

DRAINAGE

SUMMARY

PROJECT: FT WEAVER RD: WIDENING & REALIGNMENT

F.A.I. PROJECT NO. : F-076-1(2) AND S-RS-0760(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-112) S-RS-0760 (2)R/W	1990	42	148

DATE	REVISION
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[illegible]

SHEET No. *H1* OF *38* SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
N _o _____	CHECKED BY _____

DRAINAGE SUMMARY

PROJECT: FT WEAVER RD: WIDENING & REALIGNMENT

F.A.I. PROJECT NO.: F-076-1(2) AND S-RS-0760(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	43	148

DATE	REVISION
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[illegible]

SHEET No. 42 OF 38 SHEETS

DRAINAGE SUMMARY

7/20/90	Added "Type D-8 Catch Basin" to Quantities.
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PROJECT: FT WEAVER RD: WIDENING & REALIGNMENT
F.A.I. PROJECT NO.: F-076-1(2) AND S-RS-0760(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	C.0.44	148

ITEM NO.		202	206	206	503	503	503	602	603	603	603	603	603	603	603	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604	604		
		0410	2020	8000	0200	0201	1020	1021	0010	1010	1012	1014	1016	1018	1024	2311	2312	2313	2335	5060	5160	5220	5240	6300	6400	6500	6600	6650	6660	6664	7300	7400	7500	7600			
UNIT USED		EA	CY	CY	EA	LS	CY	L.S.	CY	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA		
⊕ STATION (from)	⊕ STATION (to)	Removal of Drywells	Structural Excavation Other Than at Bridges	Filter Material	Reinforced Concrete Cap Over Existing Drywell	Reinforced Concrete Collar at ⊕ Sta. 68+85 o/s 33' Lt.	Concrete In Box Culvert	Reinforcing Steel for Drainage System	Bed Course Material for Culvert	24-Inch Reinforced Concrete Pipe, Class III	30-Inch Reinforced Concrete Pipe, Class III	36-Inch Reinforced Concrete Pipe, Class III	42-Inch Reinforced Concrete Pipe, Class III	48-Inch Reinforced Concrete Pipe, Class III	66-Inch Reinforced Concrete Pipe, Class III	Type 1 'A-9P' Grated Drop Inlet, 4.50 Feet to 6.50 Feet	Type 2 'A-9P' Grated Drop Inlet, 6.00 Feet to 7.00 Feet	Type 3 'A-9P' Grated Drop Inlet, 4.00 Feet to 5.00 Feet	Type 'G1614' Grated Drop Inlet, 3.50 Feet to 5.00 Feet	Type 'C' Storm Drain Manhole, 10.00 Feet to 12.00 Feet	Type 'H' Storm Drain Manhole, 9.00 Feet to 10.00 Feet	Type 'K' Storm Drain Manhole, 10.00 Feet to 11.00 Feet	Type 'L' Storm Drain Manhole, 1.50 Feet to 5.00 Feet	Type 'A' Catch Basin, 4.50 Feet to 8.50 Feet	Type 'B' Catch Basin, 4.50 Feet to 7.50 Feet	Type 'C' Catch Basin, 4.50 Feet to 7.50 Feet	Type 'D' Catch Basin, 4.50 Feet to 7.50 Feet	Type 'D-8' Catch Basin, 7.00 Feet to 8.00 Feet	Type D-10 Catch Basin, 6.50 Feet to 7.50 Feet	Type D-14 Catch Basin, 4.00 Feet to 5.00 Feet	Type 'A1' Catch Basin, 7.00 Feet to 8.00 Feet	Type 'B1' Catch Basin, 9.00 Feet to 10.00 Feet	Type 'C1' Catch Basin, 11.00 Feet to 12.00 Feet	Type 'D1' Catch Basin, 4.00 Feet to 8.00 Feet	REMARKS		
50+50 Rt.	50+50 Lt.		76						10	58																											
50+50 Lt.	53+25 Lt.		1521	21			329	(59000)	69														1														
53+25 Lt.	53+25 Lt.		24						4	20																											
53+25 Rt.	53+25 Lt.		63						10	58																	1										
53+25 Lt.	56+60 Lt.		1853	25			401	(71800)	84														1														
54+00 Lt.	54+00 o/s 95' Lt.		85						12	68																											
54+00 o/s 95' Lt.	53+55 o/s 95' Lt.		43						7	40																										1	
56+60 Lt.	56+60 Lt.		20						4	20															1												
56+60 Rt.	56+60 Lt.		58						9	54																										1	
56+60 Lt.	58+60 Lt.		1106	15			239	(43200)	50														1														
58+60 o/s 53' Lt.	58+60 Lt.		22						5	24									1																		
58+60 Rt.	58+60 Lt.		58						9	54																										1	
58+60 Lt.	60+52 Lt.		1062	15			230	(41000)	48																												
59+76 o/s 80' Rt.	59+76 Lt.		325	7			73	(9600)	17														1														
59+50 o/s 70' Rt.	59+76 o/s 69' Rt.		24						4	24																		1									
59+92 o/s 70' Rt.	59+76 o/s 69' Rt.		13						3	14																	1										
60+40 o/s 53' Lt.	60+40 Lt.		22						4	24									1								1										
60+52 Lt.	64+25 Lt.		2768	28			772	(166700)	142														3														
61+50 Rt.	61+50 Lt.		60						8	48							1																				
62+25 o/s 53' Lt.	62+25 Lt.		21						4	24									1								1										
64+25 o/s 53' Lt.	64+25 Lt.		21						4	24									1								1										
64+25 Lt.	67+00 Lt.		2041	21			571	(121700)	105														1														
65+45 Lt.	65+45 Rt.		64						9	50						1																					
65+45 Rt.	64+80 Rt.		78						11	62							1																				
67+00 o/s 56' Lt.	67+00 Lt.		22						5	26									1								1										
Subtotal		0	11450	132	0	0	2615	(513000)	637	692	0	0	0	0	0	1	2	0	5	0	0	0	8	0	1	0	9	1	1	0	0	0	0	0	3		

SHEET No. *H3* OF *38* SHEETS

C.O. 44

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

DRAINAGE SUMMARY

PROJECT: FT WEAVER RD: WIDENING & REALIGNMENT

F.A.I. PROJECT NO. : F-076-1(2) AND S-RS-0760(2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	C.0.45	148

7/20/90 Added "Type D-8 Catch Basin"
to Quantities.

DATE	REVISION
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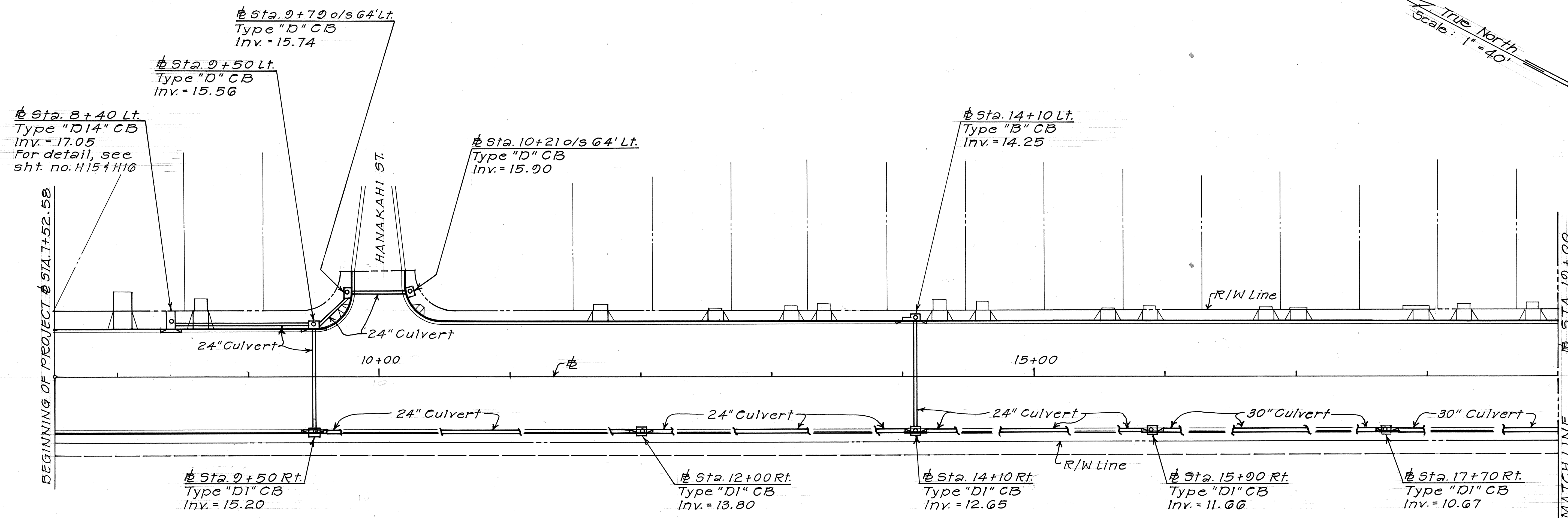
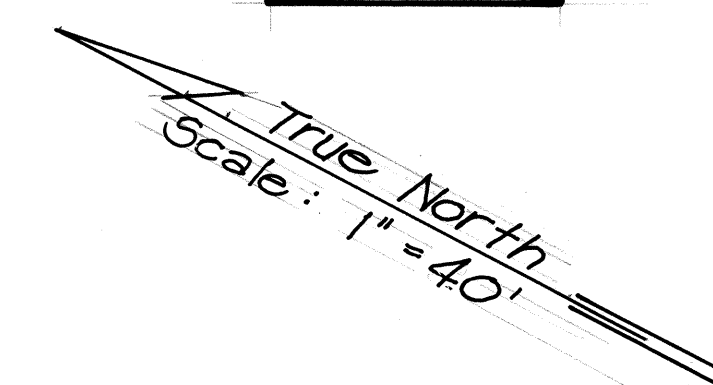
[illegible]

SHEET No. *H4* OF 38 SHEETS

C.O. 45

THE HISTORY OF THE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	40	148



FORT WEAVER ROAD GENERAL DRAINAGE NOTES:

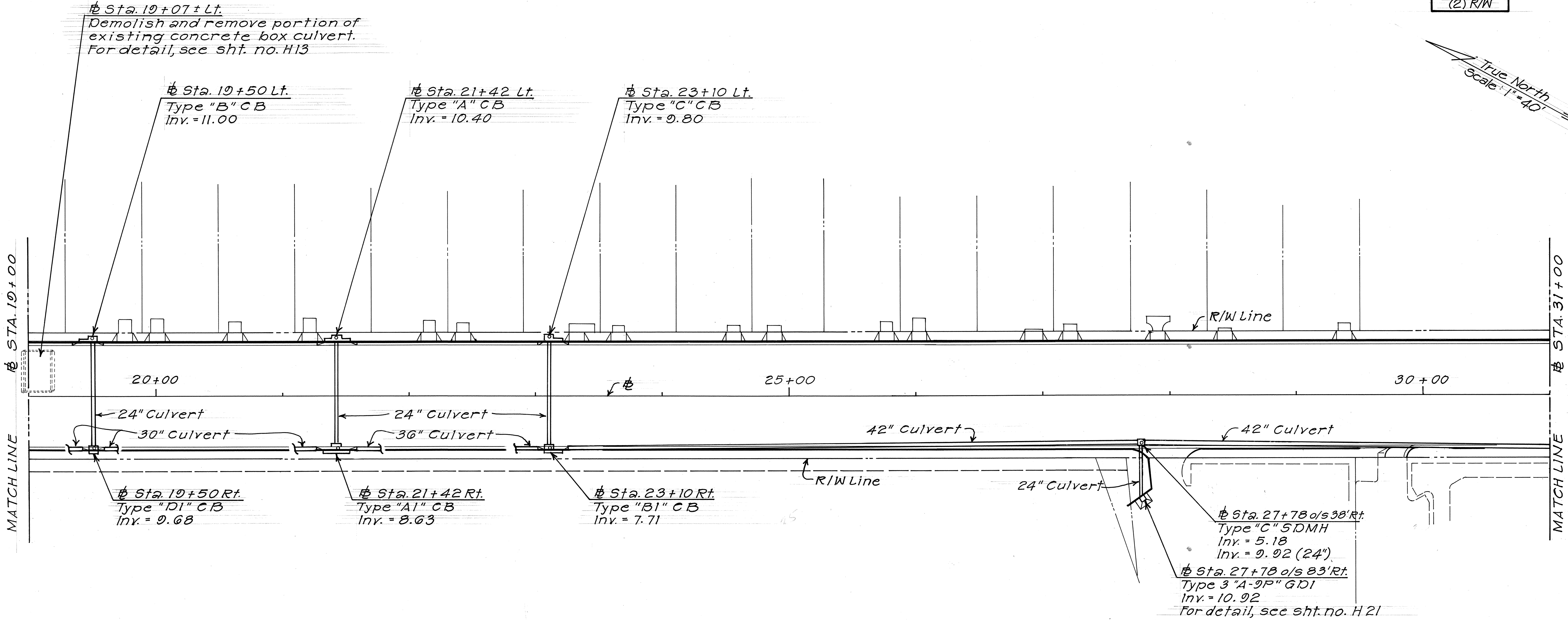
- Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various contract items.
- Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
- The following work shall not be paid for separately but shall be considered incidental to the various Contract Items:
 - Cutting and plugging existing and new culverts with bricks and mortar.
 - Demolishing and removing existing Concrete Headwall at Sta. 68+28 ± Lt.
 - Demolishing and removing existing GDI at Sta. 68+28 ± Lt.
- Concrete shall be Class A unless otherwise noted.
- Chamfer all exposed concrete edges 1".
- Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete. Where indicated on plans, the approximate diameter of drilled holes for installation of dowels shall be 2"; voids shall be filled with epoxy grout or as directed by the Engineer. The work shall be considered incidental to the various contract items.
- For added reinforcing around new culverts, at catch basins and GDIs, see Standard Plan Sheet H-04.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE PLAN	
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.	
Project Nos. F-076-1(2) and S-RS-0760(2) R/W	
Scale: As Shown	Date: SEPT, 1989
SHEET NO. H5 OF 38 SHEETS	

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	47	148

True North
Scale: 1"=40'



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

**FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.**

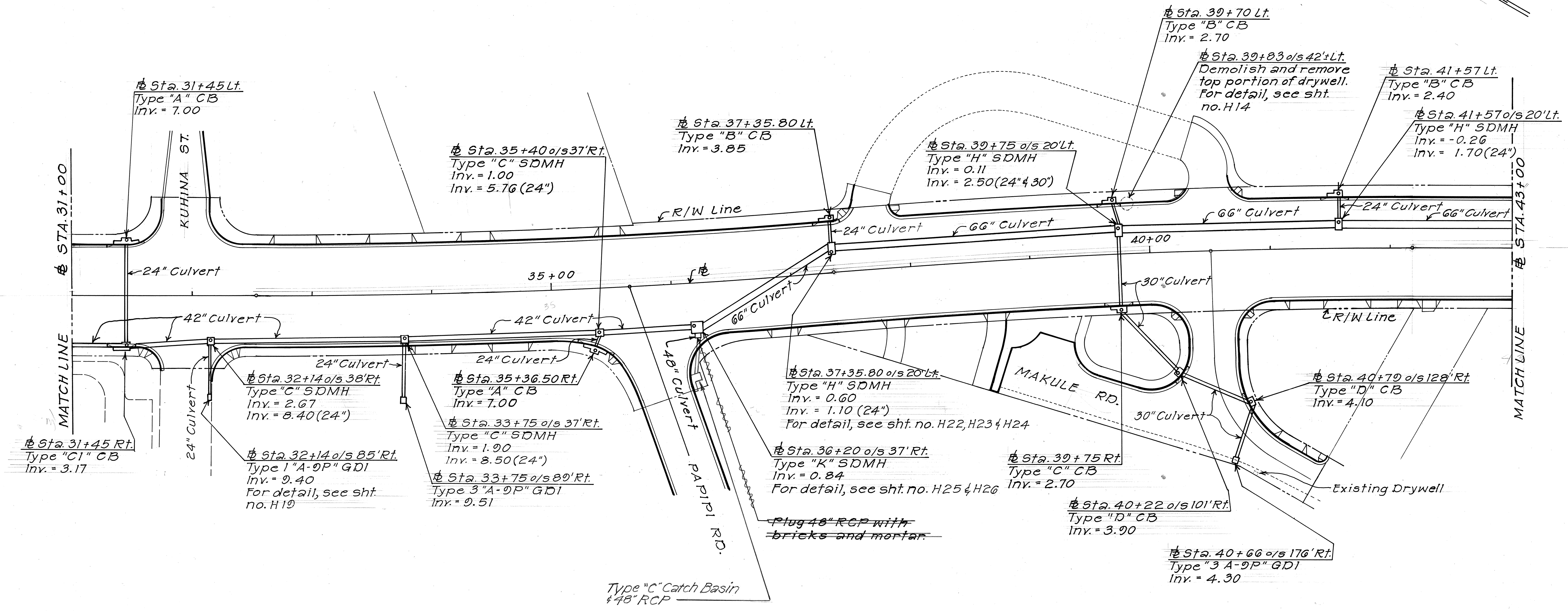
Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT, 1989

SHEET NO. 47 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	48	148

True North
Scale: 1"=40'



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

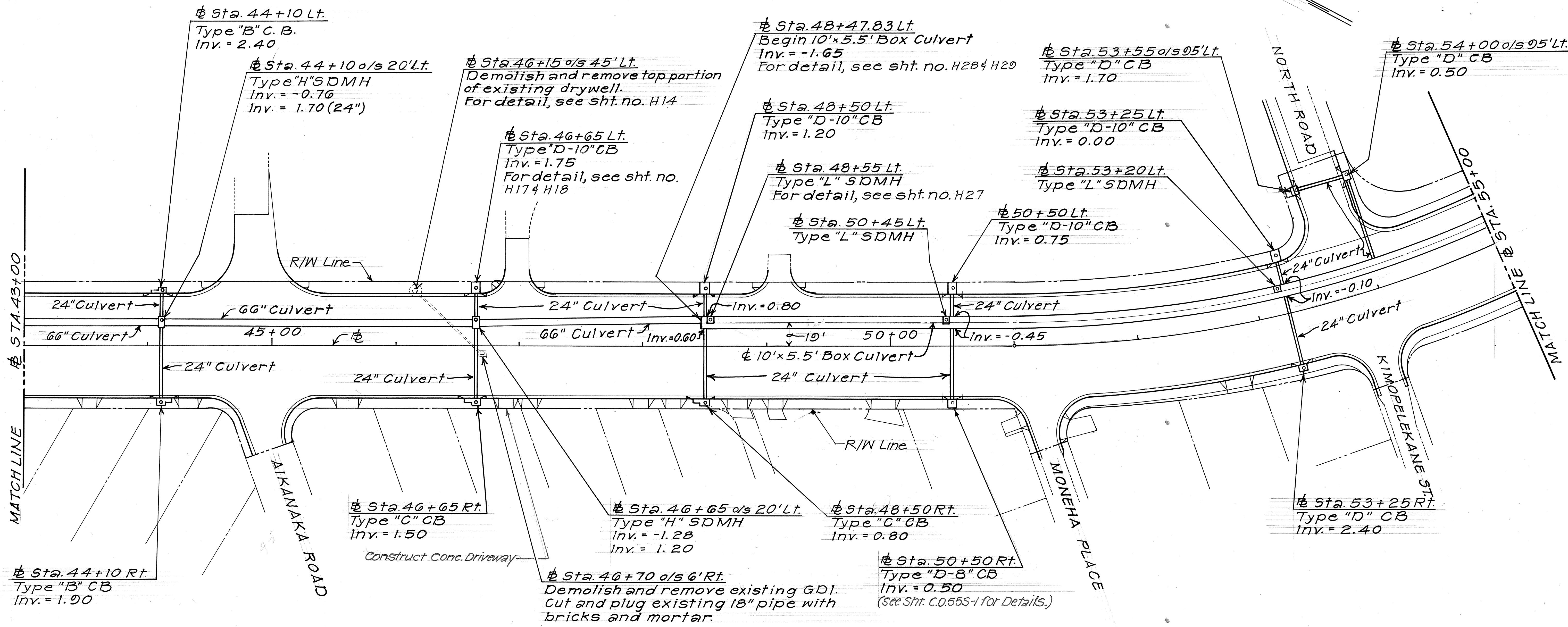
Scale: As Shown Date: SEPT, 1989

SHEET NO. H7 OF 38 SHEETS

AS-BUILT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	C.O. 49	148

True North
Scale: 1" = 40'



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT. 1989

7/20/90 Revised drainage structure to
Type "D-8" CB @ Sta. 50+50 Rt.

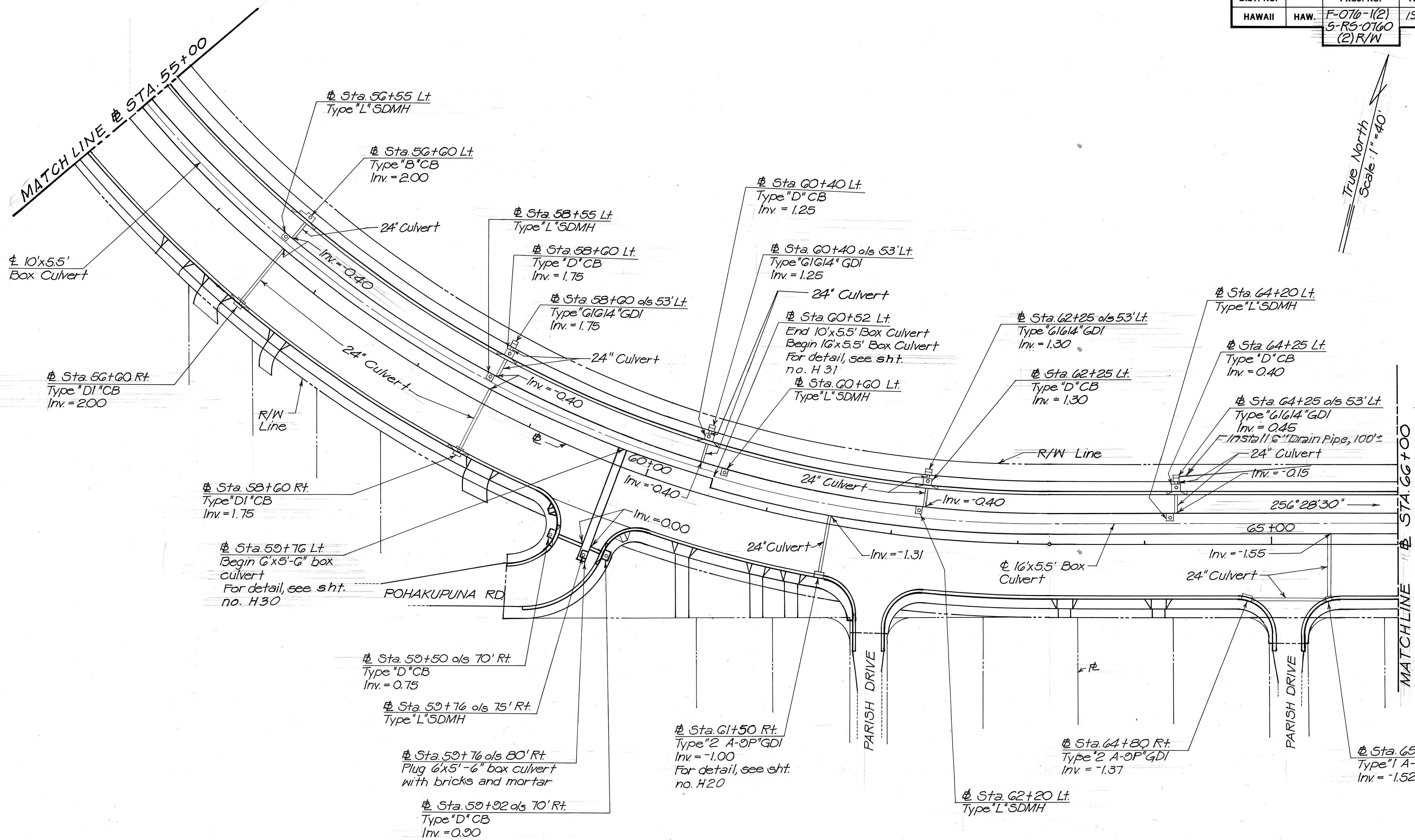
DATE REVISION

SHEET No. H8 OF 38 SHEETS

AS-BUILT

C.O. 49

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	50	148



ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

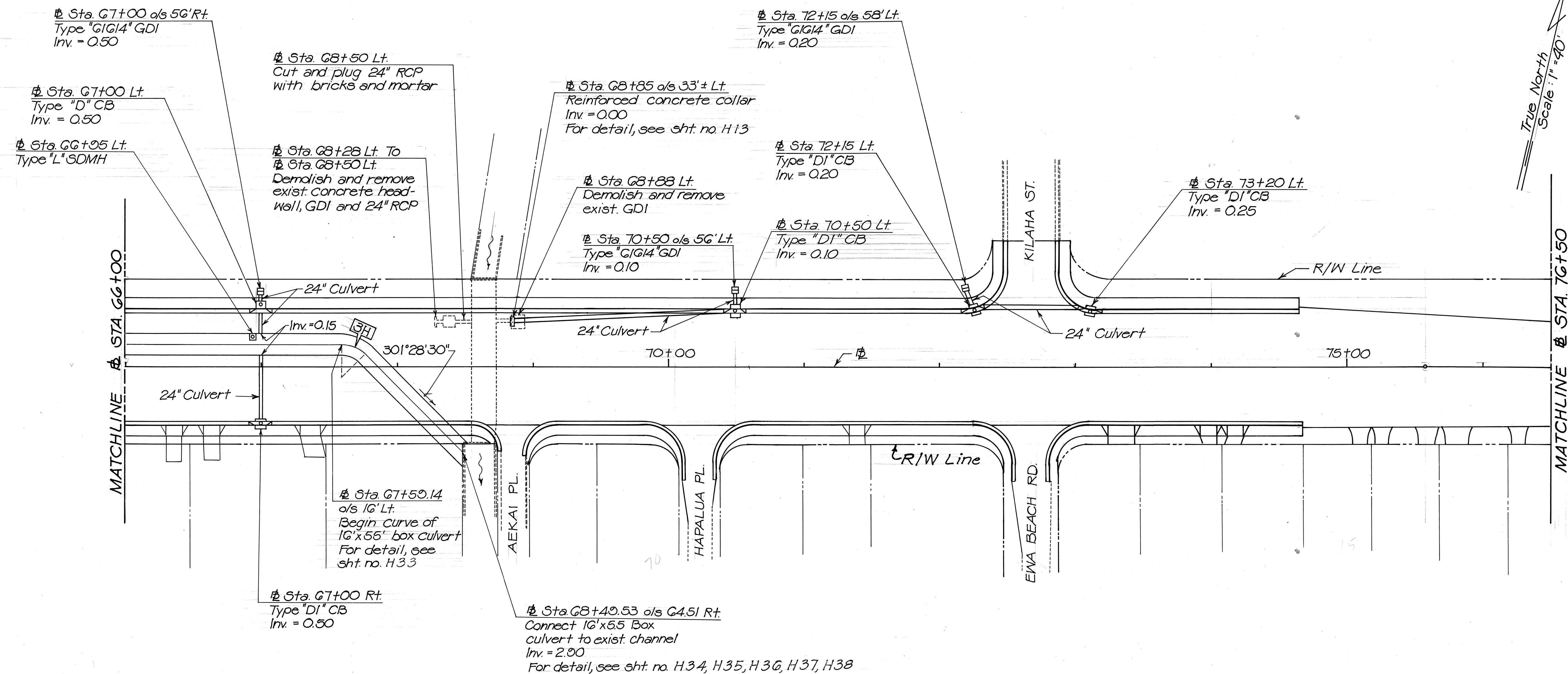
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT, 1989

SHEET NO. 50 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	51	148



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

\$ 16'x55' box culvert
curve data 3H

$\Delta = 45^{\circ}00'00''$
 $R = 24.00'$
 $T = 9.94'$
 $C = 18.37'$
 $L = 18.85'$

APPROVED:
(FOR DRAIN CONNECTION ONLY)

Lernard H. T. Young
for CHIEF, DIV. OF ENGRS. DPW GS
C. Michael Street
for DIRECTOR & CHIEF ENGR. DPW

12/7/90
DATE

12/7/0

11/15/90

Added Signature Blocks

REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

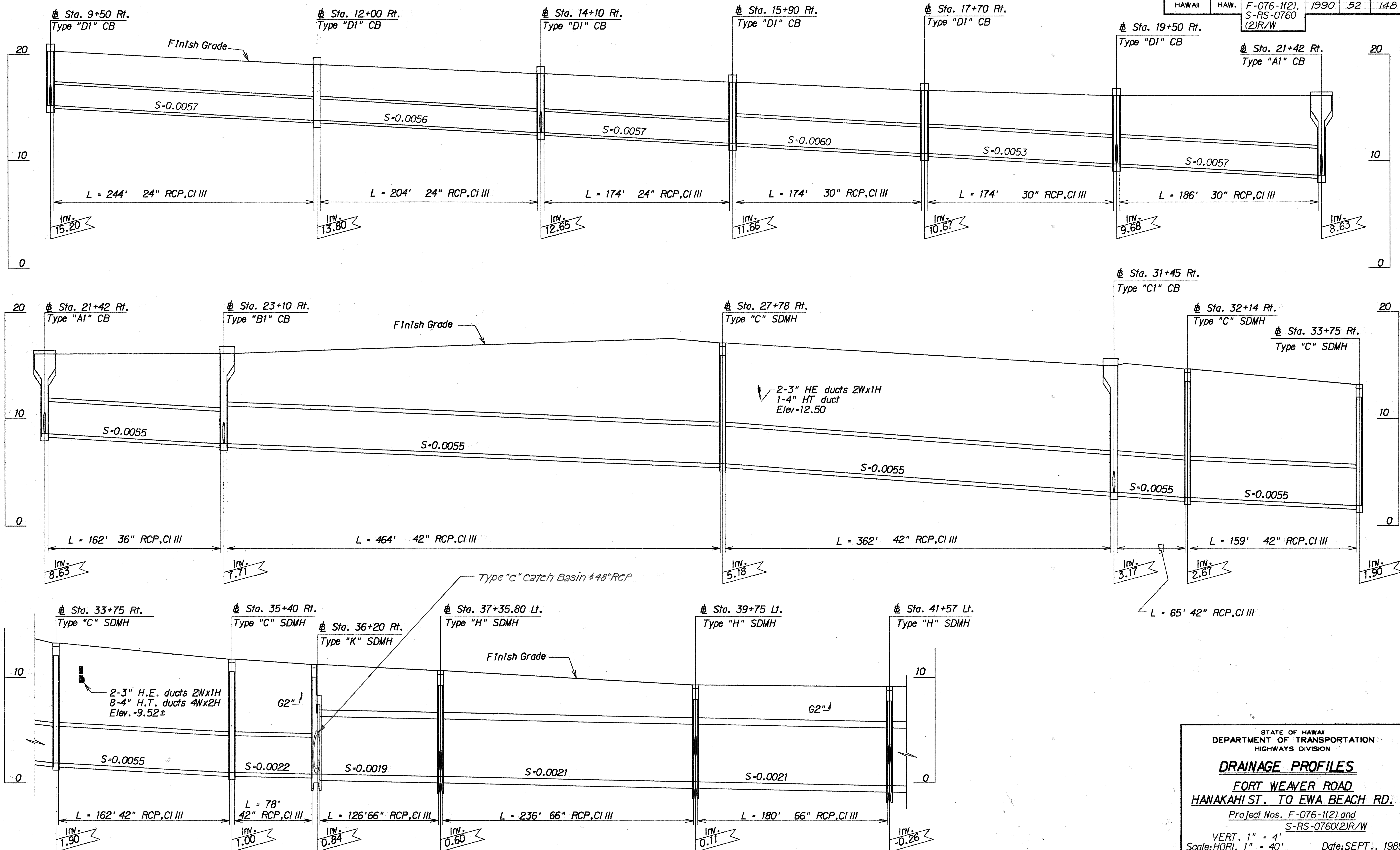
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-(1)(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. 11 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2), S-RS-0760 (2)R/W	1990	52	148



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

**FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.**

Project Nos. F-076-1(2) and S-RS-0760(2)R/W

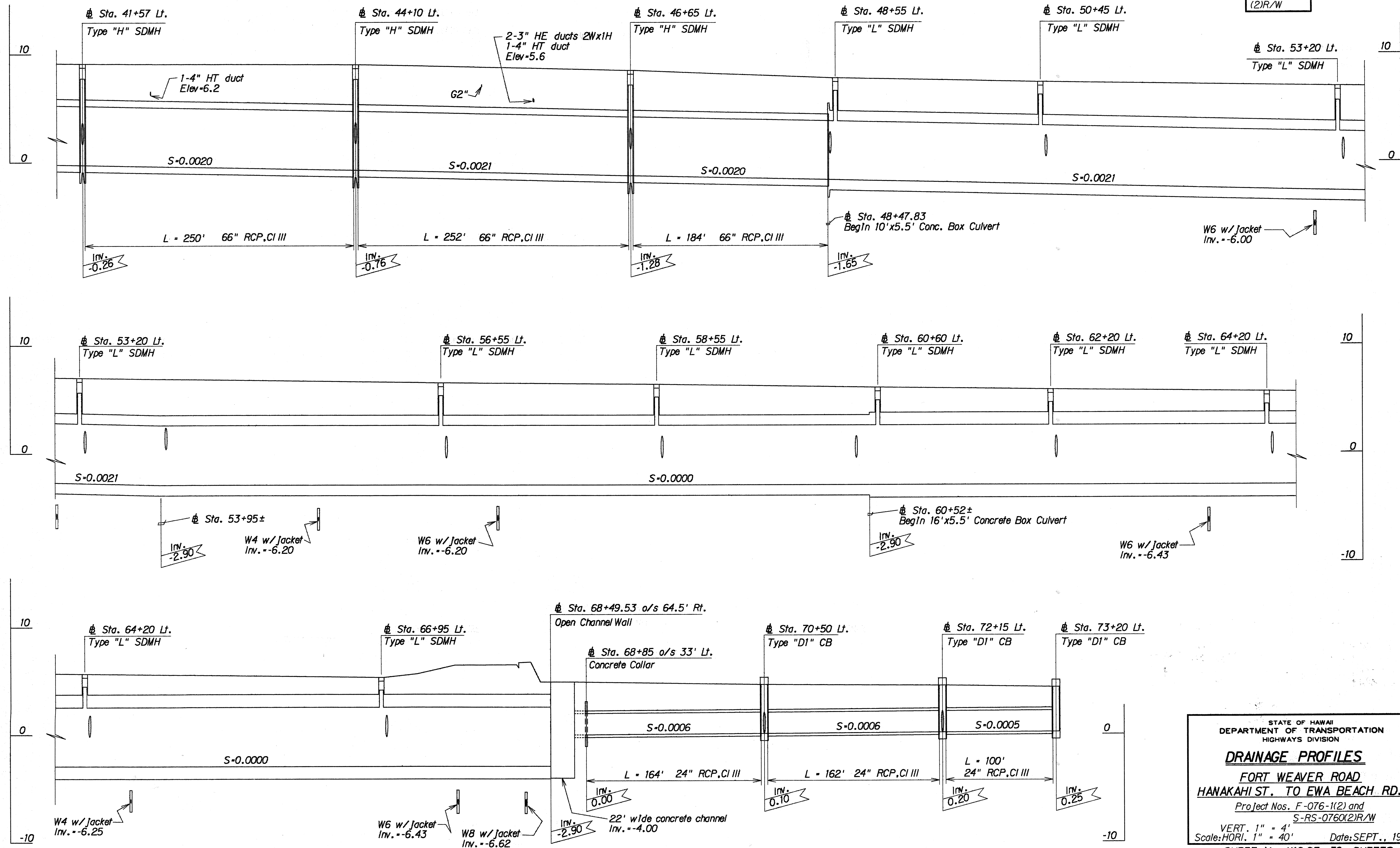
VERT. 1" = 4'
Scale: HORIZ. 1" = 40'

Date: SEPT., 1989

SHEET No. 111 OF 38 SHEETS

AS-BUILT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2), S-RS-0760 (2)R/W	1990	53	148



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

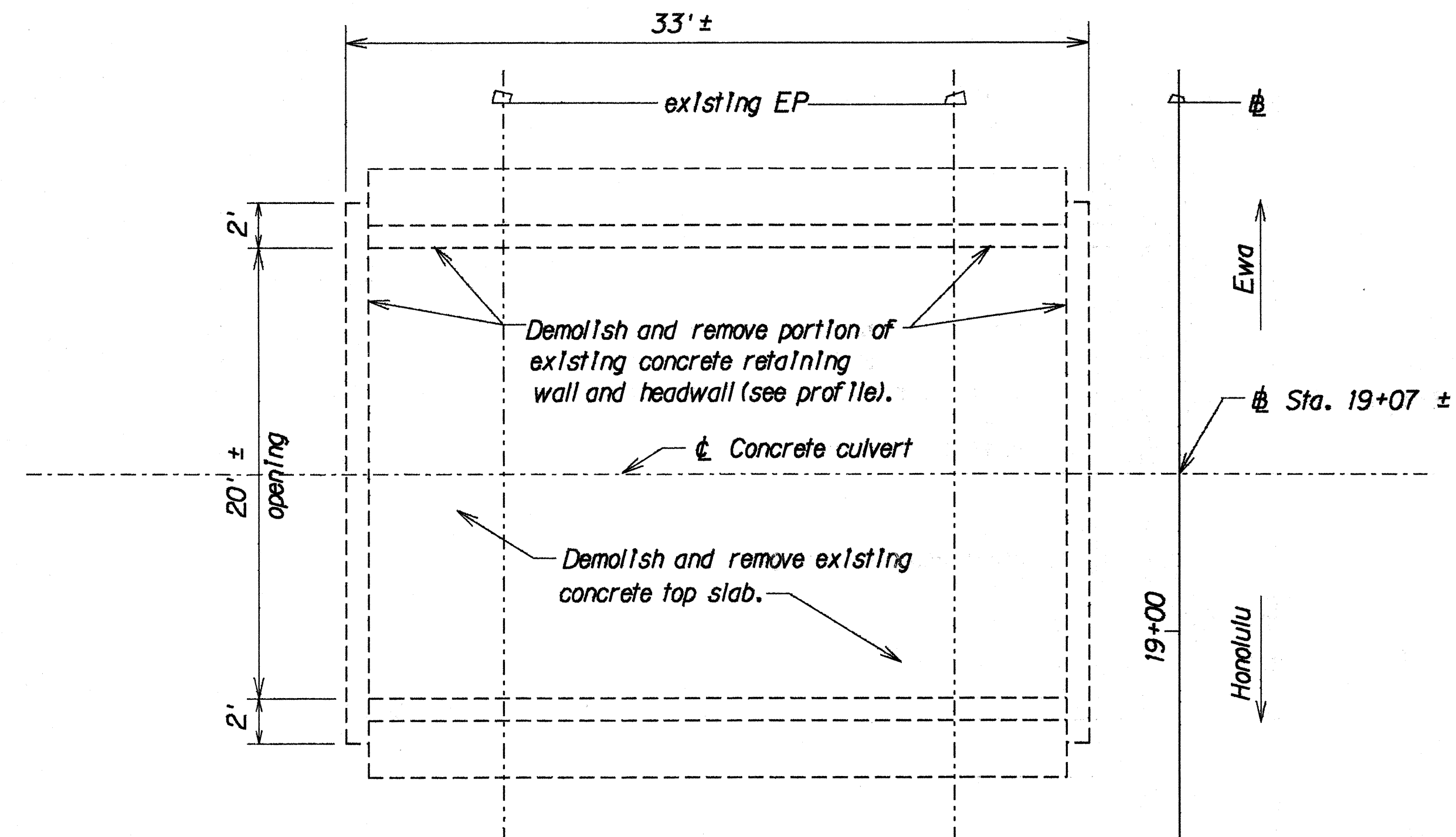
Project Nos. F-076-1(2) and S-RS-0760(2)R/W

VERT. 1" = 4'
Scale: HORIZ. 1" = 40'

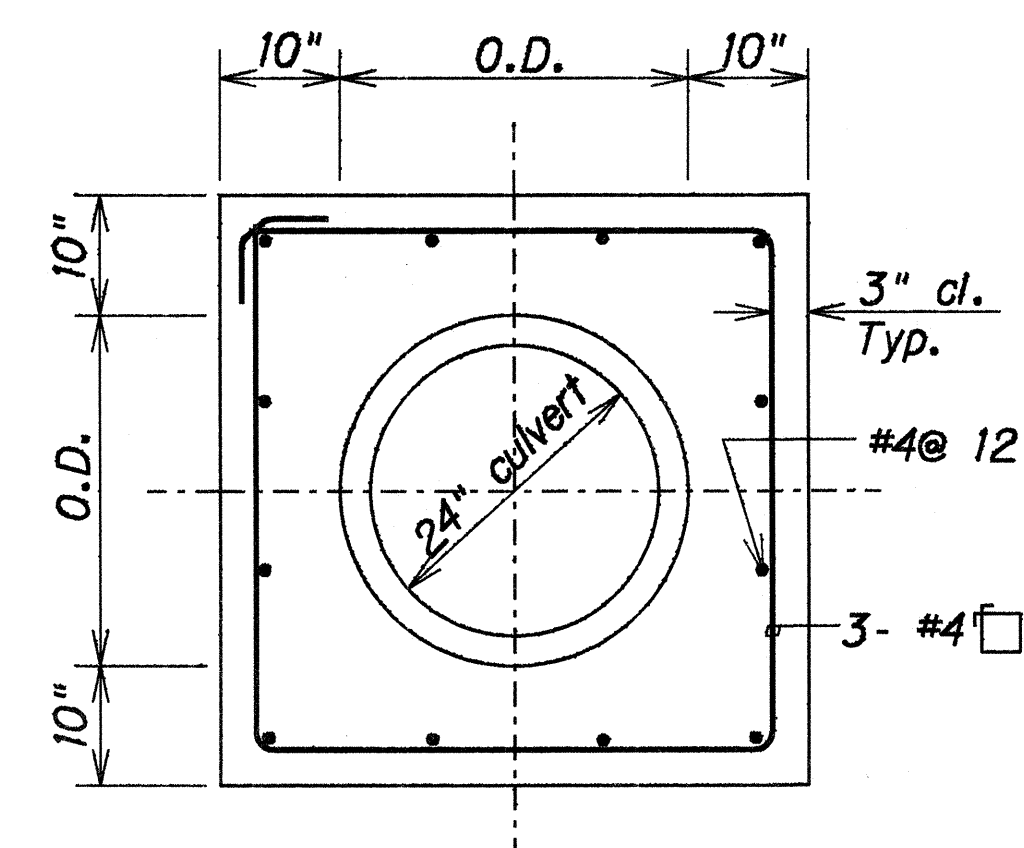
Date: SEPT., 1989

SHEET No. H12 OF 38 SHEETS

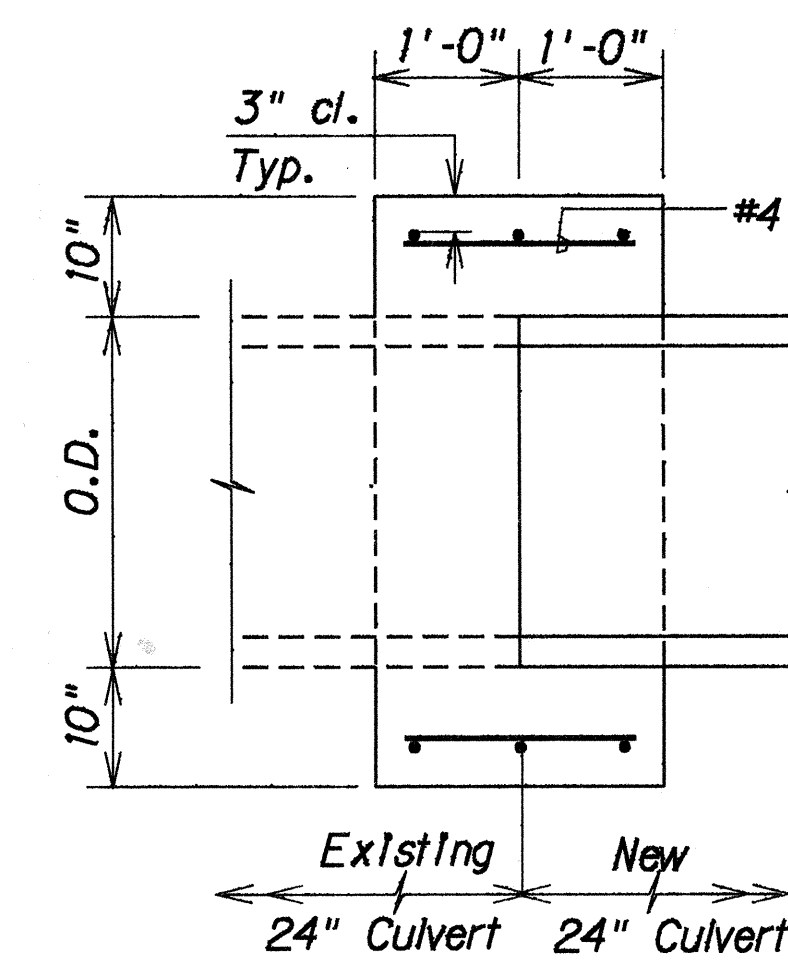
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	54	148



