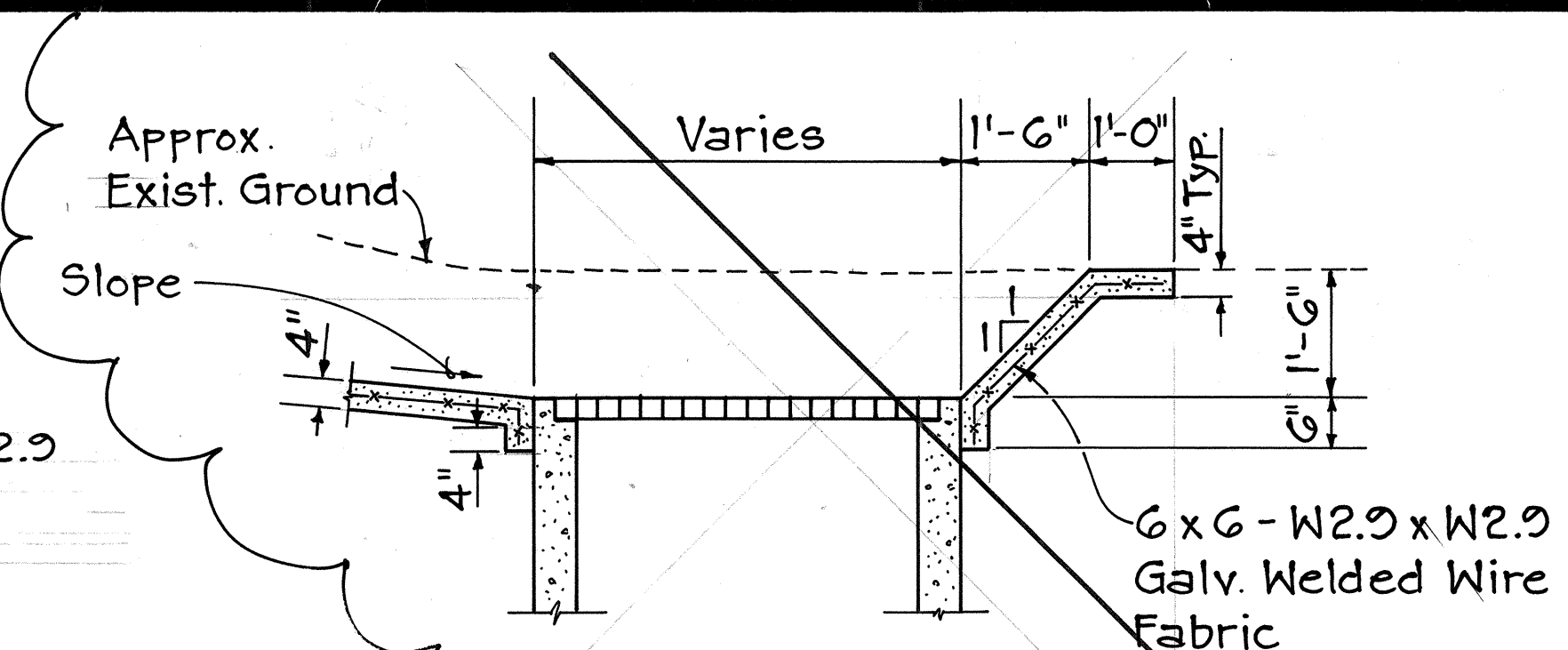
TYPE II
CUTOFF DITCH

Note:
Minimum Slope = 0.0075 ft/ft For
Road "A" Sta. 0+78 (Junction
Box) to 5+00.

