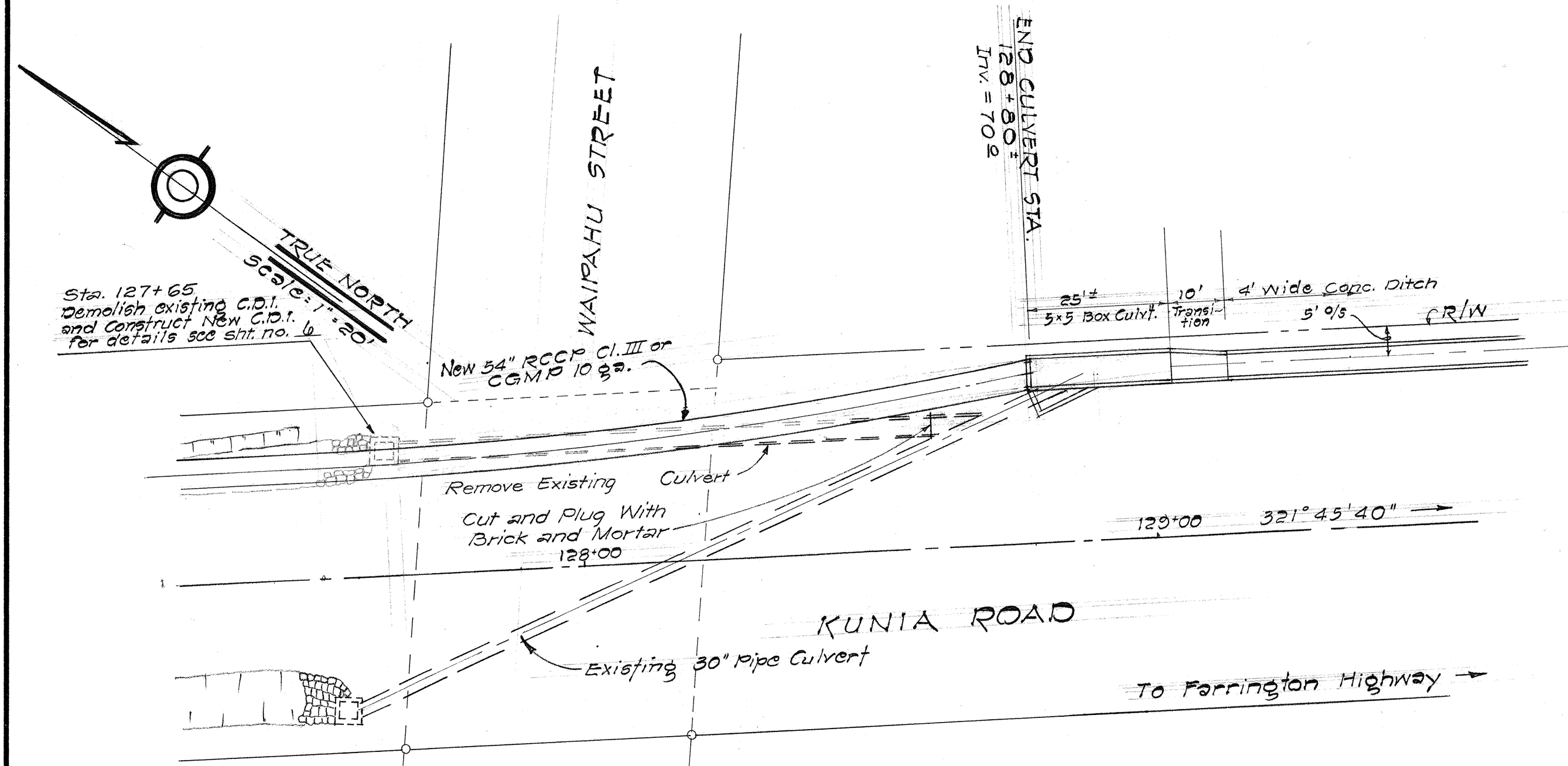
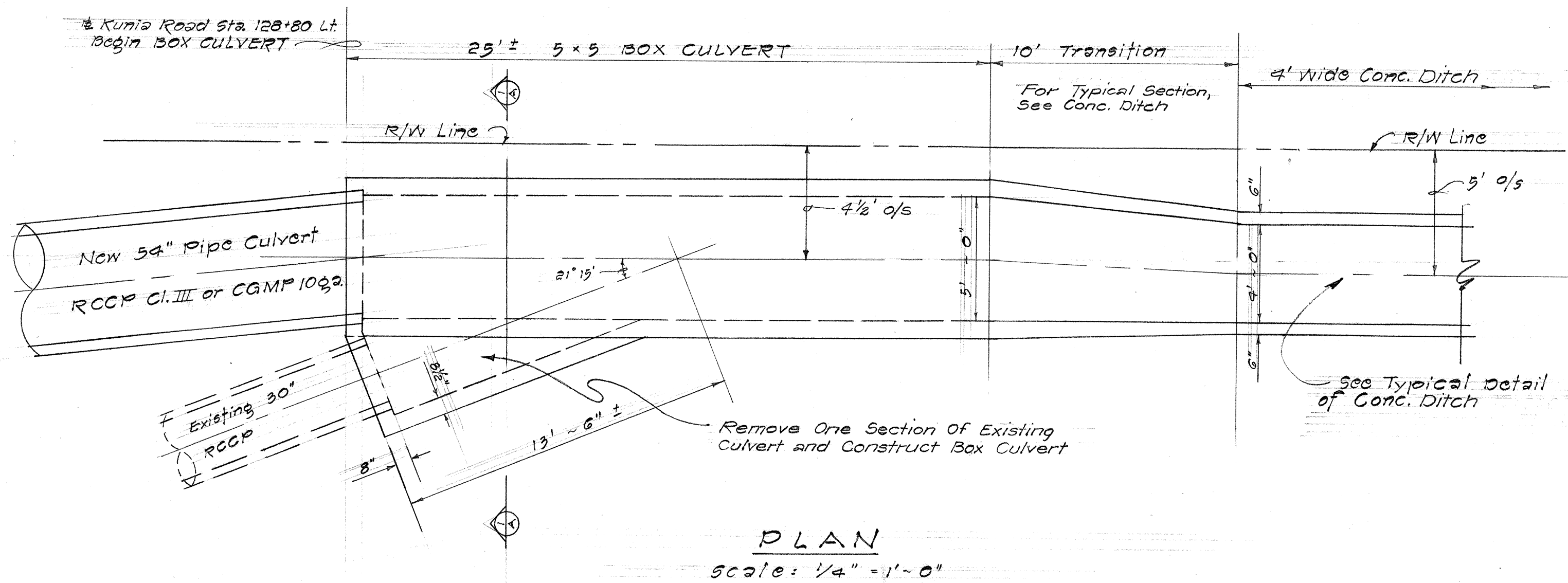


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-075-1(3)	1966	13	42



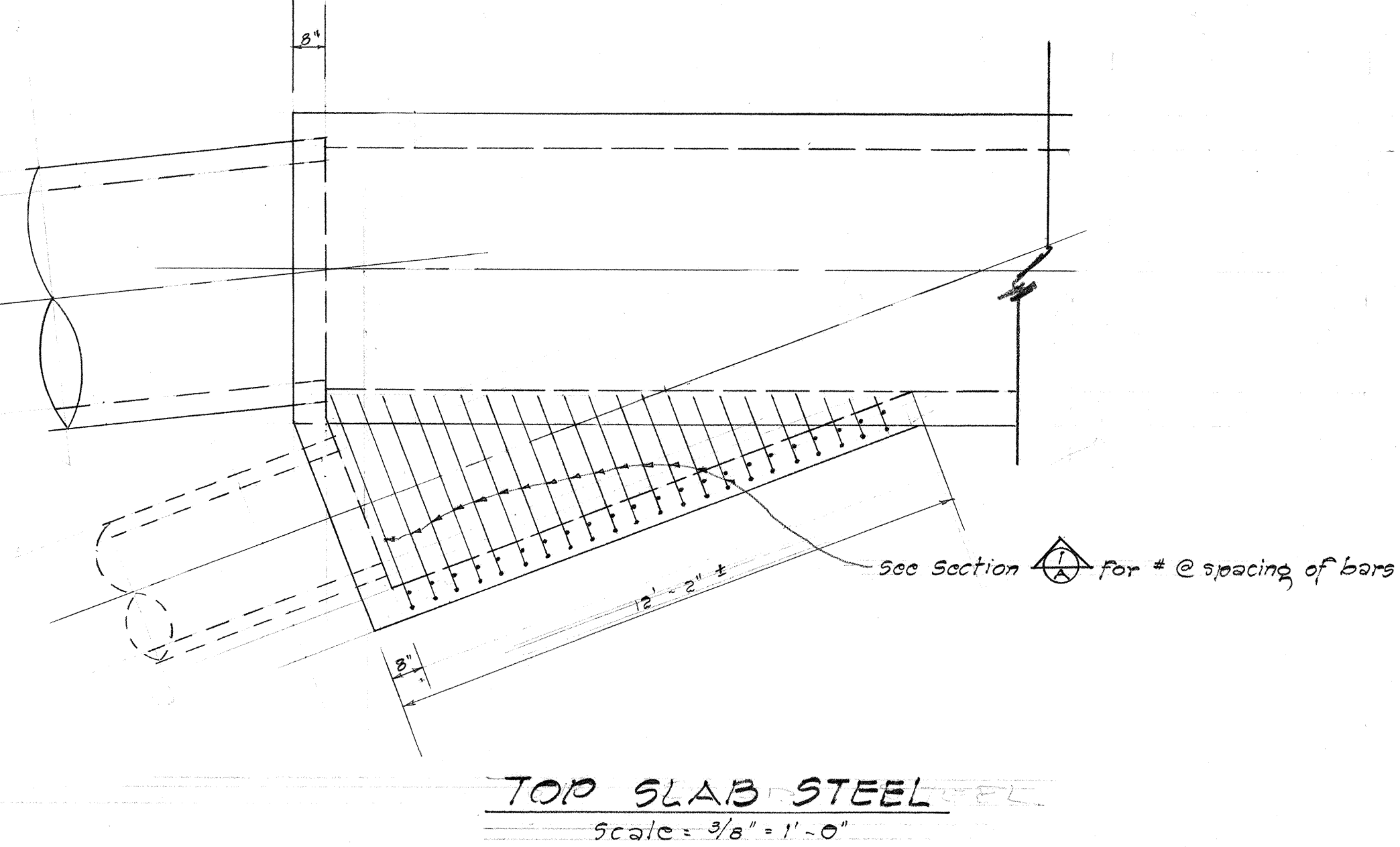
- NOTE:
1. Removal and Cutting and Plugging of Existing Culvert to be Incidental to Struc. Exc.
 2. Demolishing of Existing C.D.I. to be Incidental to Struc. Exc.