PLAN



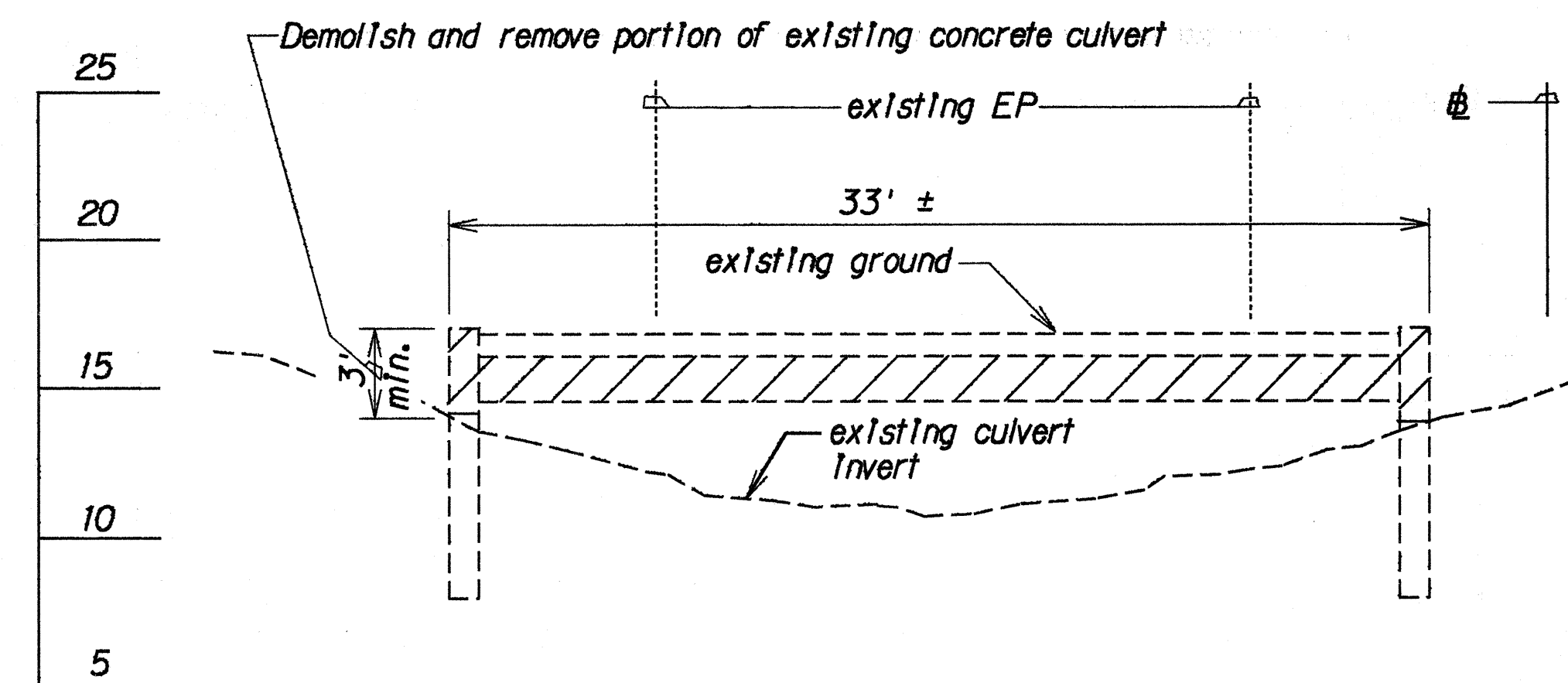
FRONT ELEVATION



SECTION

REINFORCED CONCRETE COLLAR

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



PROFILE

REMOVAL OF CONCRETE CULVERT AT STA. 19+07 ±

Scale: 1" = 5'

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

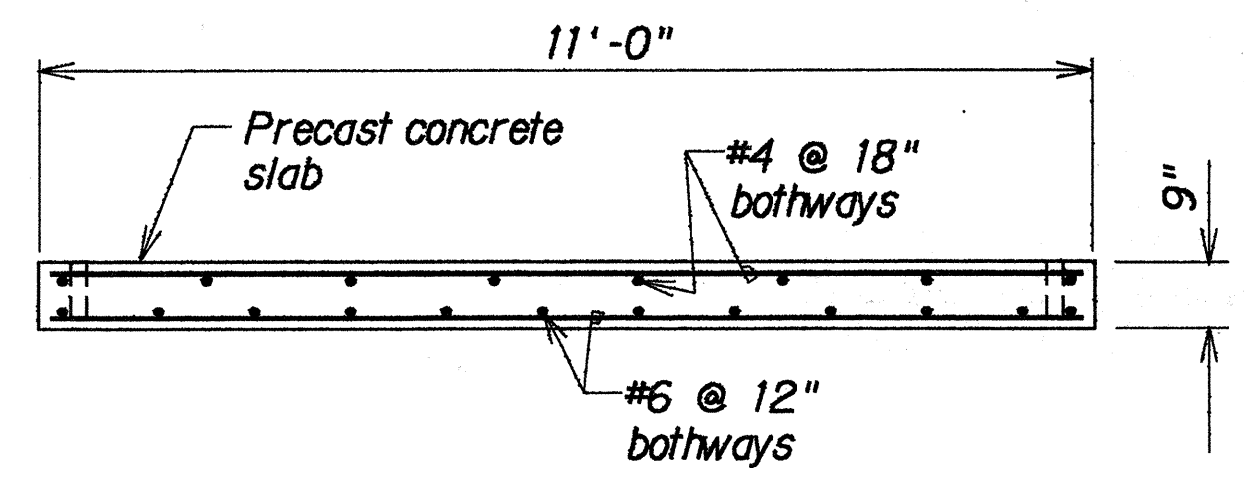
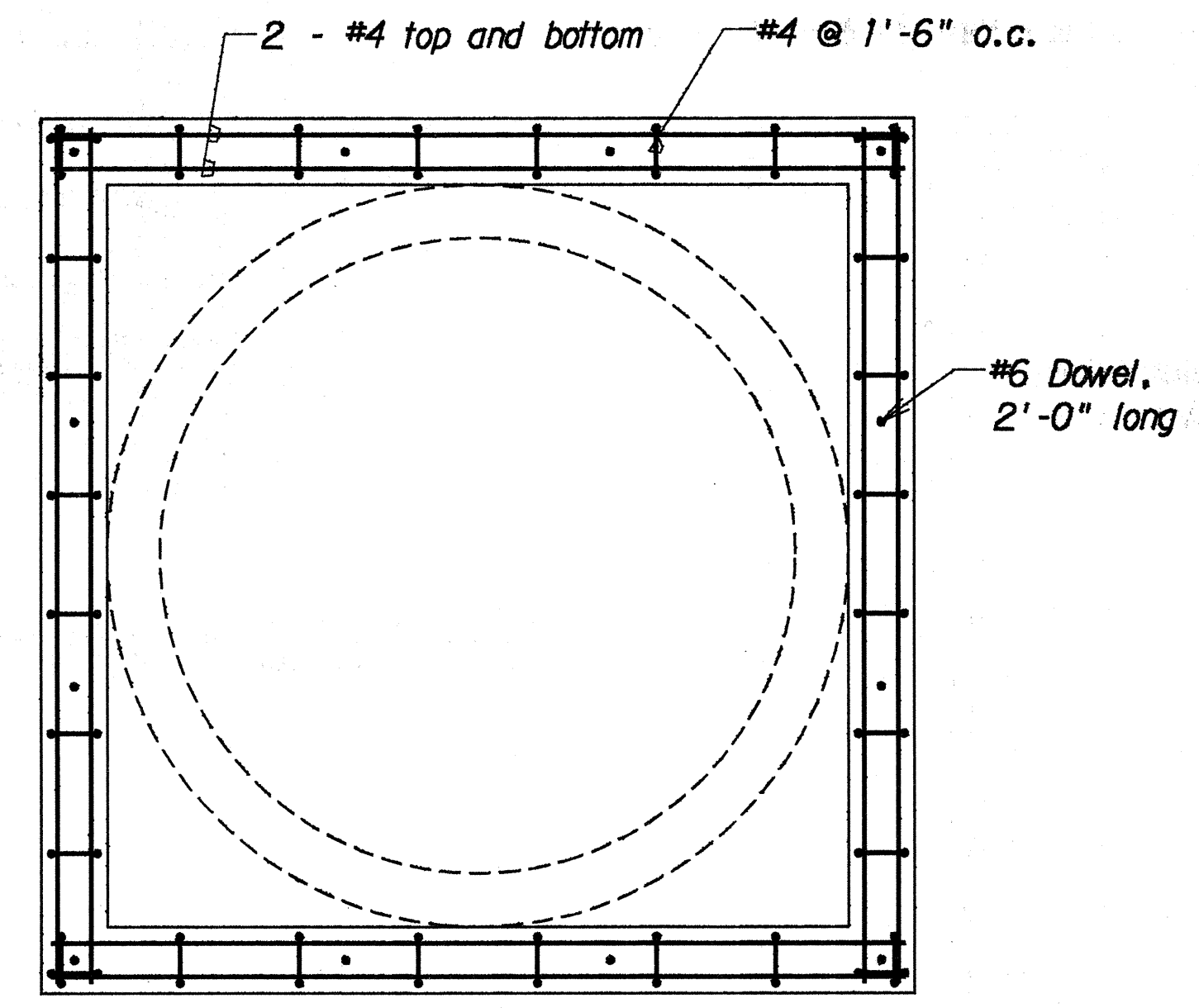
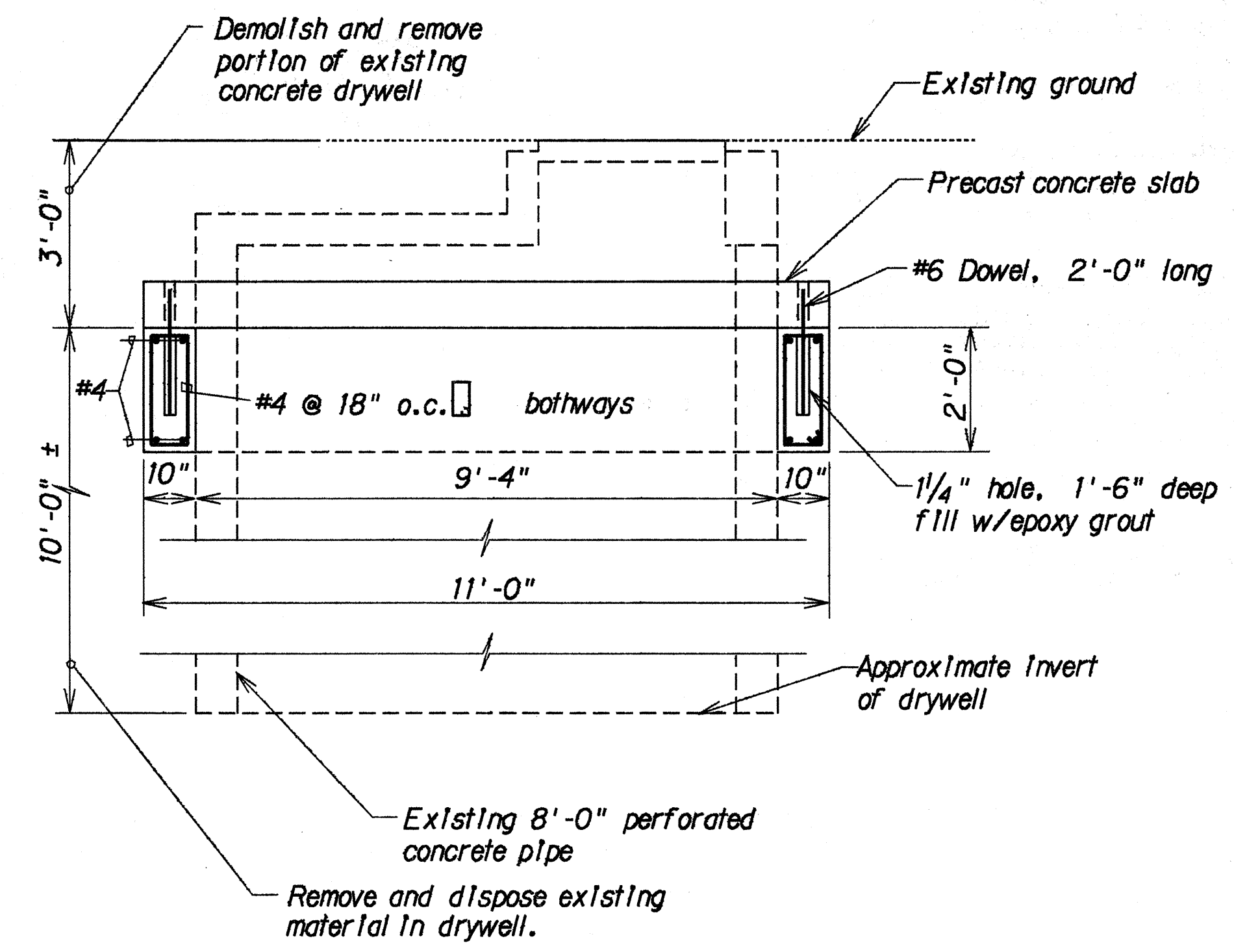
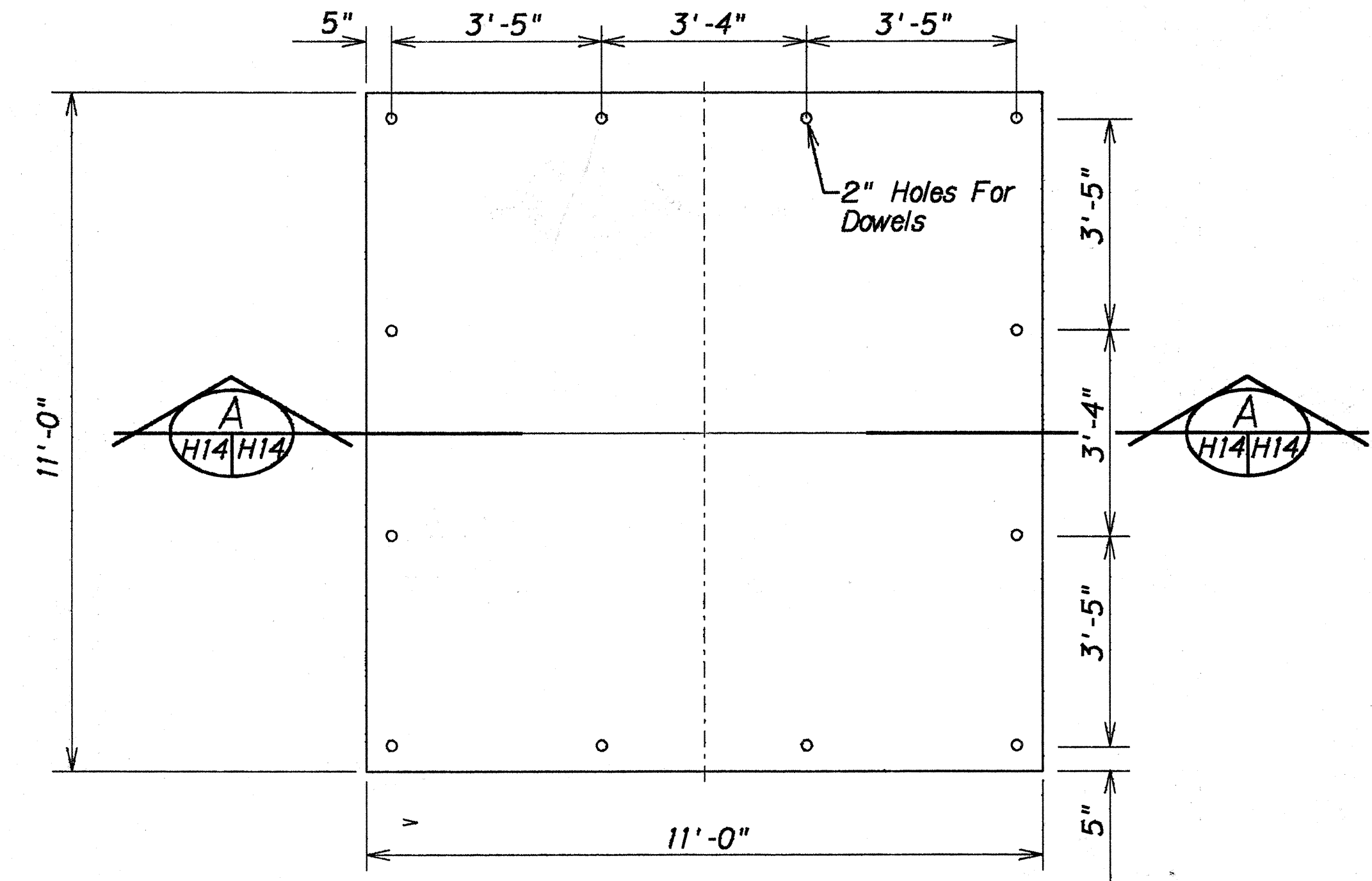
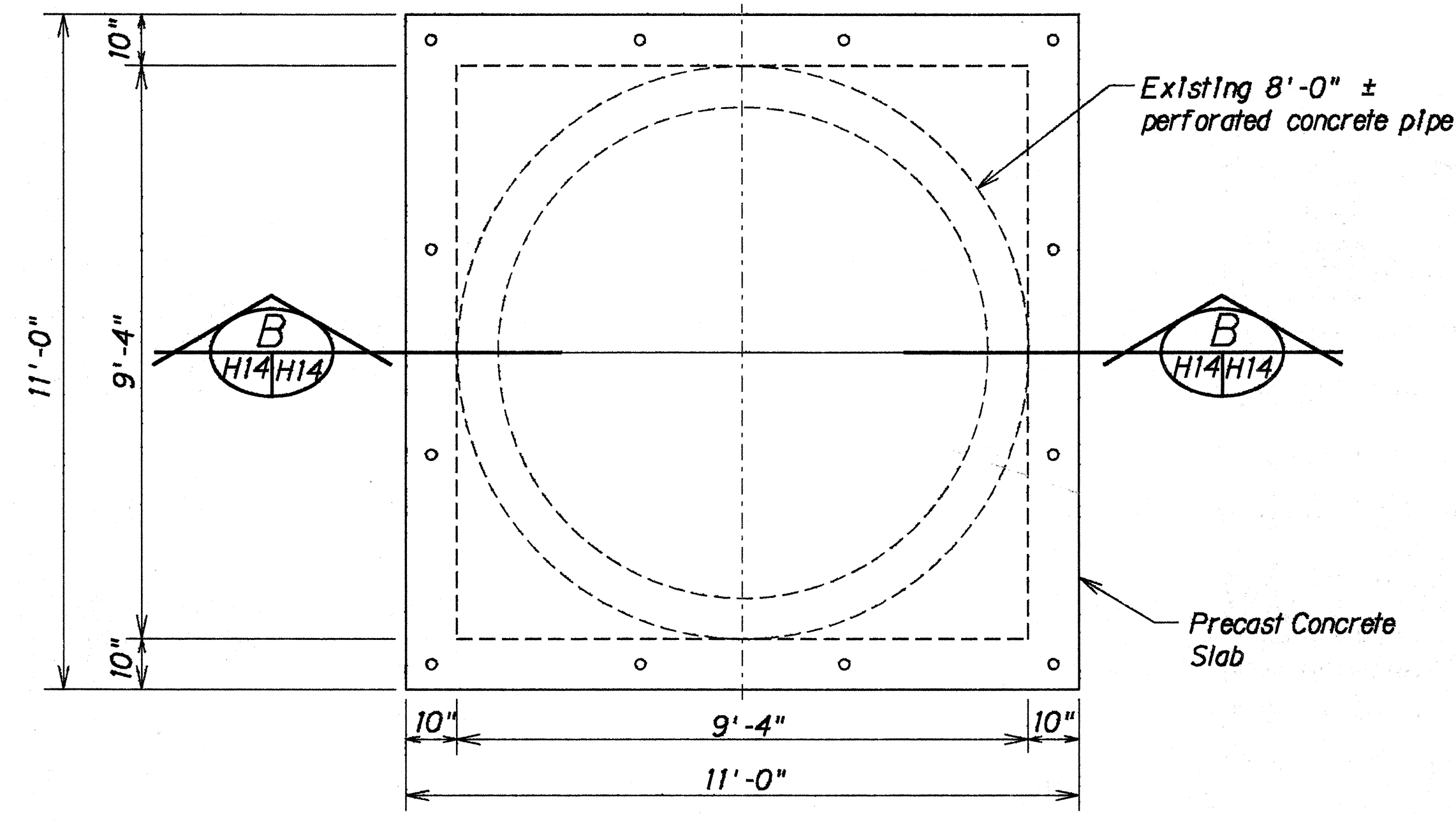
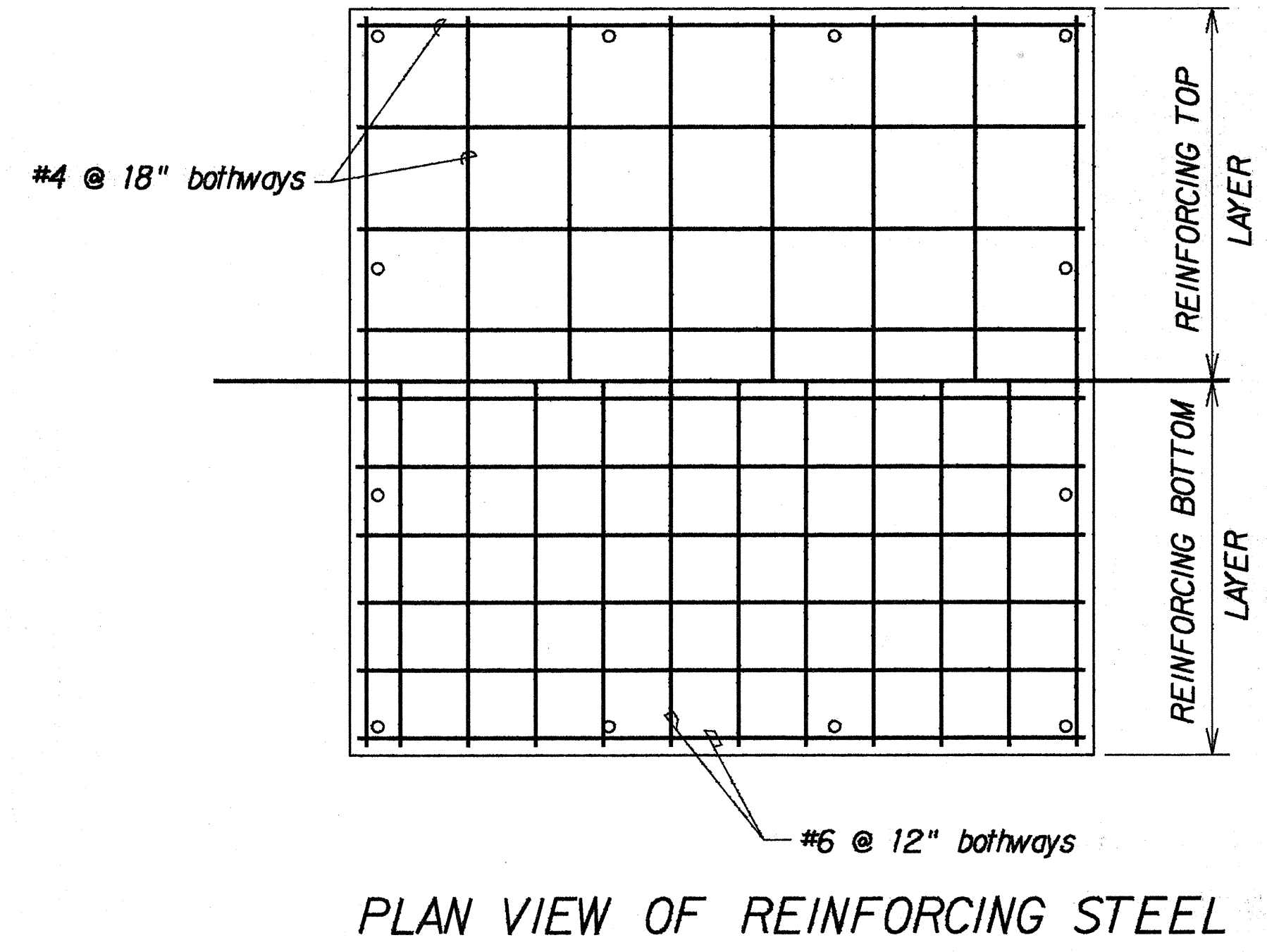
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. H13 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	55	148

- NOTES:
- Lifting device shall be undercut a minimum of 1" below the surface of the concrete and patched with mortar.
 - Clearances for reinforcing steel shall be 1 1/2".
 - Demolishing and removing existing Drywells shall be paid for under Contract Item "202.0410- Removal of Drywells".
 - Constructing Concrete Cap over existing Drywells shall be paid for under Contract Item "503.0200 - Reinforced Concrete Cap Over Existing Drywell".



SECTION B

DETAIL OF CAP FOR EXISTING DRYWELLS

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

DETAIL OF PRECAST CONCRETE SLAB

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

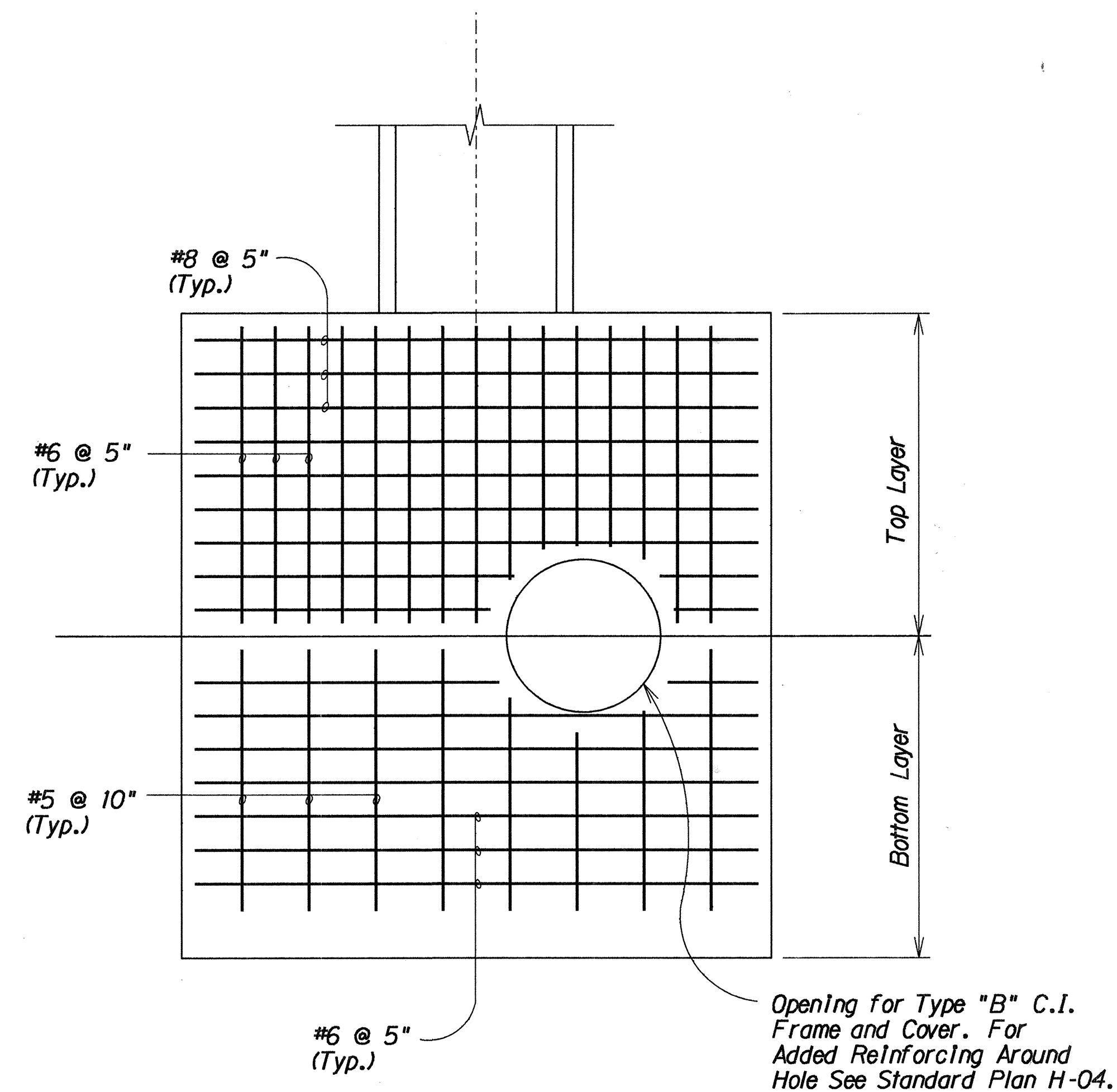
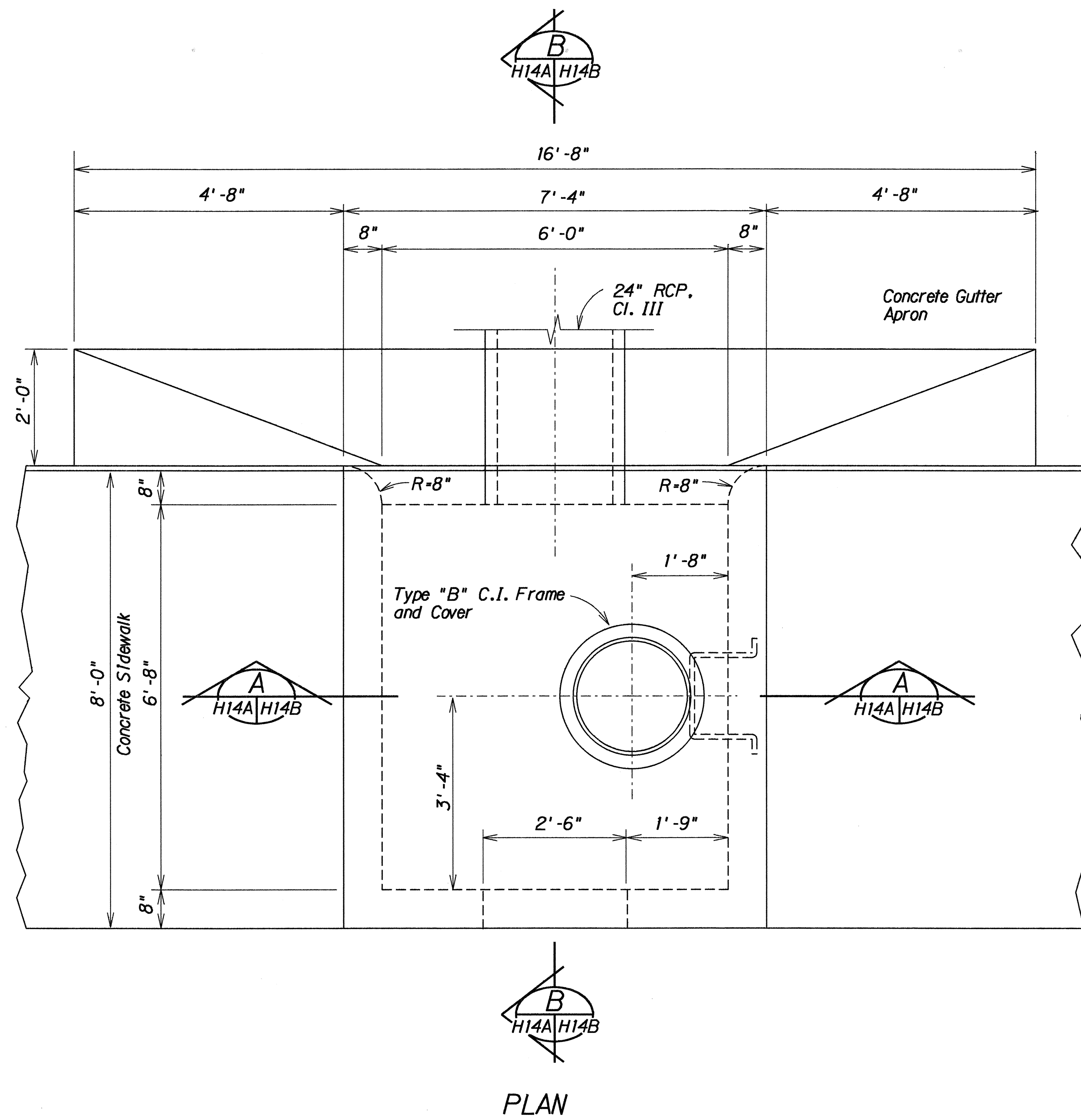
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown
Date: SEPT., 1989

SHEET No. H14 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	C.O. 55 S-1	148



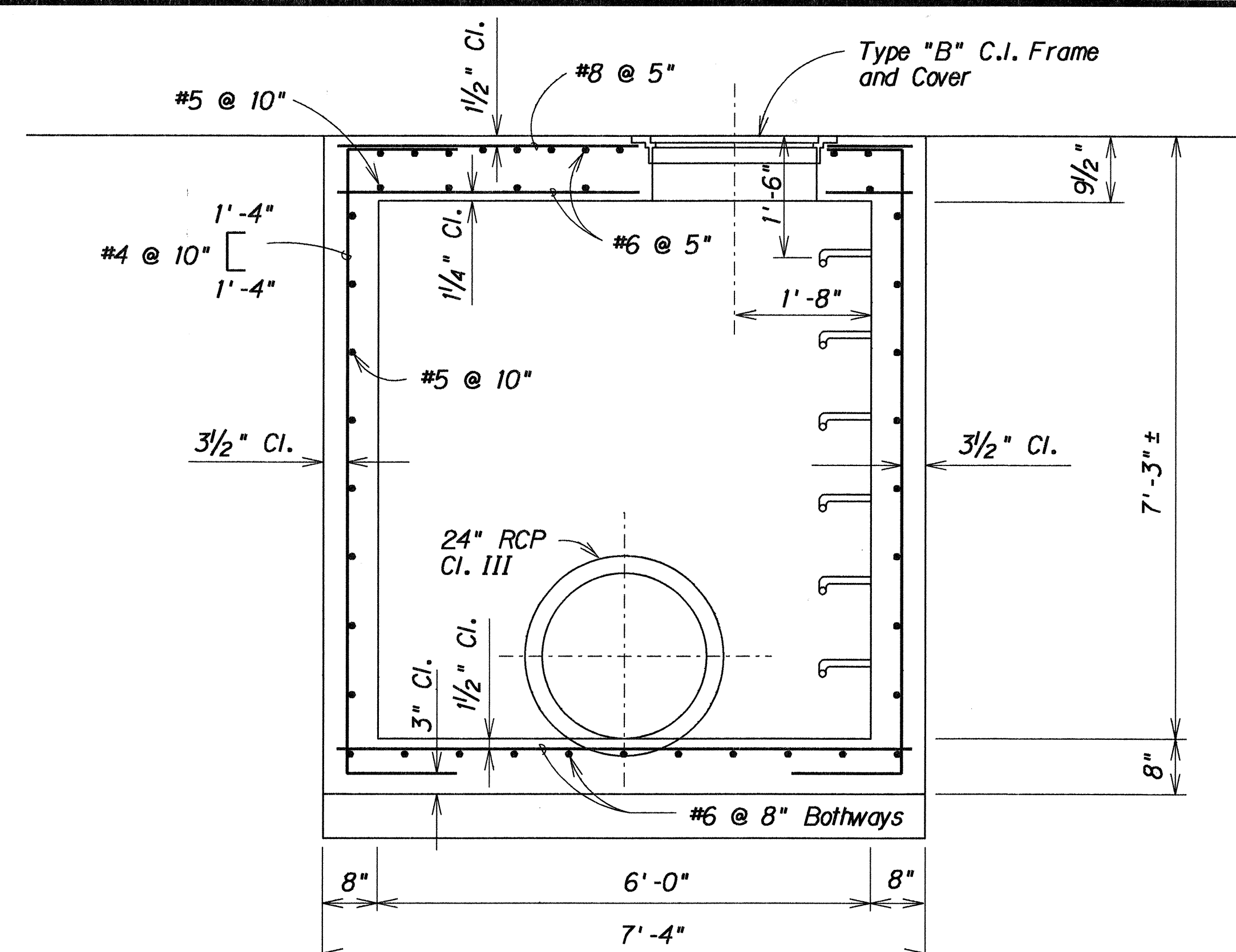
PLAN VIEW OF TOP SLAB REINFORCING

DETAILS OF TYPE "D-8" CATCH BASIN

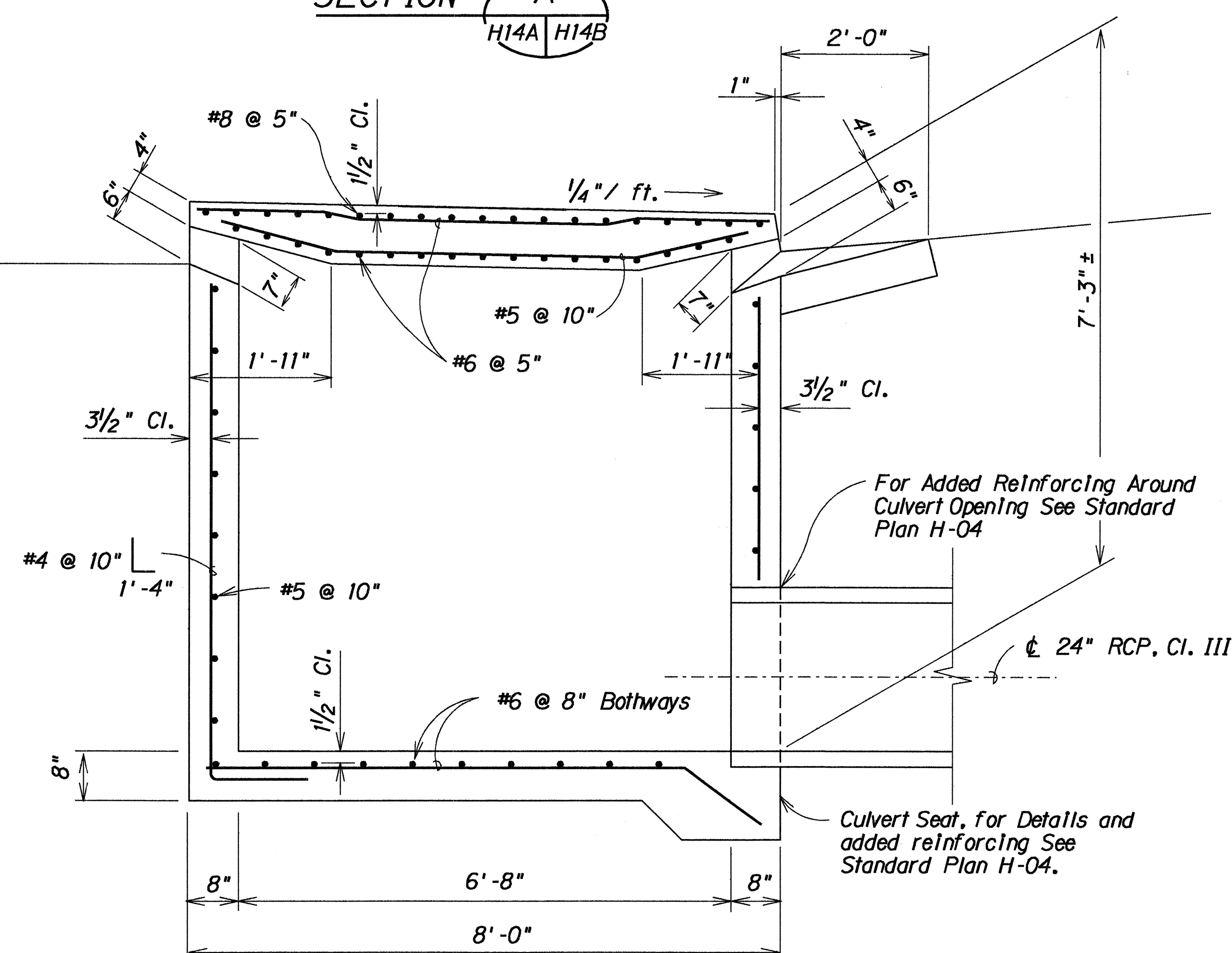
SURVEY PLOTTED BY DATE DESIGNED BY CHECKED BY NOTE BOOK QUANTITIES BY		STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD. Project Nos. F-076-1(2) and S-RS-0760(2)R/W Scale: 3/4" = 1'-0" Date: July, 1990 SHEET No. H14A OF 38 SHEETS	
7/20/90	Revised Drainage Structure Type "D-8" CB @ Sta. 50+50 Rt.	DATE	REVISION

C.O. 55 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	C.O. 55 S-2	148

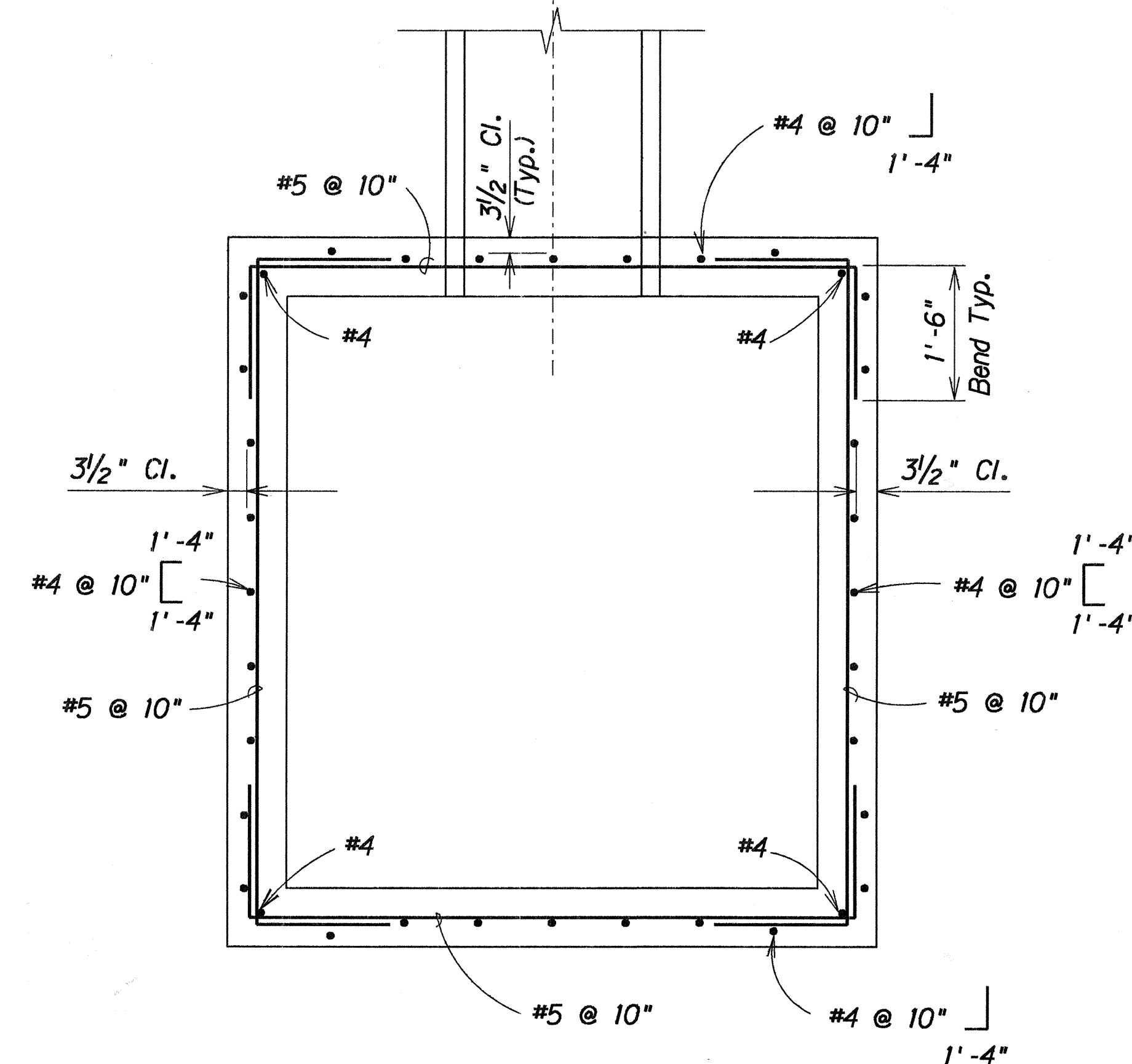


SECTION 



SECTION 

DETAILS OF TYPE "D-8" CATCH BASIN



PLAN VIEW OF WALL SECTION

7/20/90	Revised Drainage Structure Type "D-8" CB @ Sta. 50+50 Rt.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