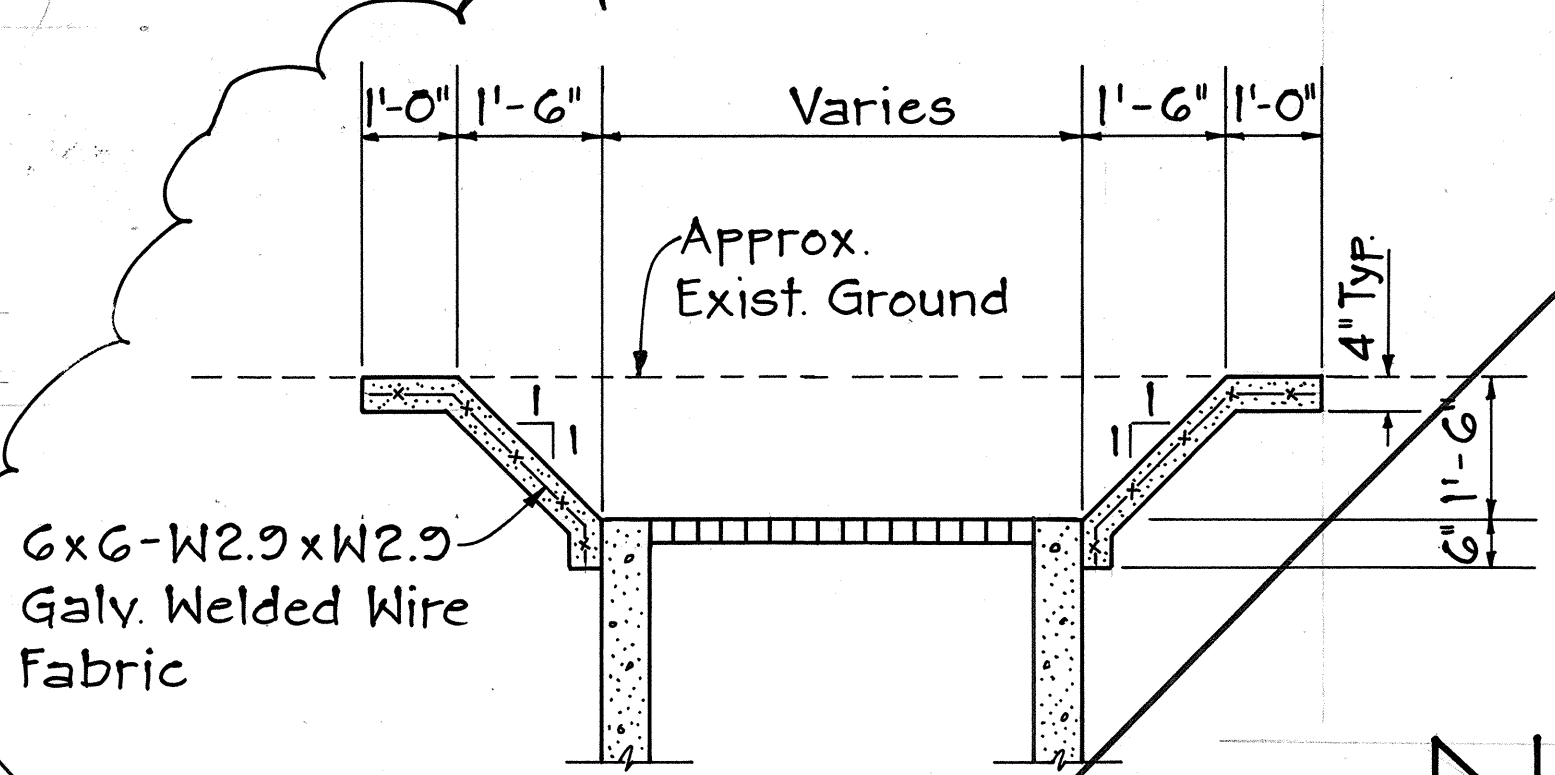
Minimum Slope = 0.0025 ft/ft For
Sta. 137+00 To 141+90