LAYOUT PLAN



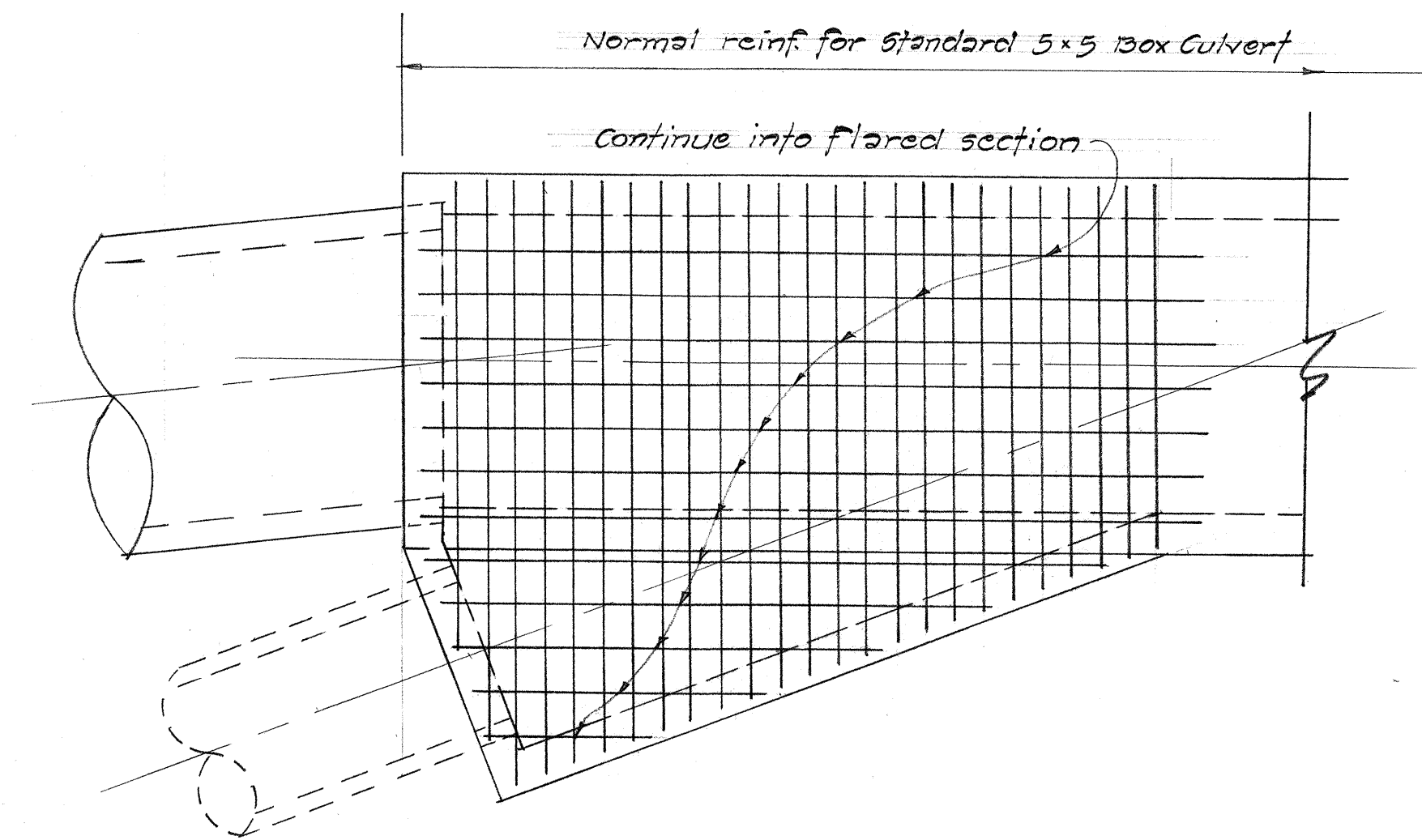
PLAN

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



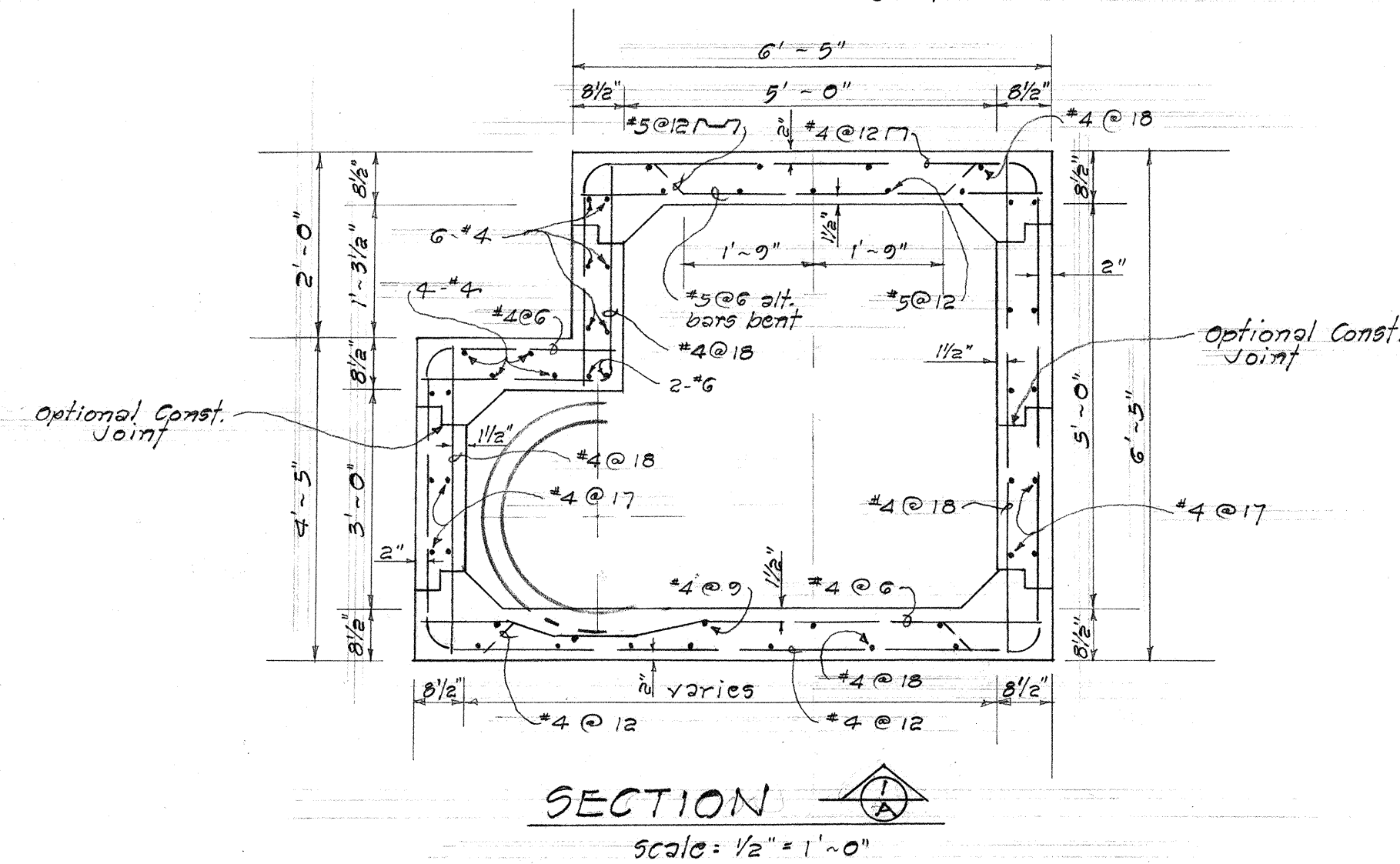
TOP SLAB STEEL

Scale: 3/8" = 1'-0"



BOTTOM SLAB STEEL

Scale: 3/8" = 1'-0"



SECTION

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL - CULVERT UNDER
WAIPAHU STREET
Sta. 127+25 TO Sta. 129+05 LEFT