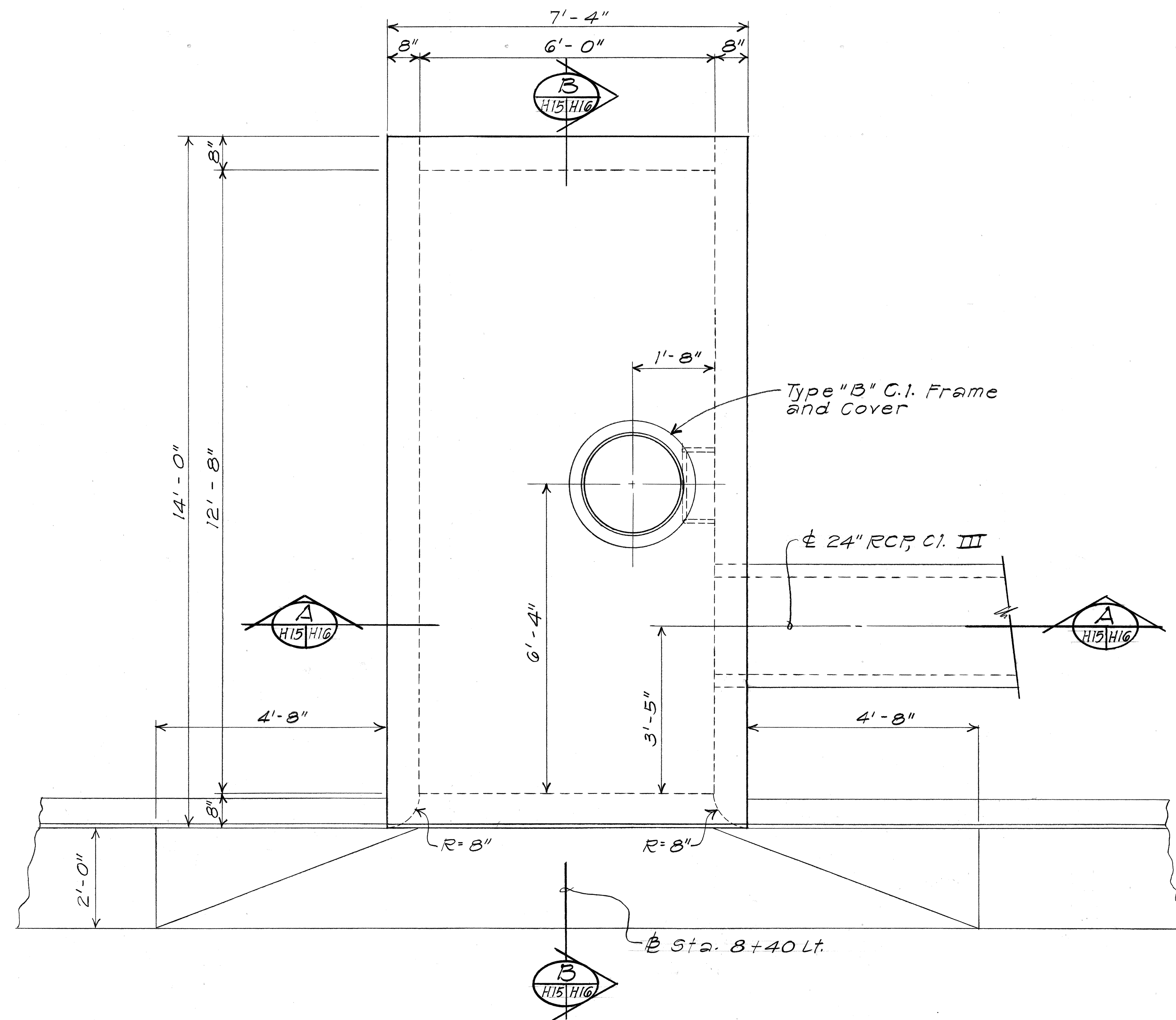
Scale: $\frac{3}{4}" = 1' - 0"$ Date: July, 1990

SHEET No. H14BOF 38 SHEETS

C.O. 55 S-2

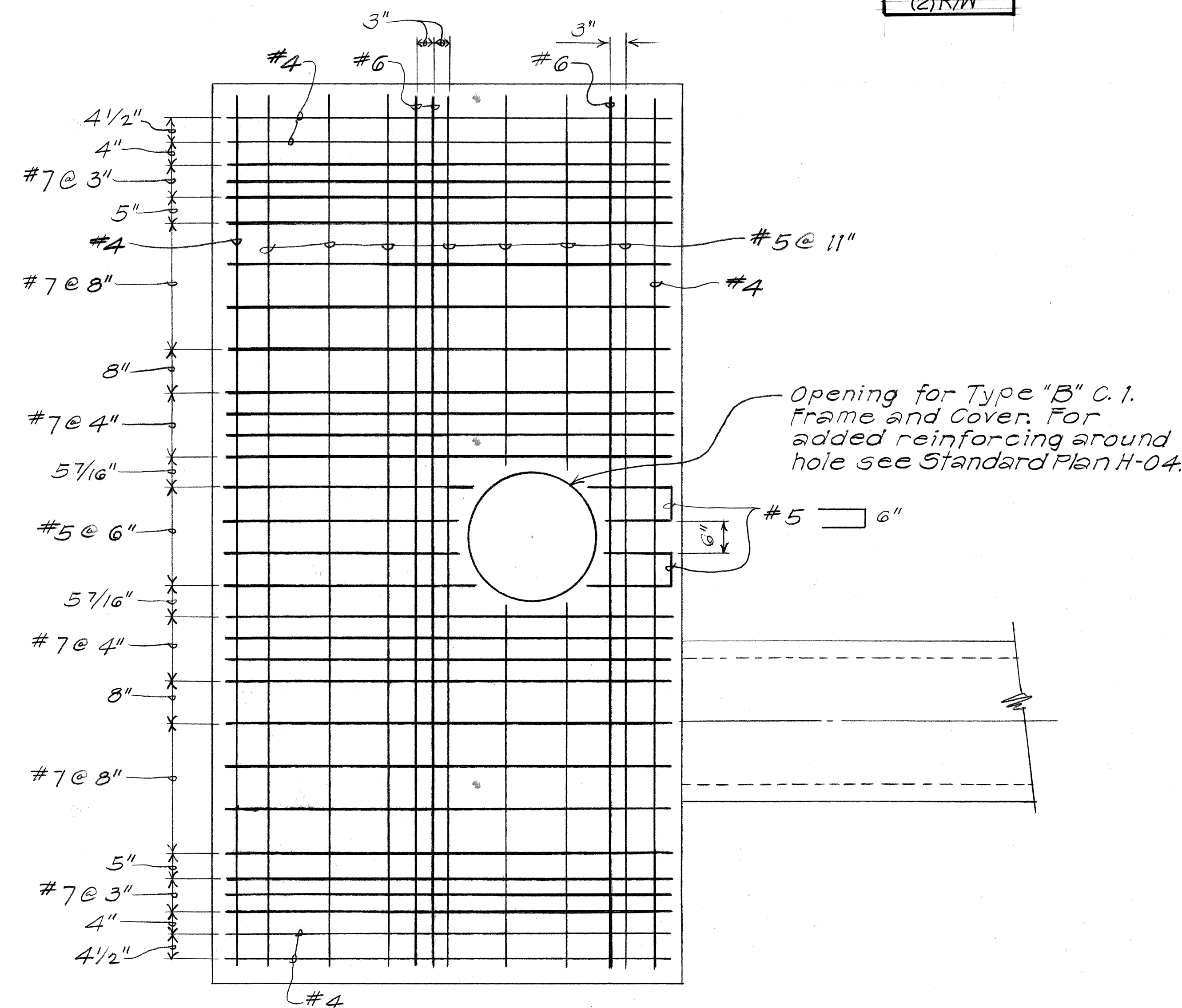
ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
	CHECKED BY _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	56	148



PLAN

DETAILS OF TYPE D-14 CATCH BASIN AT STA. 8+40 LT.
Scale: 3/4" = 1'-0"

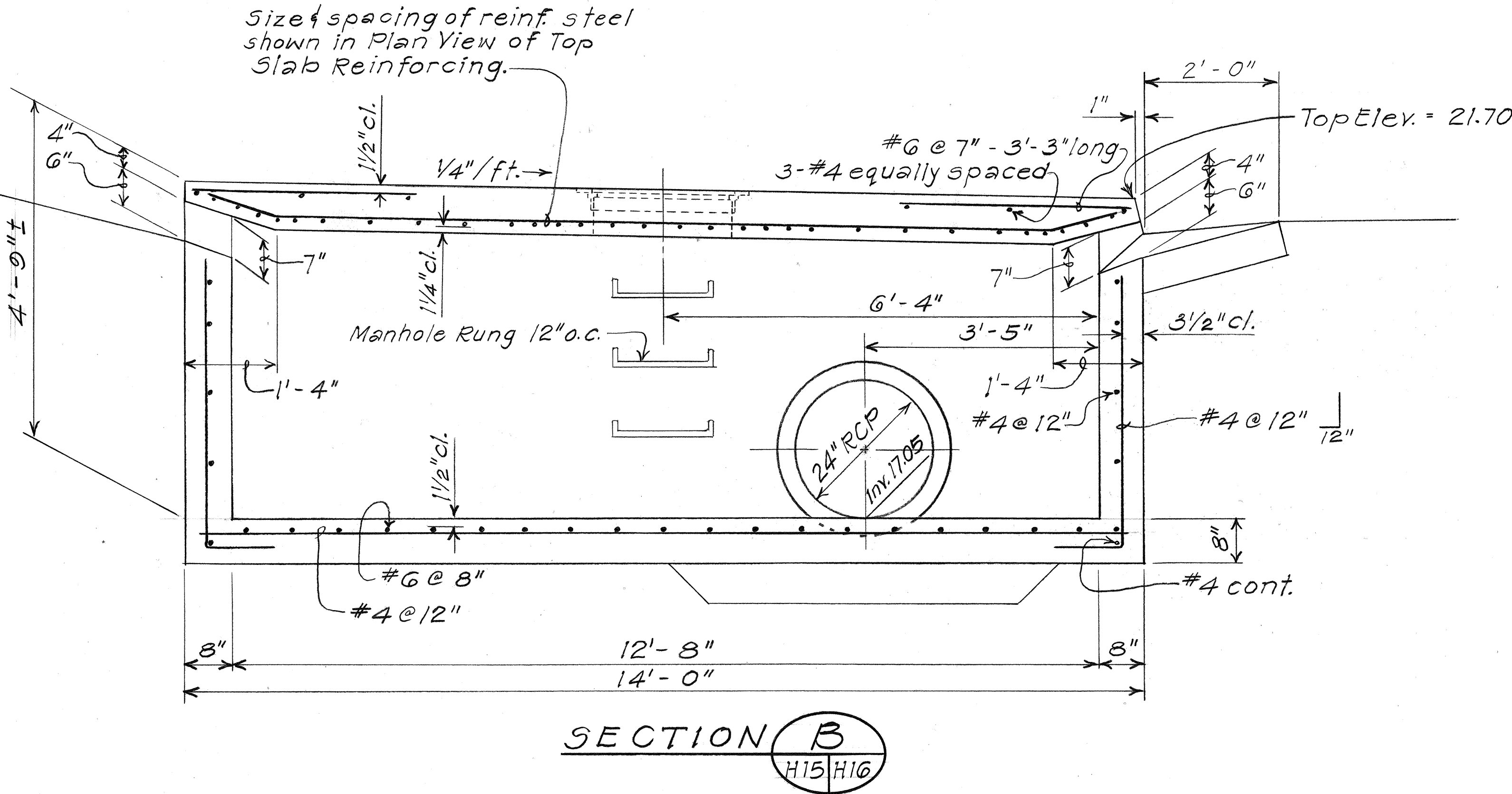
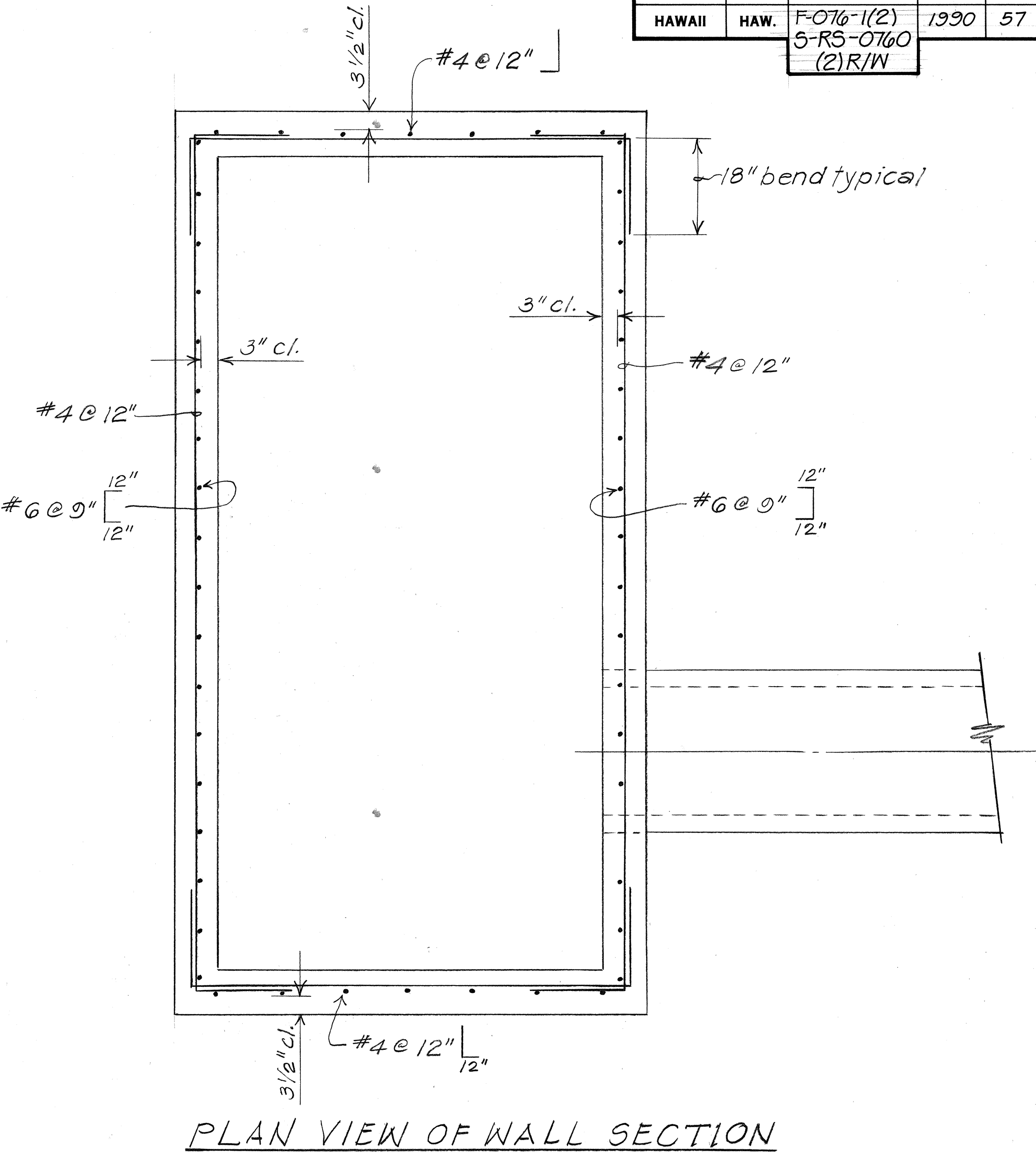
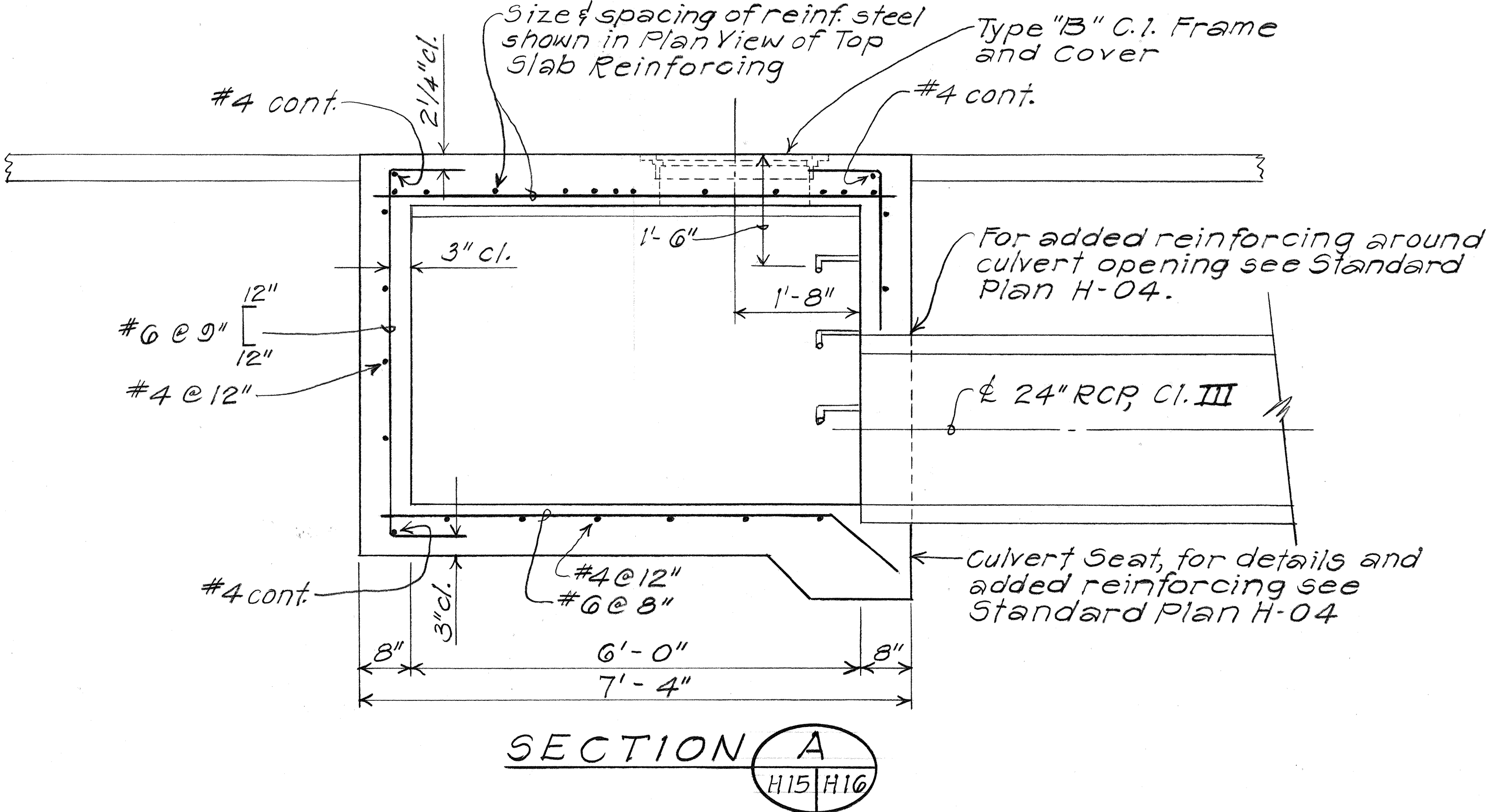


PLAN VIEW OF TOP SLAB REINFORCING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.	
Project Nos. F-076-1(2) and S-RS-0760(2) R/W	Date: SEPT, 1989
Scale: As Shown	Date: SEPT, 1989
SHEET NO. 115 OF 38 SHEETS	

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	57	148



DETAILS OF TYPE D-14 CATCH BASIN AT STA. 8+40 LT.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

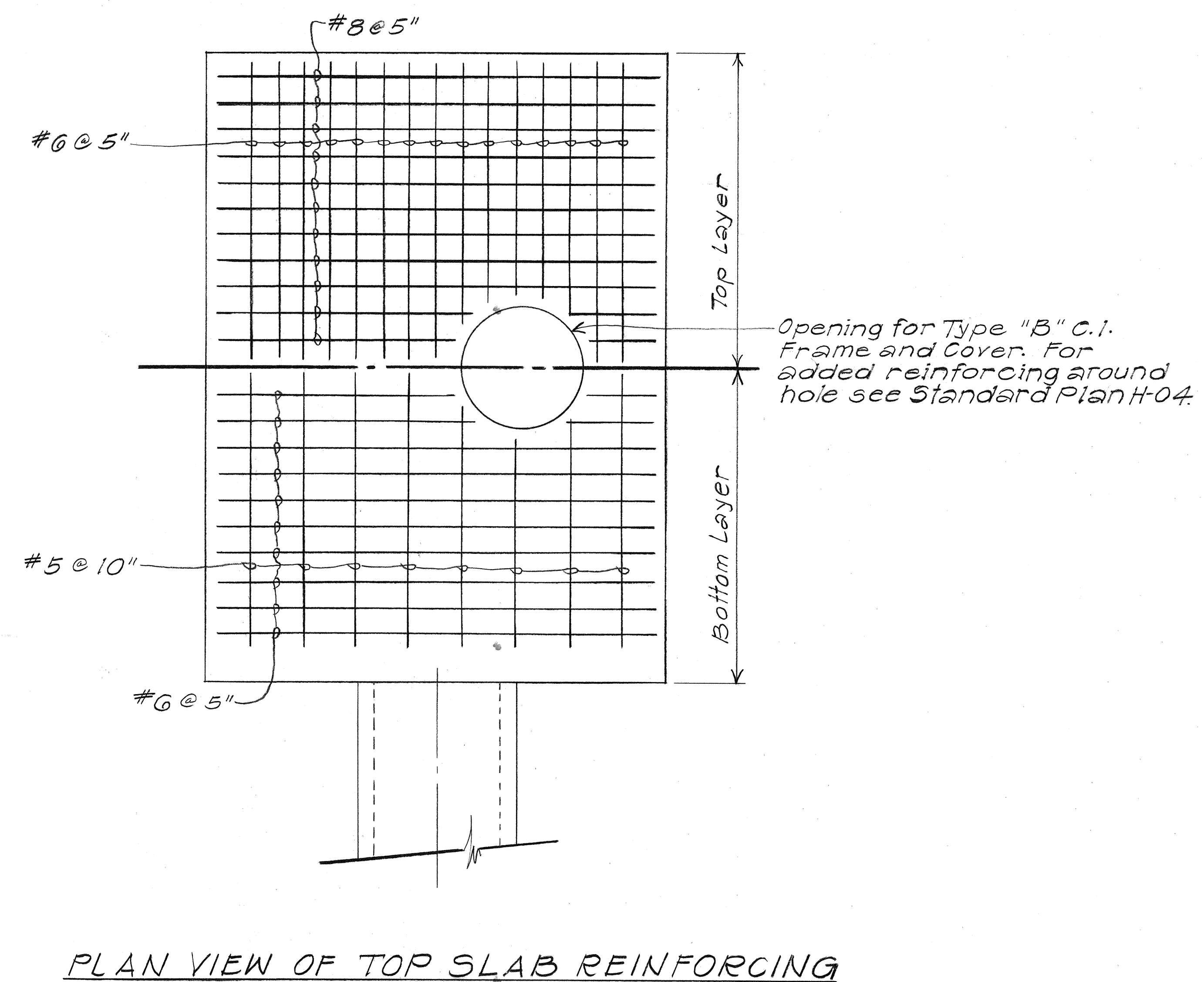
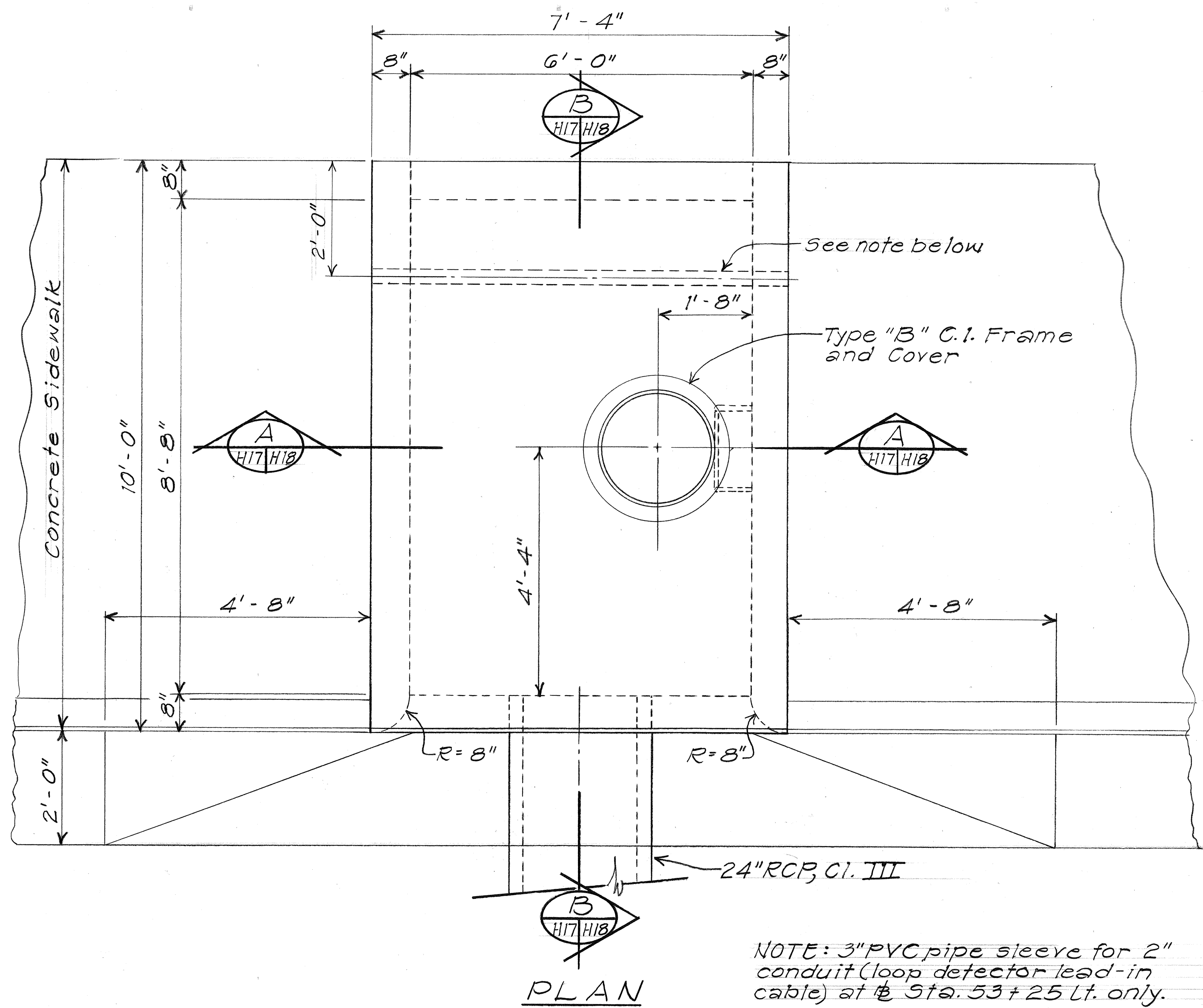
Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT, 1989

SHEET NO. H16 OF 38 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	58	148



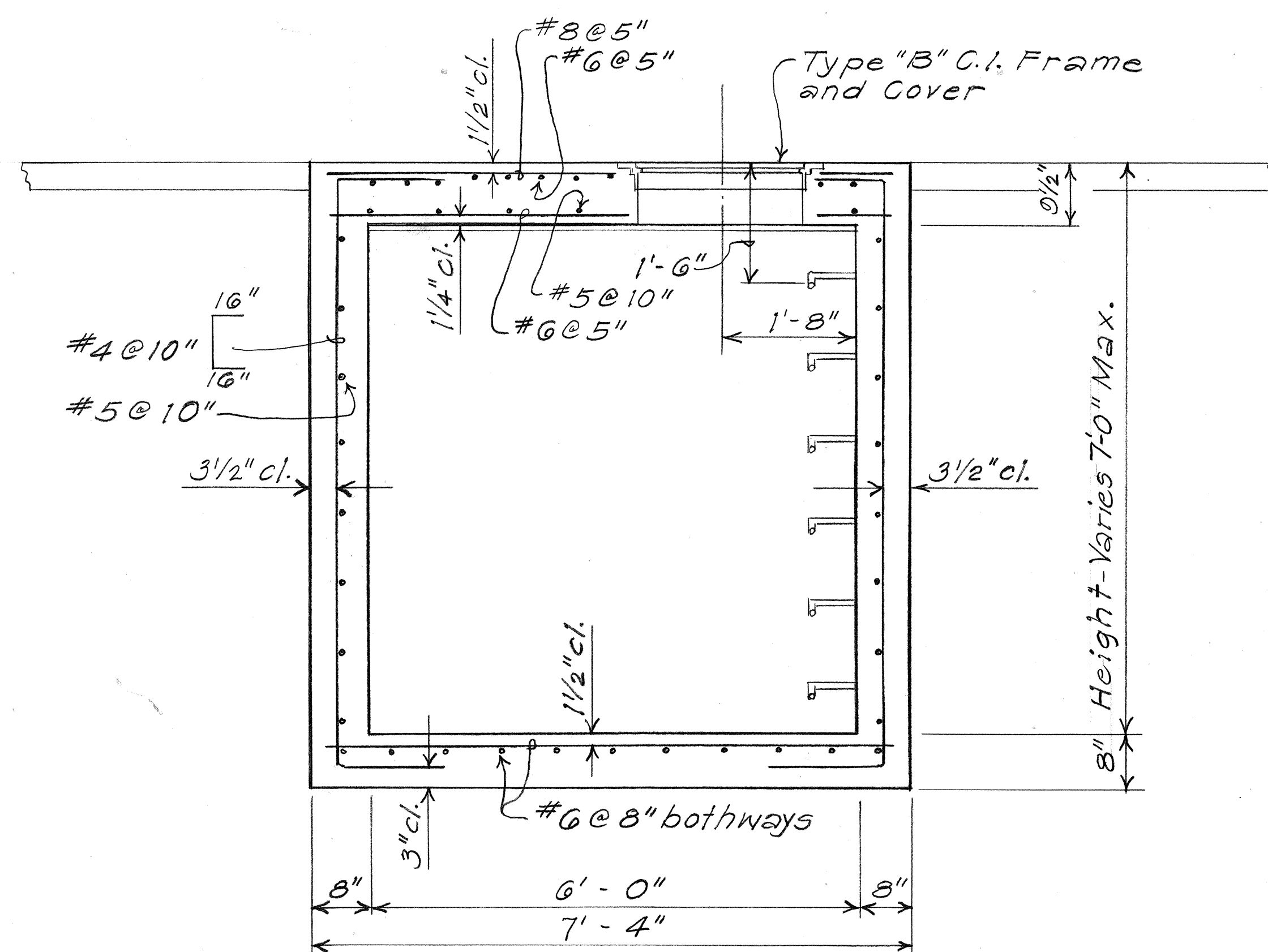
DETAILS OF TYPE "D-10" CATCH BASIN Scale: 3/4" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

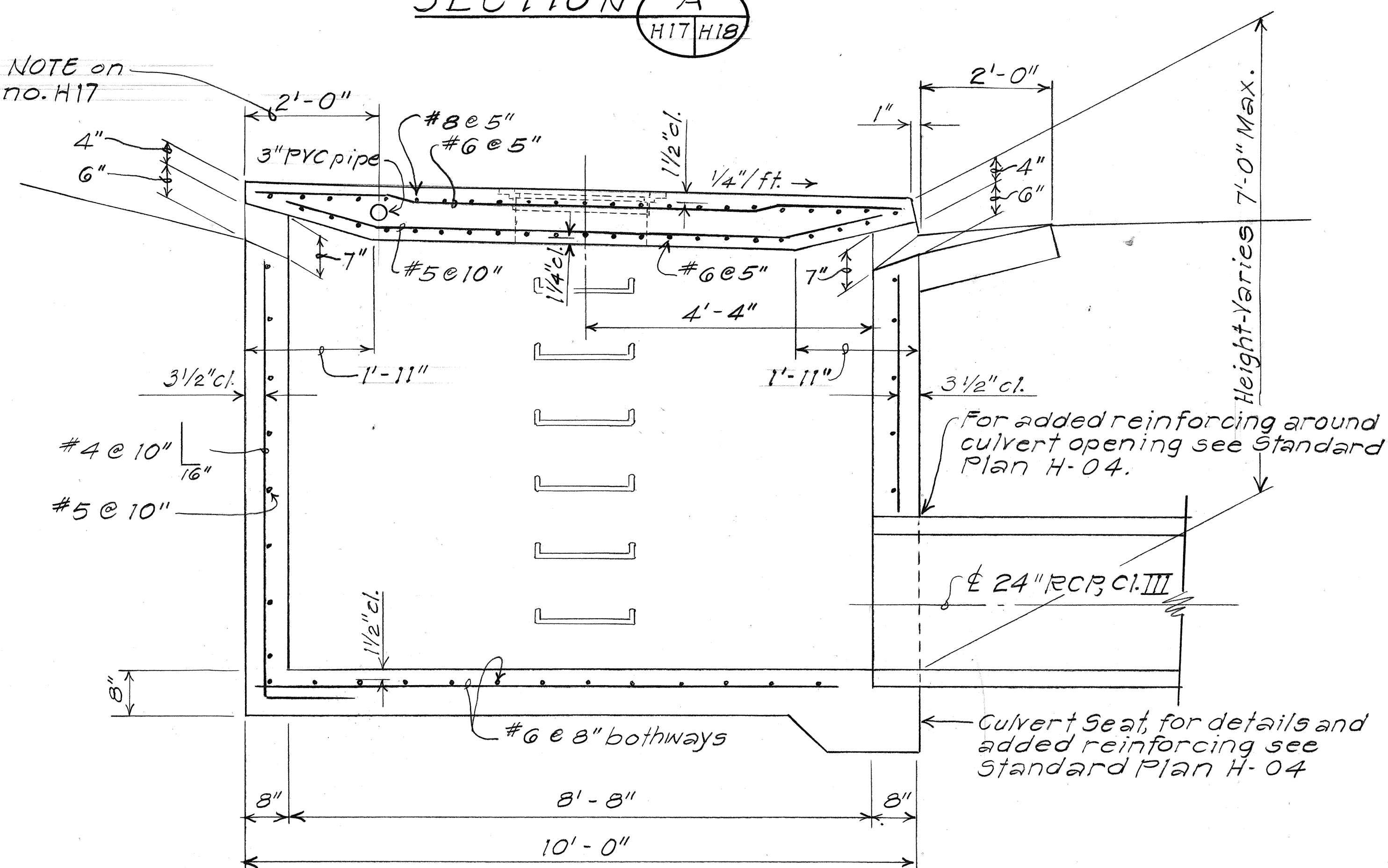
DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S RS 0760(2)R/W
Scale: As Shown Date: SEPT., 1989
SHEET NO. 117 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	59	148



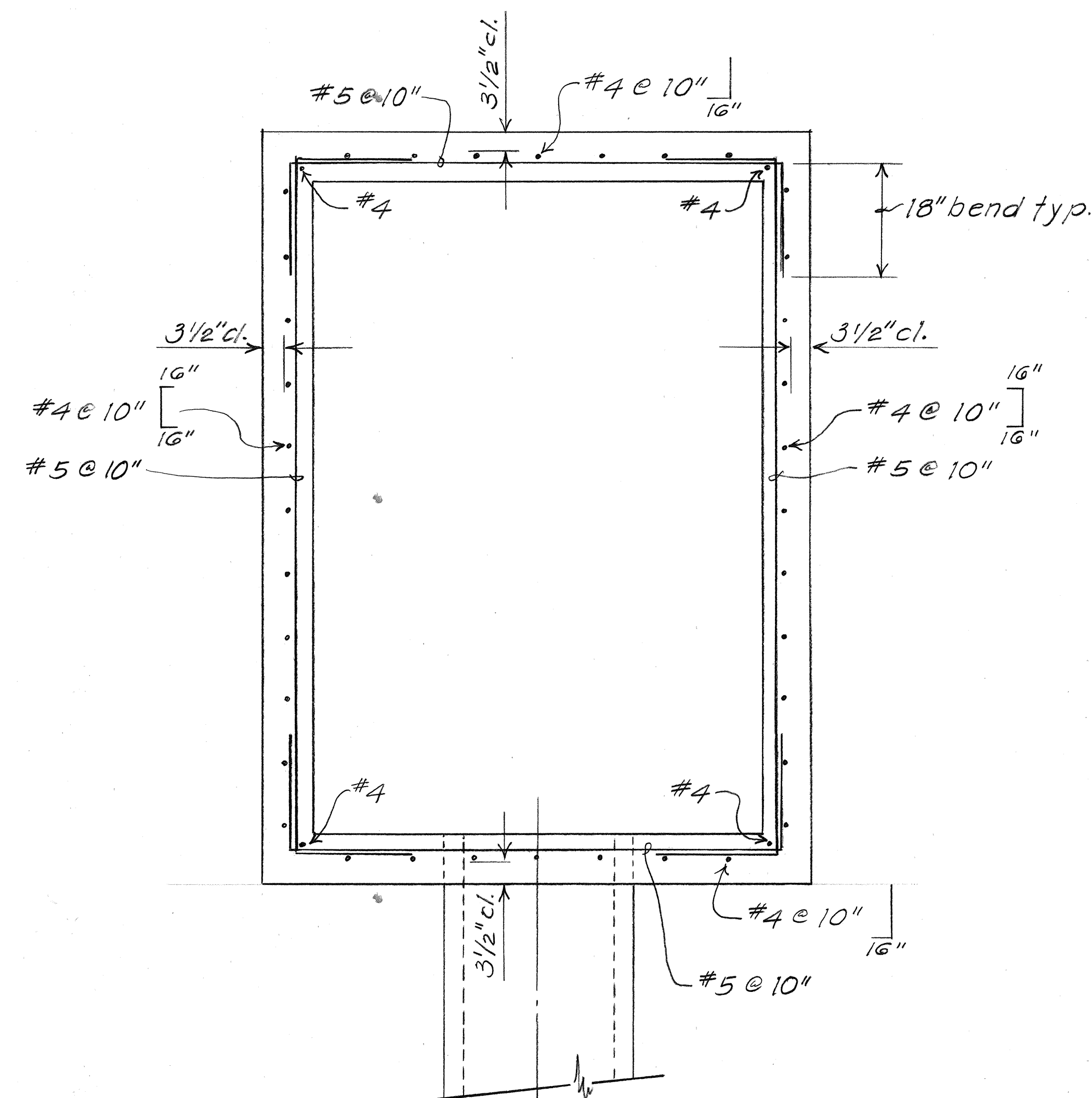
SECTION A
H17/H18

See NOTE on
sht. no. H17



SECTION B
H17/H18

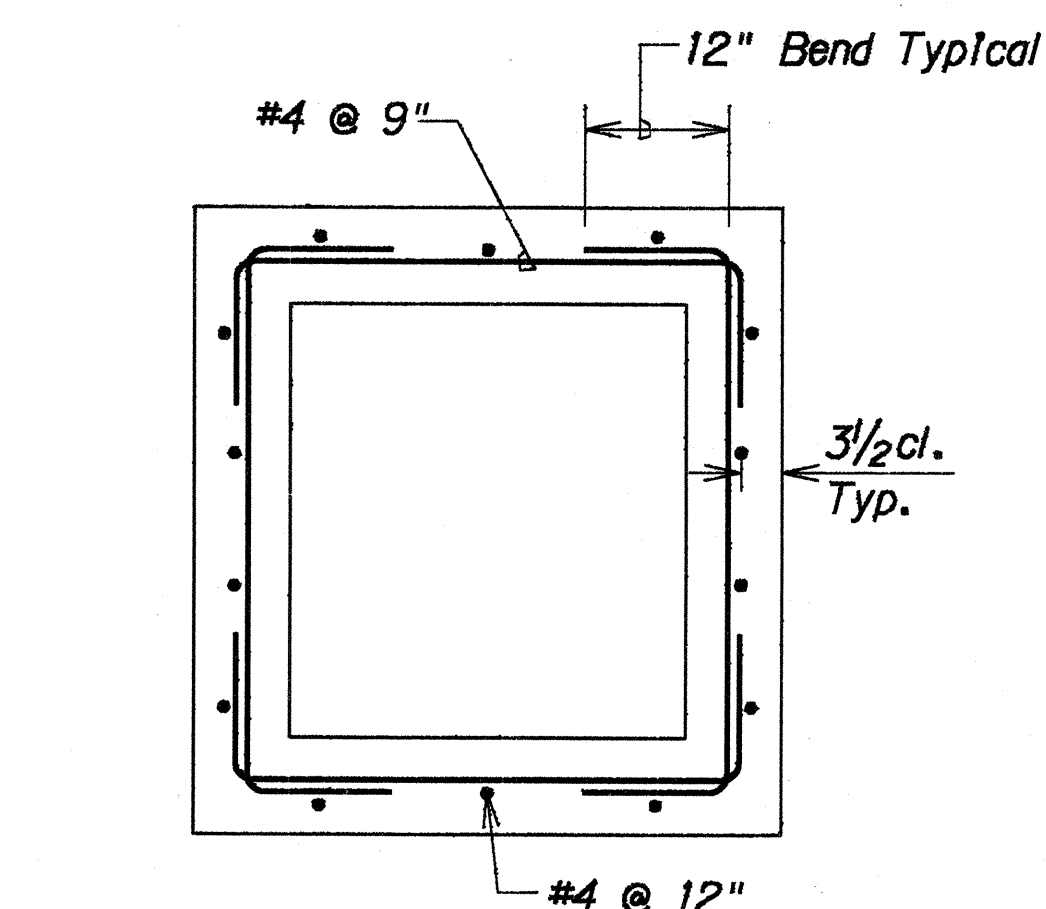
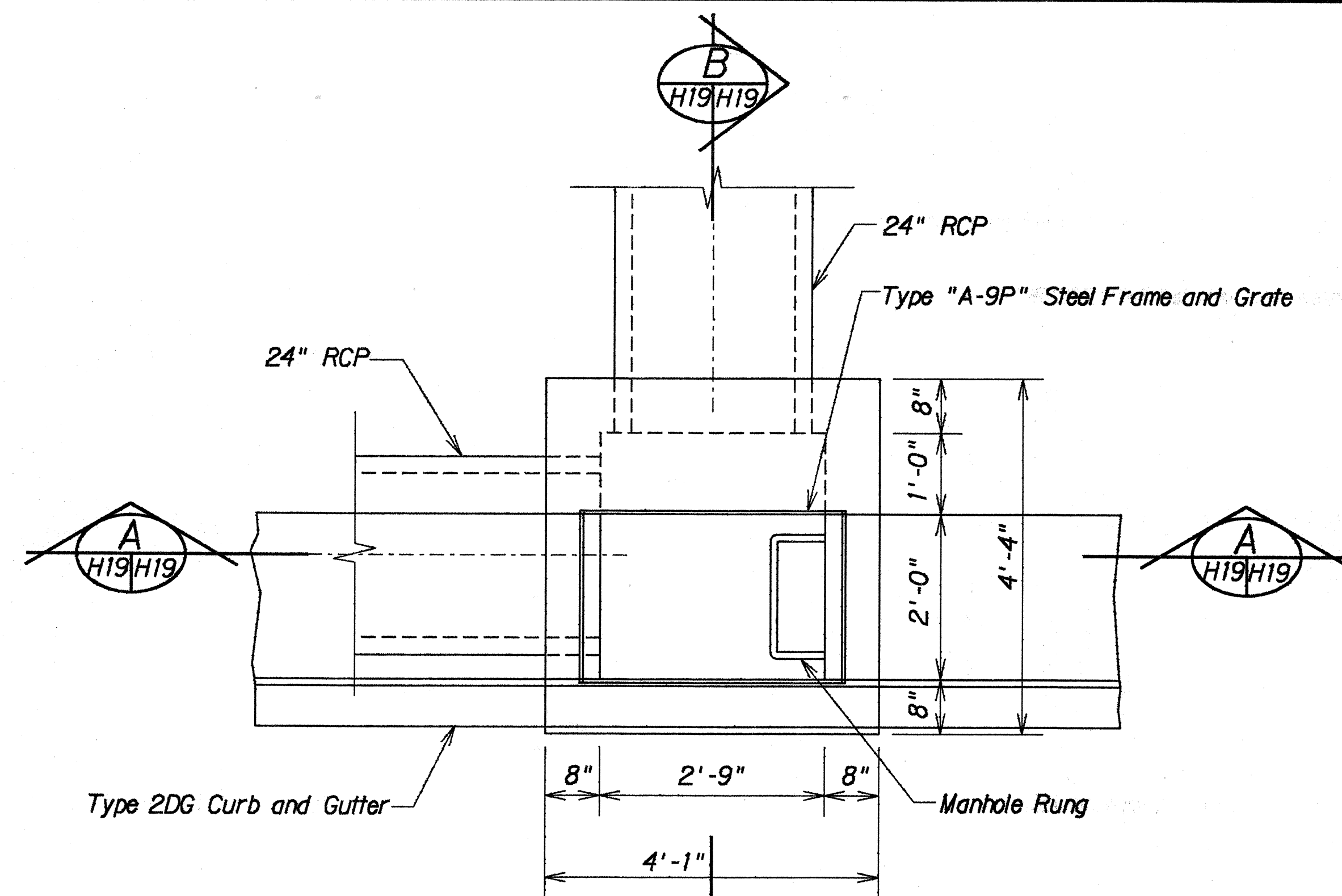
DETAILS OF TYPE "D-10" CATCH BASIN Scale: 3/4" = 1'-0"