TYPICAL CUTOFF DITCH SECTIONS

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



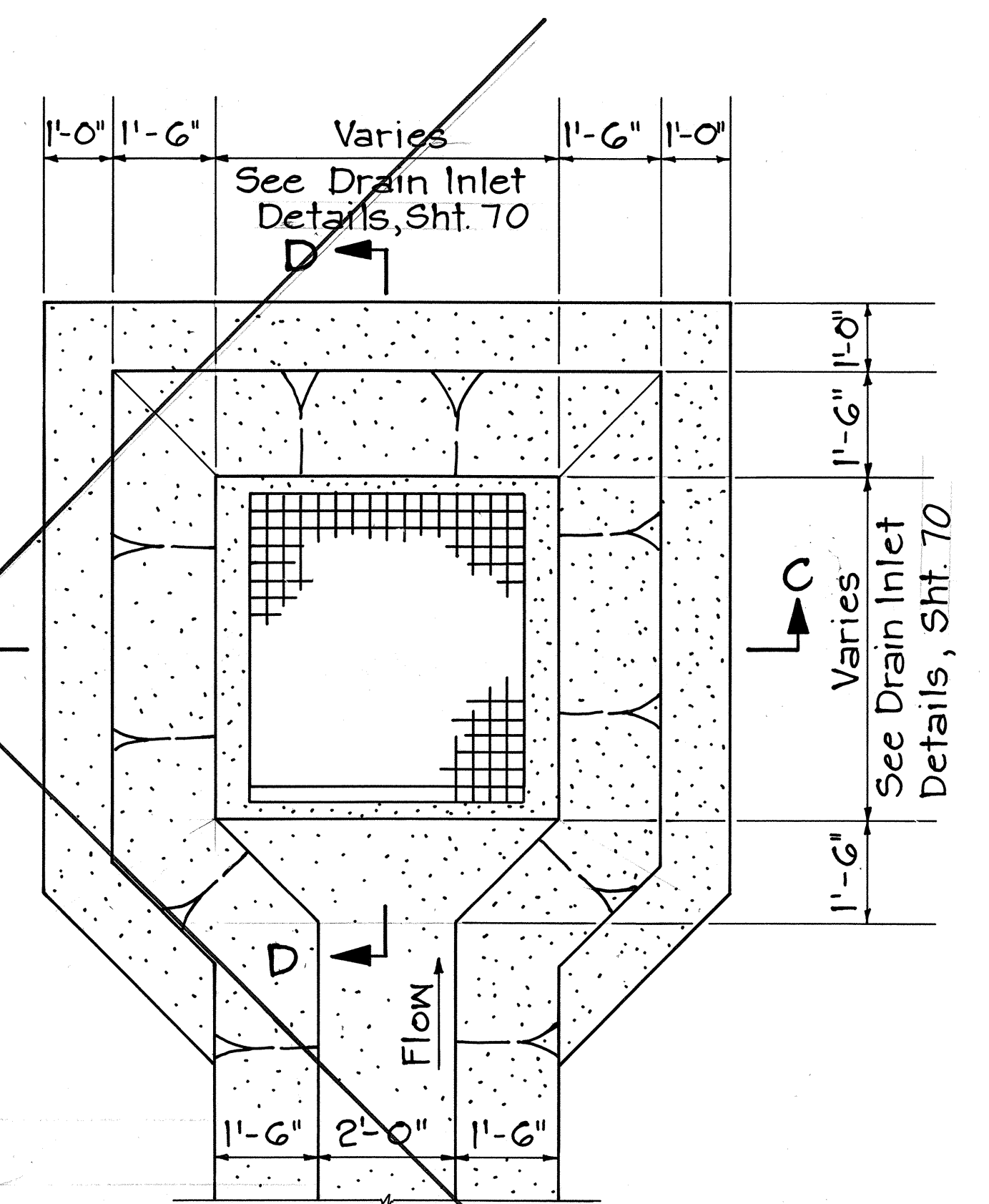
SECTION "D-D"



SECTION "C-C"