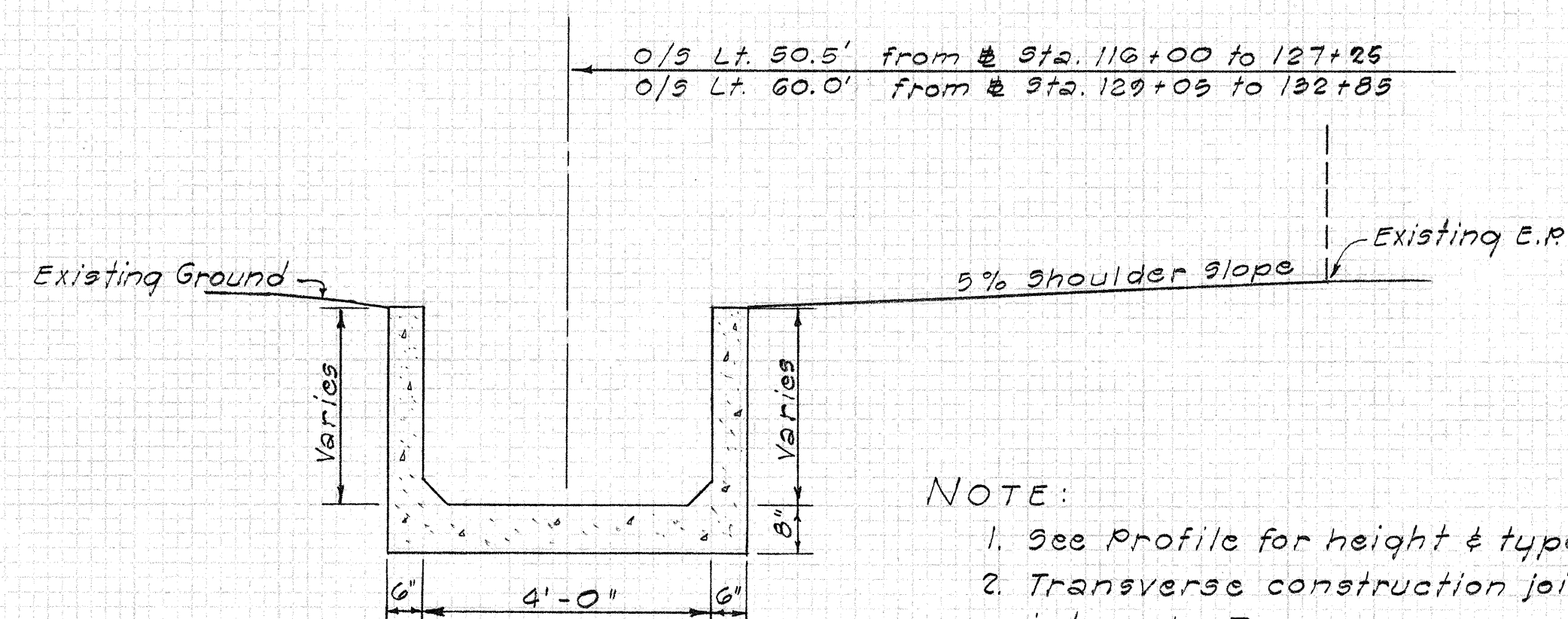
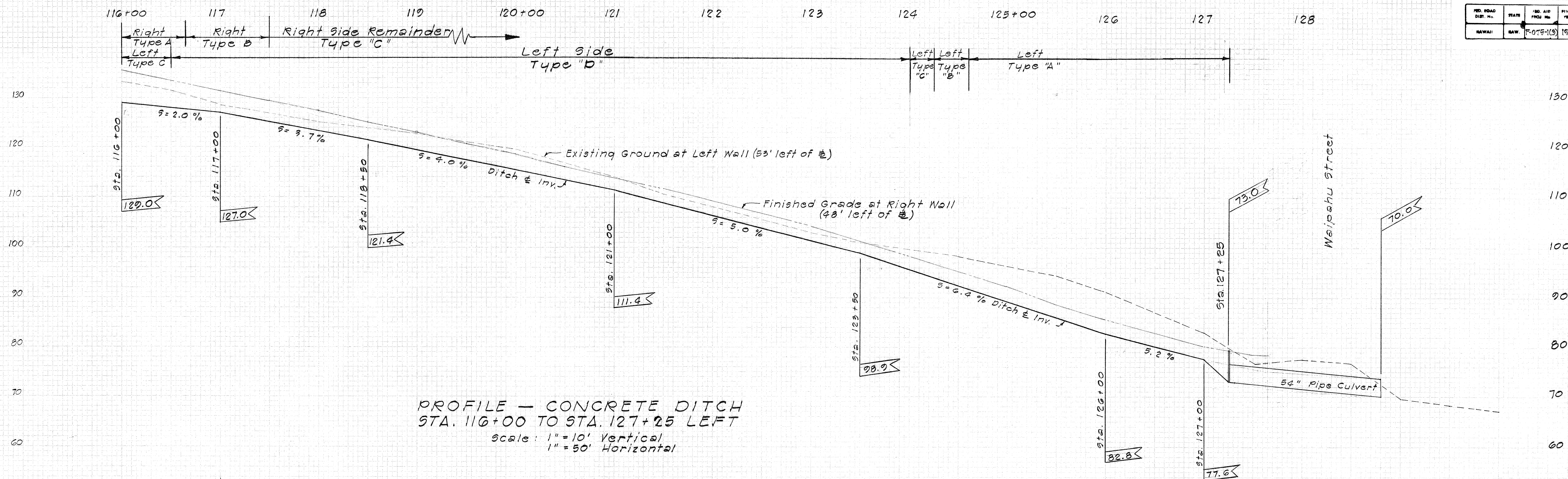
KUNIA ROAD
PROJECT NO. F-075-1(3)

SCALE: AS NOTED

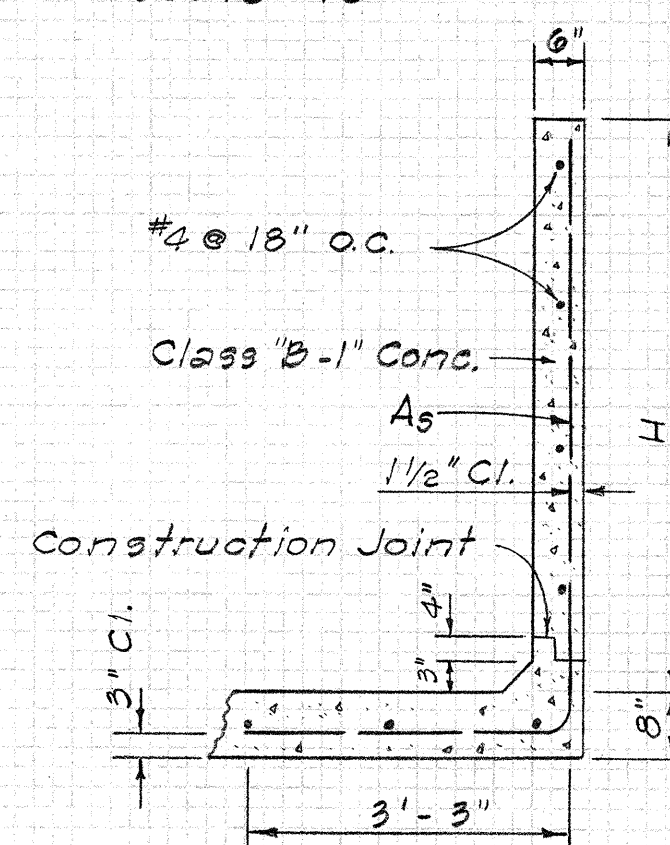
SHEET No. 1 OF 4 SHEETS

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

PROJ. ROAD DIST. NO.	STATE	DES. AND PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	SAV.	F-075-1(3)	1966	14	42



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

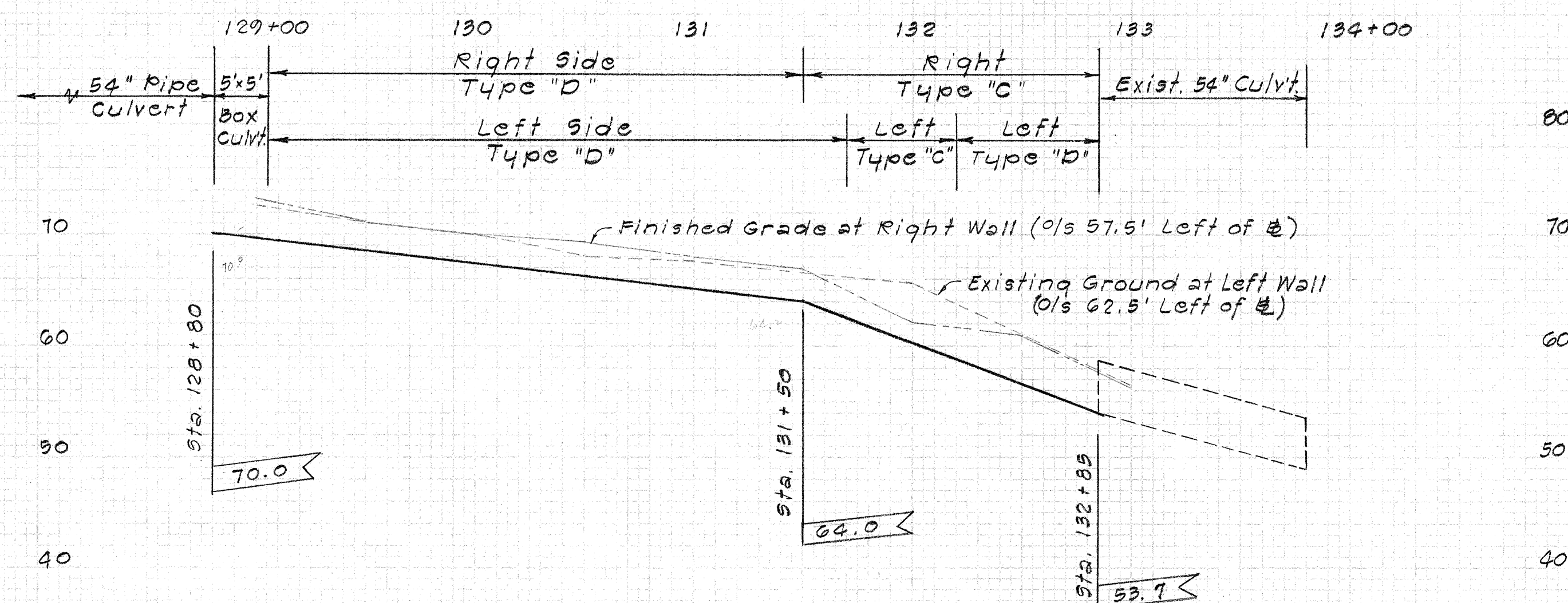


CONC. DITCH REINFORCING DETAIL
Scale: 1/2" = 1'-0"