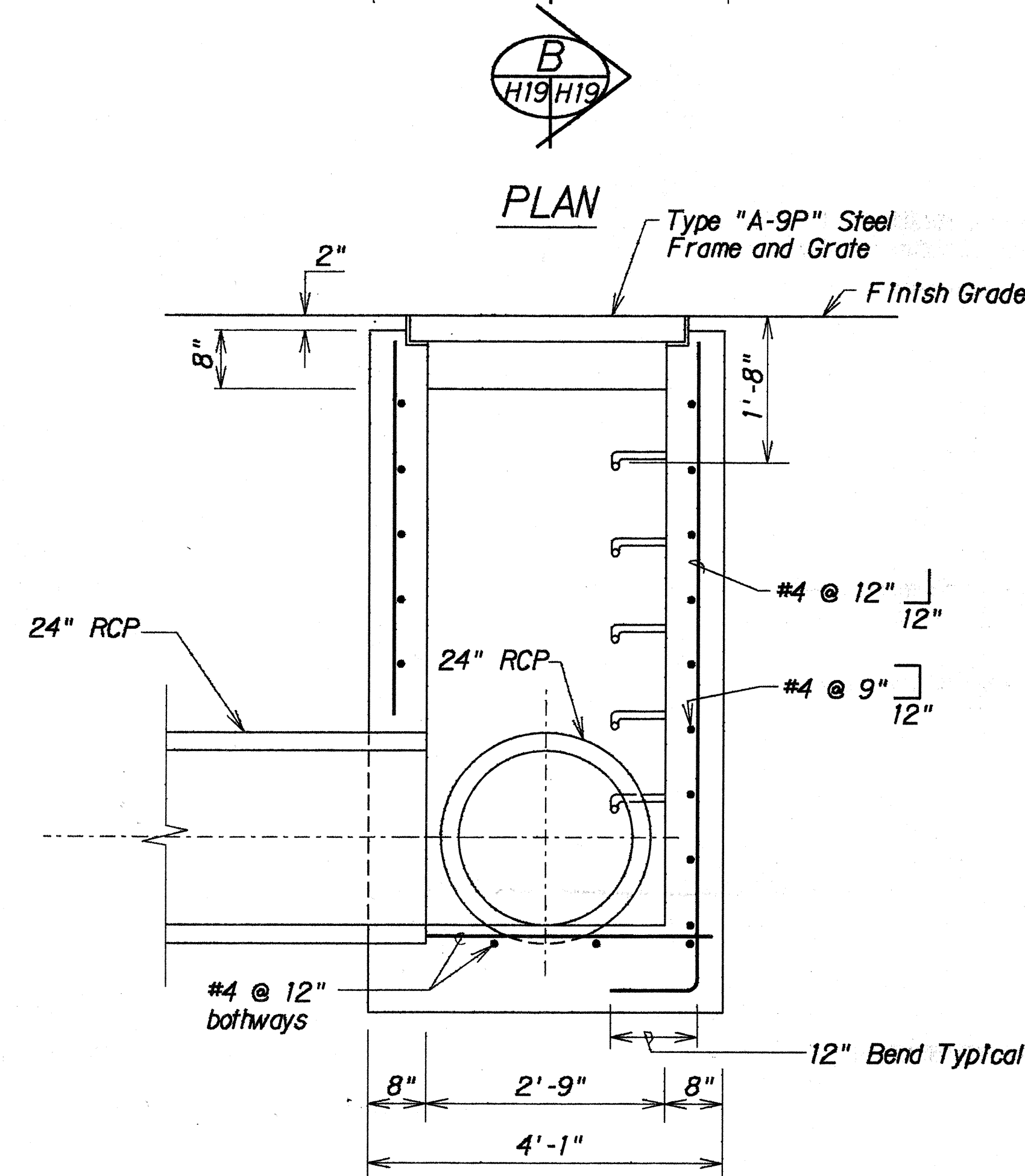
PLAN VIEW OF WALL SECTION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.	
Project Nos. F-076-1(2) and S-RS-0760(2) R/W	
Scale: As Shown	Date: SEPT, 1989
SHEET NO. H18 OF 38 SHEETS	

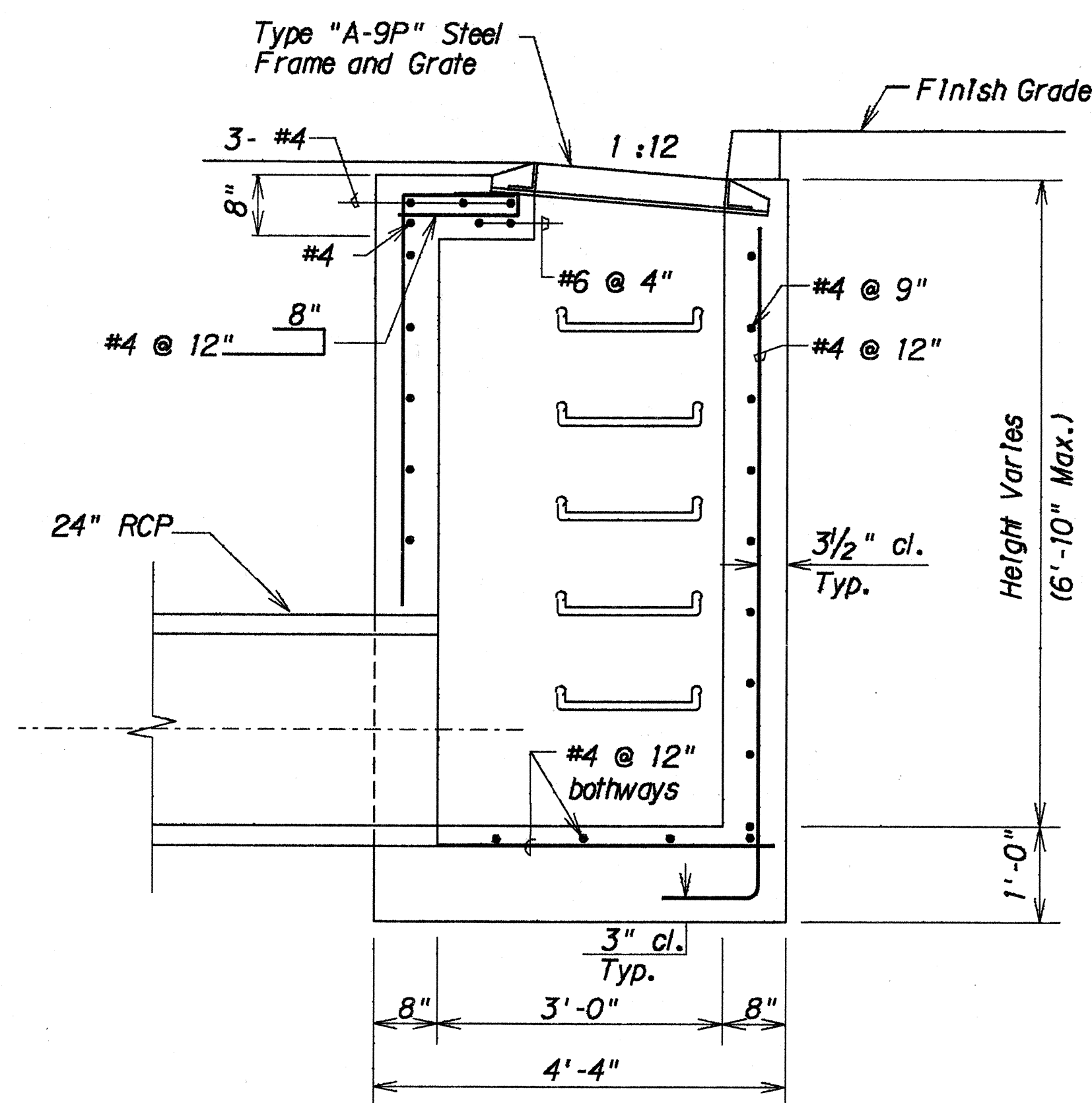
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	60	148



PLAN VIEW OF WALL SECTION



SECTION A
H19/H19



SECTION B
H19/H19

DETAILS OF TYPE 1 A-9P GRATED DROP INLET

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

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
CHECKED BY	
N.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

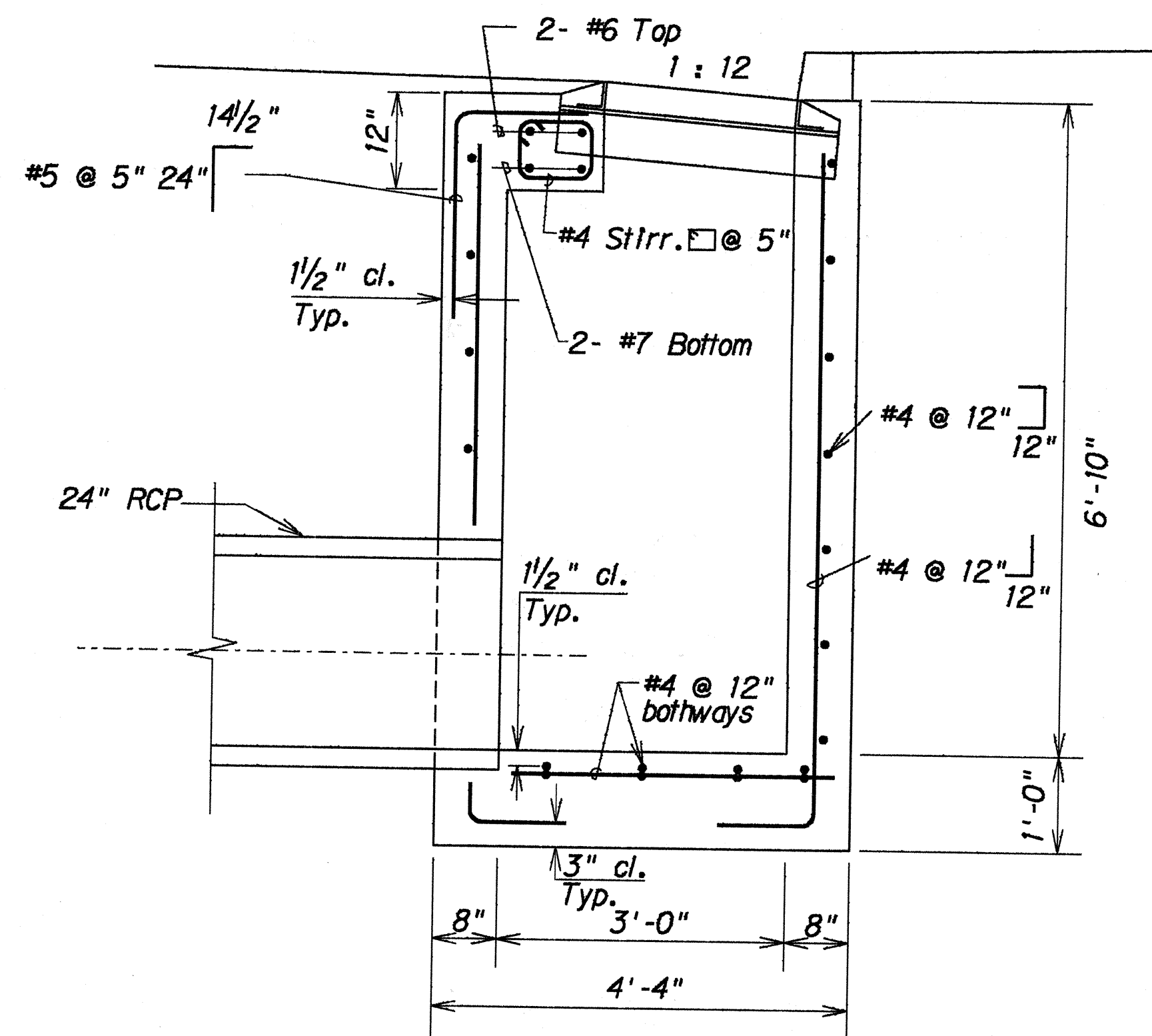
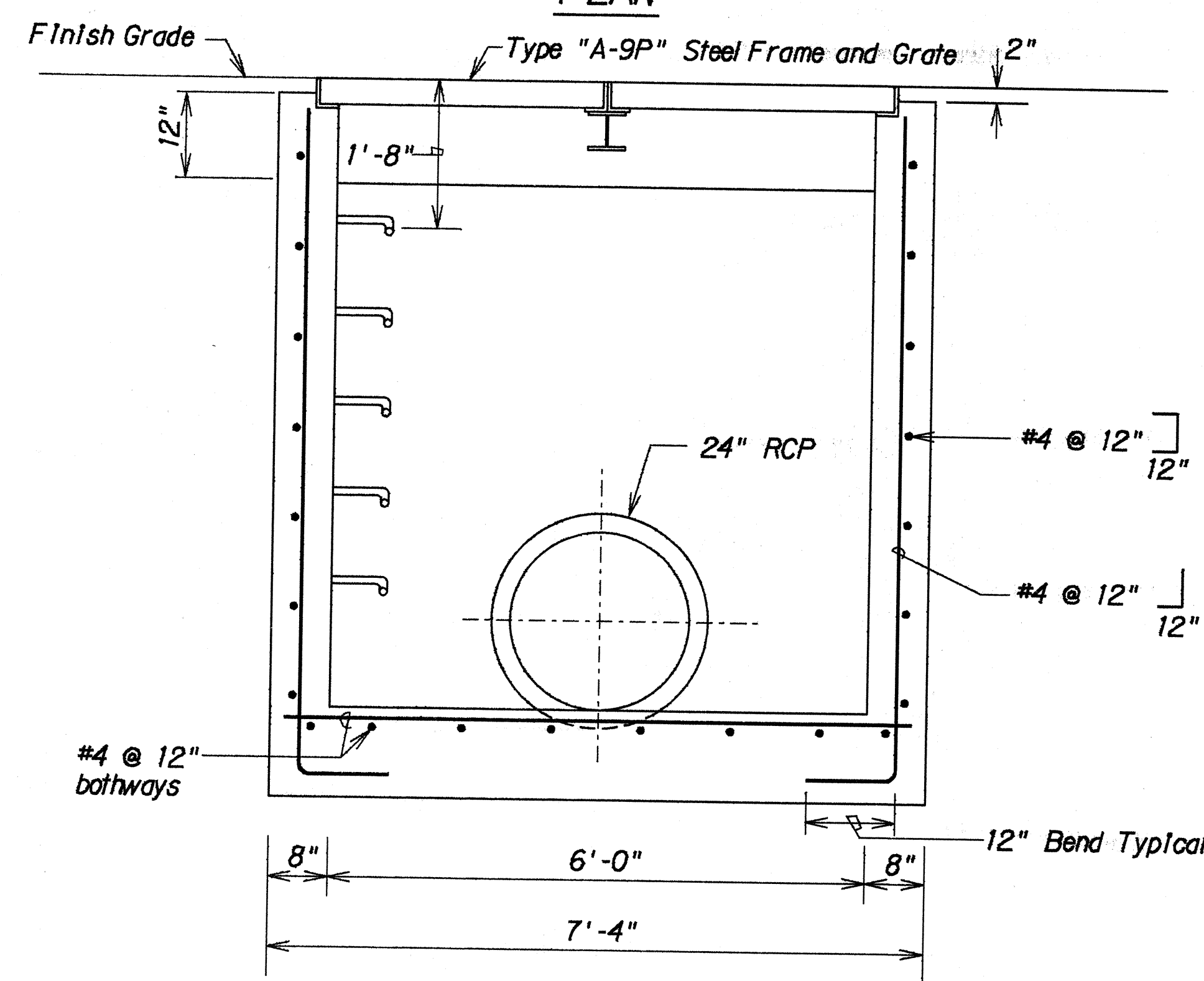
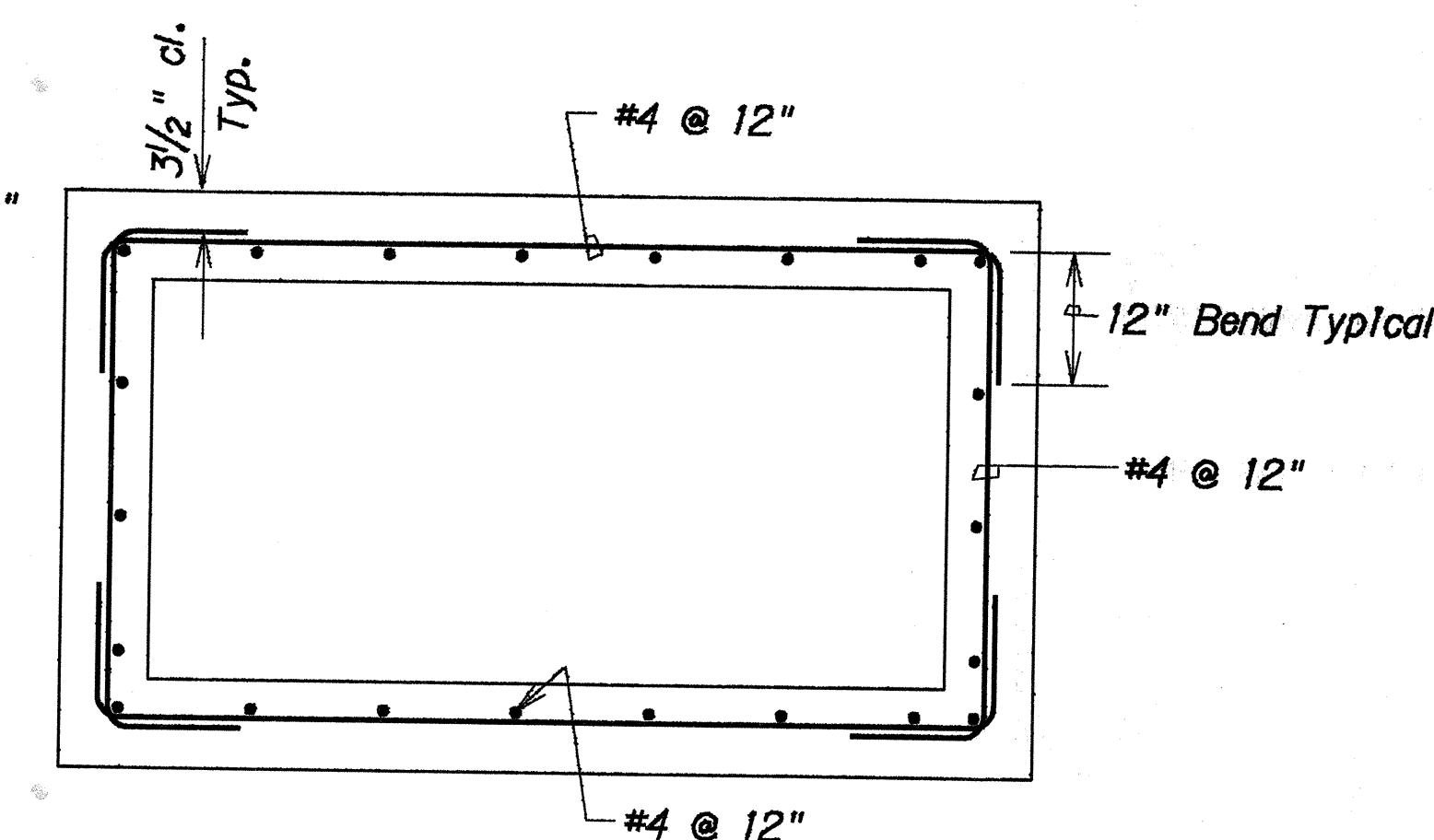
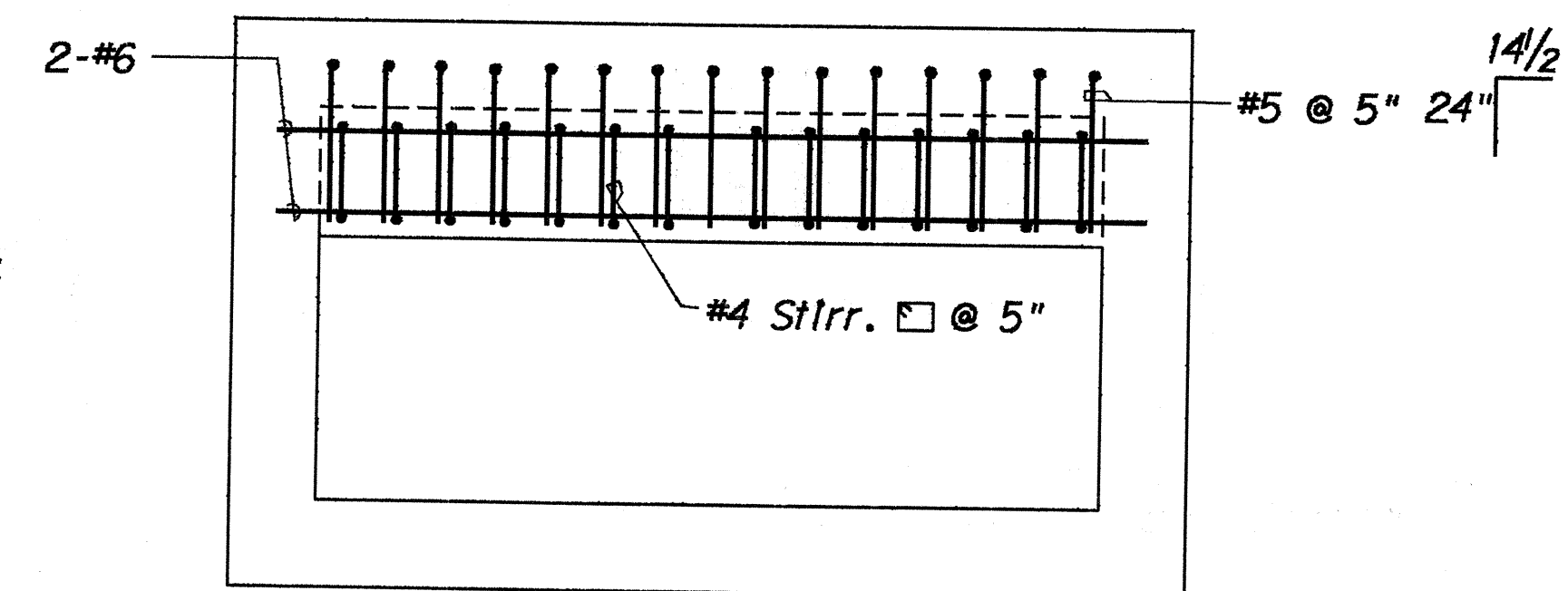
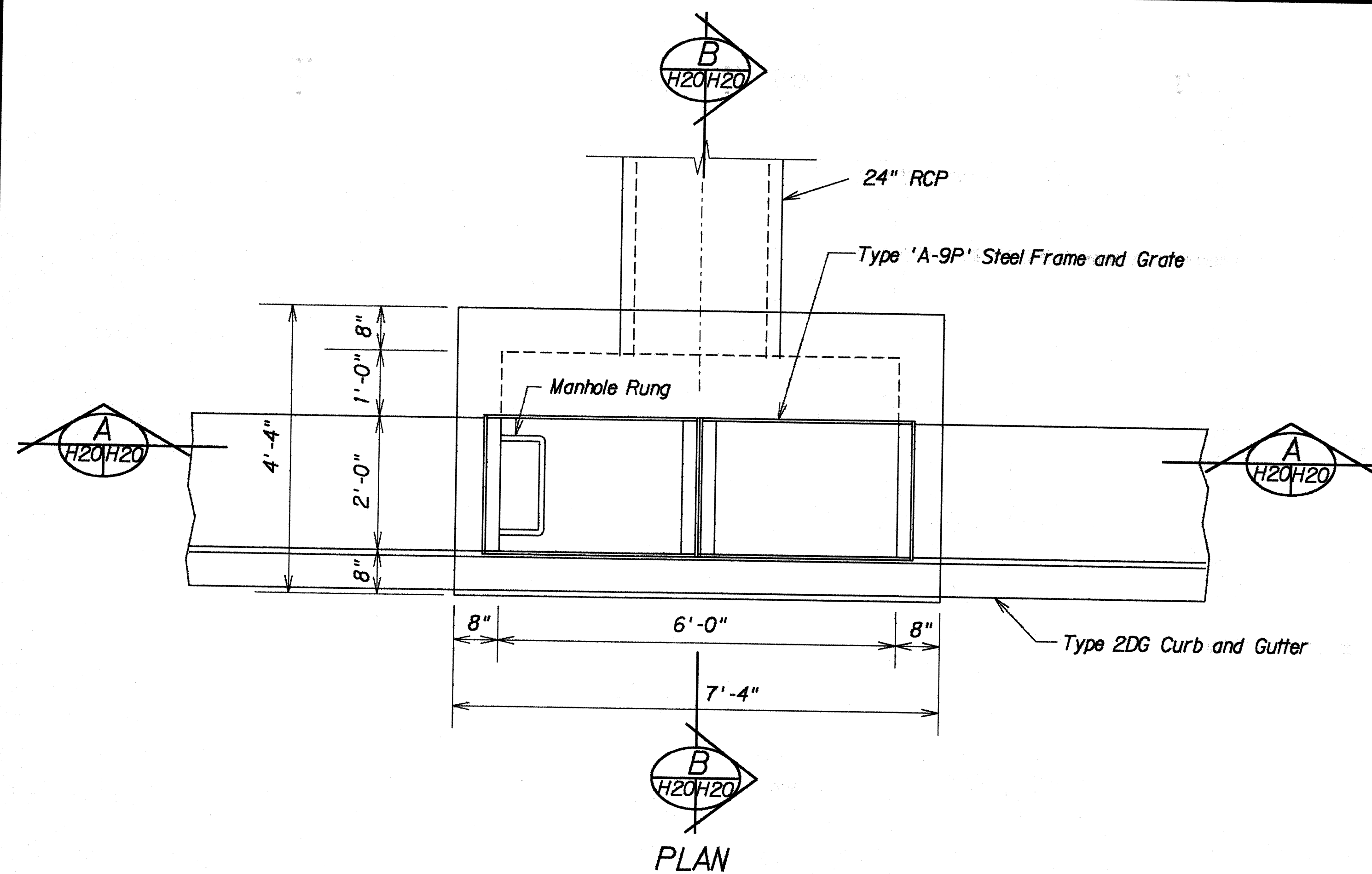
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. H19 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	61	148



DETAILS OF TYPE 2 A-9P GRATED DROP INLET

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DRAINAGE DETAILS

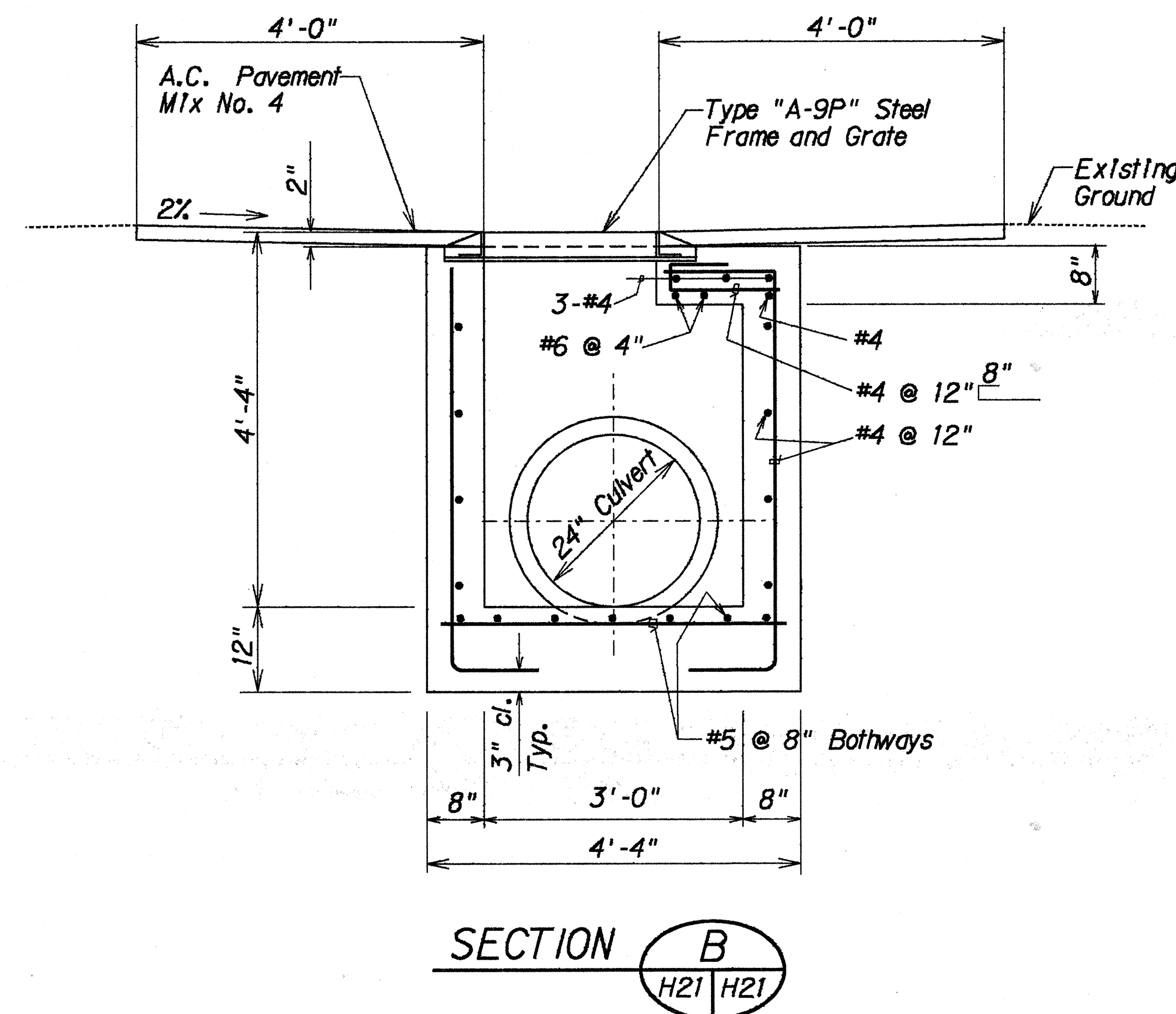
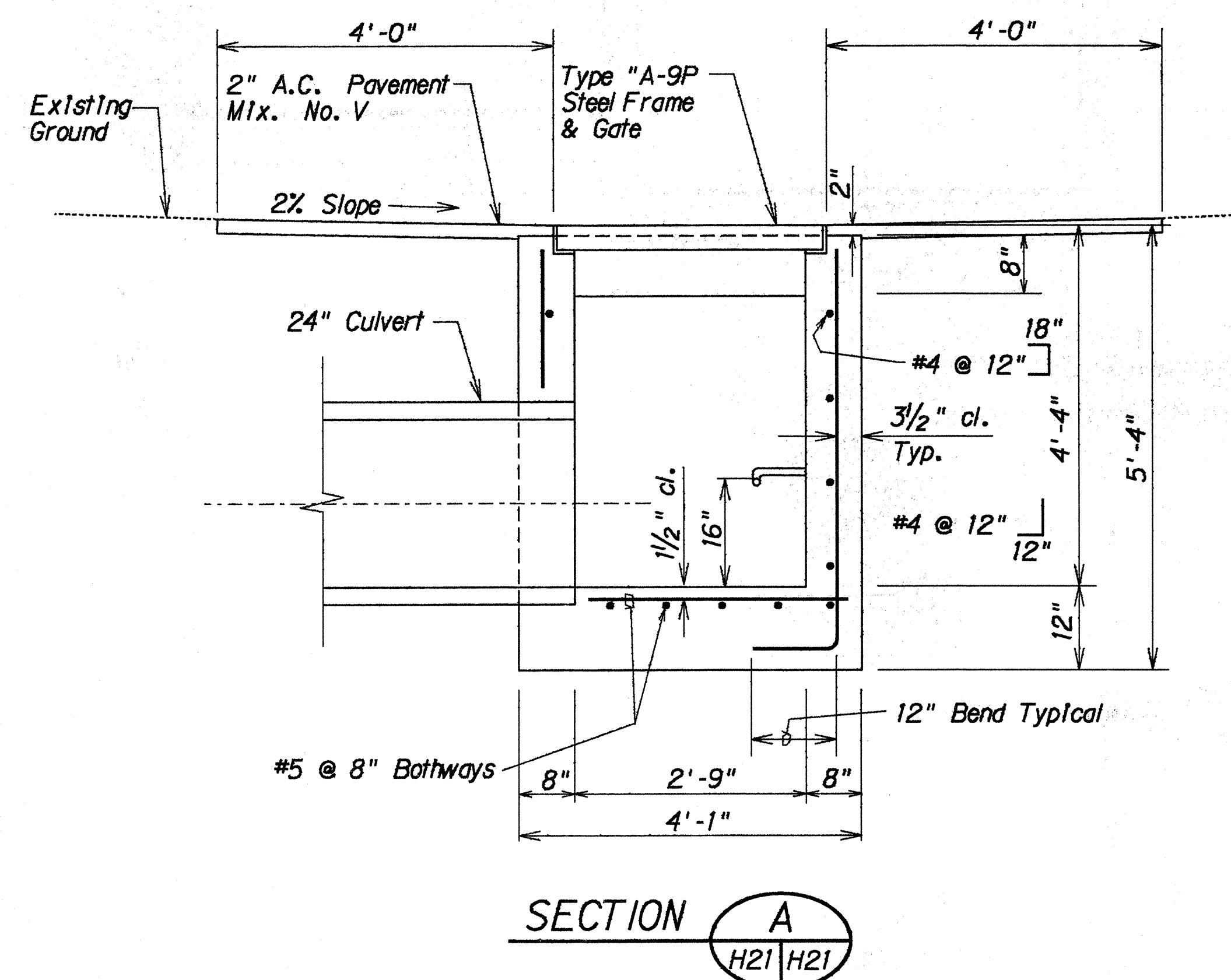
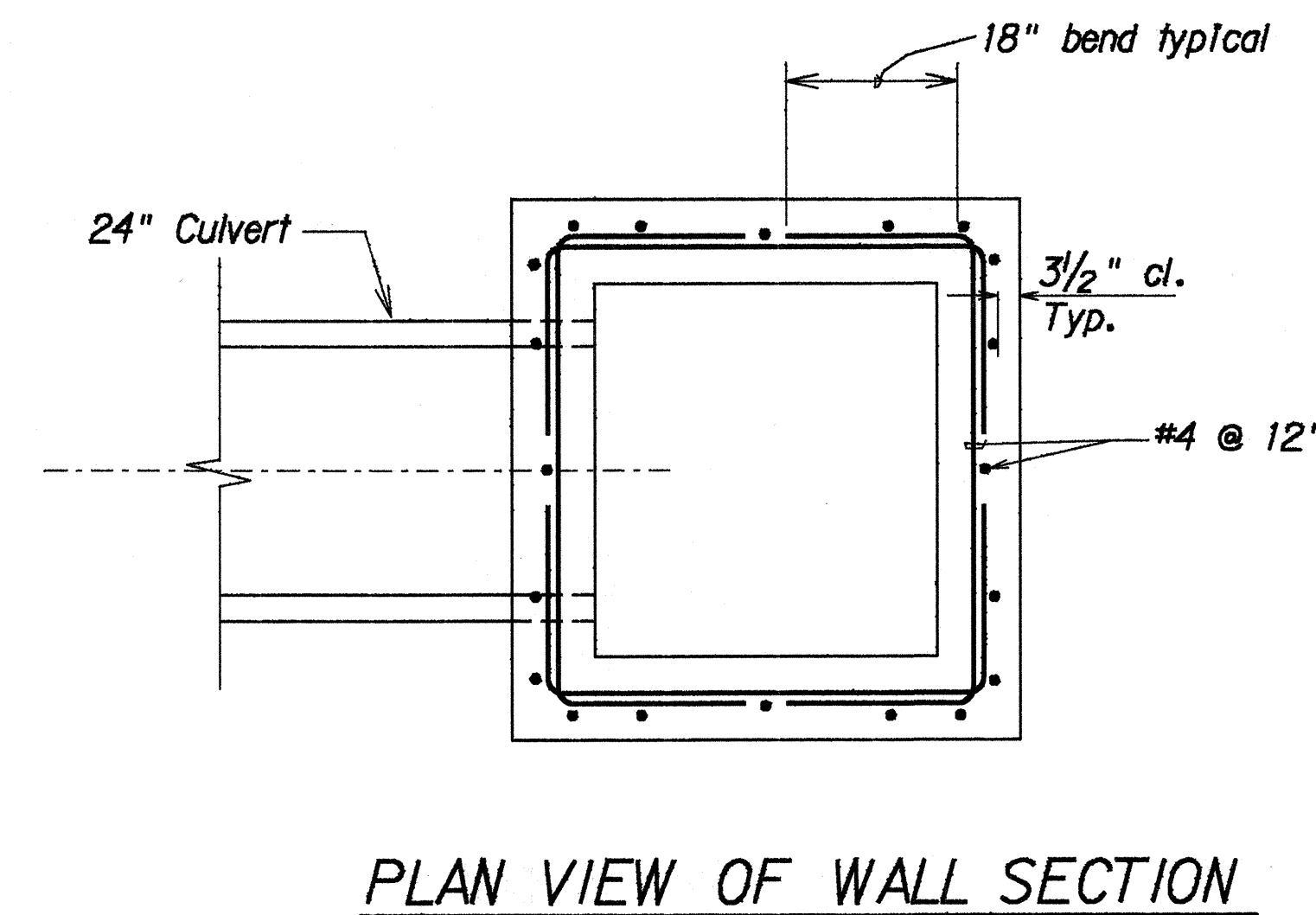
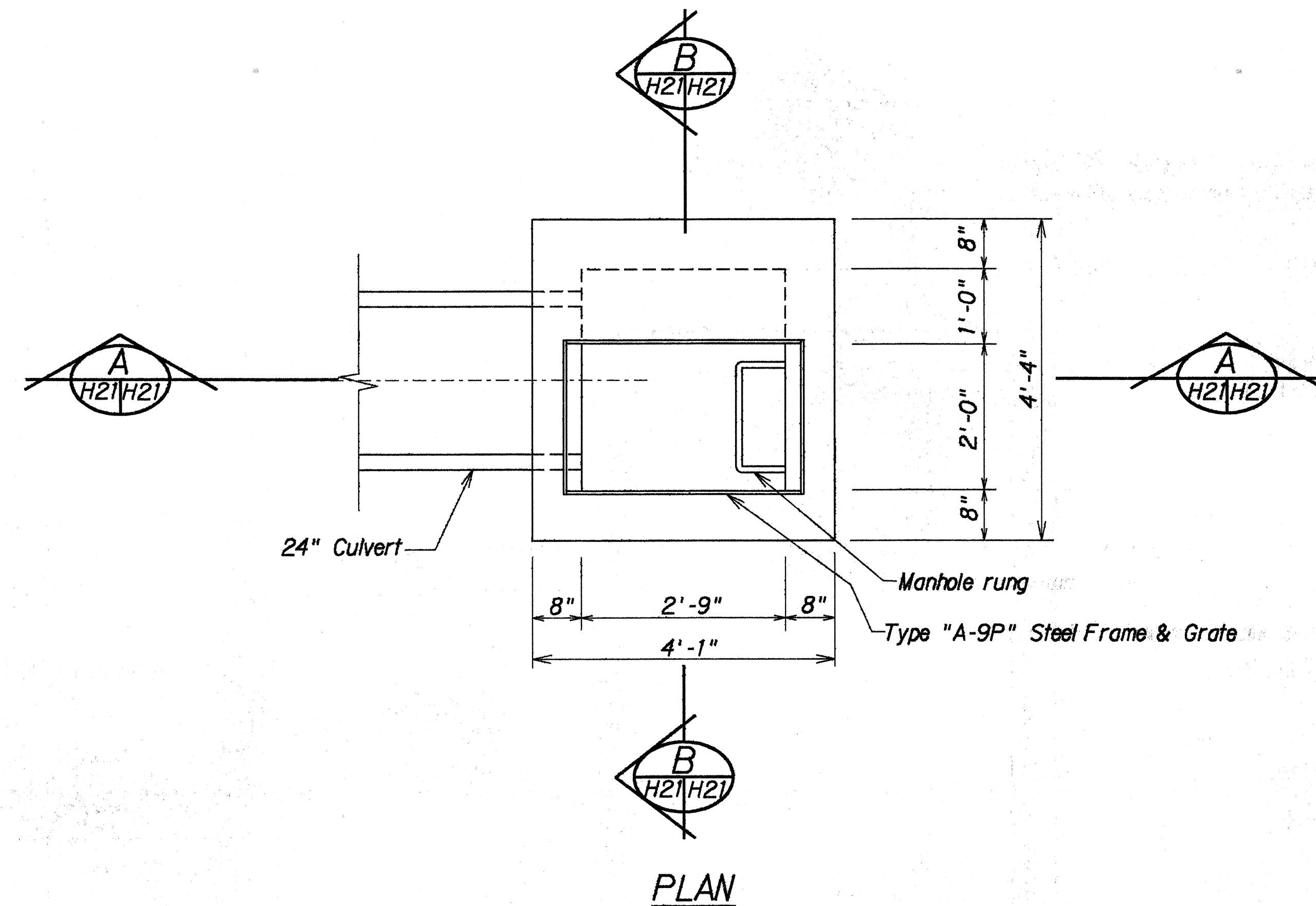
FORT WEAVER ROAD
 HAWAII ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
 S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. H20 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	62	148



DETAILS OF TYPE 3 A-9P GRATED DROP INLET

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

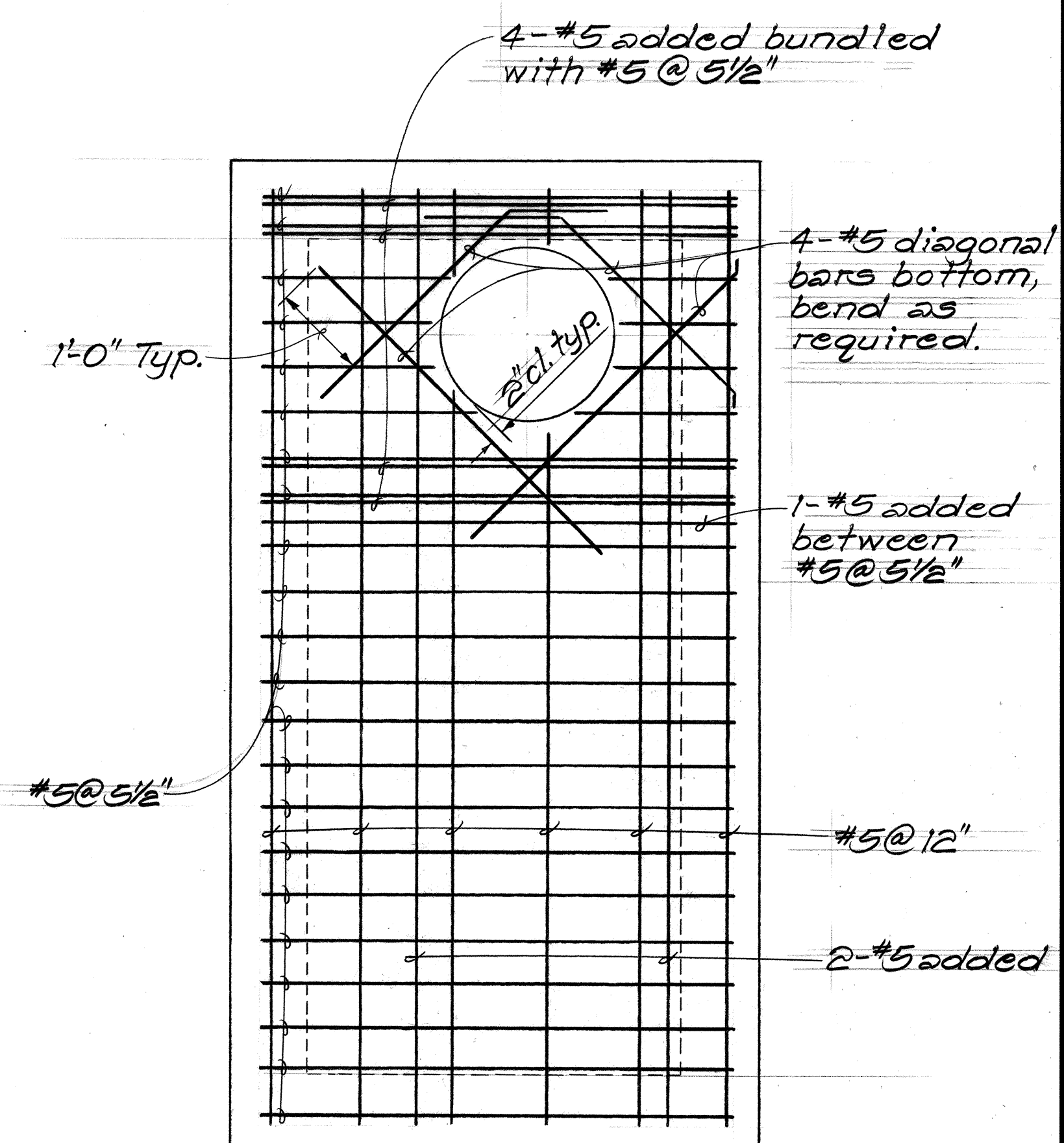
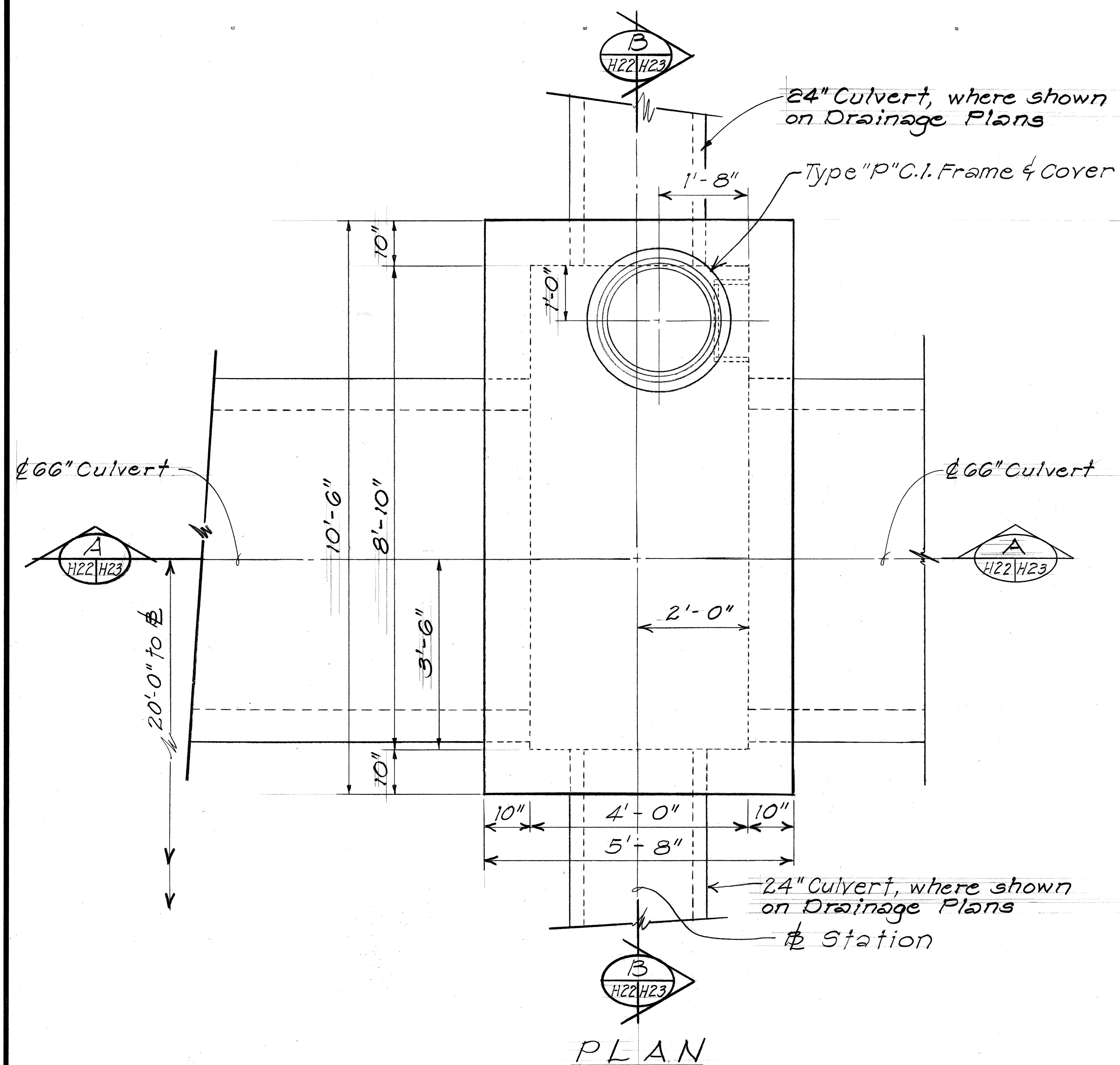
DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown
Date: SEPT., 1989