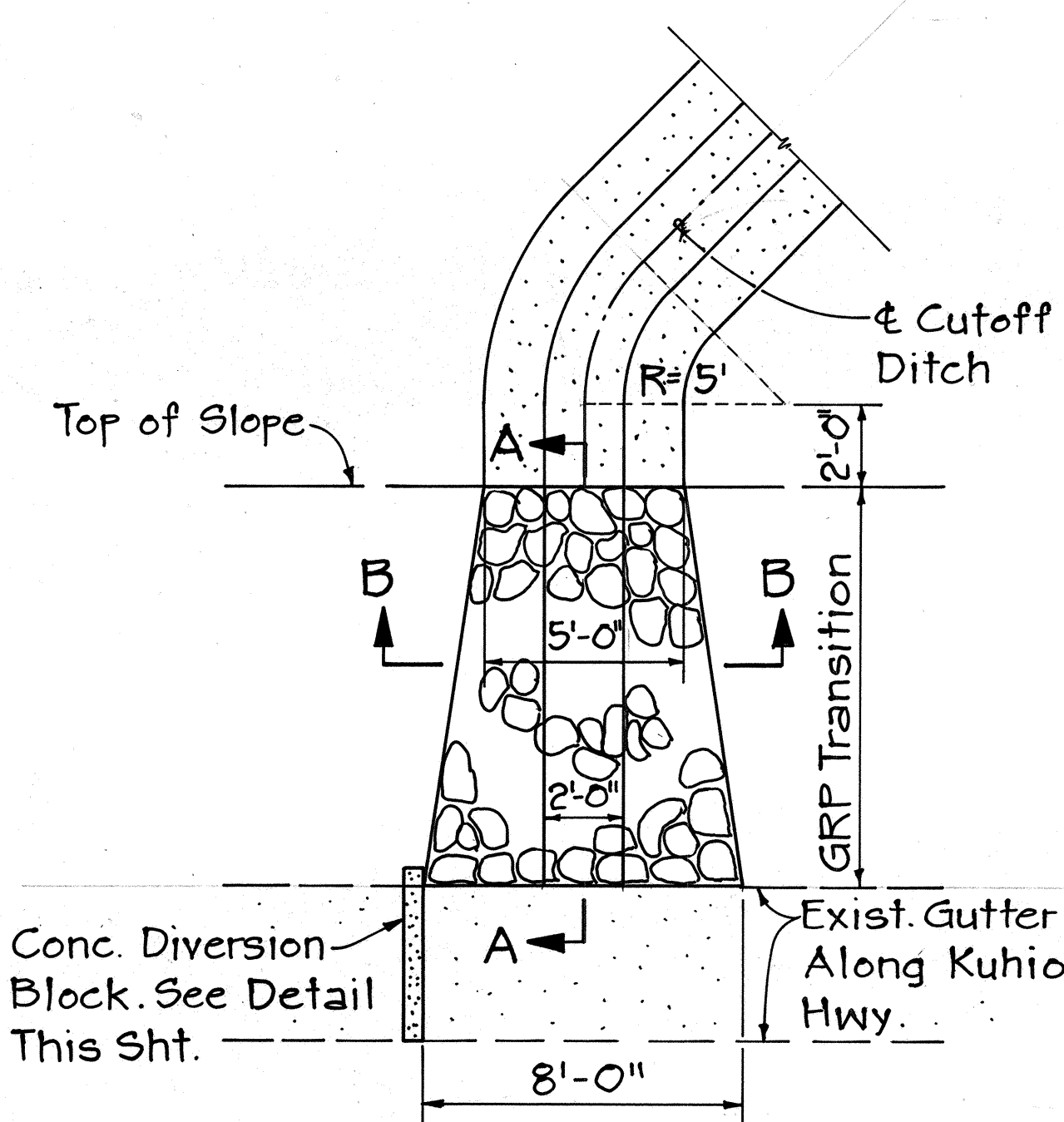
CUTOFF DITCH AT DRAIN INLET

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



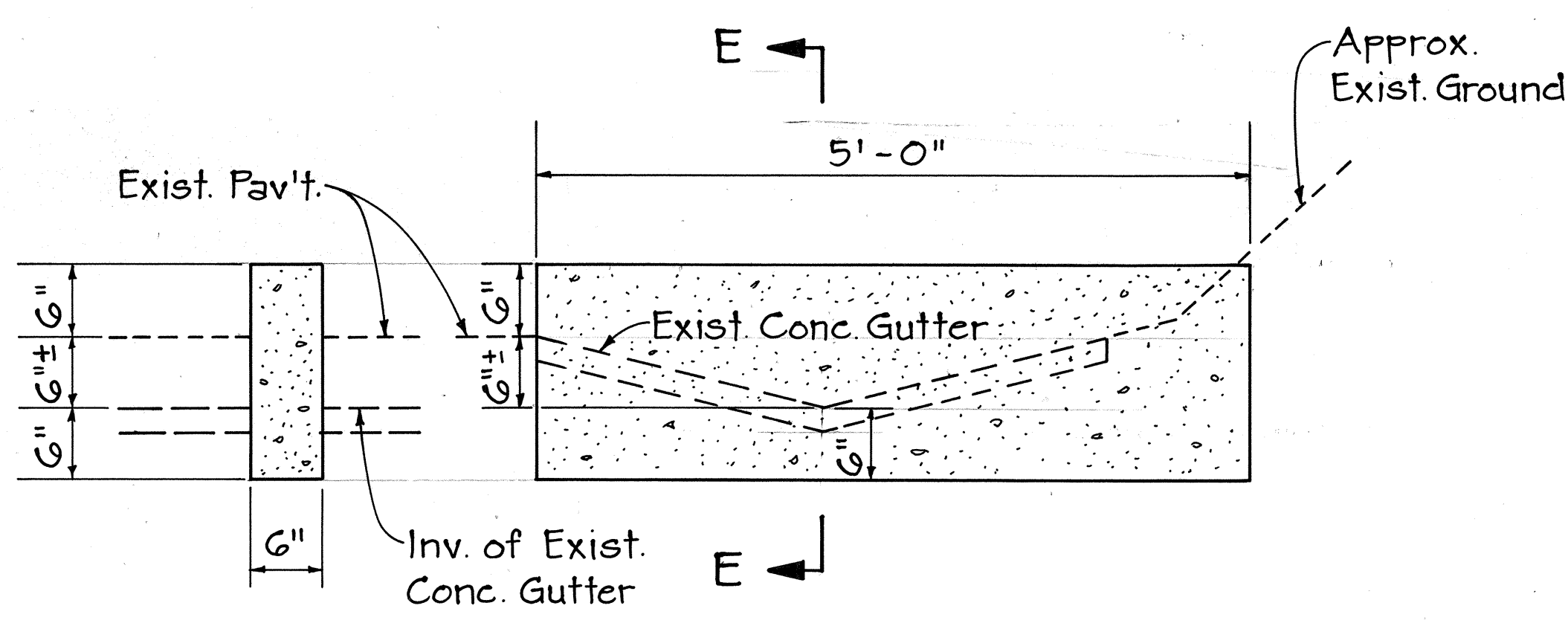
PLAN

#22A & #28A



**END CUTOFF DITCH AT
STA. 141+90 O/S 85 LT.**

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

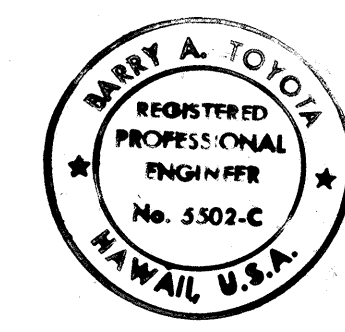


SECTION "E-E"

ELEVATION

CONCRETE DIVERSION BLOCK

Scale: 1" = 1'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CUTOFF DITCH DETAILS

HANAMAULU ROAD & APPROACHES
HANAMAULU-AHUKINI CUTOFF ROAD
(Ahukini Road to Kauai Hardwoods)
Federal Aid Proj. No. F-051-1(7)
Scale: As shown Date: August, 1986

SHEET No. 10 OF 10 SHEETS

THIS WORK WAS PREPARED
BY ME OR UNDER MY
SUPERVISION