NOTE:

1. See Profile for height & type.
2. Transverse construction joints spaced at 30' intervals. Transverse expansion joints spaced at 90' intervals.
3. Minimum ditch slope 2%.
4. Between Sta. 116+00 to 127+25, minimum height of sides = 2'-9".
5. Between Sta. 129+05 to 132+85, minimum height of sides = 3'-0".

TYPE	H	A _s
A	6' to 8'	#5 @ 6" o.c.
B	5' to 6'	#4 @ 6" o.c.
C	4' to 5'	#4 @ 9" o.c.
D	2'-9" to 4'	#4 @ 15" o.c.



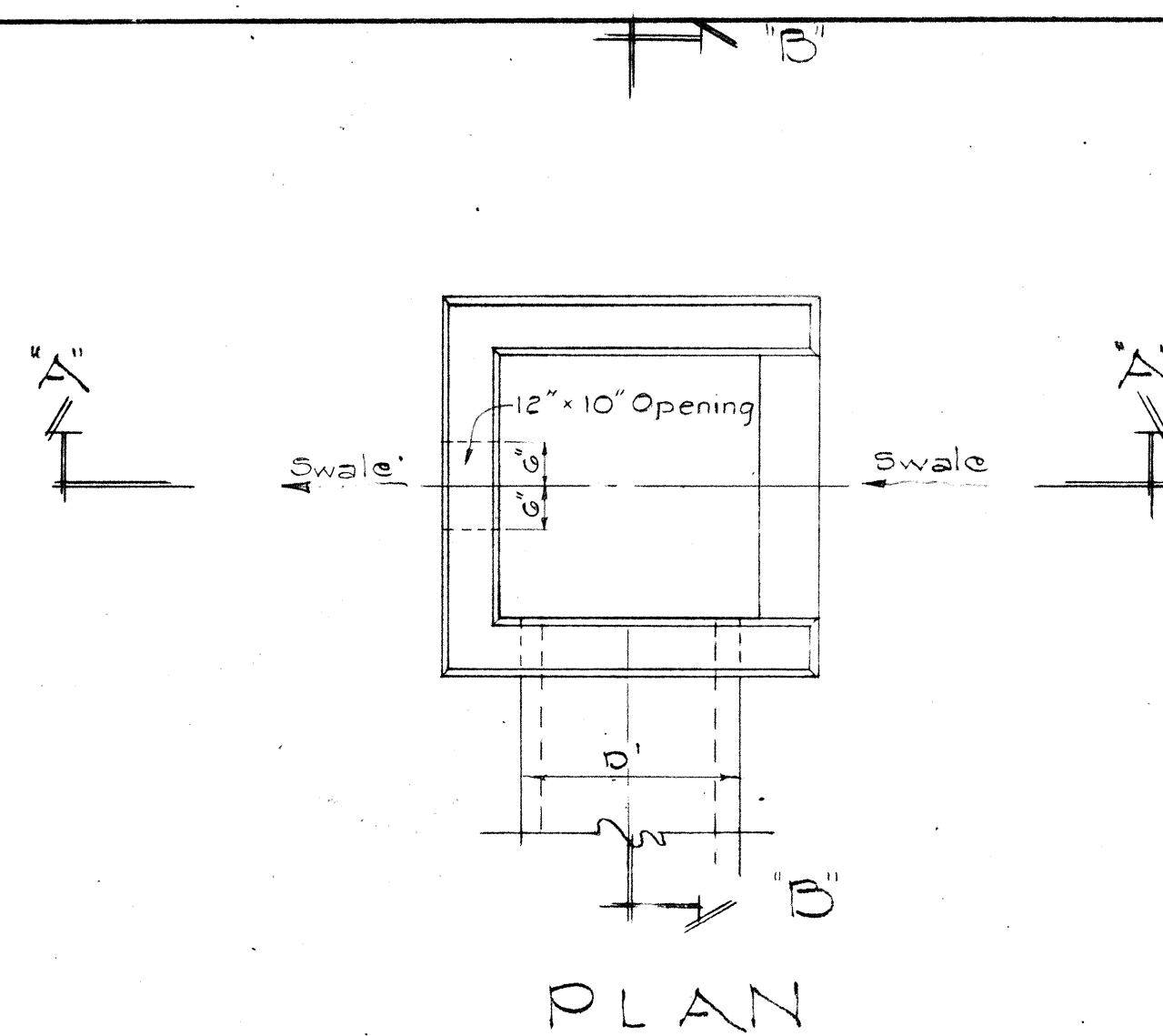
PROFILE - CONCRETE DITCH
STA. 129+05 TO STA. 132+85 LEFT
Scale: 1" = 10' Vertical
1" = 50' Horizontal