SHEET No. H21 OF 38 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
CHECKED 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-076-11(2) S-RS-0760 (2) R/W	1990	63	148



PLAN VIEW OF REINFORCING STEEL

DETAILS OF TYPE "H" STORM DRAIN MANHOLE

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

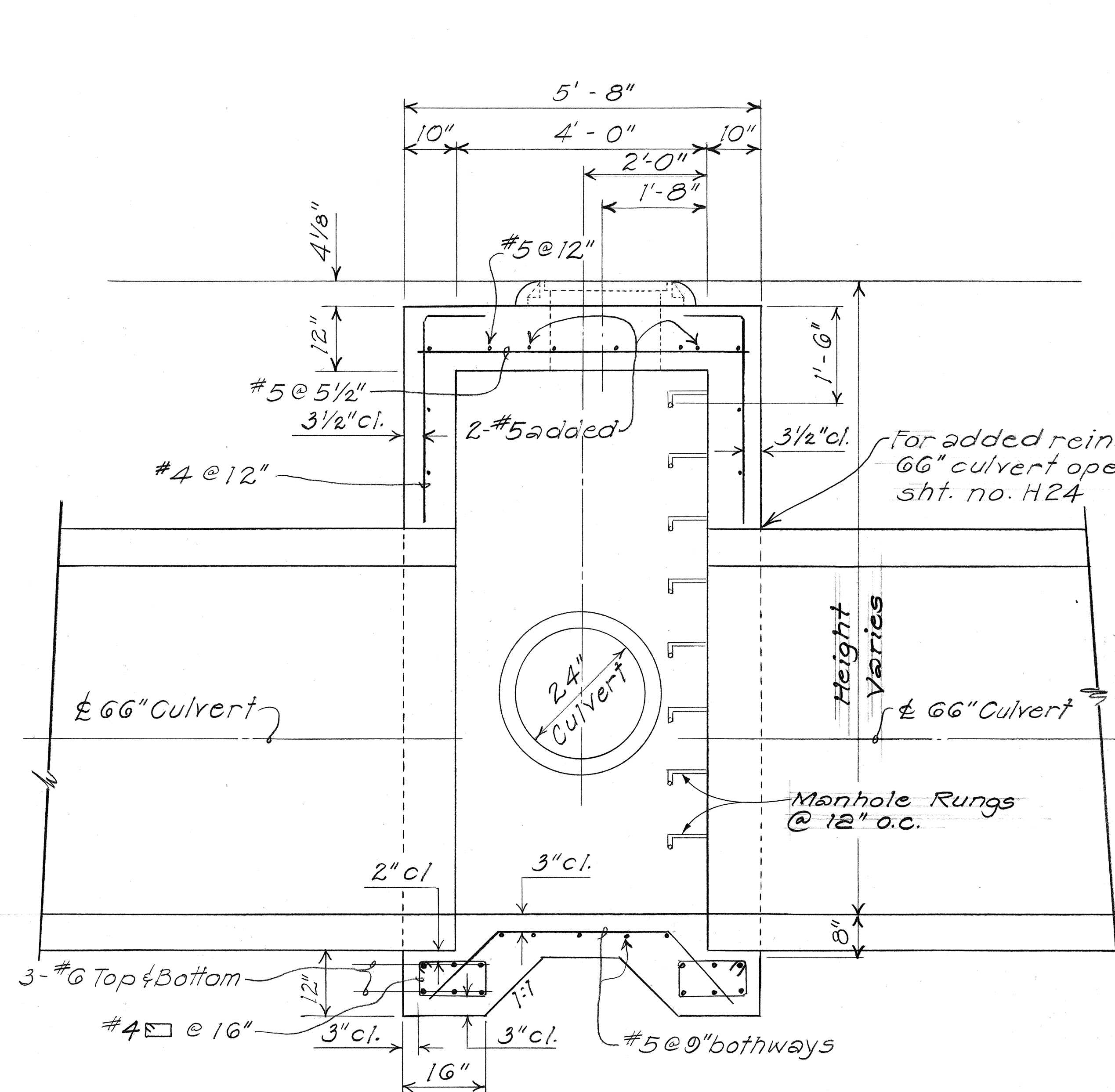
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

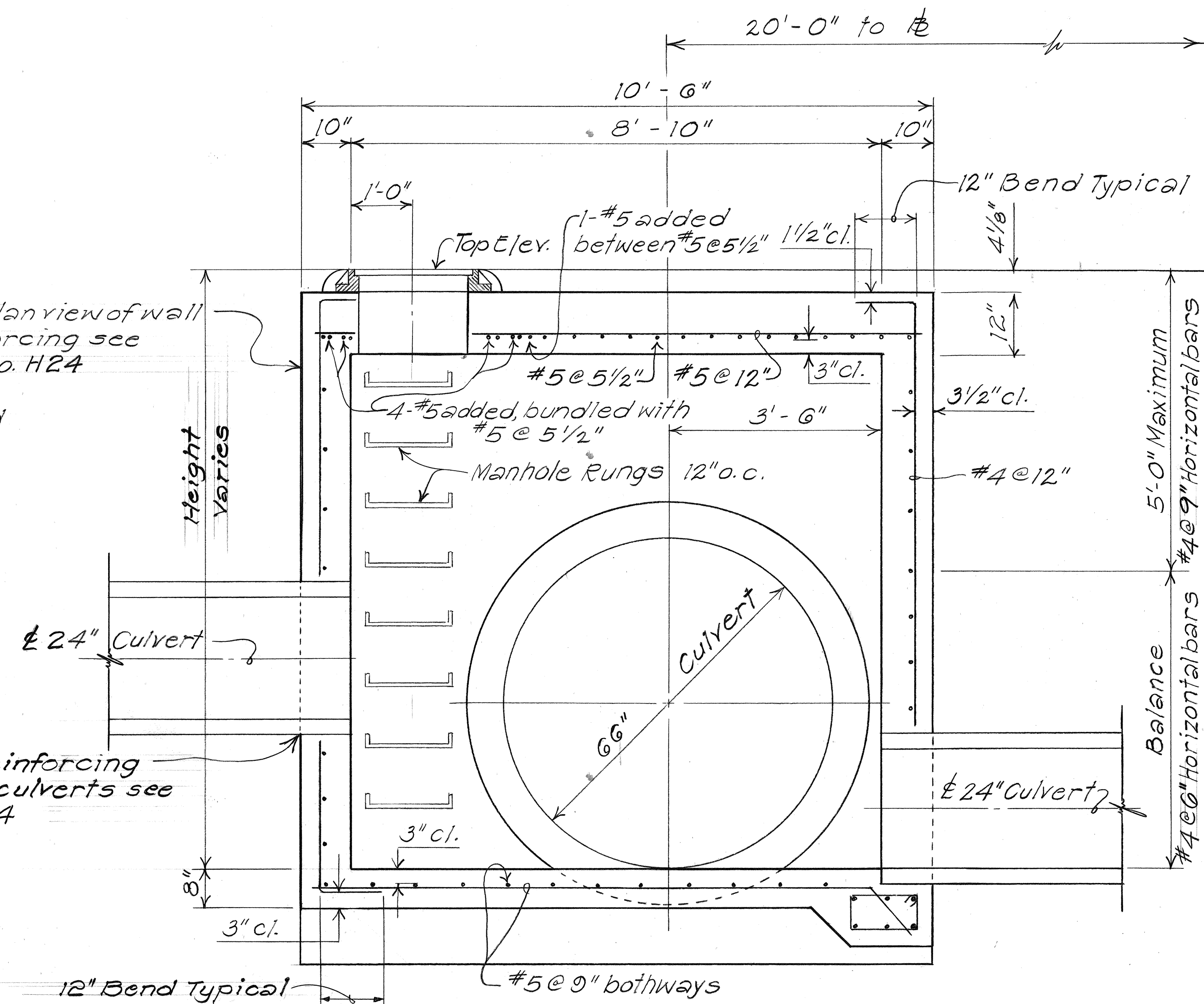
Scale: As Shown Date: SEPT., 1989

SHEET No. H22 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	64	148



SECTION A
H22/H23



SECTION B
H22/H23

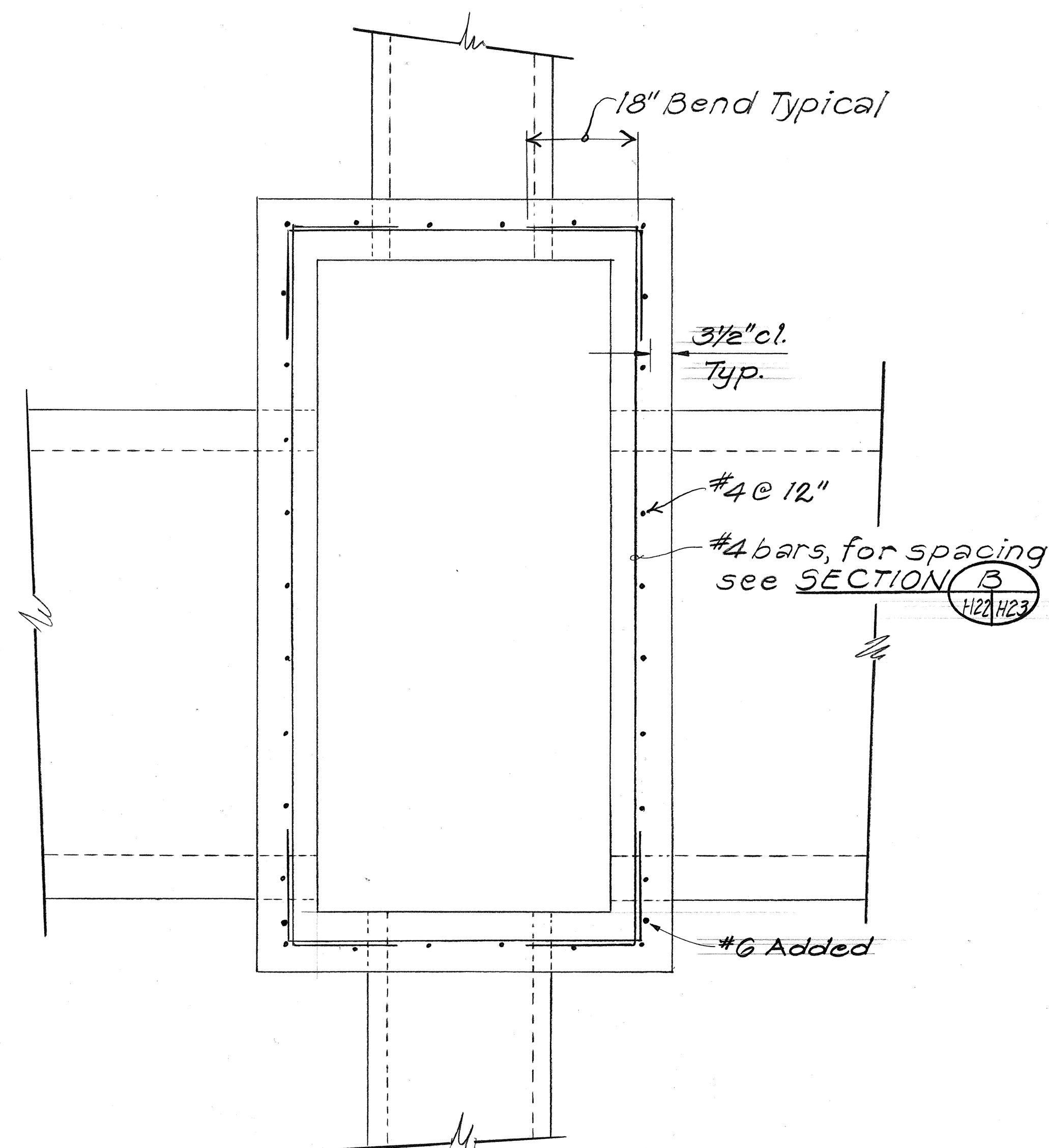
DETAILS OF TYPE "H" STORM DRAIN MANHOLE

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

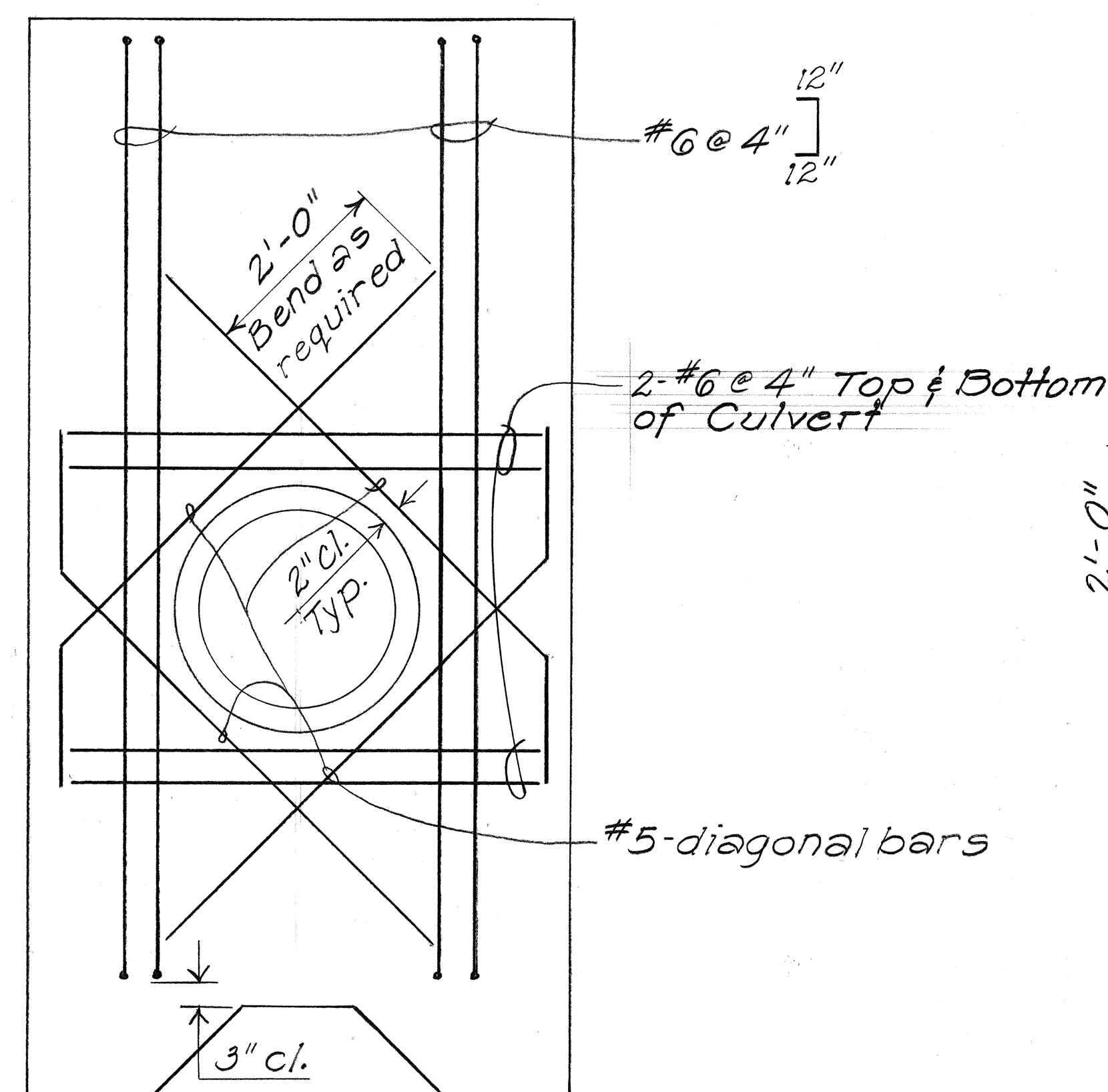
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.	
Project Nos. F-076-1(2) and S-RS-0760(2)R/W	
Scale: As Shown	Date: SEPT., 1989
SHEET NO. H23 OF 38 SHEETS	

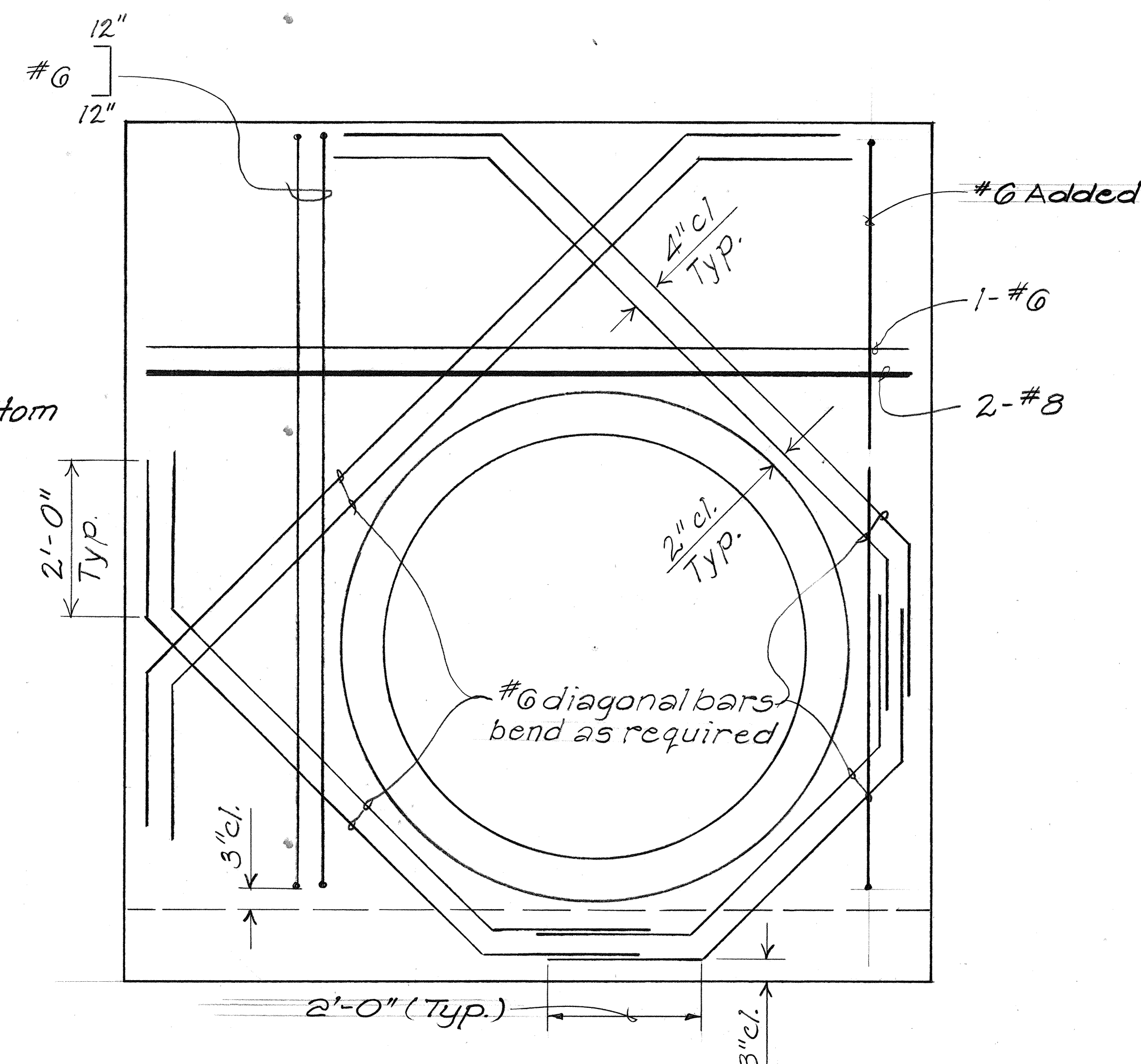
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	65	148



PLAN VIEW OF WALL SECTION



ADDED REINFORCING AT 24" CULVERT OPENING



ADDED REINFORCING AT 66" CULVERT OPENING

DETAILS OF TYPE "H" STORM DRAIN MANHOLE
Scale: 3/4" = 1'-0"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

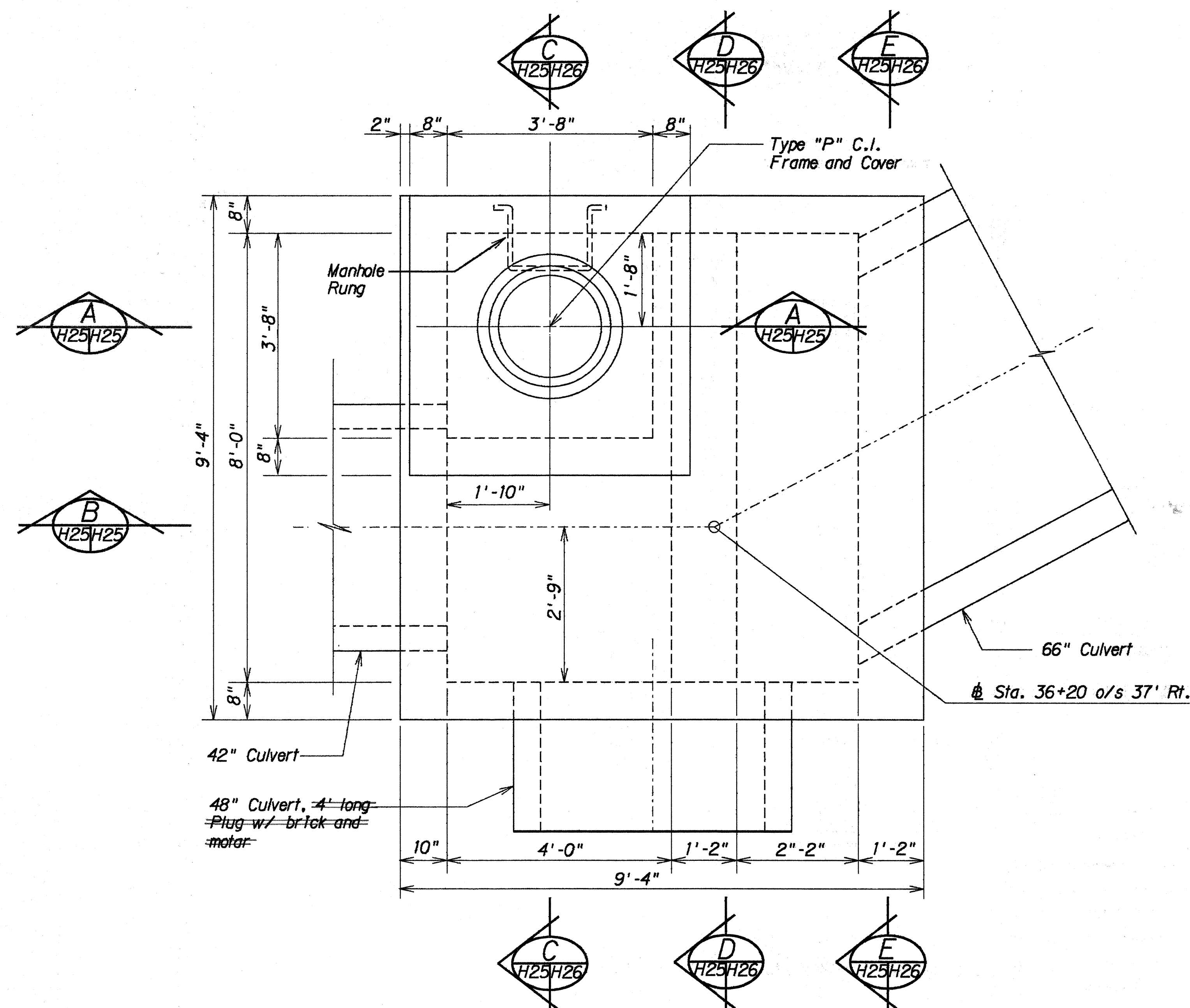
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT, 1989

SHEET No. H24 OF 38 SHEETS

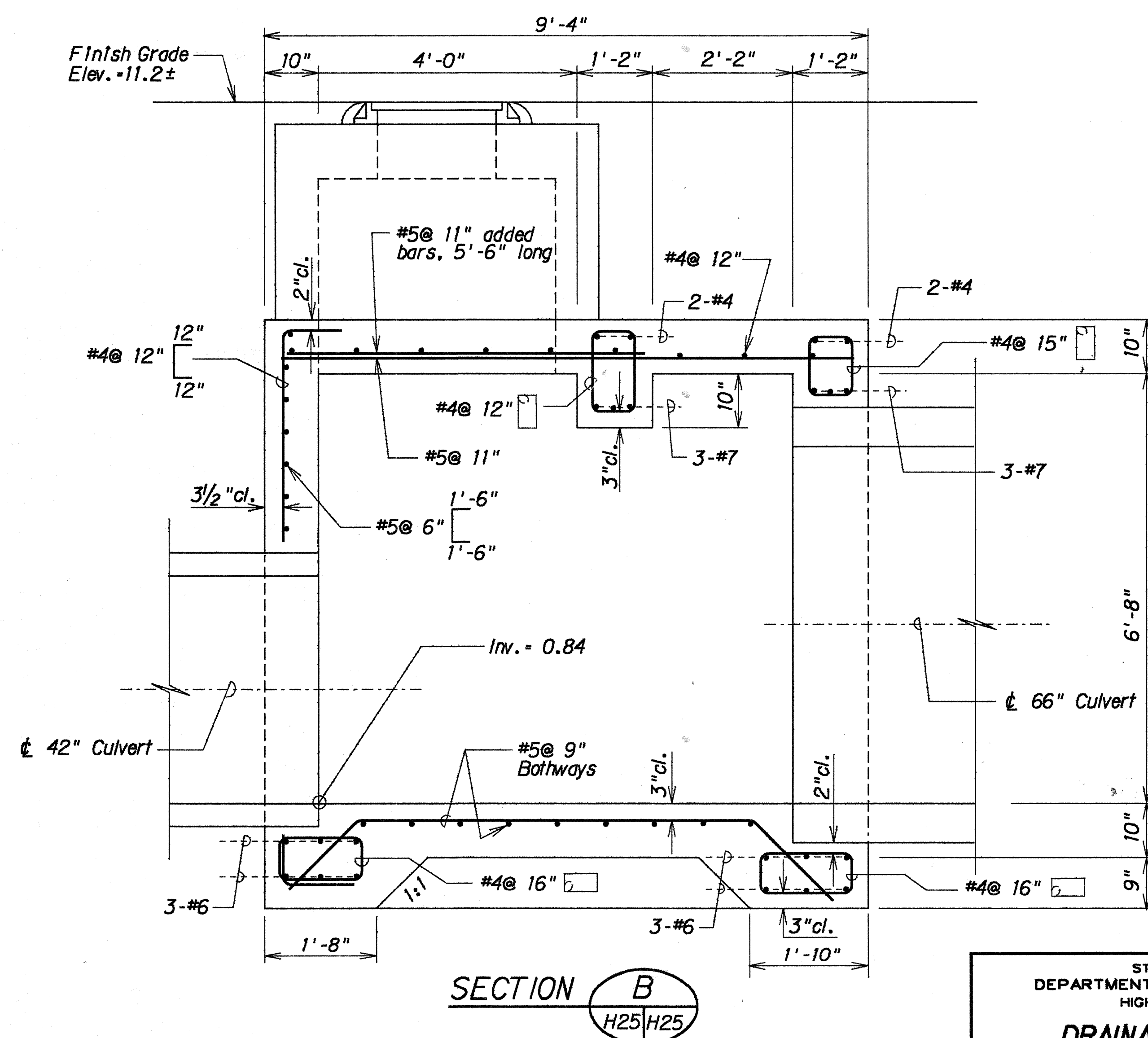
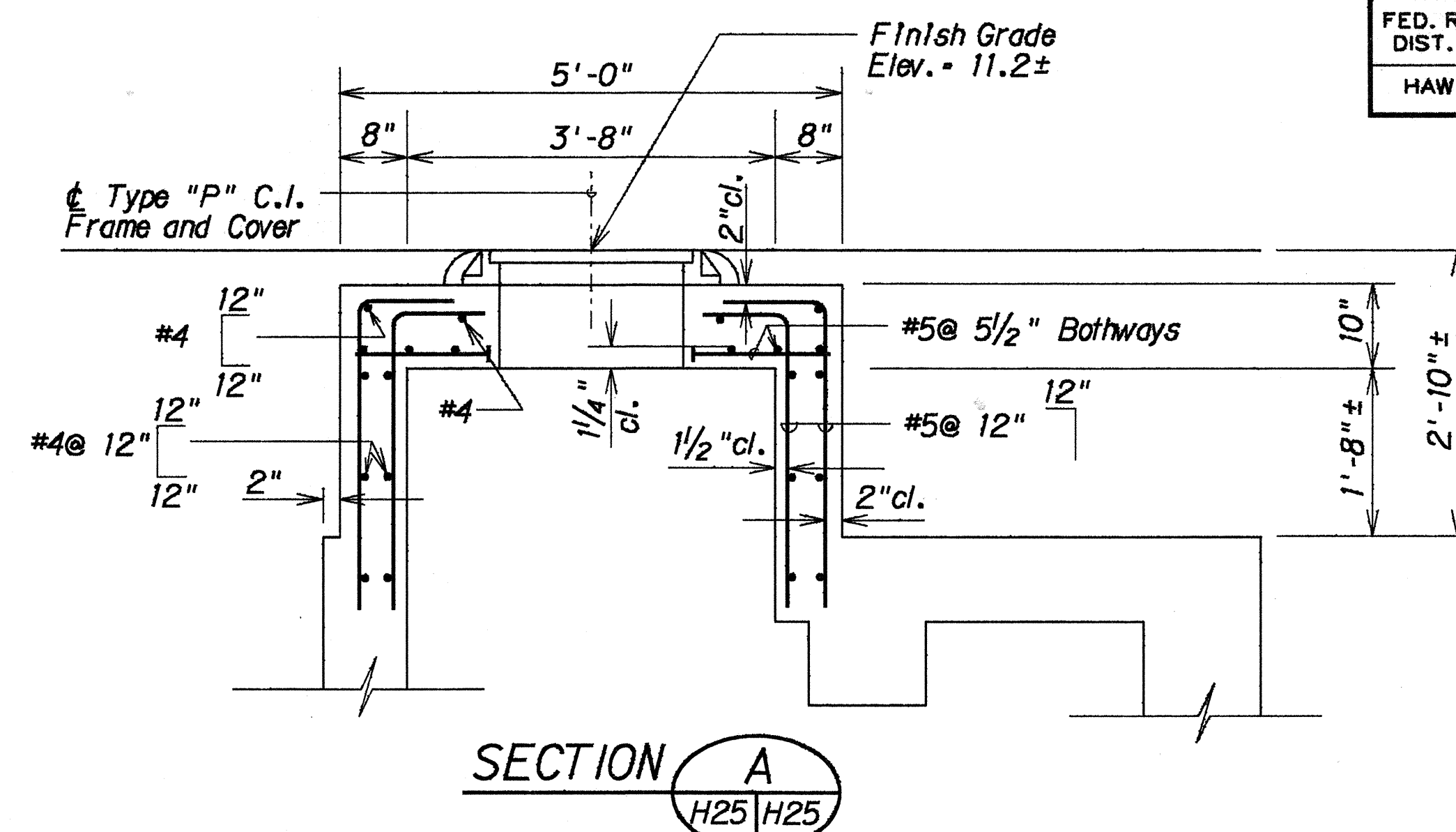
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	66	148



PLAN

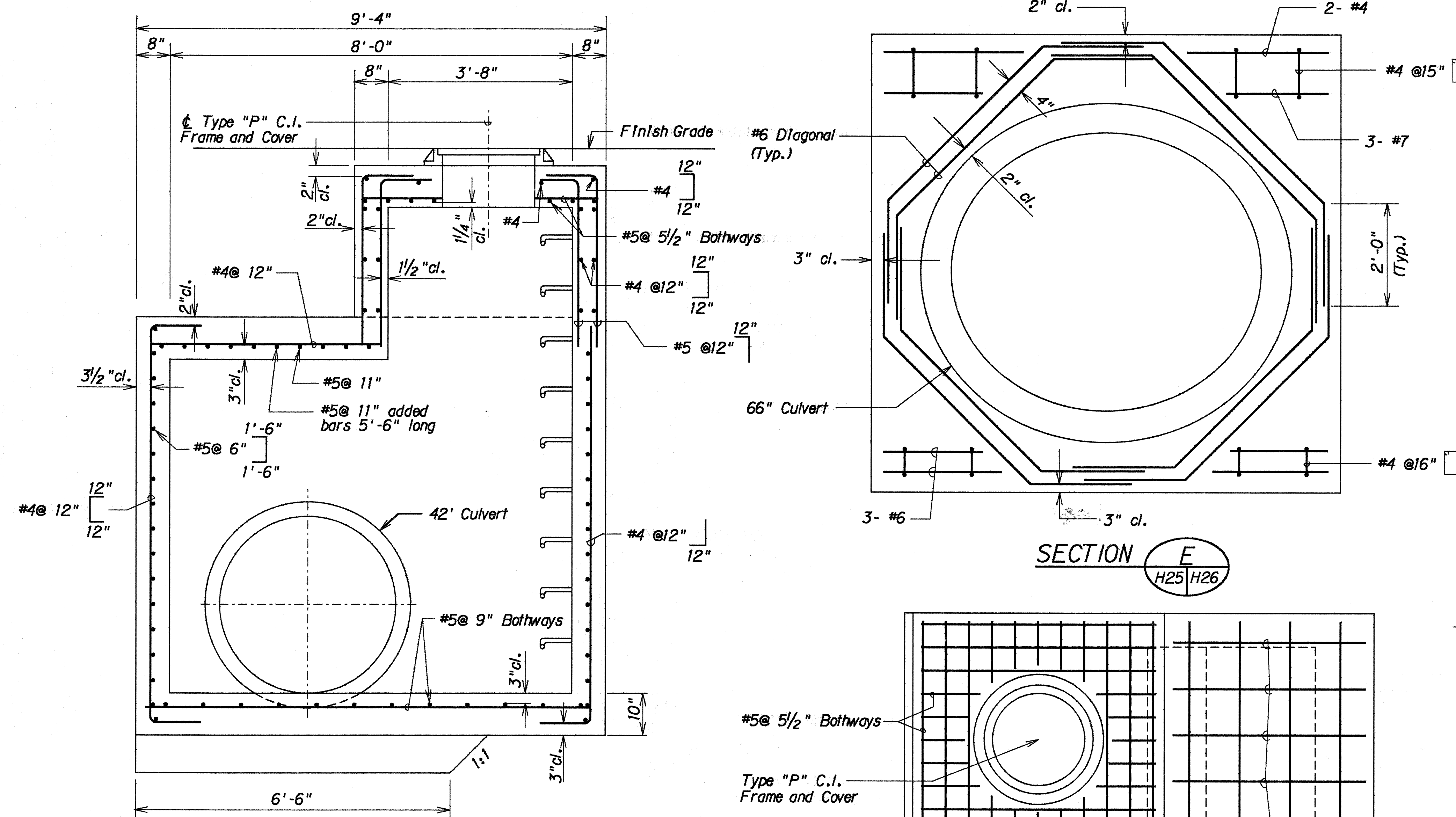
DETAILS OF TYPE "K" STORM DRAIN MANHOLE

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

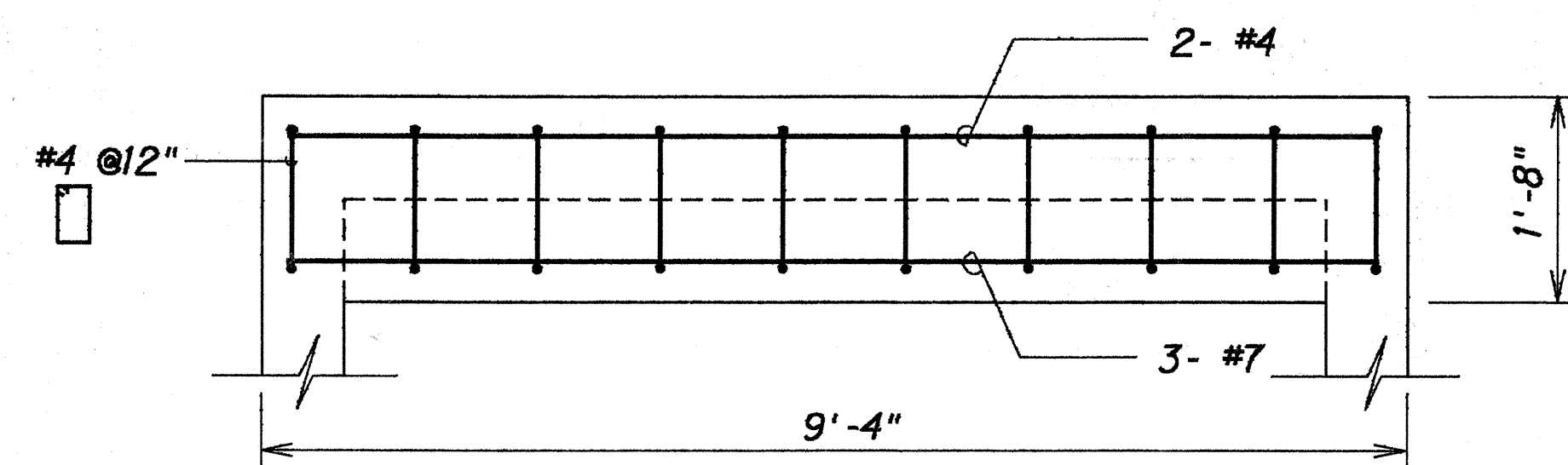
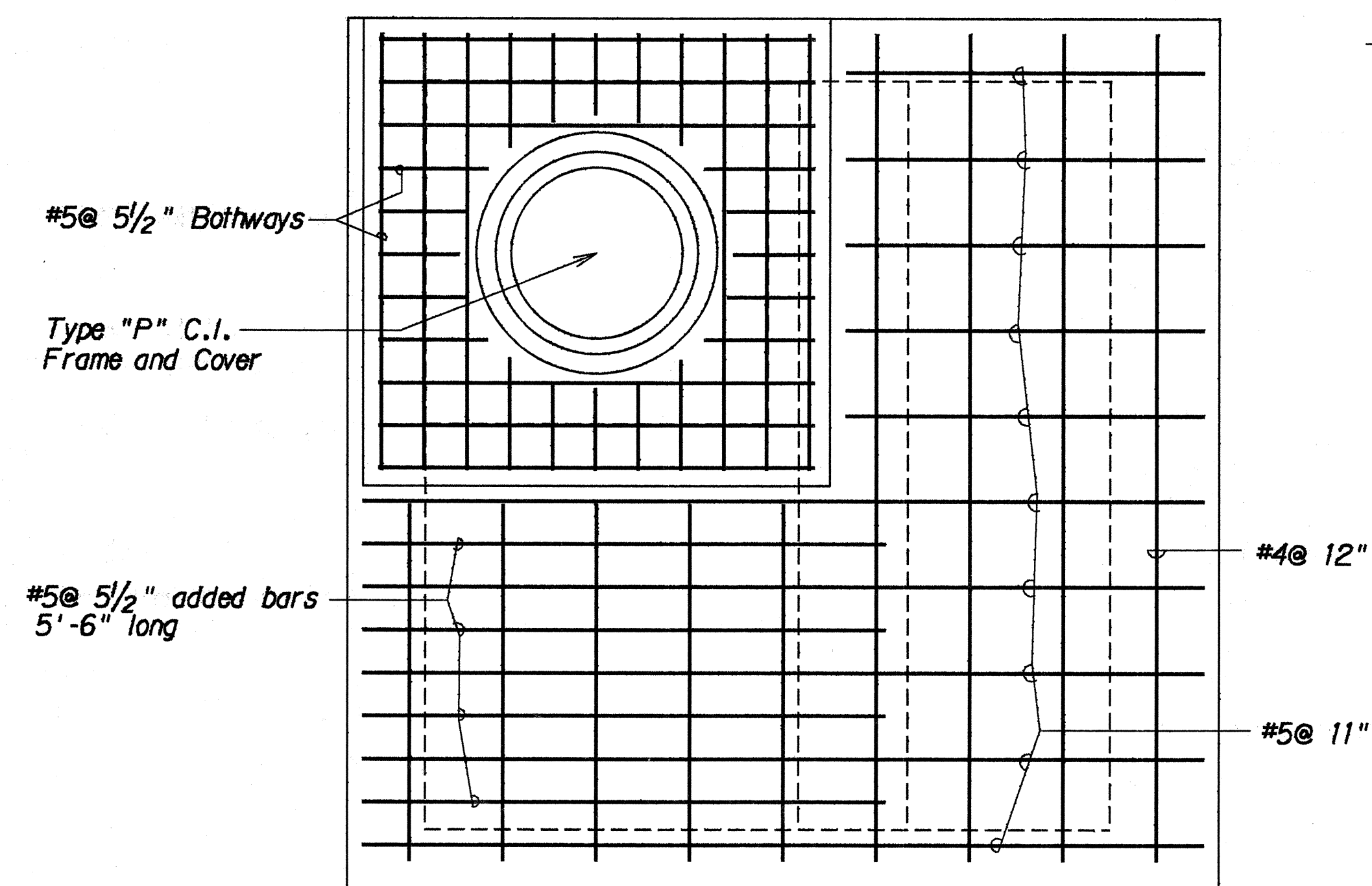


STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAILS
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and S-RS-0760(2)R/W
Scale: As Shown Date: SEPT., 1989
SHEET No. H25 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	67	148



SECTION E
H25 | H26



DETAILS OF TYPE "K" STORM DRAIN MANHOLE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