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

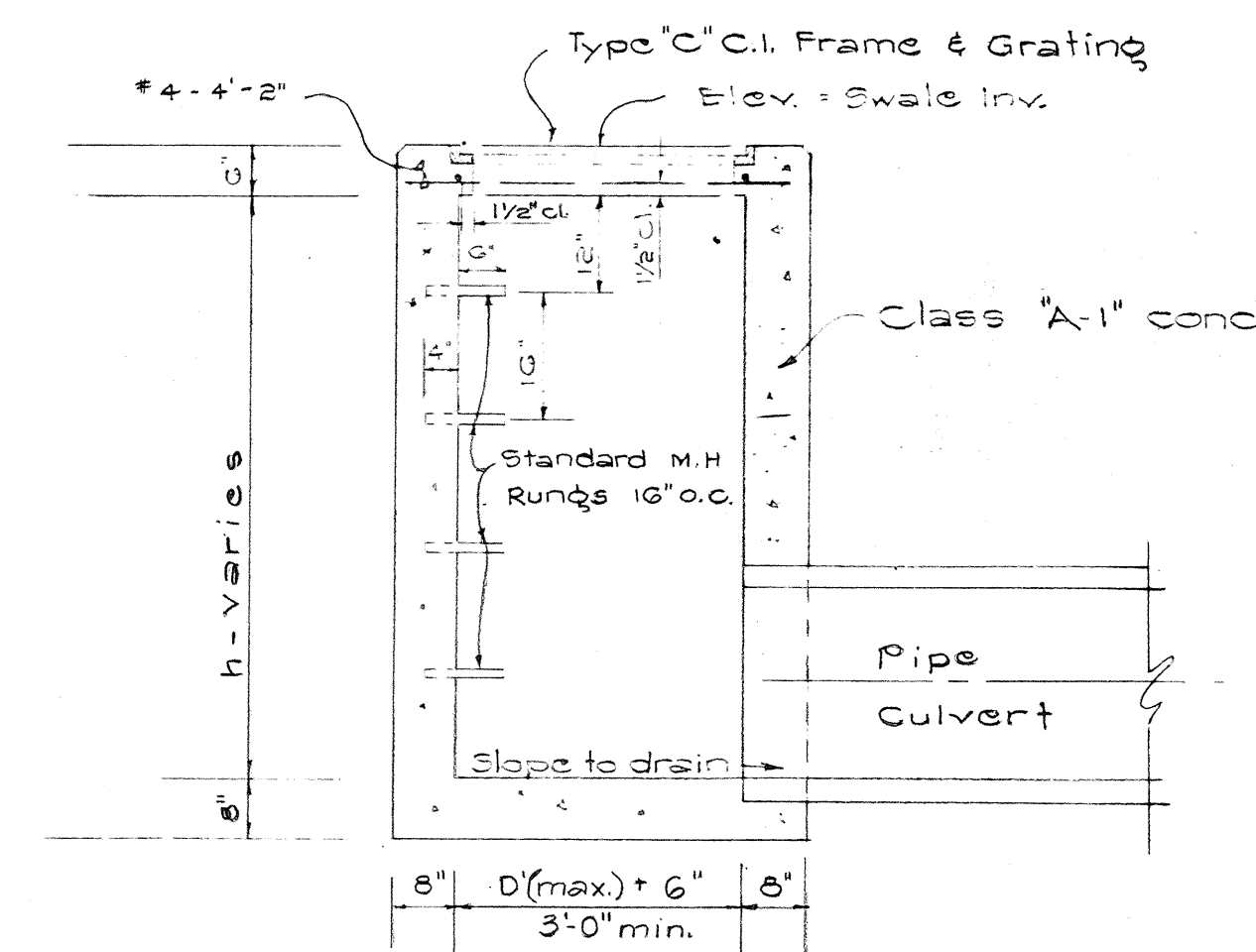
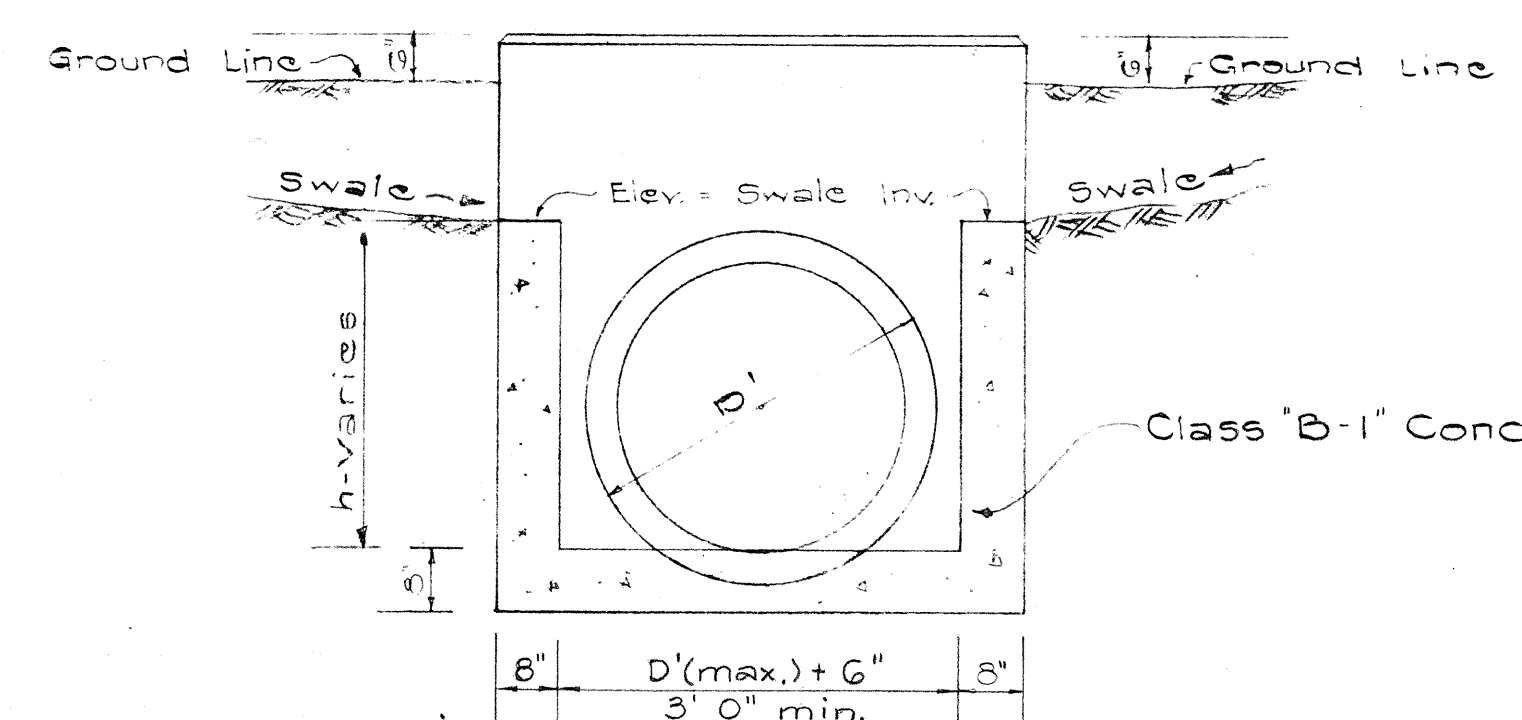
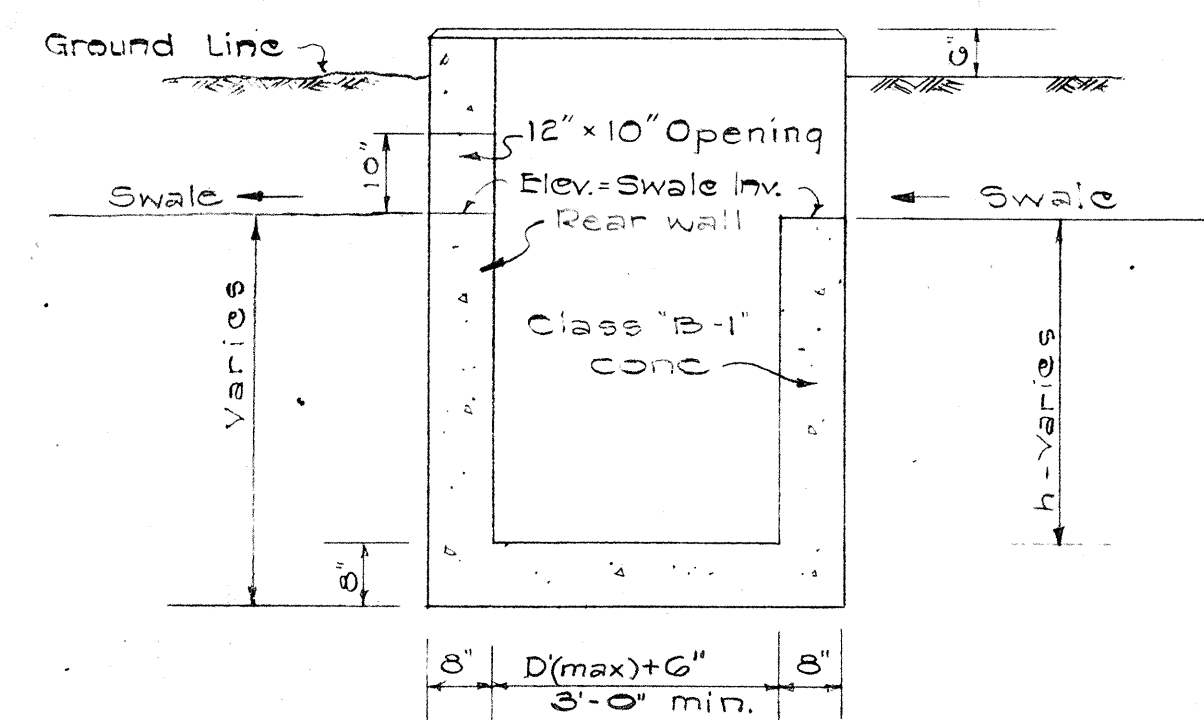
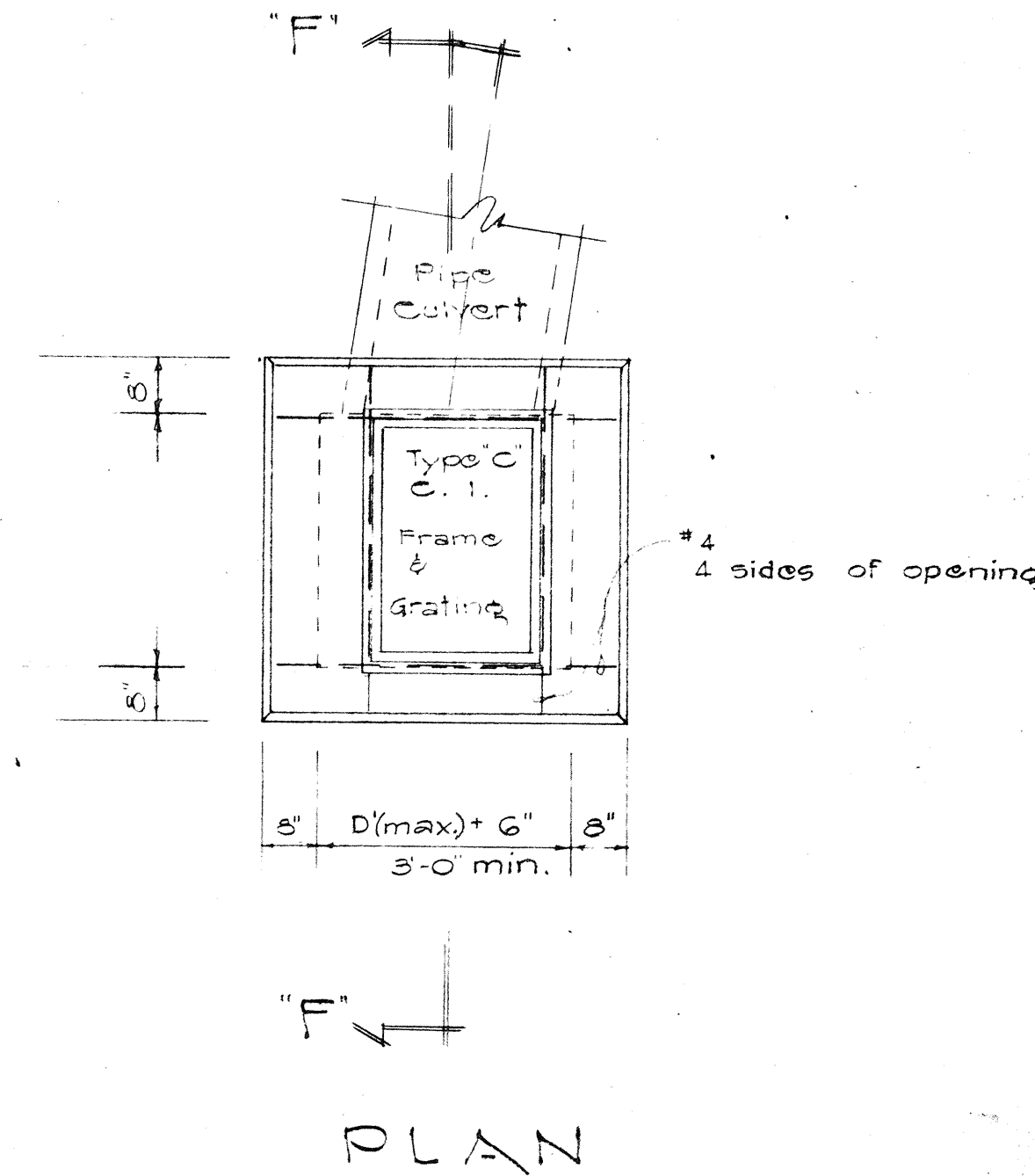
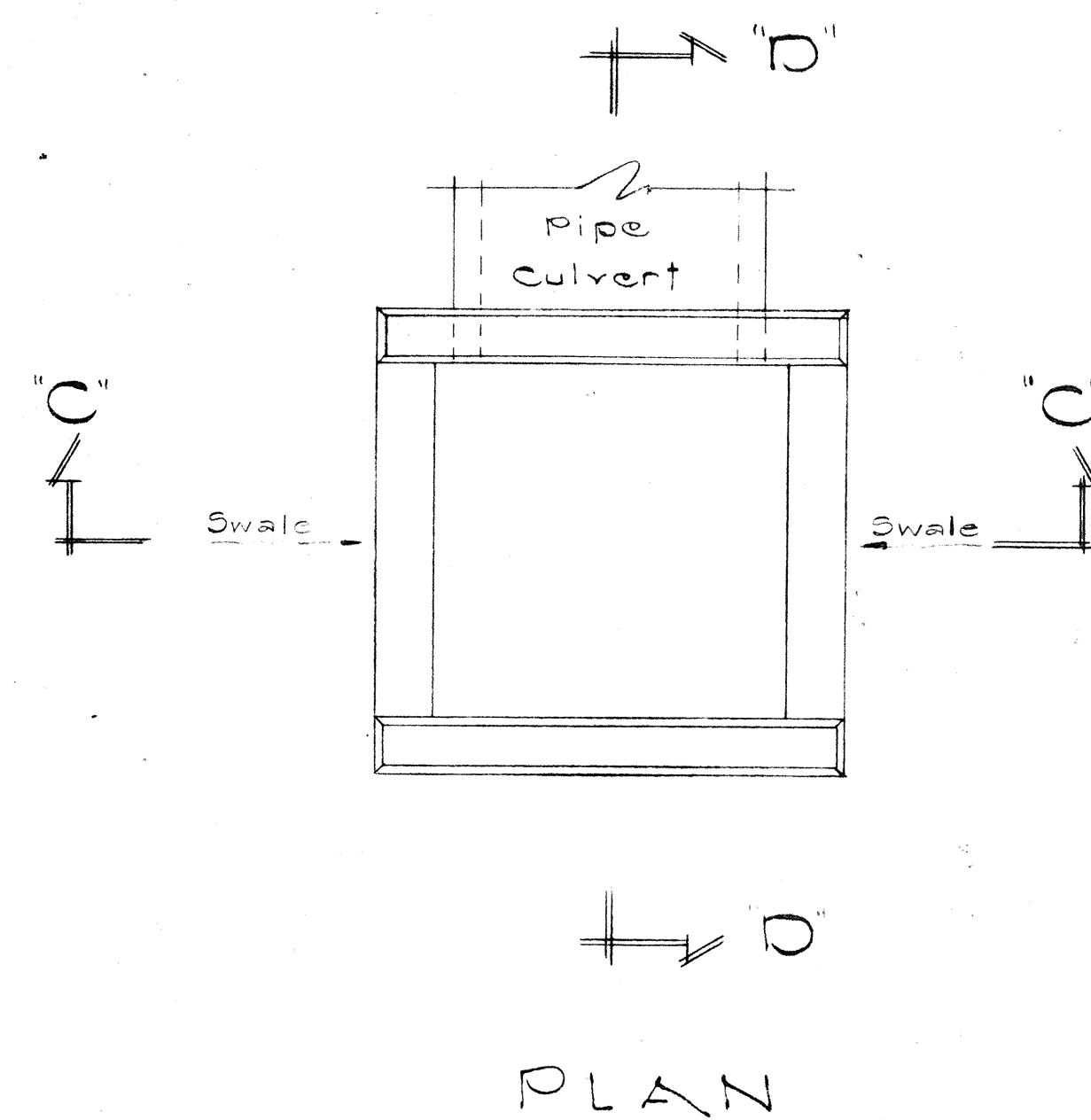
DRAINAGE DETAILS

CONCRETE DITCH
STA. 116+00 to 127+25 Lt.
STA. 129+05 to 132+85 Lt.
KUNIA ROAD
PROJ. No. F-075-1(3)
SCALE: AS NOTED

SHEET No. 2 OF 4 SHEETS

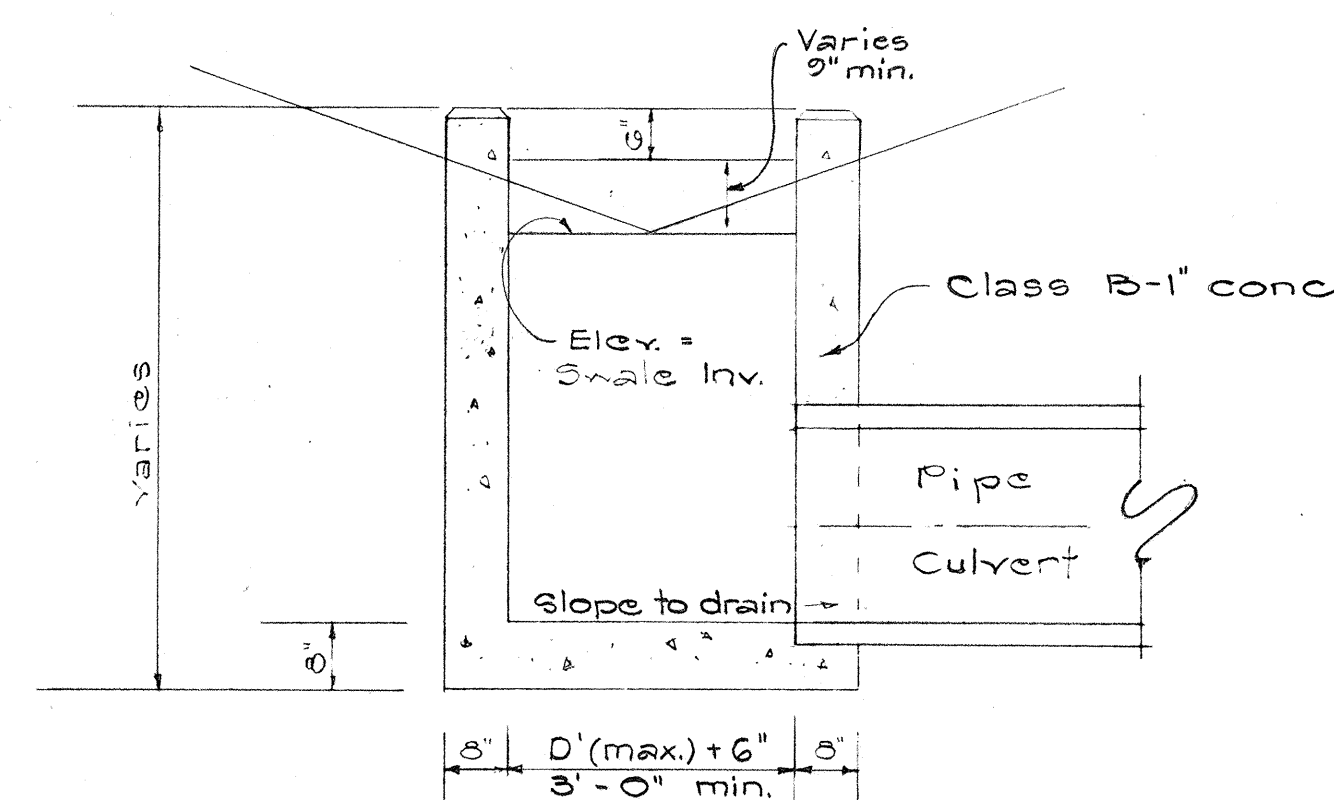


- NOTES:
- 12' x 10' opening in rear wall not required when CDI is located at termination of swale.
 - Where called for on the plans, provide 12' x 10' side opening in center of side wall. See plans for invert of side opening.