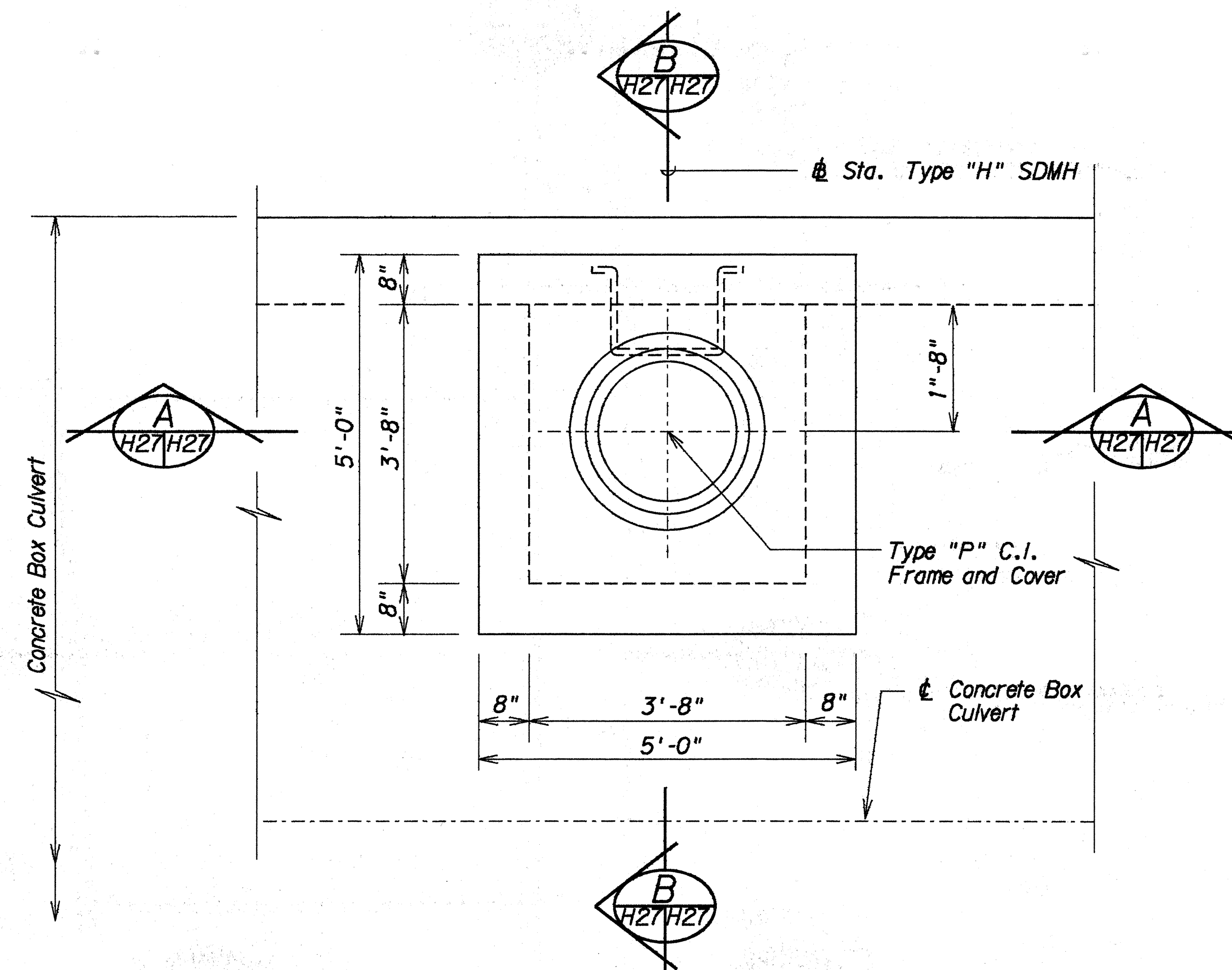
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

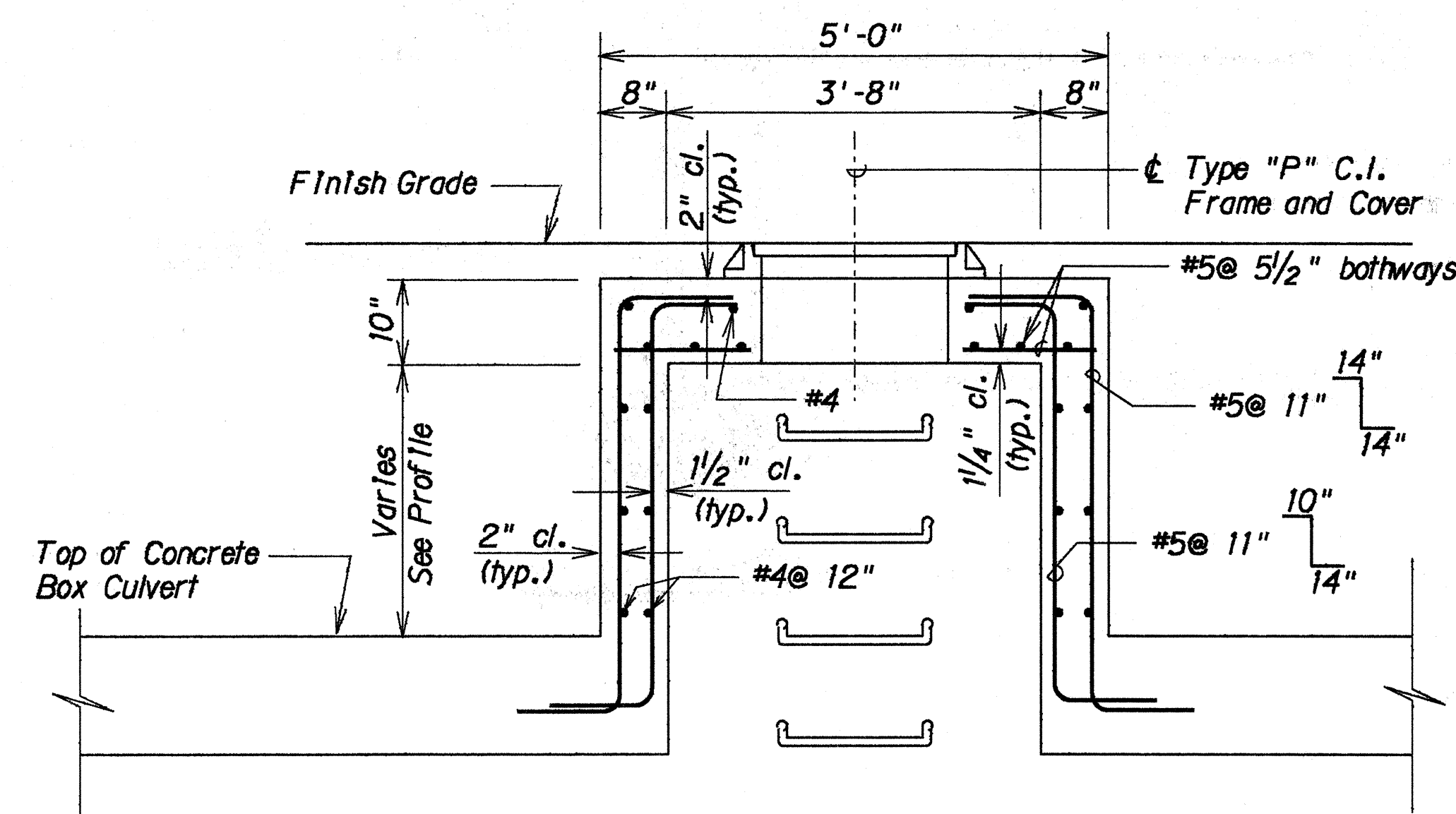
Scale: As Shown Date: SEPT., 1989

SHEET No. H26 OF 38 SHEETS

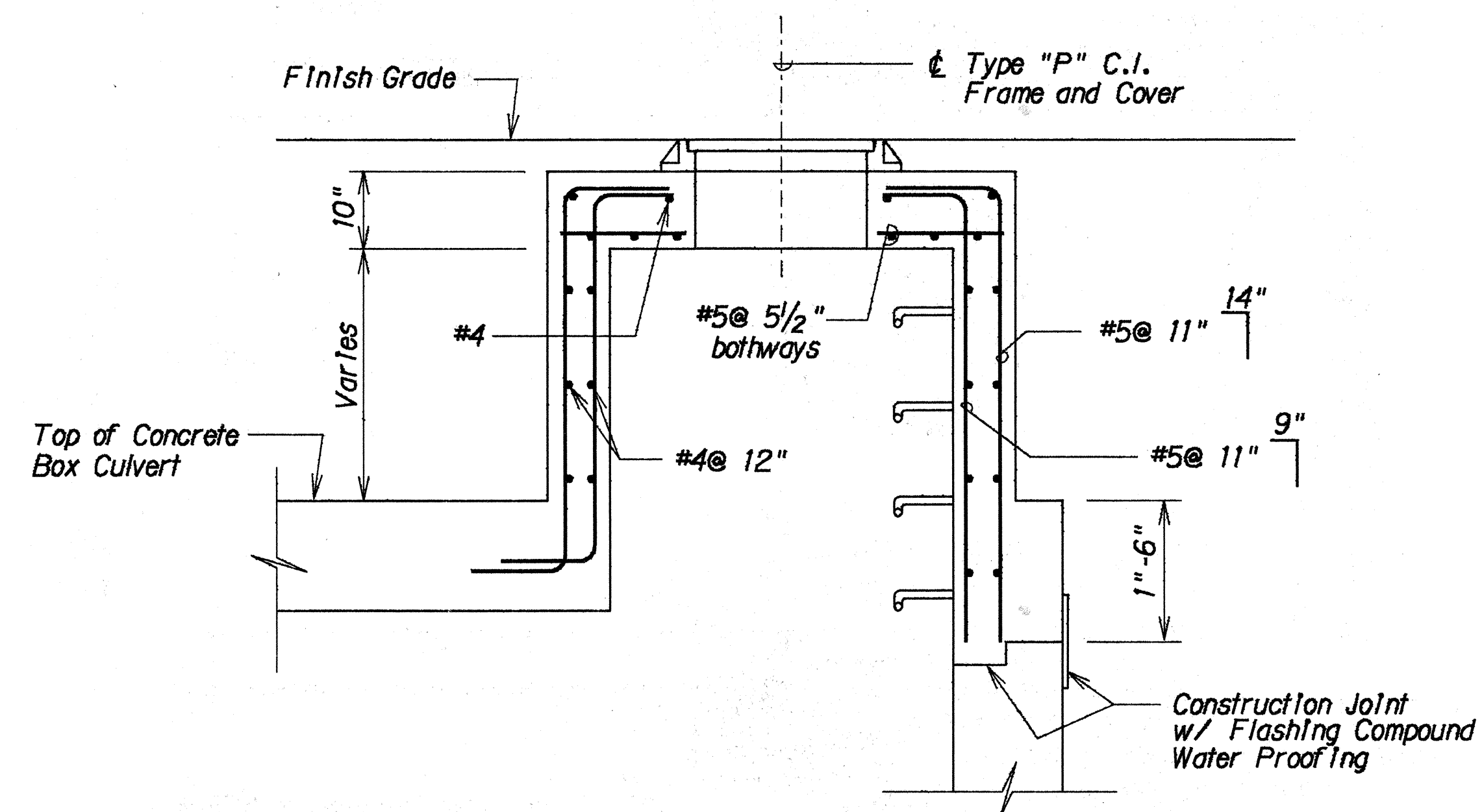
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	68	148



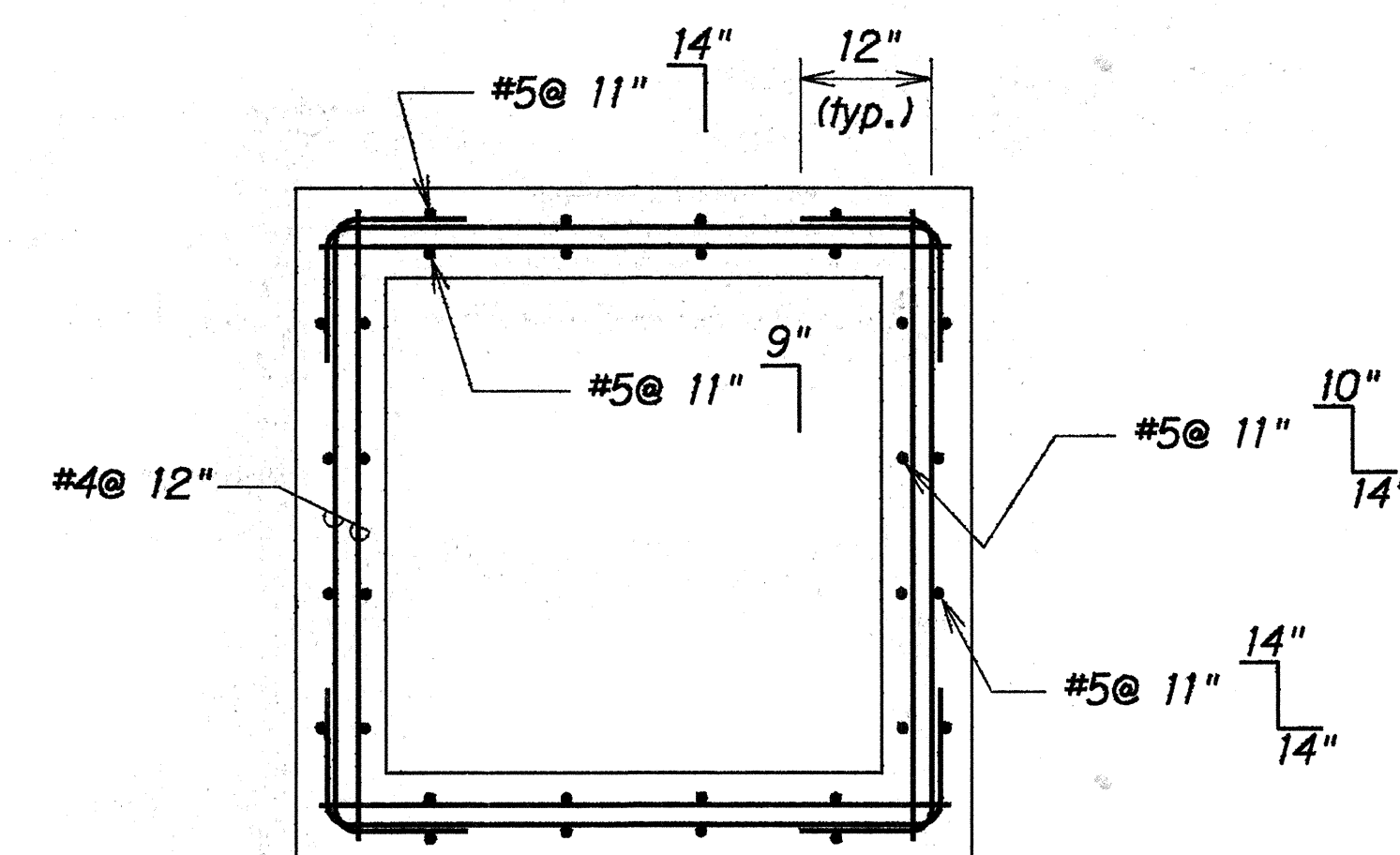
PLAN



SECTION A
H27 H27



SECTION B
H27 H27



PLAN VIEW OF WALL SECTION

DETAILS OF TYPE "L" STORM DRAIN MANHOLE

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

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

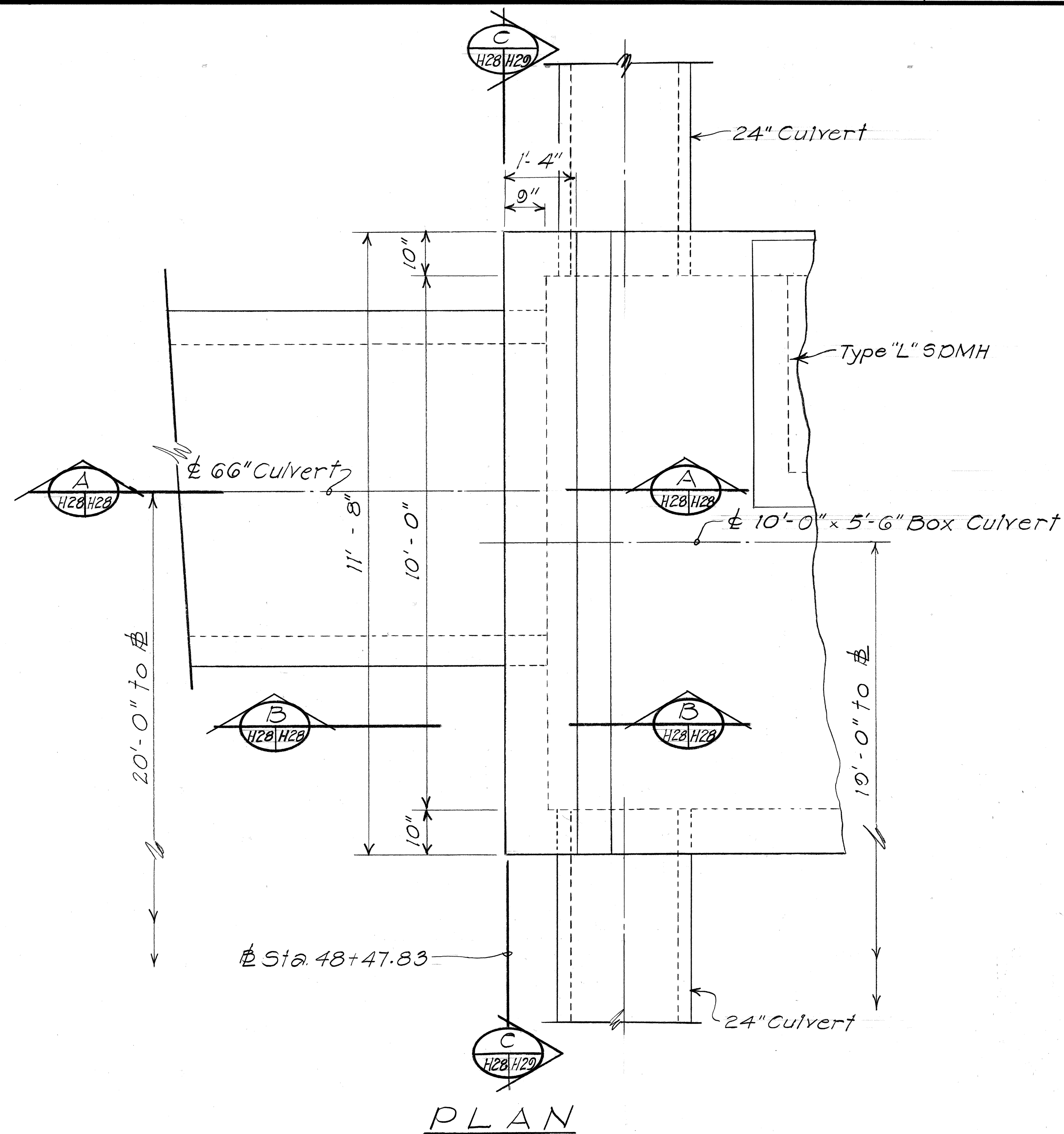
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

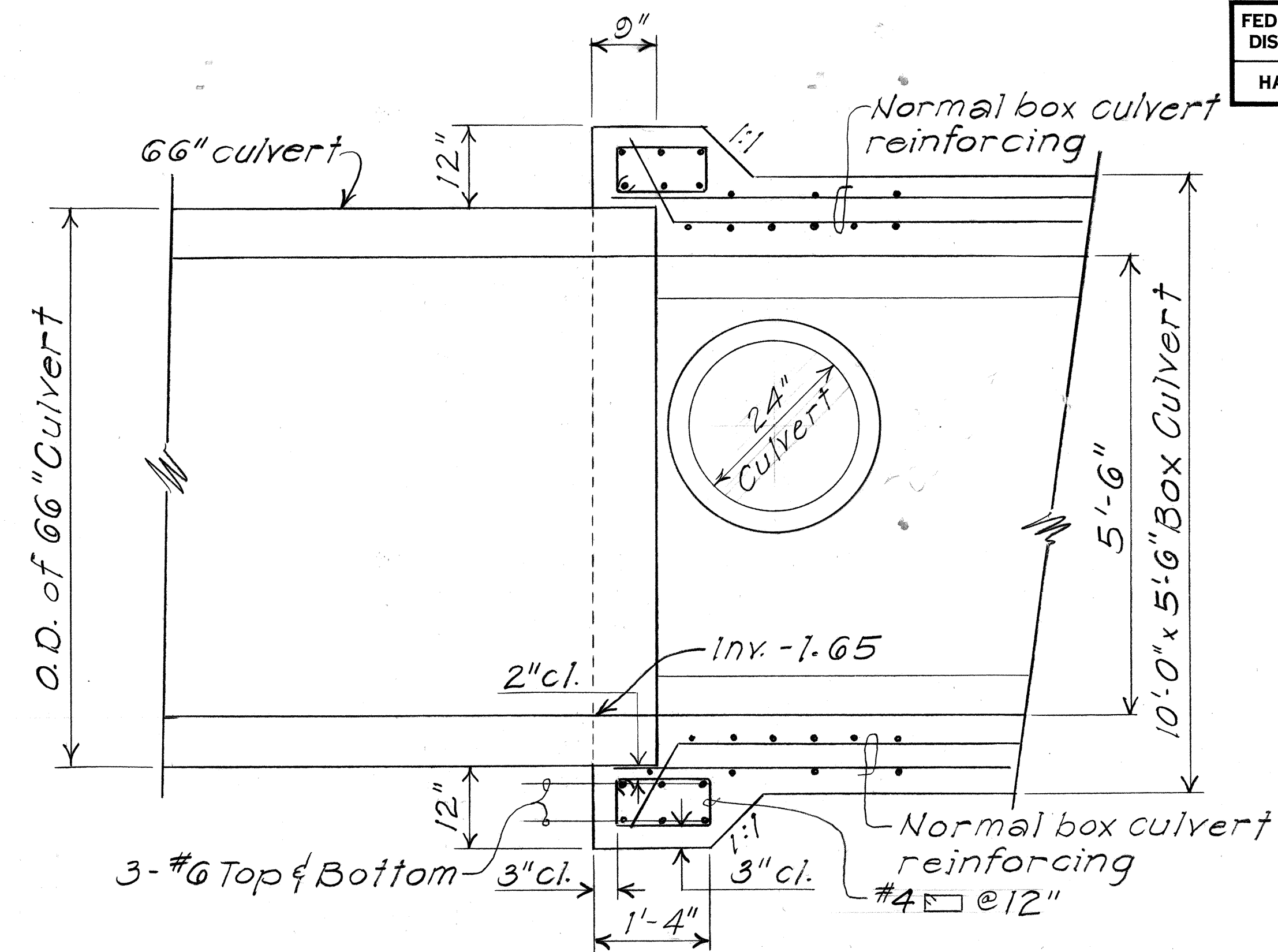
Scale: As Shown
Date: SEPT., 1989

SHEET No. H27 OF 38 SHEETS

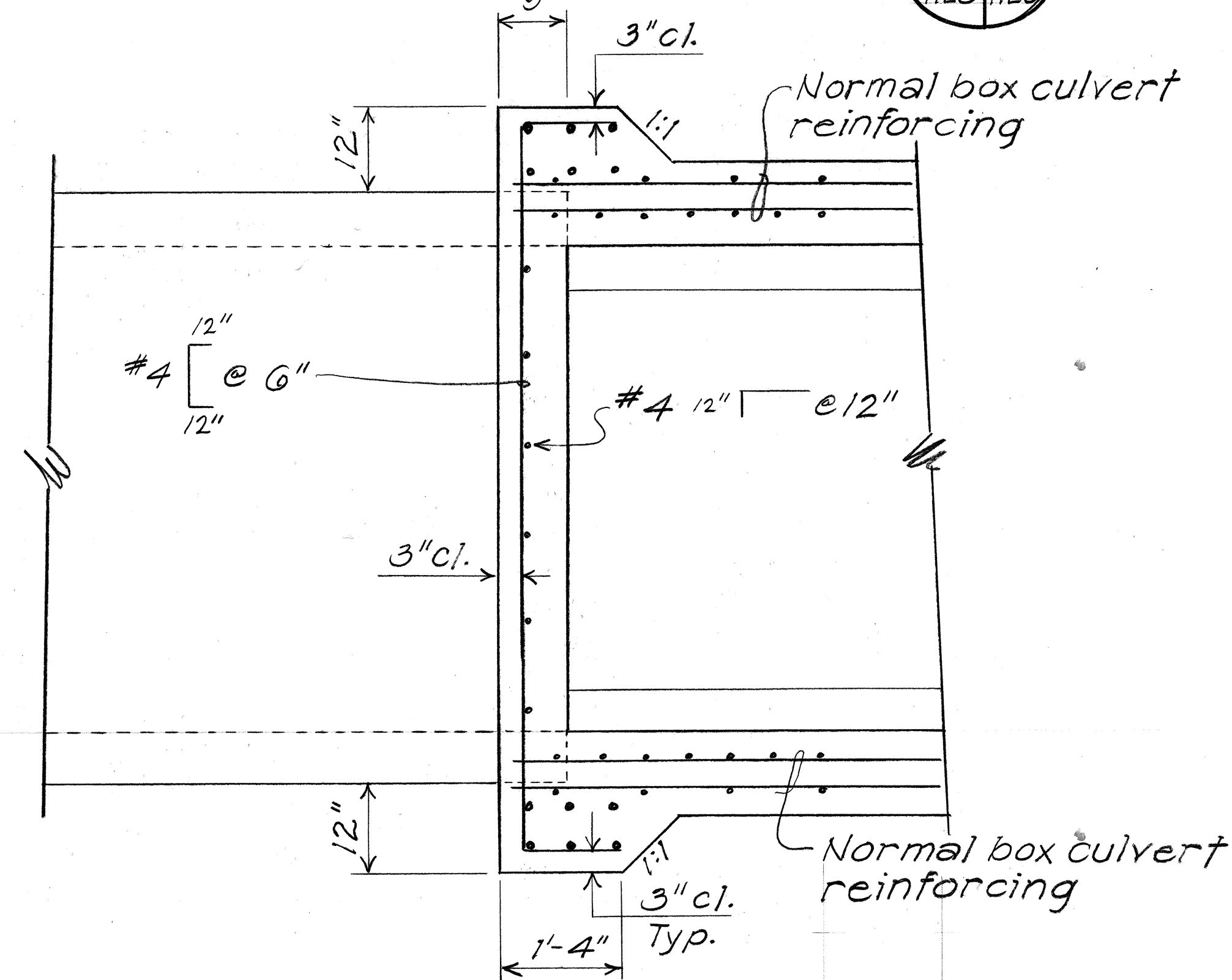
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	69	148



DETAIL OF 66" CULVERT CONNECTION TO 10' x 5.5' BOX CULVERT
Scale: 3/4" = 1'-0"



SECTION A
H28/H28



SECTION B
H28/H28

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

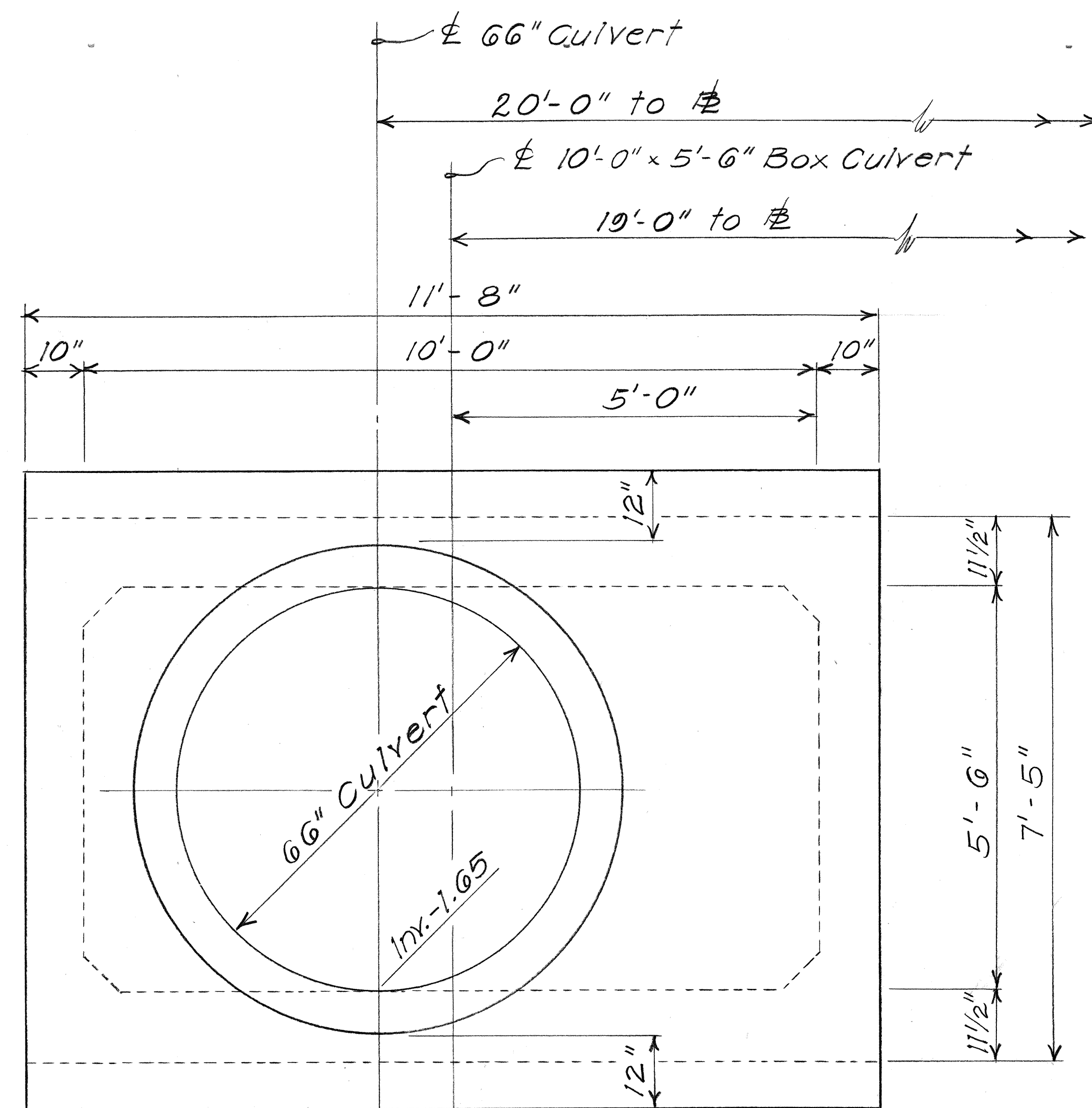
Project Nos. F-076-1(2) and
S-RS-0760(2) R/W

Scale: As Shown Date: SEPT., 1989

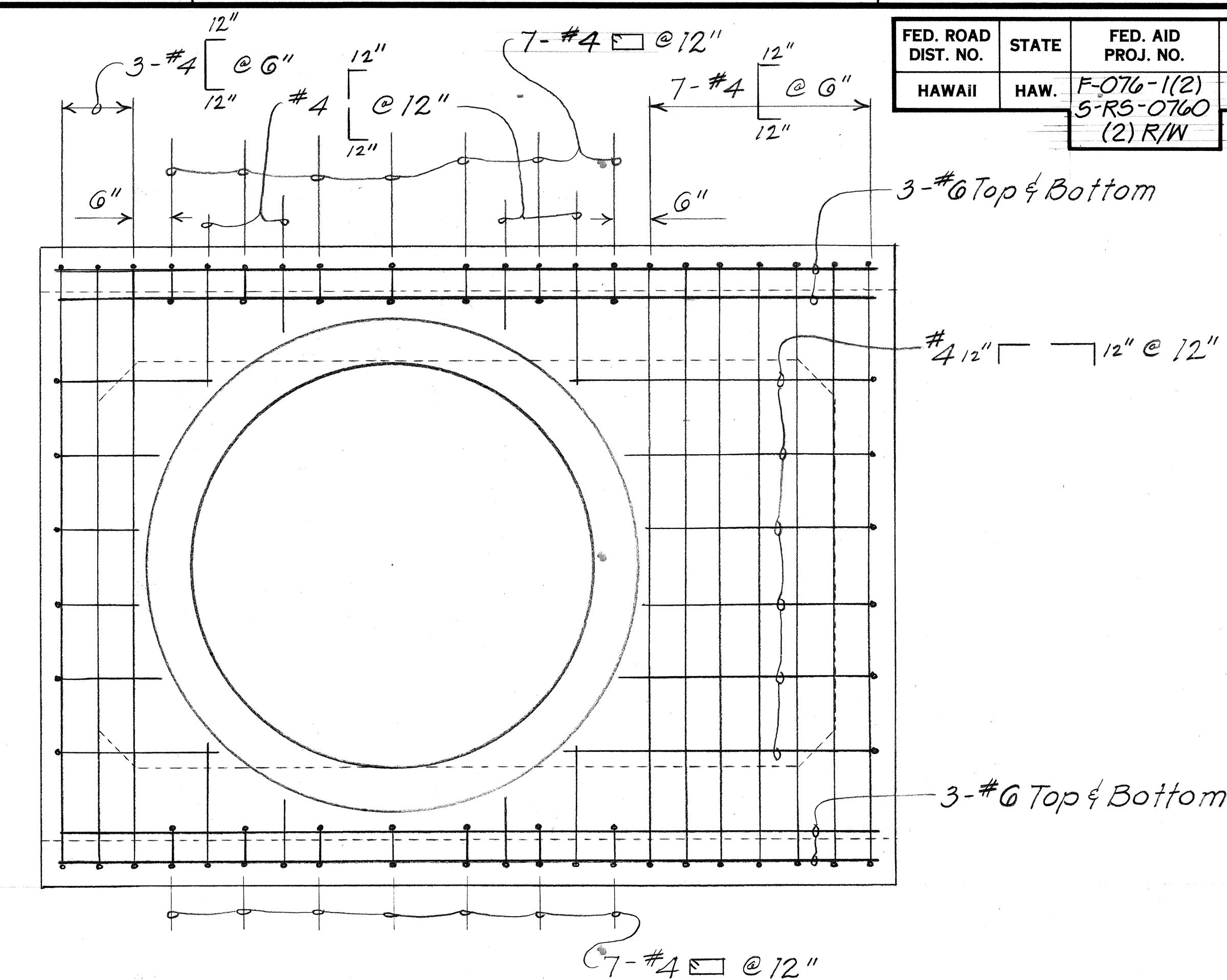
SHEET No. H28 OF 38 SHEETS

ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DESIGNED BY	
NOTE BOOK	QUANTITIES BY	
NO.	CHECKED BY	

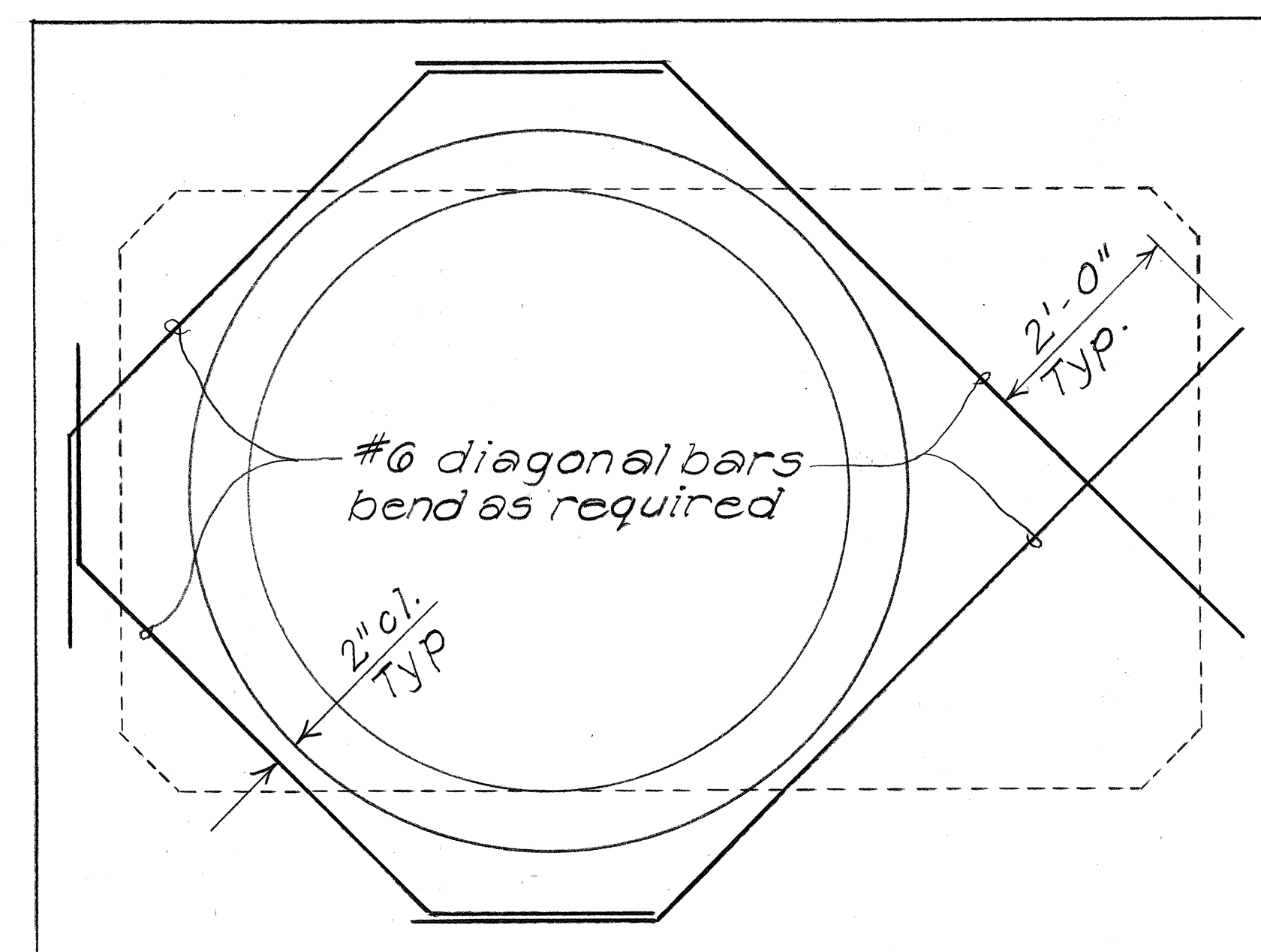
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	70	148



SECTION C
H28/H29



ELEVATION VIEW OF REINFORCING STEEL



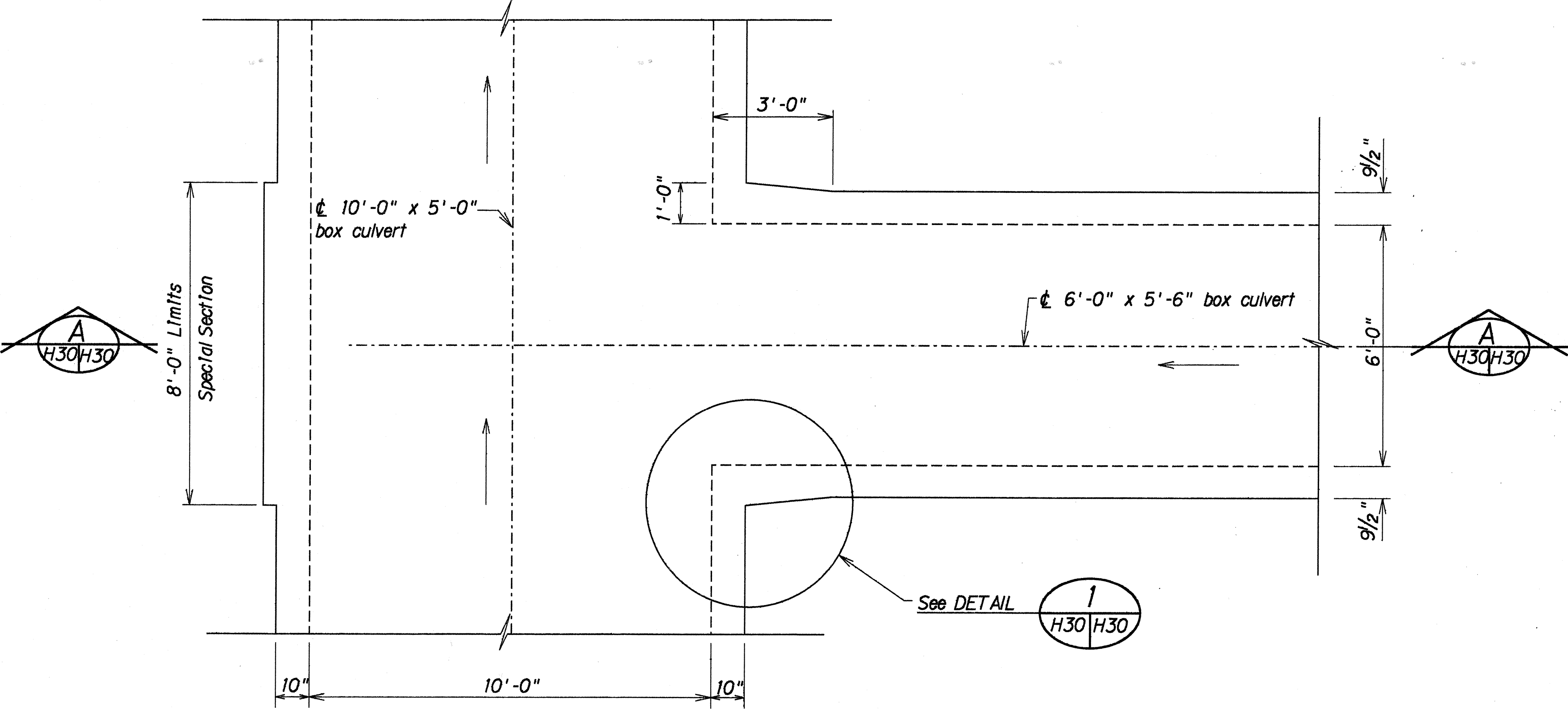
ADDED REINFORCING AT
66" CULVERT OPENING

DETAIL OF 66" CULVERT CONNECTION TO 10' x 5.5' BOX CULVERT

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

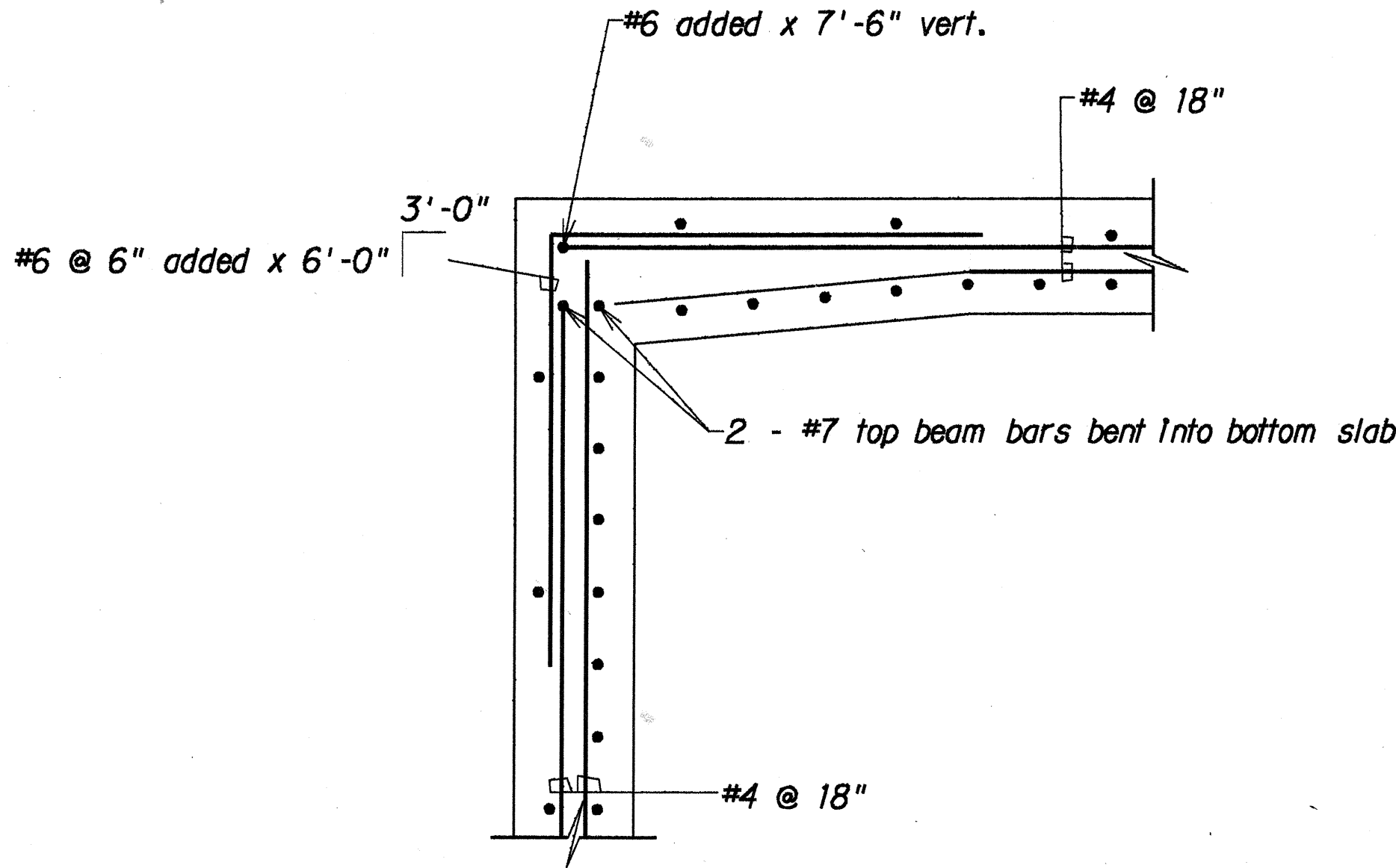
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
FORT WEAVER ROAD HANAKAHI ST. TO EWA BEACH RD.	
Project Nos. F-076-1(2) and S-RS-0760(2)R/W	
Scale: As Shown	Date: SEPT, 1989
SHEET No. H29 OF 38 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	71	148