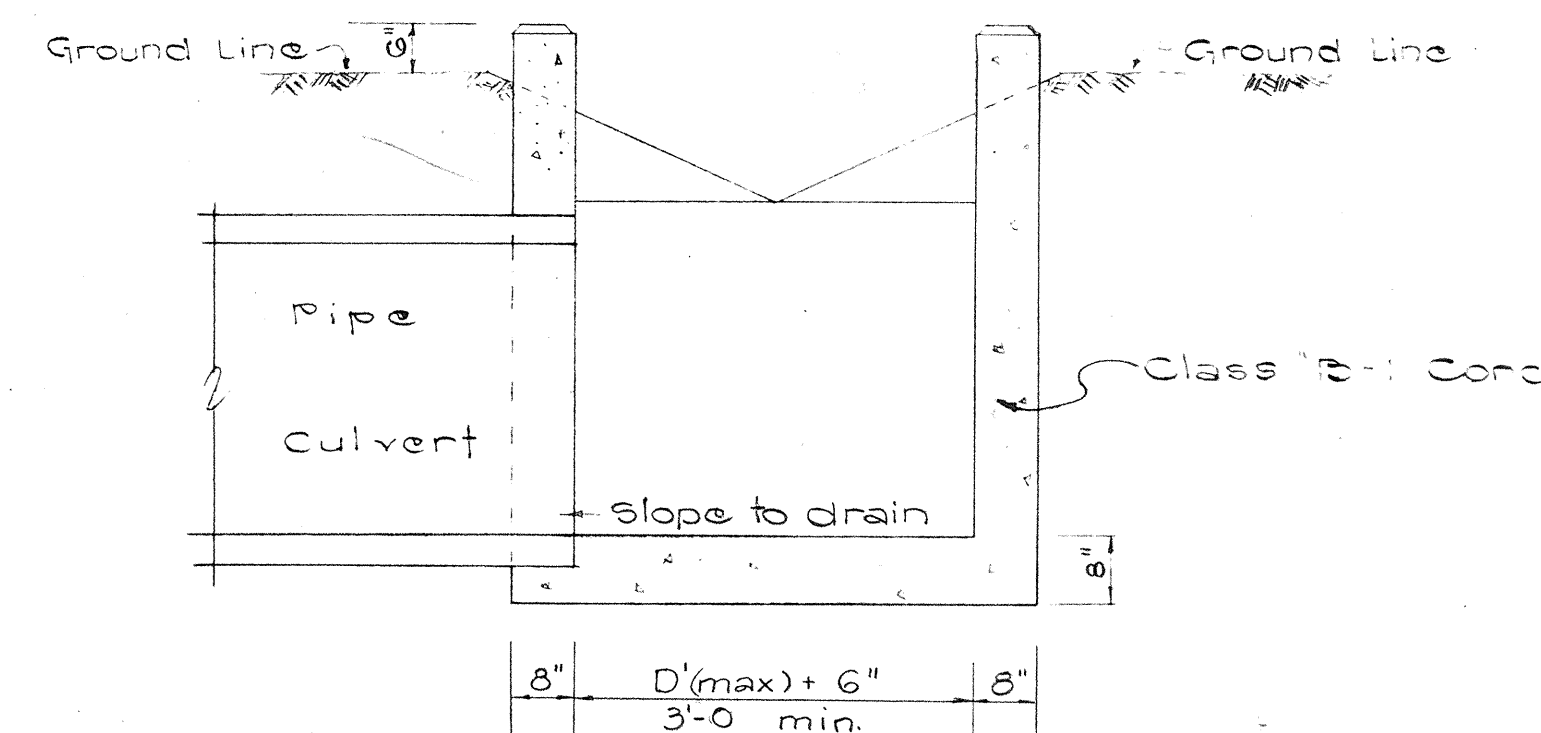


TYPE "C" GRATED
CONCRETE DROP INTAKE
SCALE: 1/2" = 1'-0"

- NOTES:
- See Plans for alignment & inverts of all culverts, ditches, and swales entering C.D.I.
 - Exposed edges above the ground line of Concrete Drop Intakes shall be chamfered one (1) inch.
 - Swales and Ditches shall have a ten (10) feet transition into C.D.I.
 - Standard Manhole Rungs @ 10" o.c. shall be provided for structures having "h" greater than 3'-0" and shall be incidental to class A-1 or B-1 Concrete.
 - Location of Standard Manhole Rungs to be determined by the Engineer.

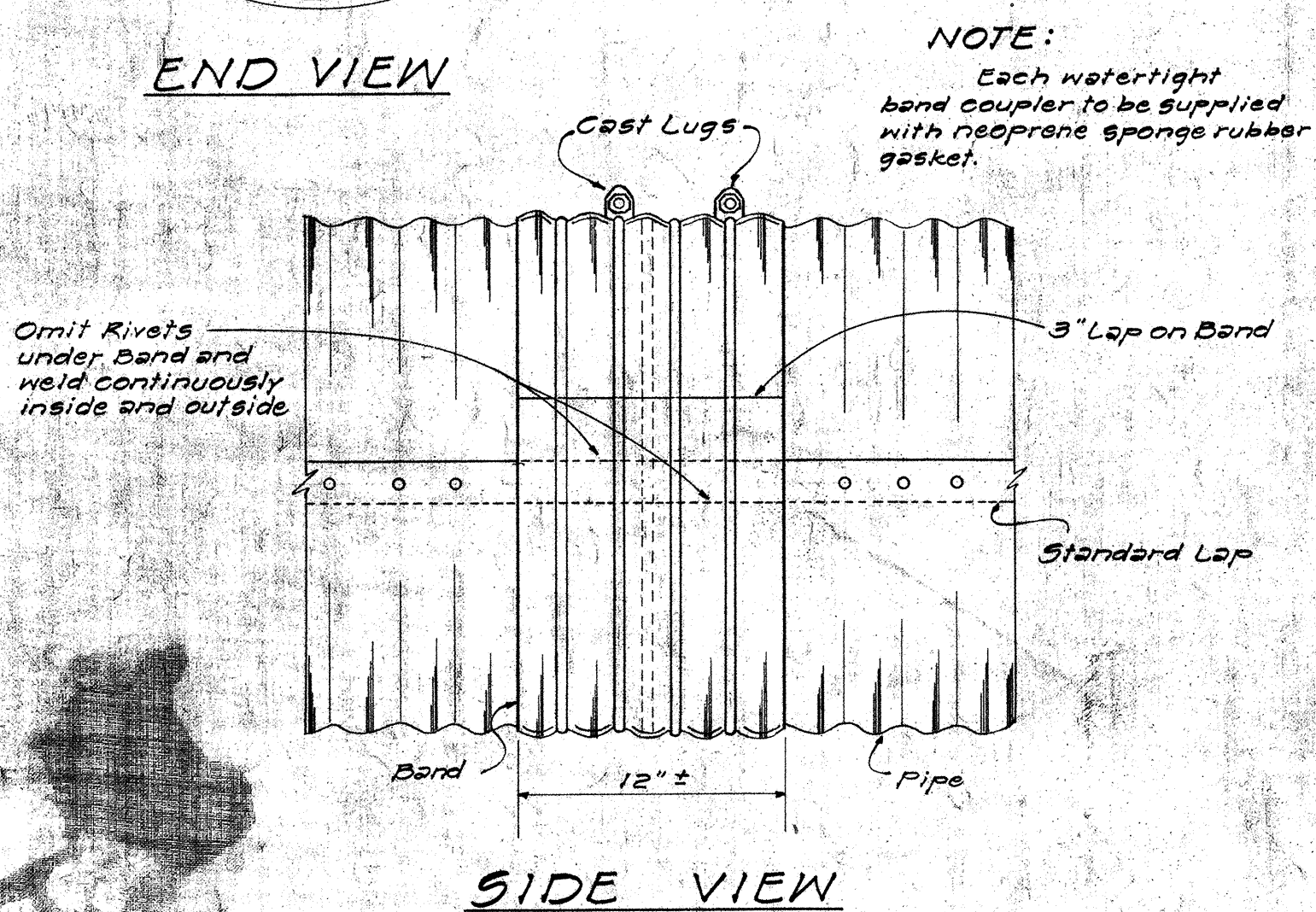
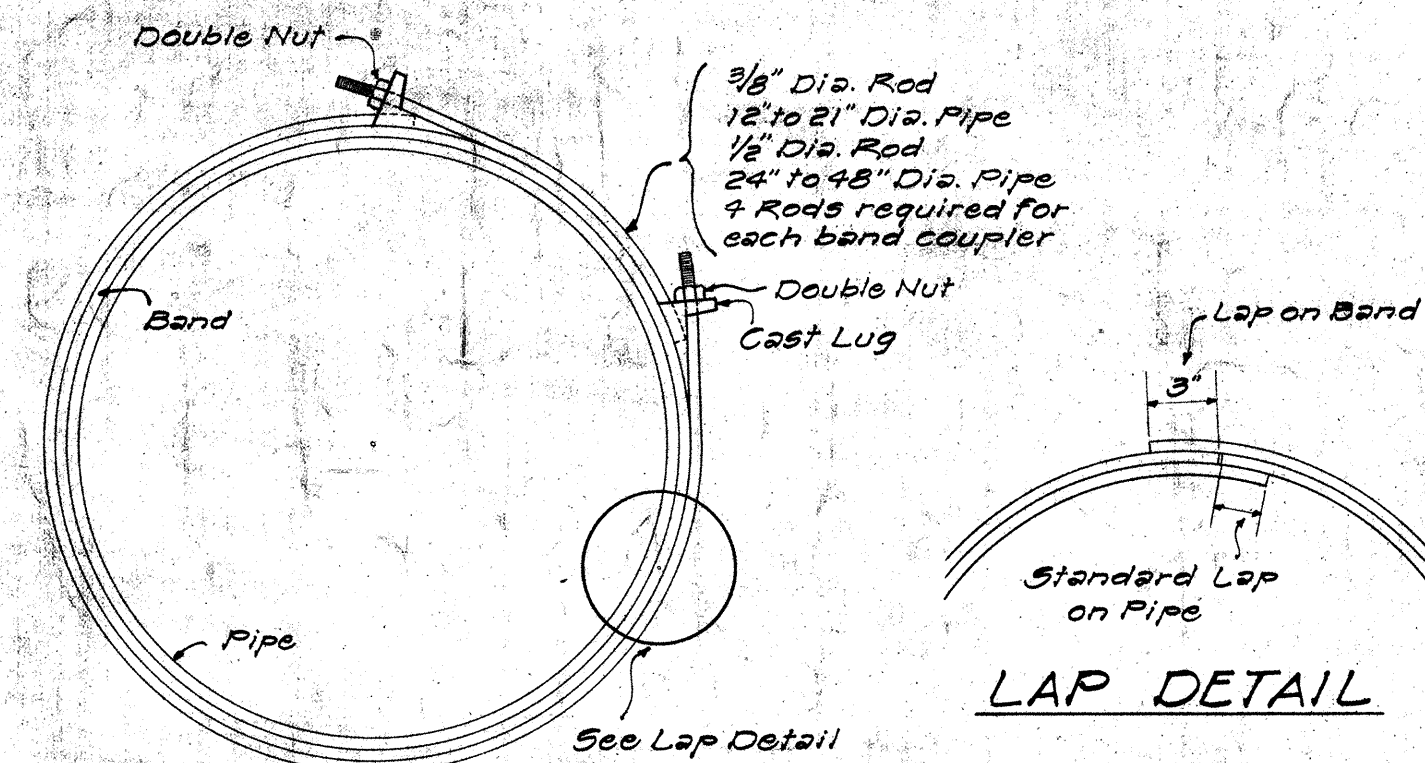