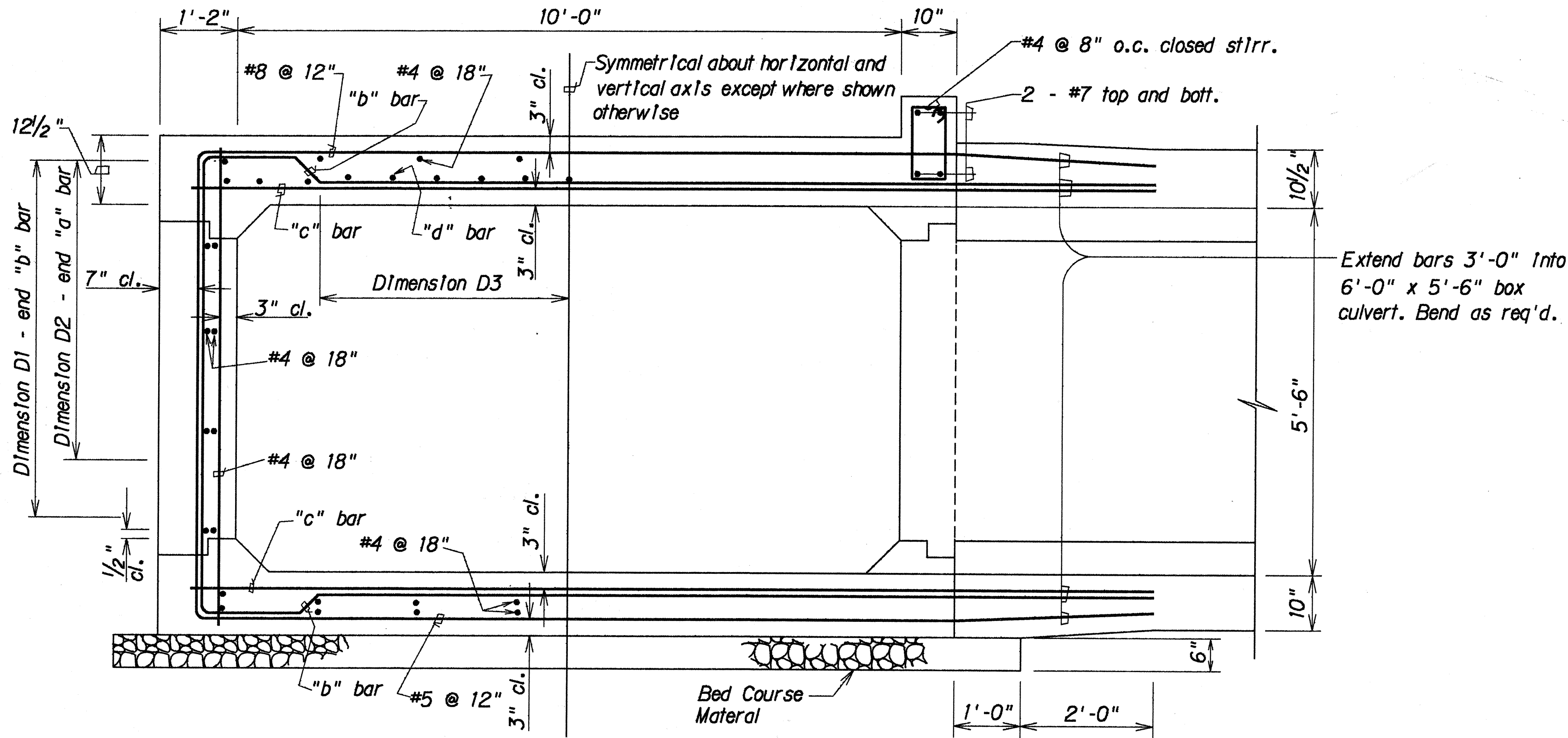
PLAN

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



DETAIL 1

Scale: 1" = 1'-0"



SECTION A

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



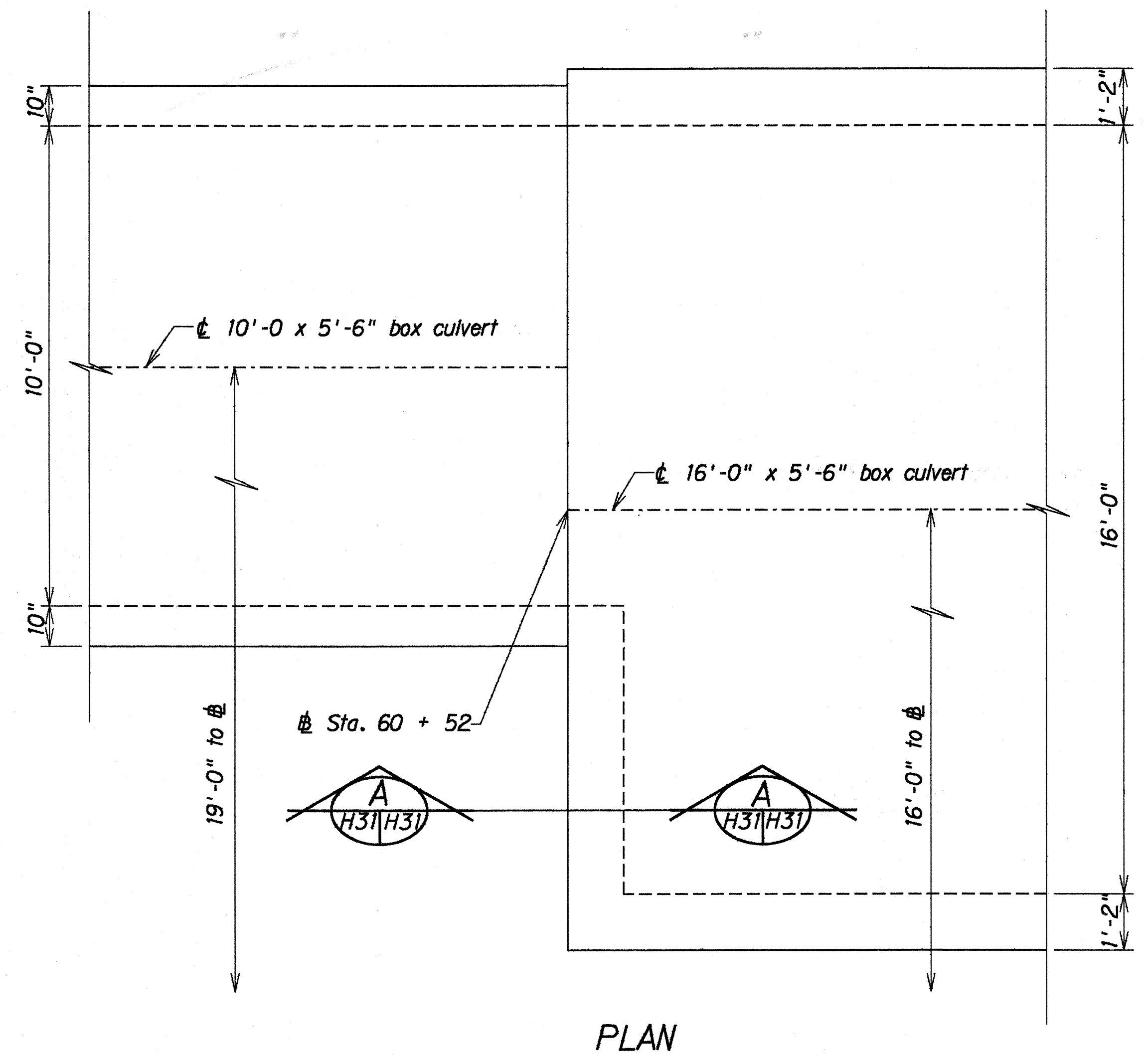
DETAILS OF 6'-0" X 5'-6" TO 10'-0" X 5'-6" BOX CULVERT CONNECTION

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

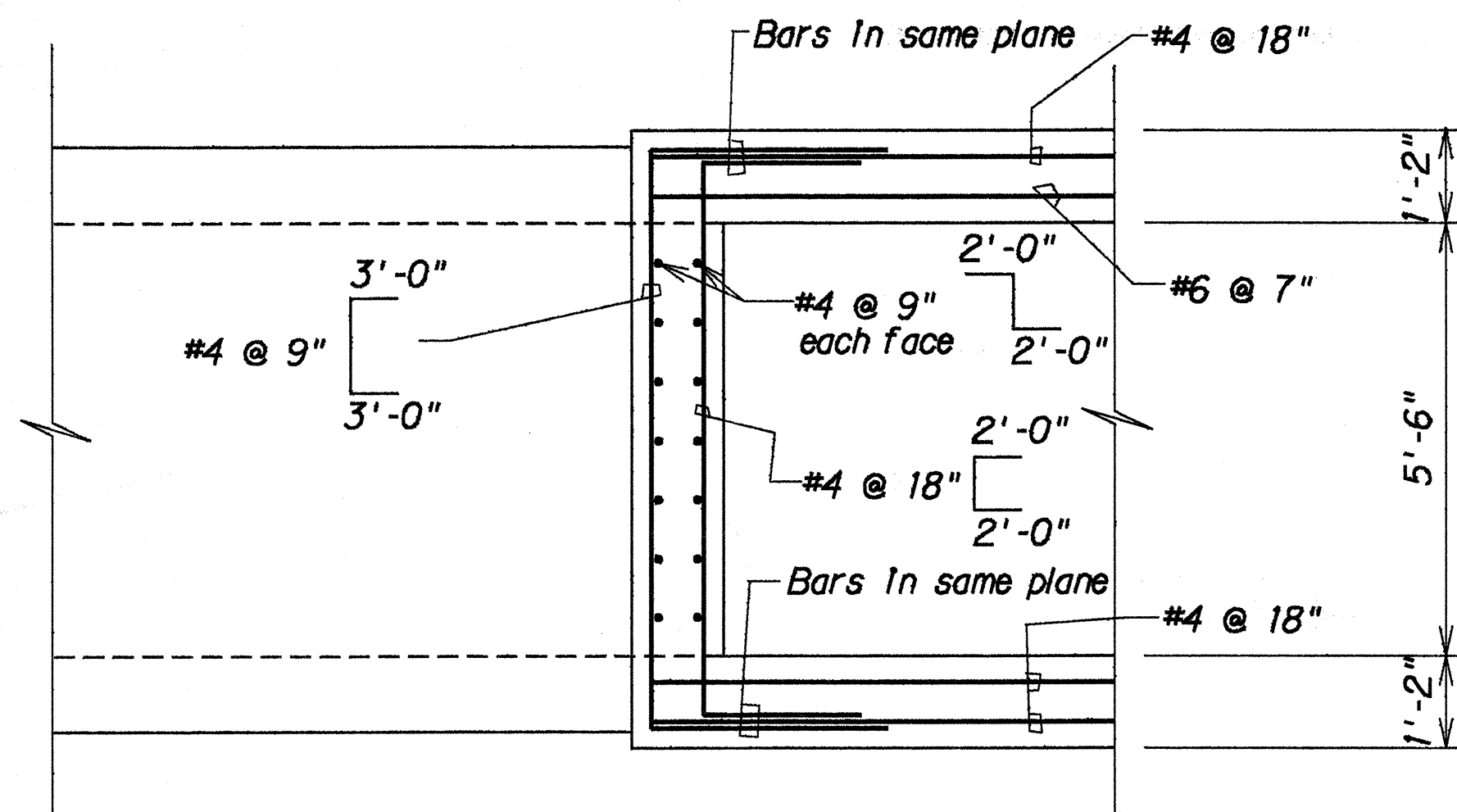
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W
Scale: As Shown Date: SEPT., 1989
SHEET No. H30 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	72	148



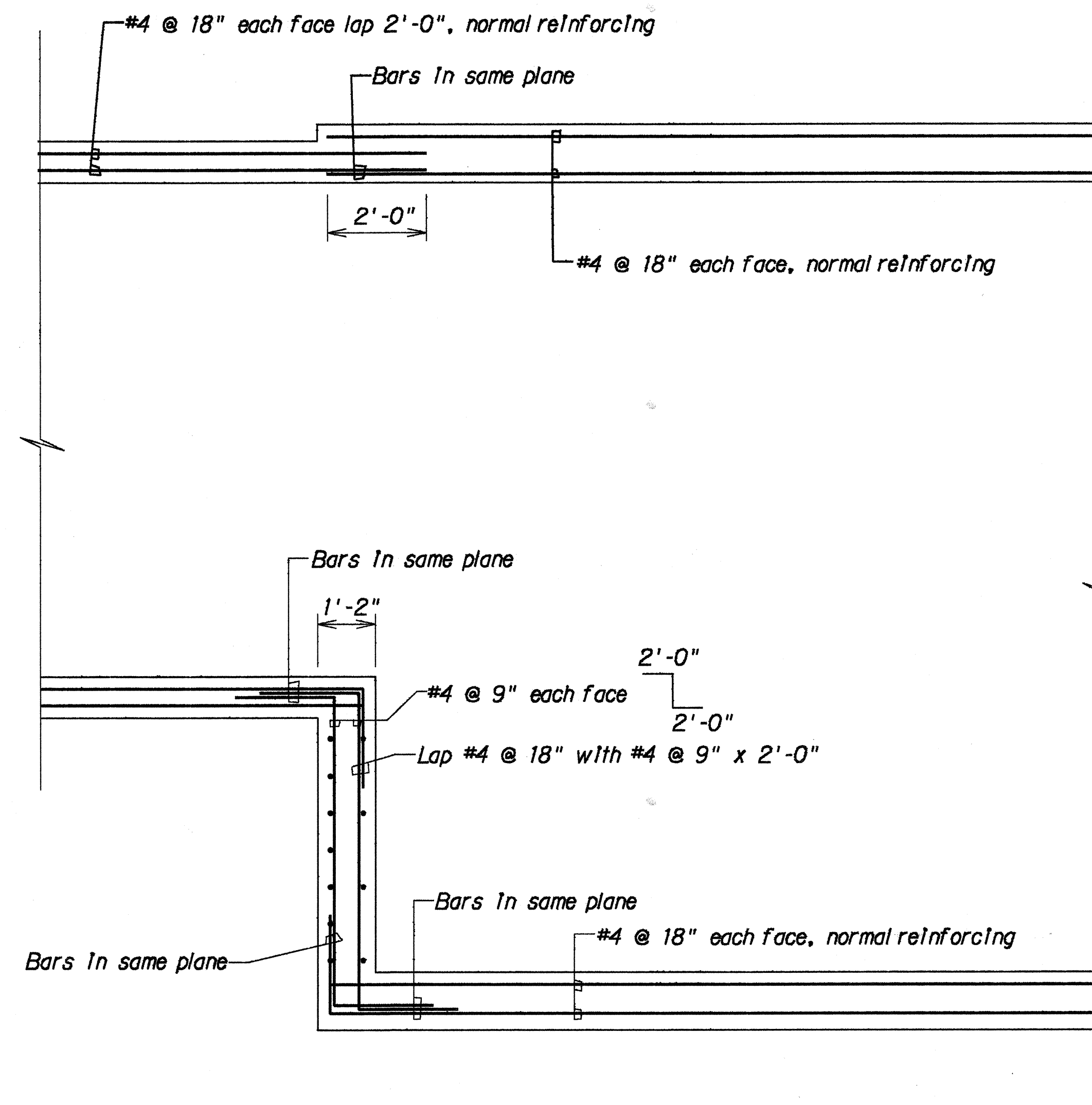
PLAN



SECTION A
H31 H31

DETAILS OF 10'-0" X 5'-6" TO 16'-0" X 5'-6" BOX CULVERT CONNECTION

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



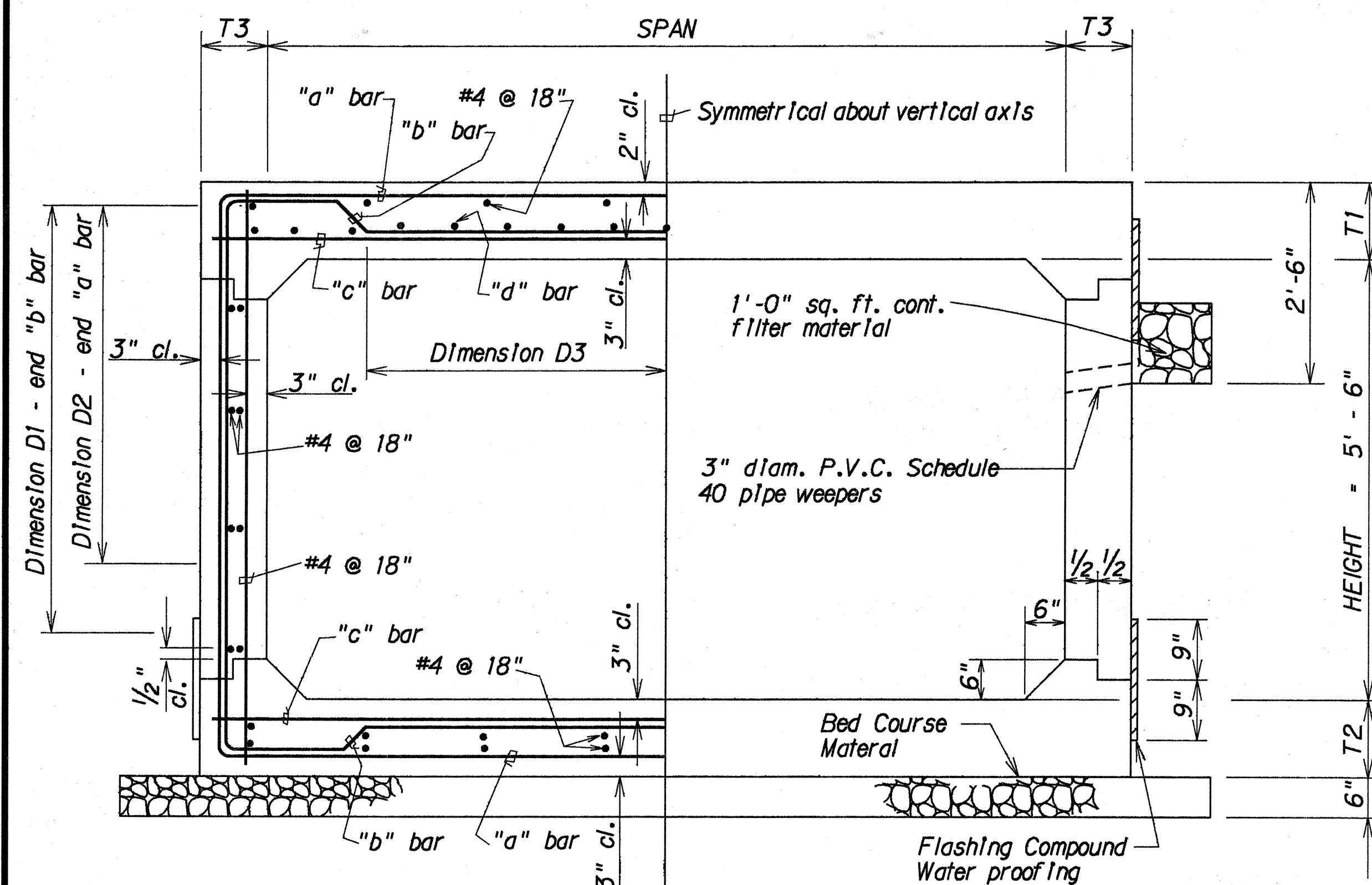
PLAN VIEW OF WALL REINFORCING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

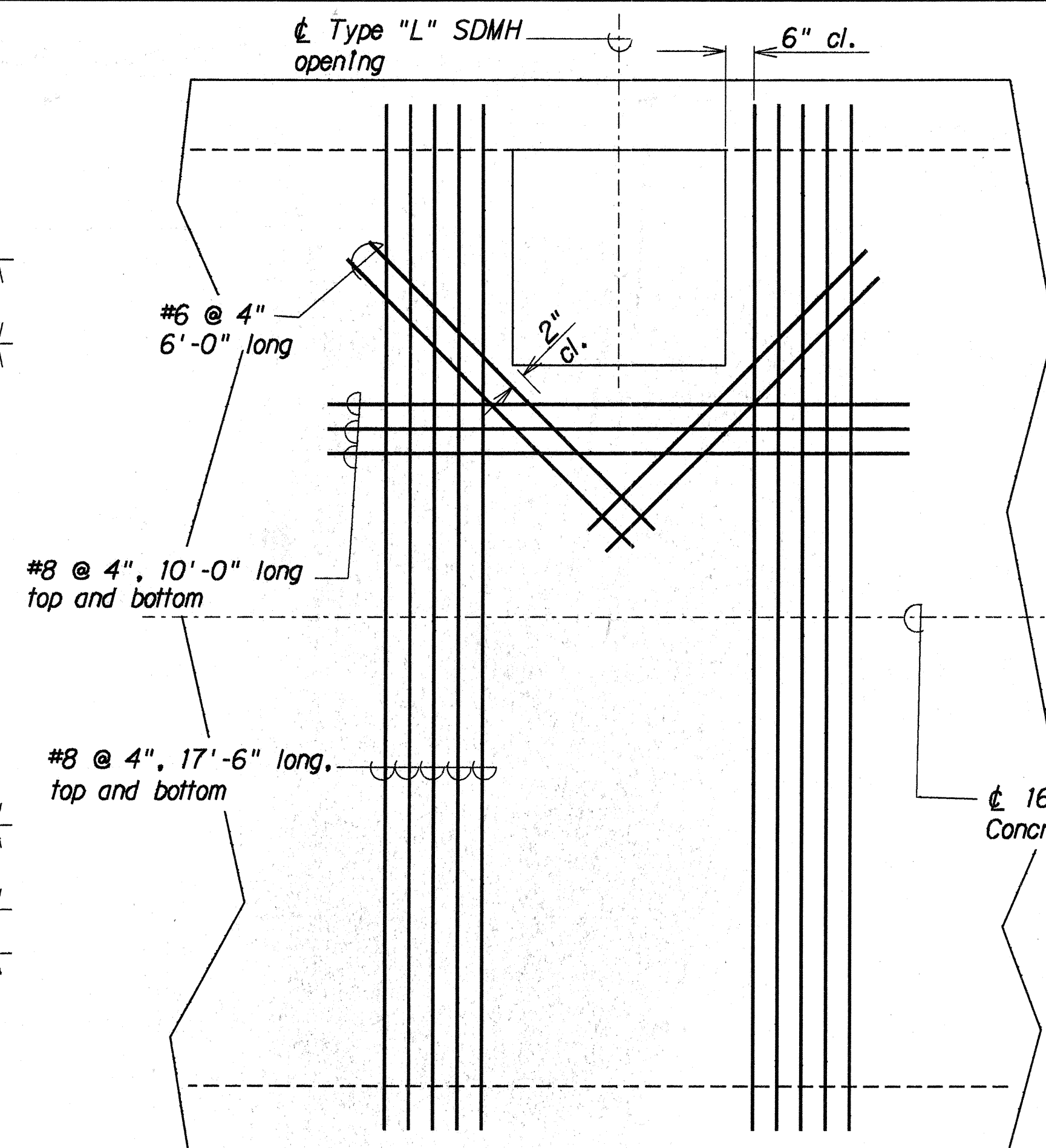
DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W
Scale: As Shown Date: SEPT., 1989
SHEET No. H31 OF 38 SHEETS

DATE	BY
DESIGNED BY	
CHECKED BY	
NOTED BY	
DATE	

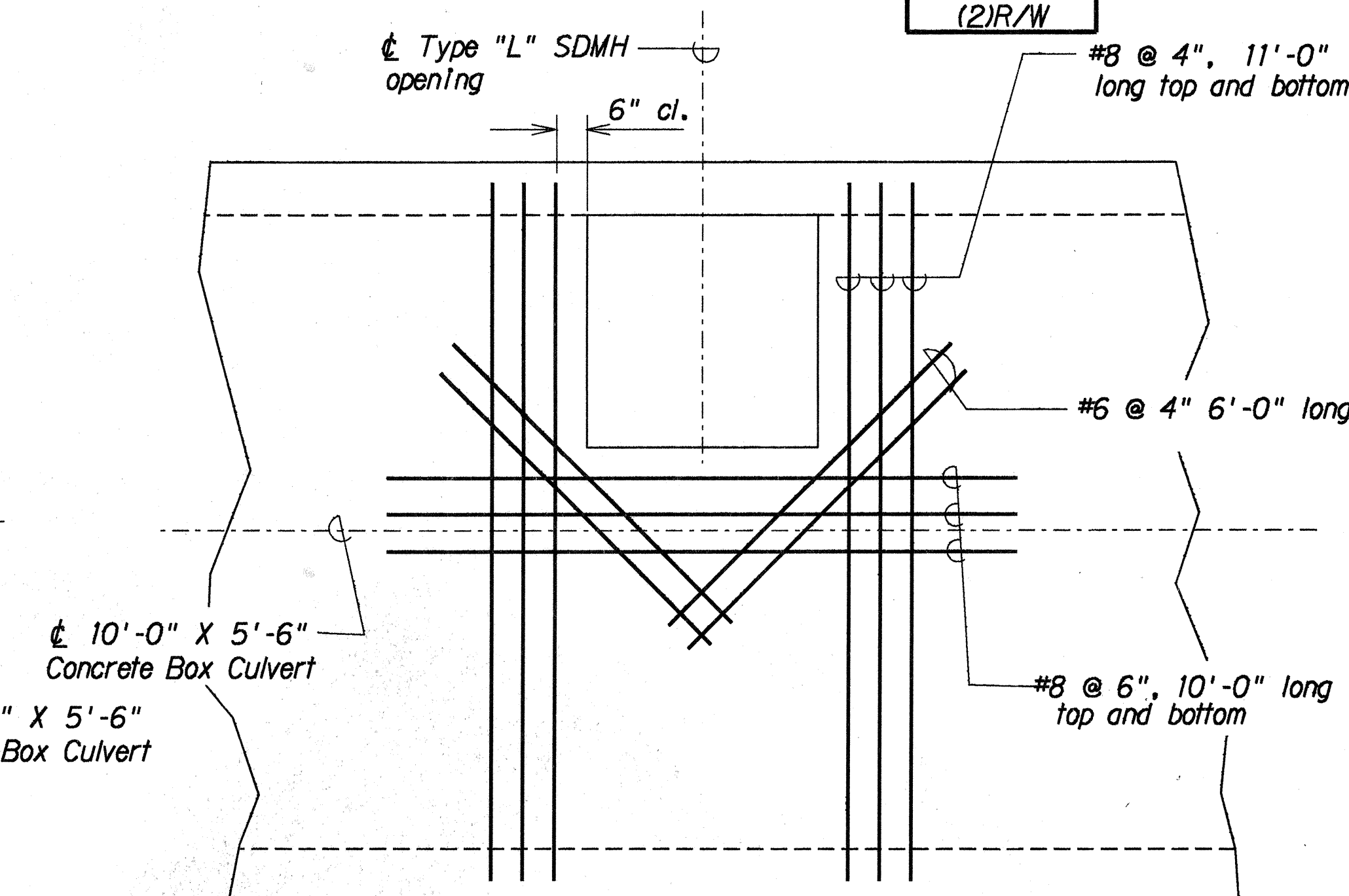
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	73	148



TYPICAL SECTION THROUGH CONCRETE BOX CULVERT
Scale: 3/4"=1'-0"



ADDED REINFORCING AT TYPE "L" SDMH OPENING
Scale: 1/2"=1'-0"

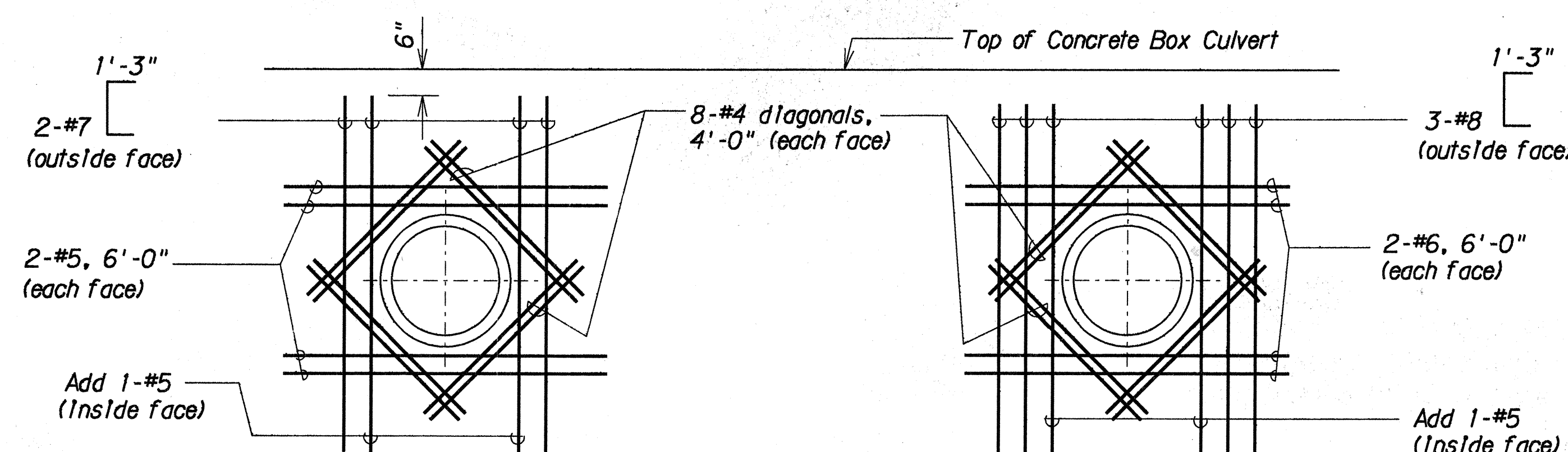


Note: Added reinforcing for 6'-0" X 5'-6" Concrete Box Culvert shall be similar to added reinforcing for 10'-0" X 5'-6" Concrete Box Culvert.

TABLE - CONCRETE BOX CULVERT						
CONCRETE BOX CULVERT TYPE		BC 1	BC 2	BC 3		
SPAN		6' - 0"	10' - 0"	16' - 0"		
HEIGHT		5' - 6"	5' - 6"	5' - 6"		
CONC.	TOP SLAB T1	10 1/2"	11 1/2"	1'-2"		
	BOTTOM SLAB T2	10"	11 1/2"	1'-2"		
	SIDE WALLS T3	9 1/2"	10"	1'-2"		
STEEL	DIMENSION D1	4' - 4"	4' - 9"	5' - 4"		
	DIMENSION D2	3' - 11"	4' - 2"	4' - 8"		
	DIMENSION D3	2' - 3"	3' - 9"	5' - 10"		
REINFORCING	BAR SIZE & SPACING	T1	"a" bar	#4 @ 12"	#4 @ 12"	#6 @ 10"
			"b" bar	#5 @ 12"	#7 @ 12"	#8 @ 10"
			"c" bar	#6 @ 12"	#6 @ 12"	#6 @ 10"
			cont. "d" bar	#5 @ 8"	#6 @ 8"	#6 @ 7"
	T2		"a" bar	#4 @ 12"	#5 @ 12"	#6 @ 10"
			"b" bar	#4 @ 12"	#7 @ 12"	#8 @ 10"
			"c" bar	#5 @ 12"	#6 @ 12"	#6 @ 10"
	T3		"a" bar	#4 @ 12"	#5 @ 12"	#6 @ 10"
			"b" bar	#4 @ 12"	#7 @ 12"	#8 @ 10"
			"c" bar	#5 @ 12"	#6 @ 12"	#6 @ 10"

NOTES:

- Construction joints spacing for Concrete Box Culverts shall be 32 feet maximum O.C. with expansion joints at 96 feet maximum O.C. See Standard Plan B-01.
- For details of Flashing Compound Waterproofing, See Standard Plan B-01.



10'-0" X 5'-6" Box Culvert
6'-0" X 5'-6" Box Culvert
16'-0" X 5'-6" Box Culvert

ADDED REINFORCING AT CULVERT OPENING
Scale: 1/2"=1'-0"

DETAILS OF CONCRETE BOX CULVERT

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

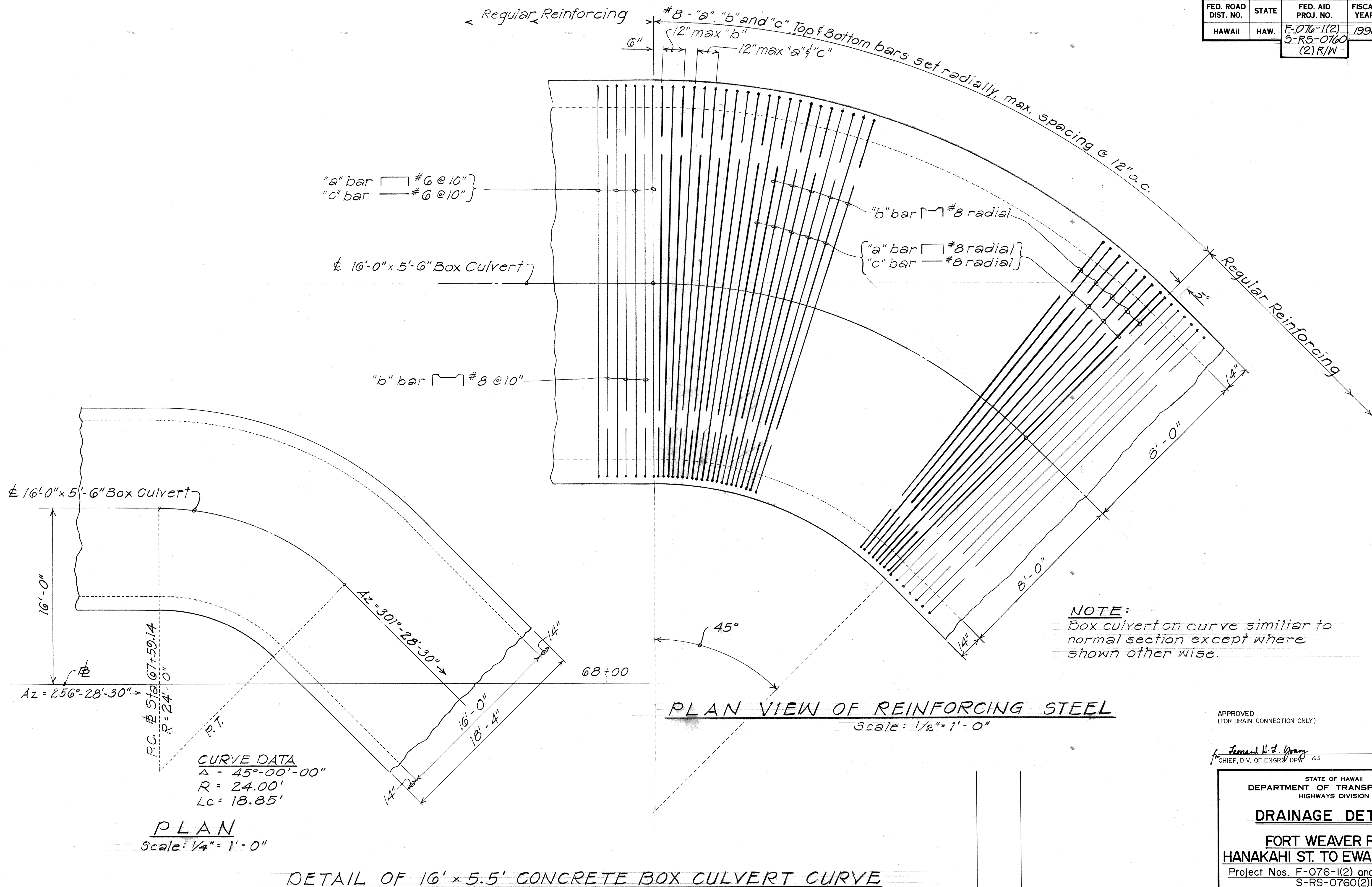
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. H32 OF 38 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2) R/W	1990	74R	148

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



NOTE:
Box culvert on curve similar to
normal section except where
shown other wise.

PLAN VIEW OF REINFORCING STEEL
Scale: 1/2" = 1'-0"

CURVE DATA
Δ = 45°-00'-00"
R = 24.00'
Lc = 18.85'

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

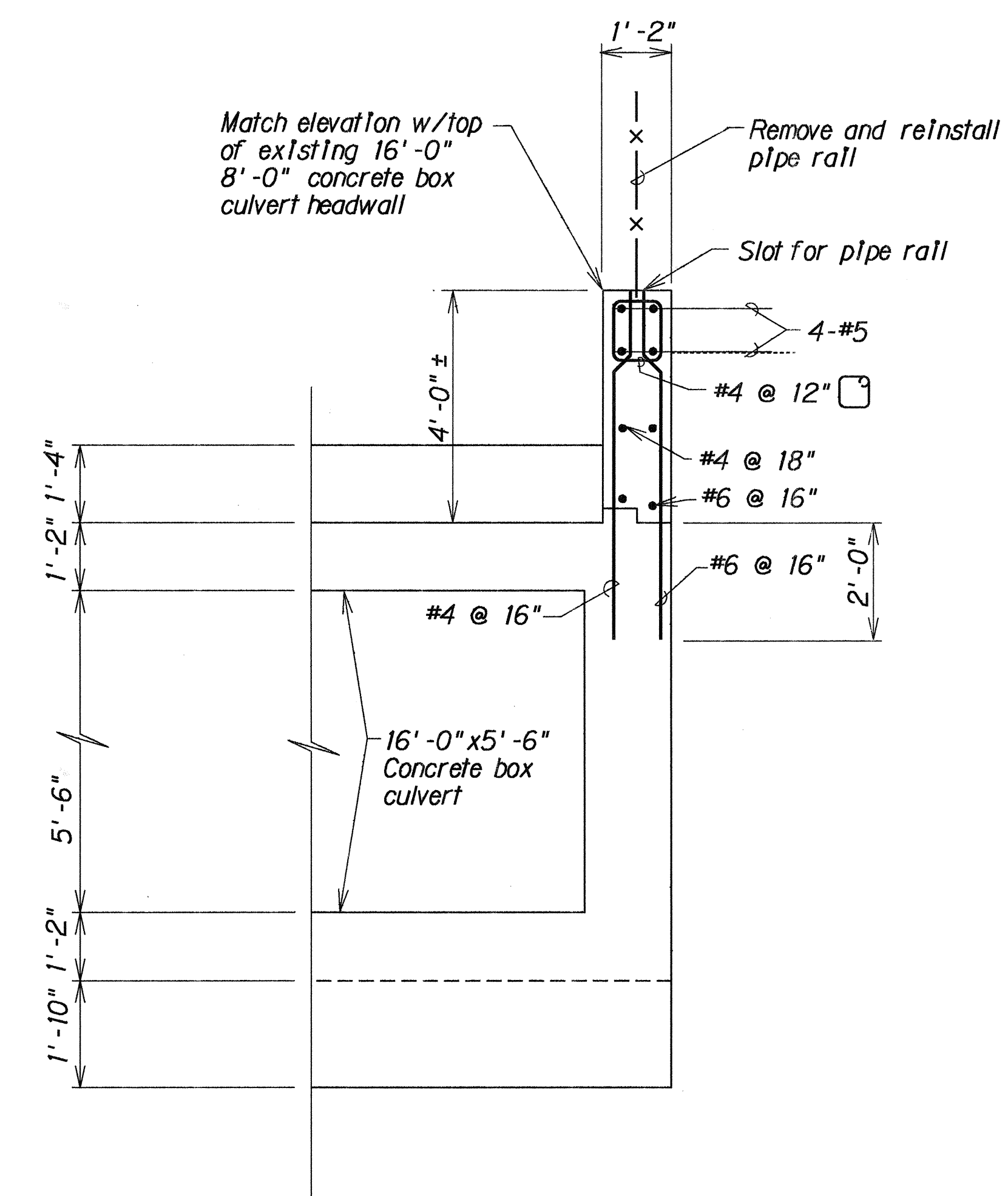
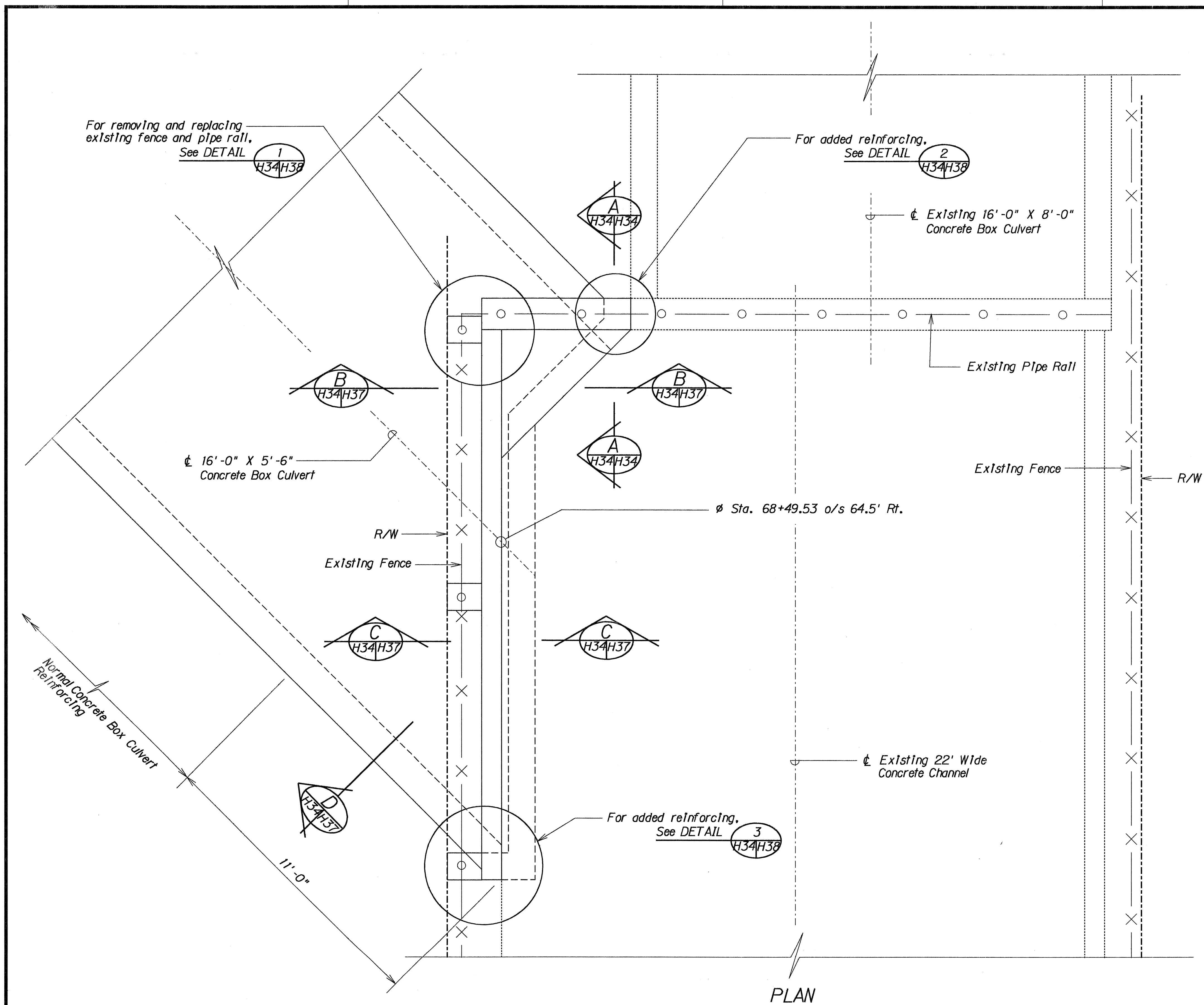
DETAIL OF 16' x 5.5' CONCRETE BOX CULVERT CURVE

APPROVED
(FOR DRAIN CONNECTION ONLY)
James H. J. Gray
CHIEF, DIV. OF ENGR'G DPW
DATE 12/1/90

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W
Scale: As Shown
Date: SEPT, 1989
SHEET No. 433 OF 38 SHEETS

12/5/90	Added Approval Block
DATE	REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	75R	148



SECTION A
H34H34

CONNECTION DETAILS OF 16'-0" X 5'-6" CONCRETE BOX CULVERT
TO EXISTING 22' CONCRETE CHANNEL

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

APPROVED
(FOR DRAIN CONNECTION ONLY)

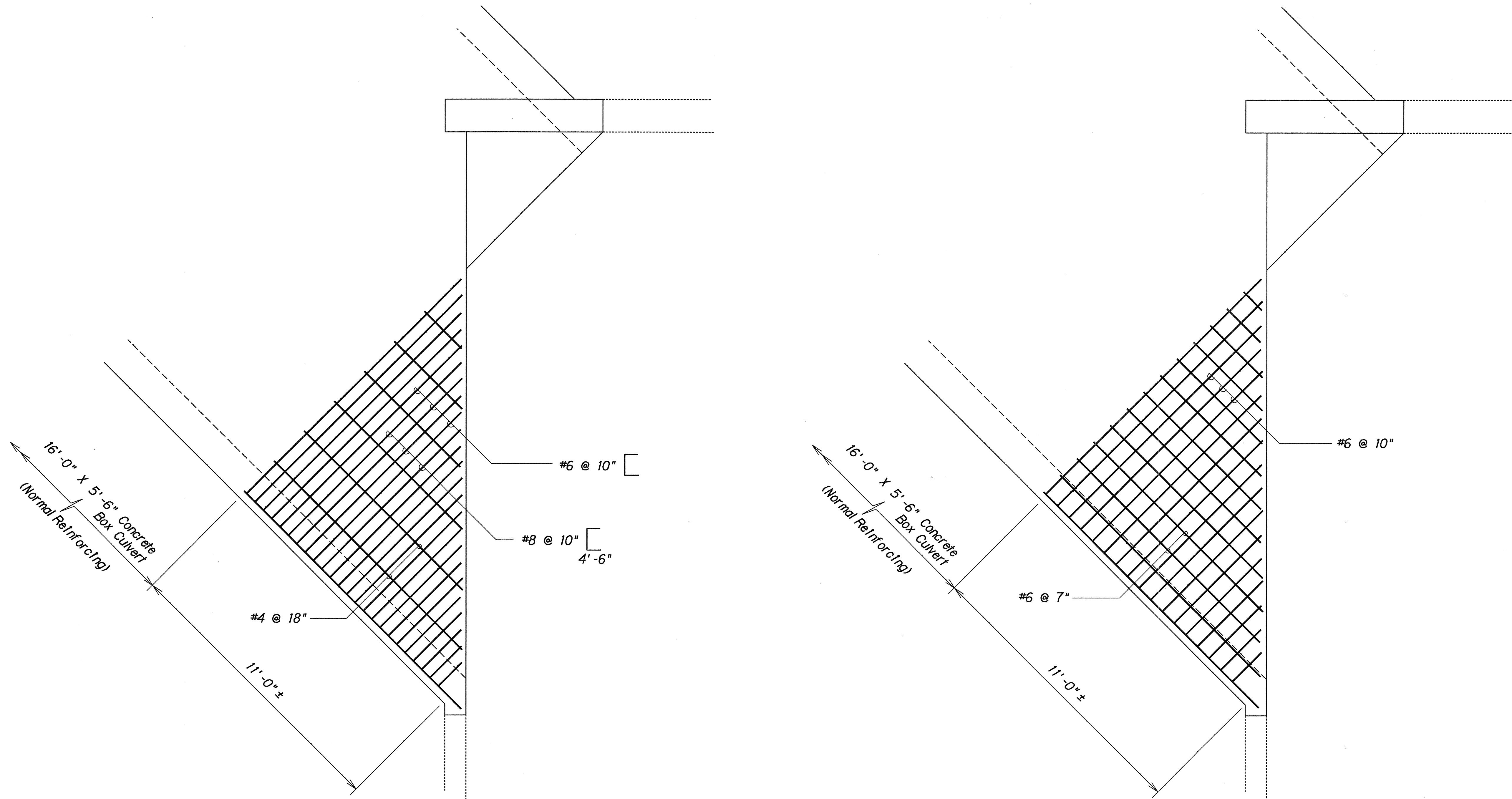
12/7/90
CHIEF, DIV. OF ENGRG/DPW GS DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
FORT WEAVER ROAD
HAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989
SHEET No. H34 OF 38 SHEETS

12/5/90 Added Approval Block
DATE REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	76R	148



TOP LAYER

BOTTOM LAYER

PLAN VIEW OF TOP SLAB REINFORCING STEEL

CONNECTION DETAILS OF 16'-0" X 5'-6" CONCRETE BOX CULVERT
TO EXISTING 22' CONCRETE CHANNEL

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

APPROVED
(FOR DRAIN CONNECTION ONLY)

Edward W. L. Gray
CHIEF, DIV. OF ENGRG. & DPW 45 12/7/90 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.
Project Nos. F-076-1(2) and
S-RS-0760(2)R/W
Scale: As Shown Date: SEPT., 1989

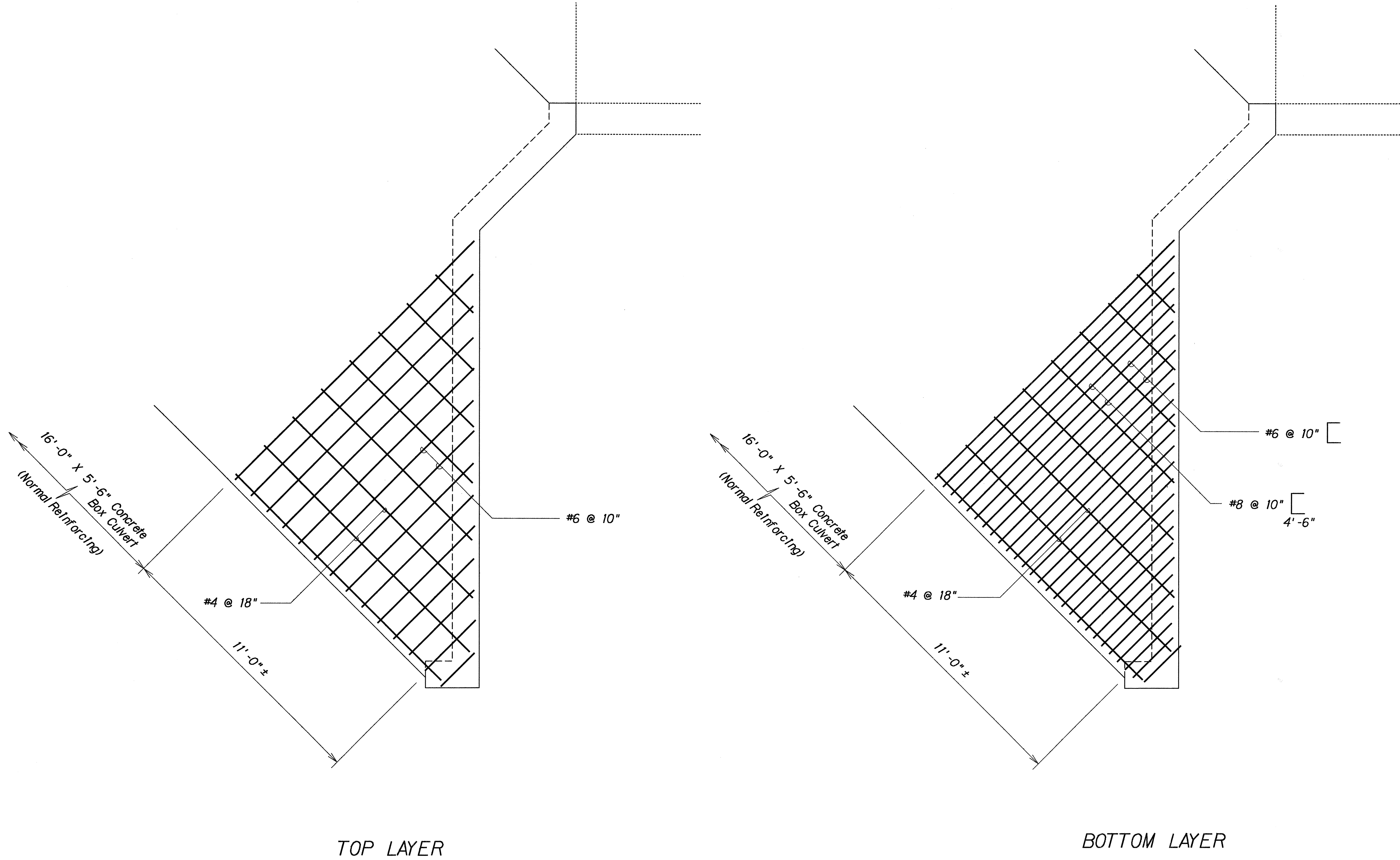
12/5/90
DATE

Added Approval Block
REVISION

SHEET No. H35 OF 38 SHEETS

DESIGNED BY	DATE
TRACED BY	
NOTED BY	
CHECKED BY	
IN CHARGE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	77R	148



TOP LAYER
 BOTTOM LAYER
 PLAN VIEW OF BOTTOM SLAB REINFORCING STEEL
 CONNECTION DETAILS OF 16'-0" X 5'-6" CONCRETE BOX CULVERT
 TO EXISTING 22' CONCRETE CHANNEL
 Scale: 1/2" = 1'-0"

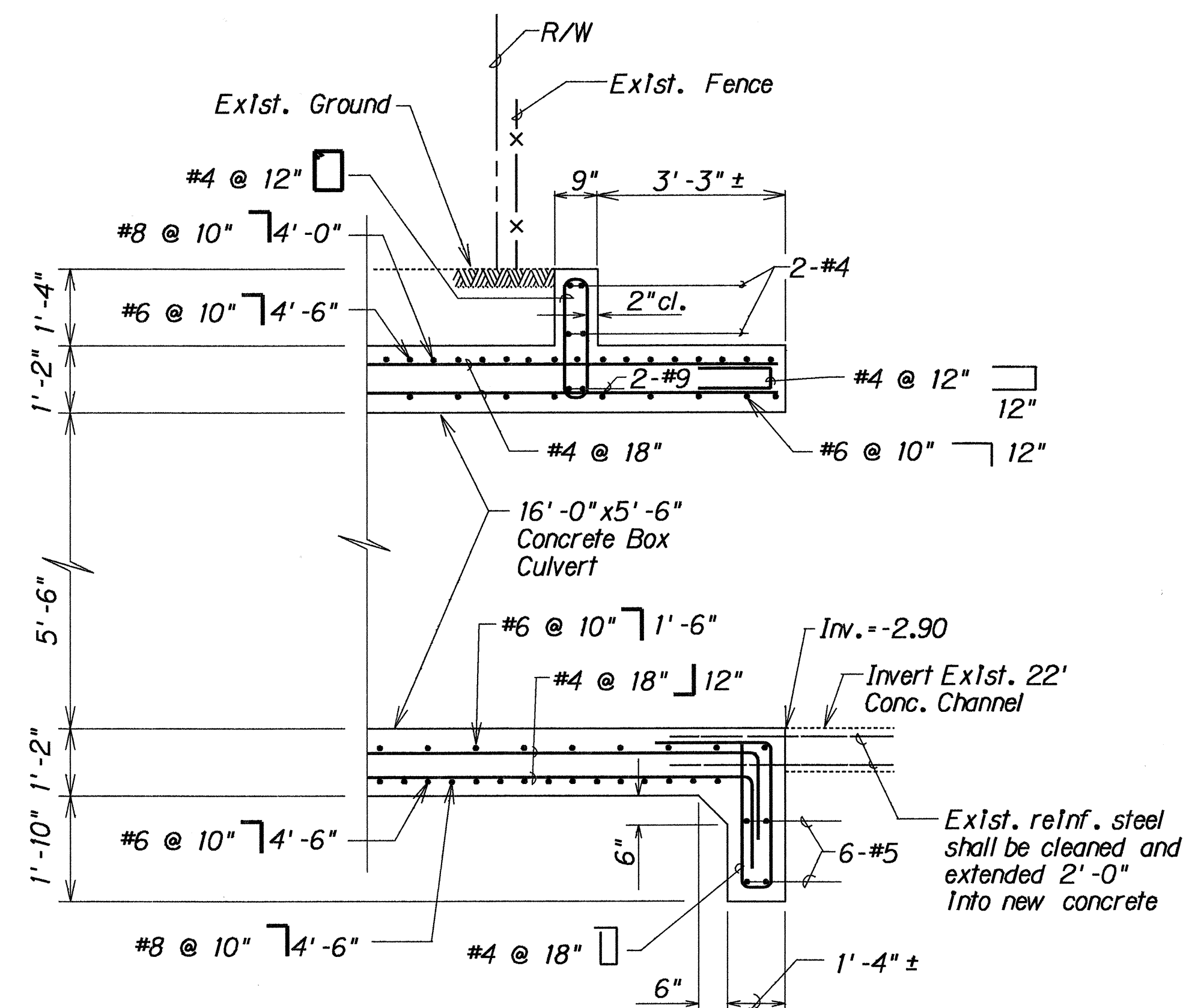
APPROVED
(FOR DRAIN CONNECTION ONLY)

for *Thomas N. L. Young* 12/7/90
 CHIEF, DIV. OF ENGRG/DPW G.S. DATE

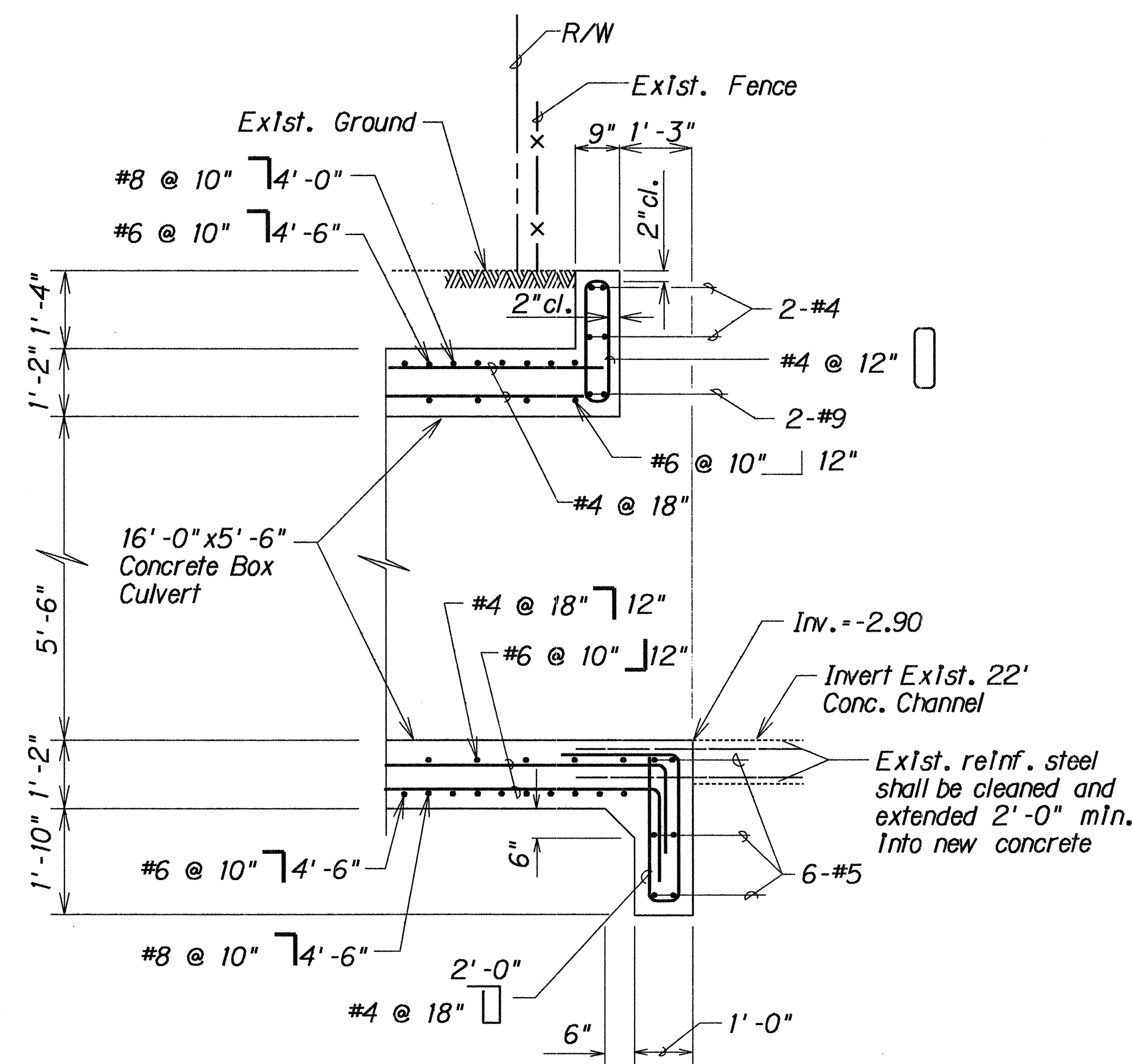
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
DRAINAGE DETAILS
 FORT WEAVER ROAD
 HAWAII ST. TO EWA BEACH RD.
 Project Nos. F-076-1(2) and
 S-RS-0760(2)R/W
 Scale: As Shown Date: SEPT., 1989
 SHEET No. H36 OF 38 SHEETS

12/5/90 Added Approval Block
 DATE REVISION

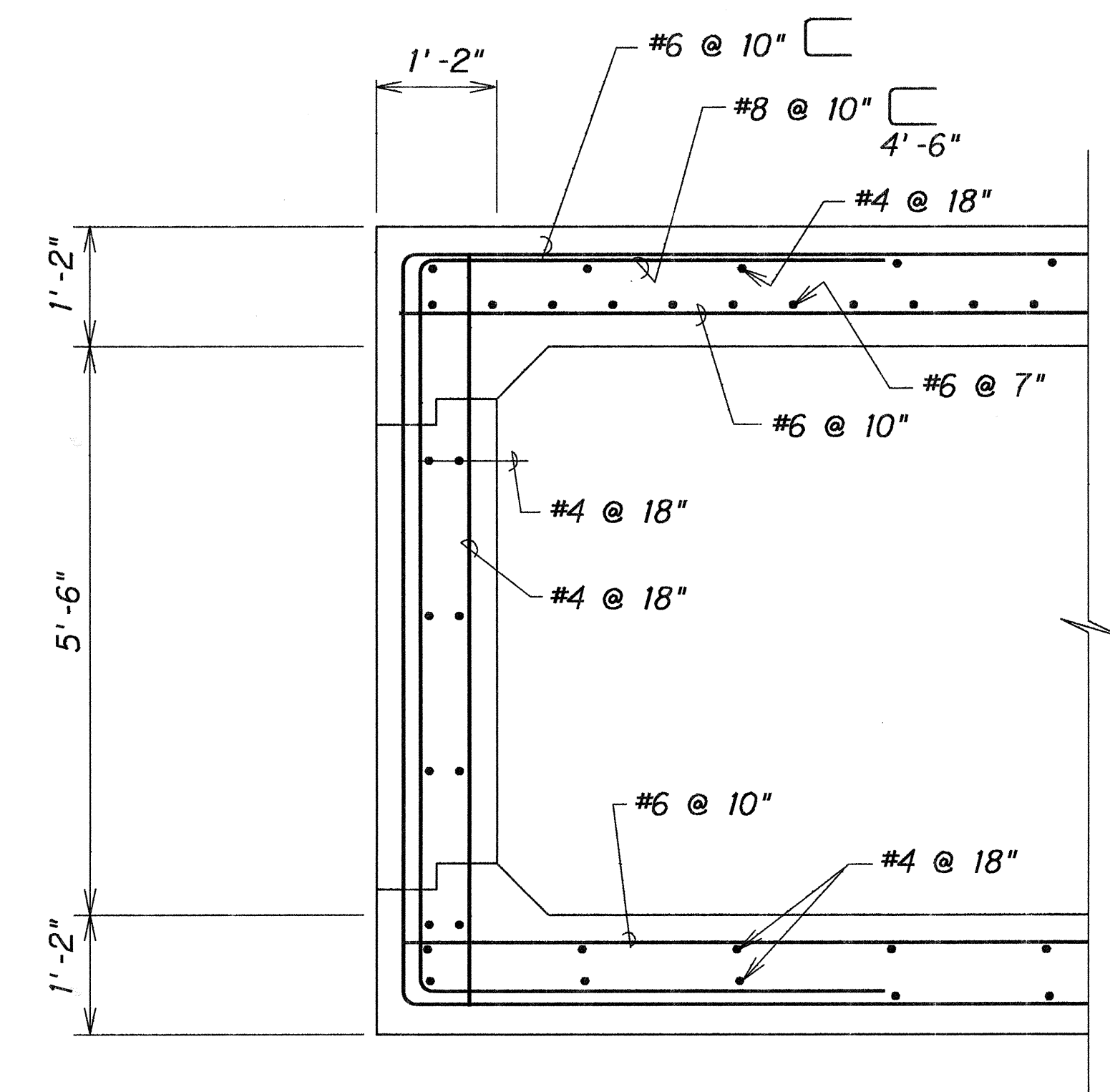
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-112) S-RS-0760 12R/W	1990	78R	148



SECTION B
Scale: 1/2" = 1' - 0" H34 | H37



SECTION C
 Scale: 1/2" = 1' - 0" H34 | H37



SECTION D
 Scale: $\frac{3}{4}" = 1' - 0"$ H34 | H37

CONNECTION DETAILS OF 16'-0" X 5'-6" CONCRETE BOX CULVERT
TO EXISTING 22' CONCRETE CHANNEL

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	•
	TRACED BY _____	•
	DESIGNED BY _____	•
	QUANTITIES BY _____	•
N _o _____	CHECKED BY _____	•

APPROVED
(FOR DRAIN CONNECTION ONLY)

for Leonard H. L. Gray 12/7/90
CHIEF, DIV. OF ENGRG. & PW GS DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HANAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

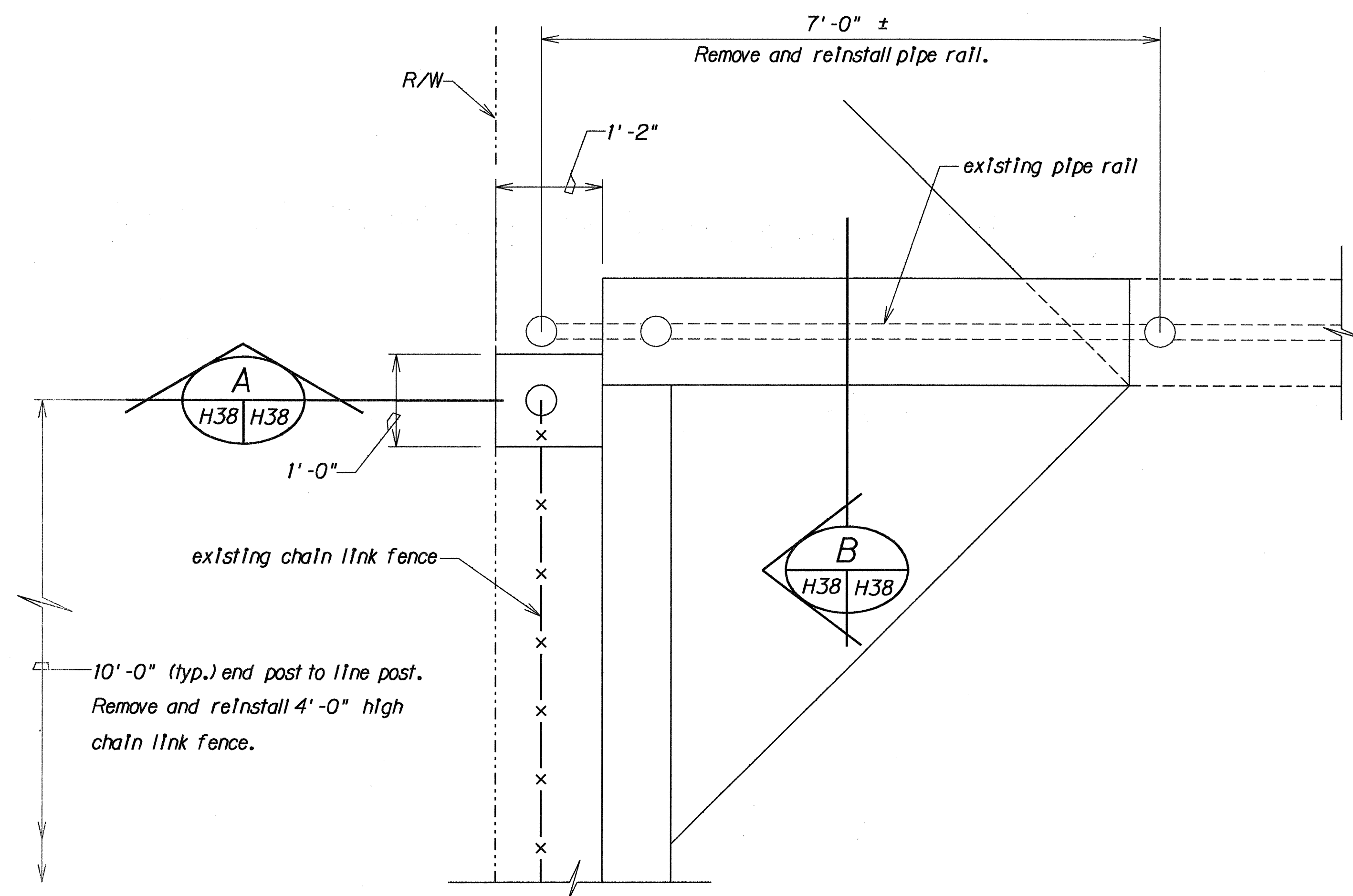
Scale: As Shown Date: SEPT., 1989

SHEET No. *H37* OF *38* SHEETS

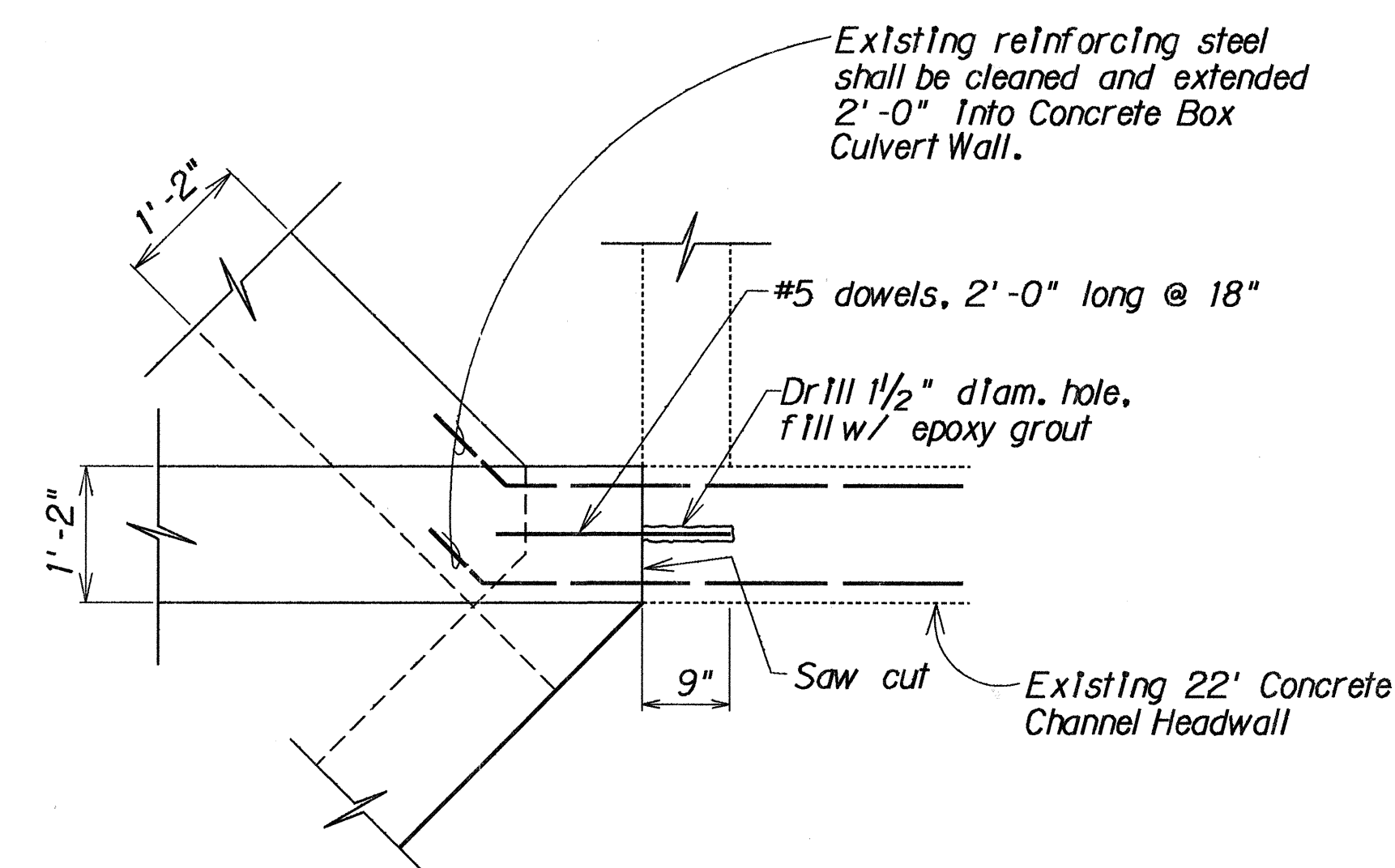
12/5/90	Added Approval Block
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DATE	REVISION
------	----------

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(2) S-RS-0760 (2)R/W	1990	79R	148

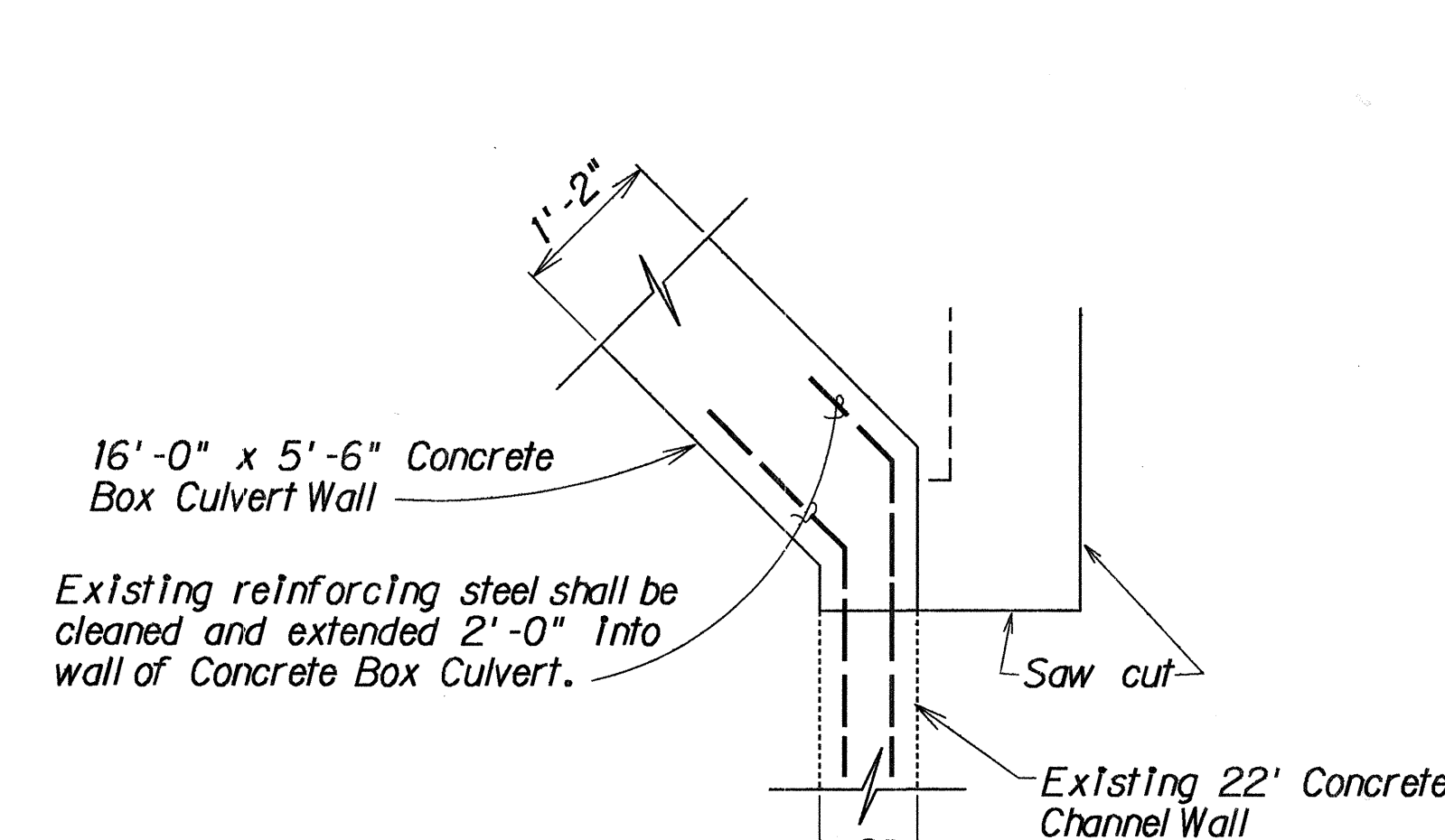


PLAN



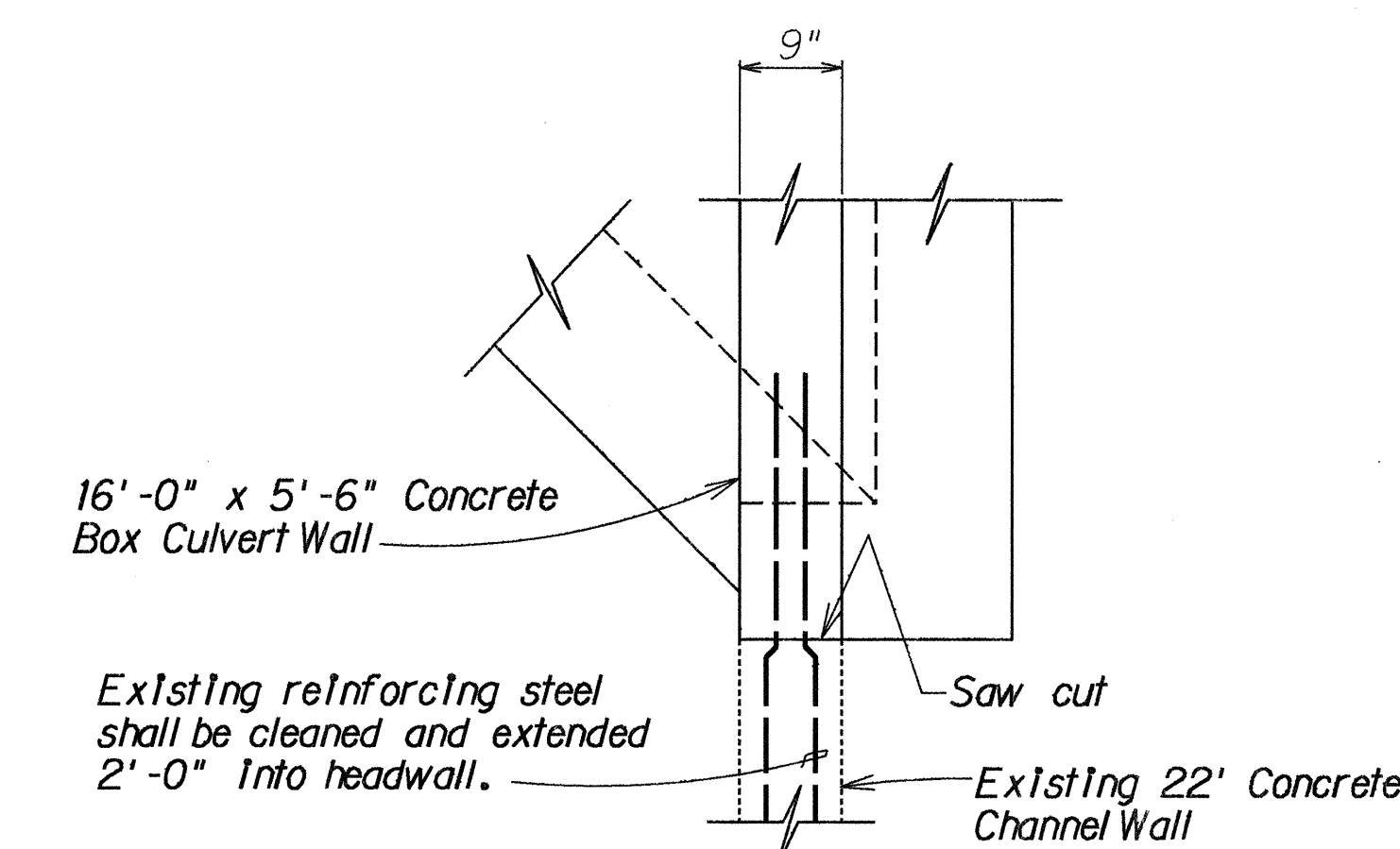
REINFORCING AT BOX CULVERT WALL

DETAIL 2
Scale: 3/4" = 1'-0" H38 H38

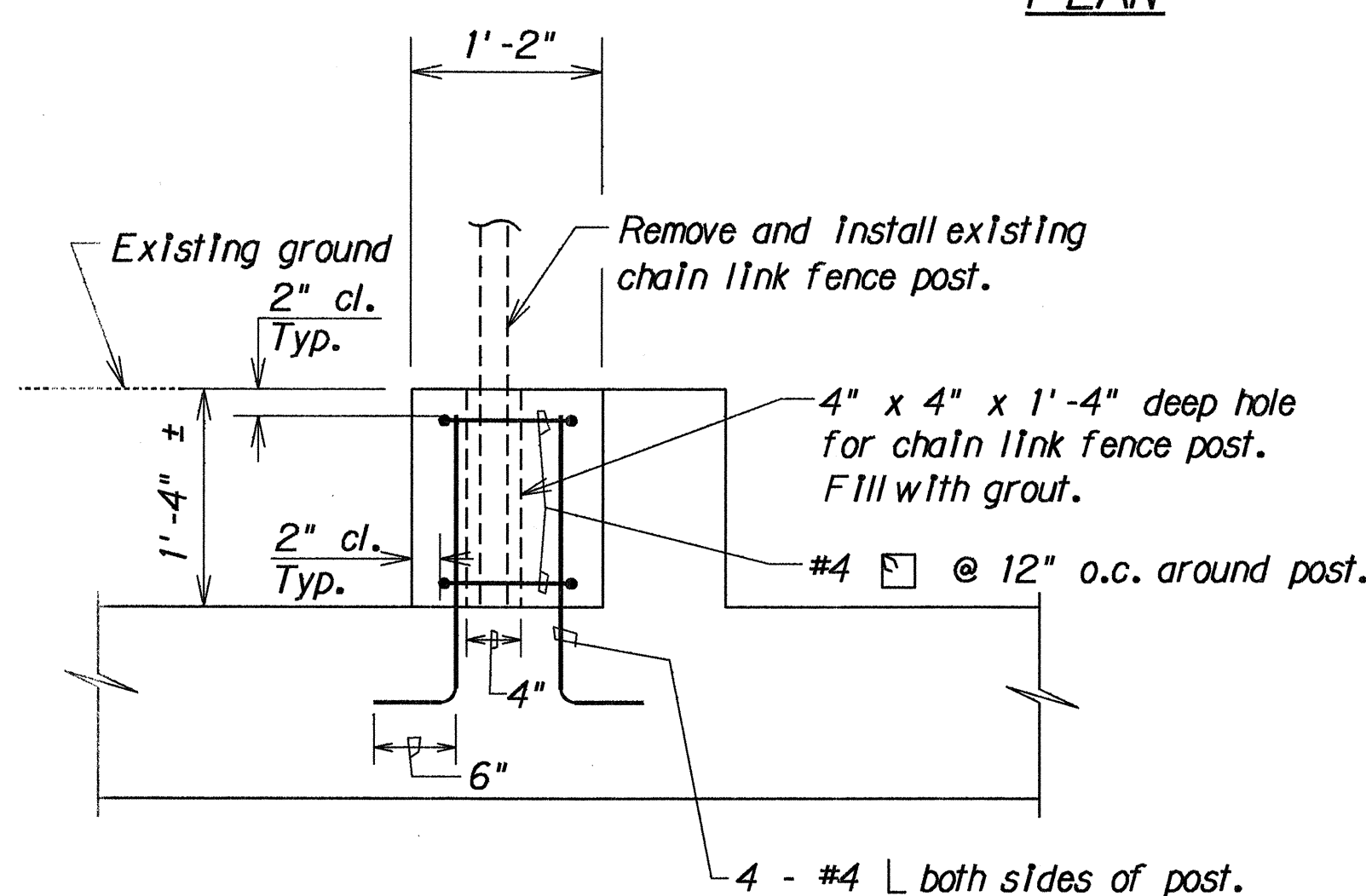


REINFORCING AT BOX CULVERT WALL

DETAIL 3
Scale: 3/4" = 1'-0" H38 H38

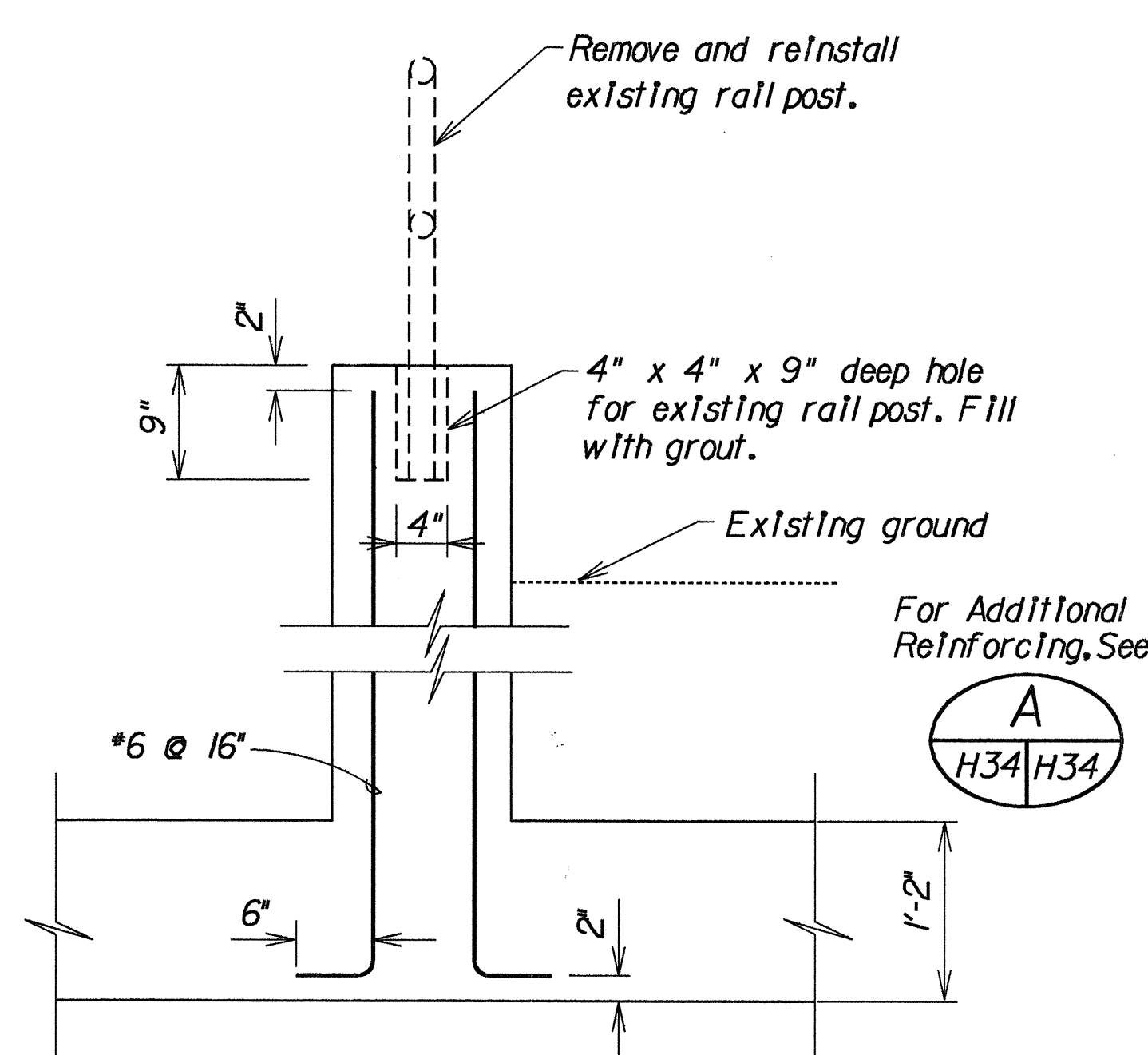


REINFORCING AT HEADWALL ON TOP SLAB



SECTION A
H38 H38

DETAIL 1
Scale: 1" = 1'-0" H38 H38



SECTION B
H38 H38

CONNECTION DETAILS OF 16'-0" X 5'-6" CONCRETE BOX CULVERT
TO EXISTING 22' CONCRETE CHANNEL

APPROVED
(FOR DRAIN CONNECTION ONLY)

CHIEF, DIV. OF ENGR. & S.

12/1/90
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD
HAKAHI ST. TO EWA BEACH RD.

Project Nos. F-076-1(2) and
S-RS-0760(2)R/W

Scale: As Shown Date: SEPT., 1989

SHEET No. H38 OF 38 SHEETS

12/5/90 Added Approval Block
11/15/90 Revised Section B
DATE REVISION