TYPE "A"
CONCRETE DROP INTAKE
SCALE: 1/2" = 1'-0"

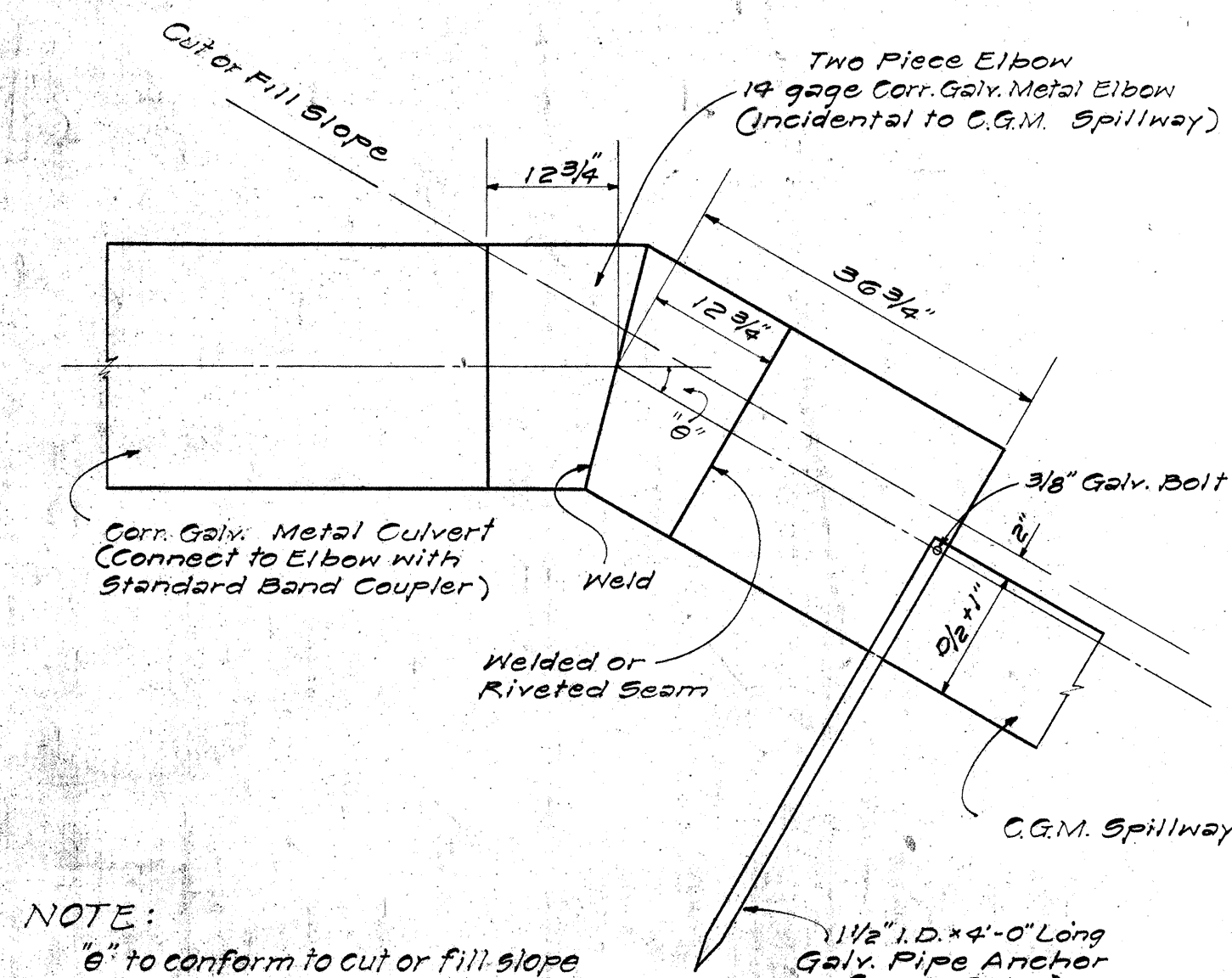


TYPE "B"
CONCRETE DROP INTAKE
SCALE: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
CONCRETE DROP INTAKE
KUNIA ROAD
PROJECT NO. F-075-1(3)

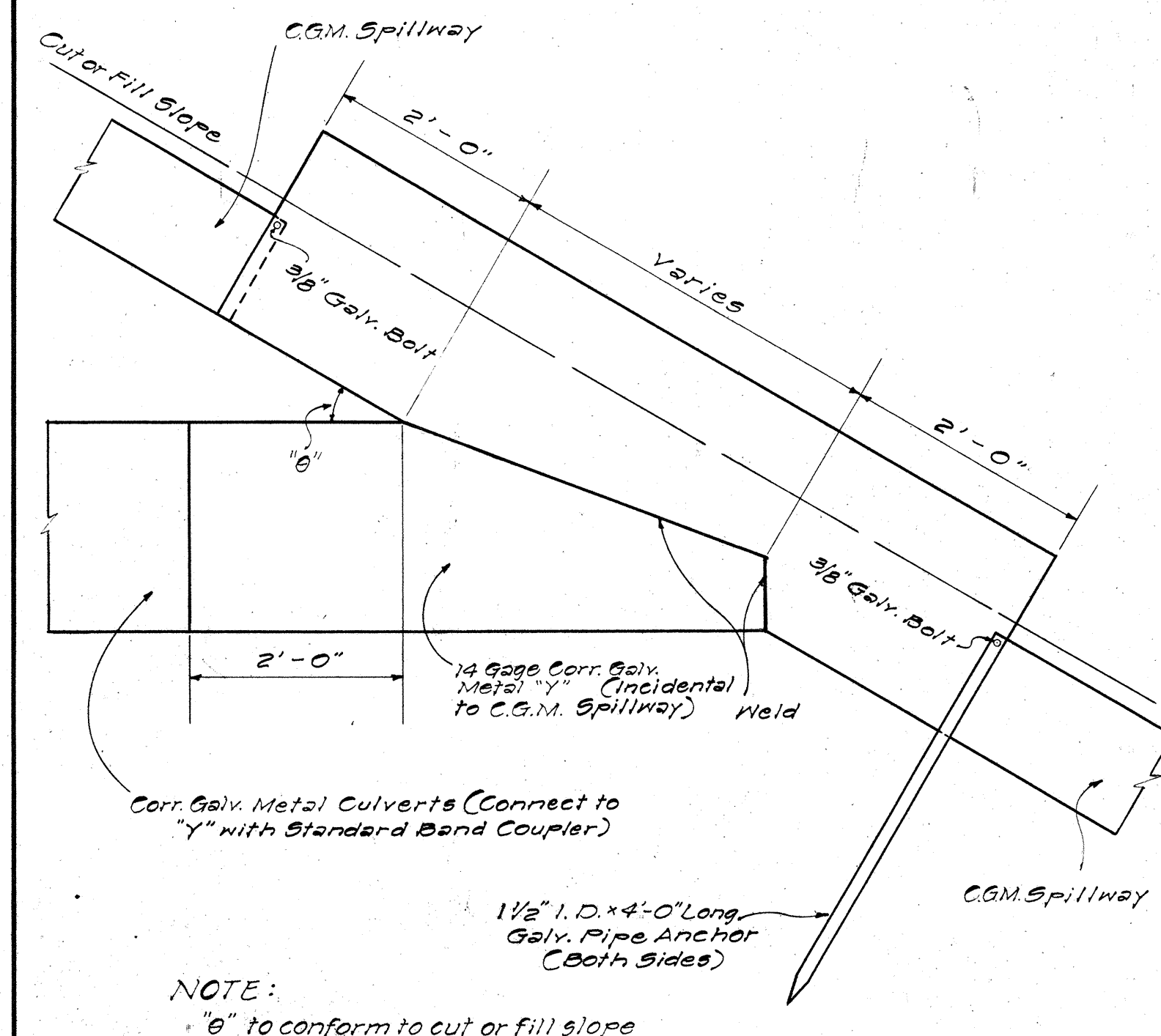


DETAIL OF WATERTIGHT BAND COUPLER
NOT TO SCALE



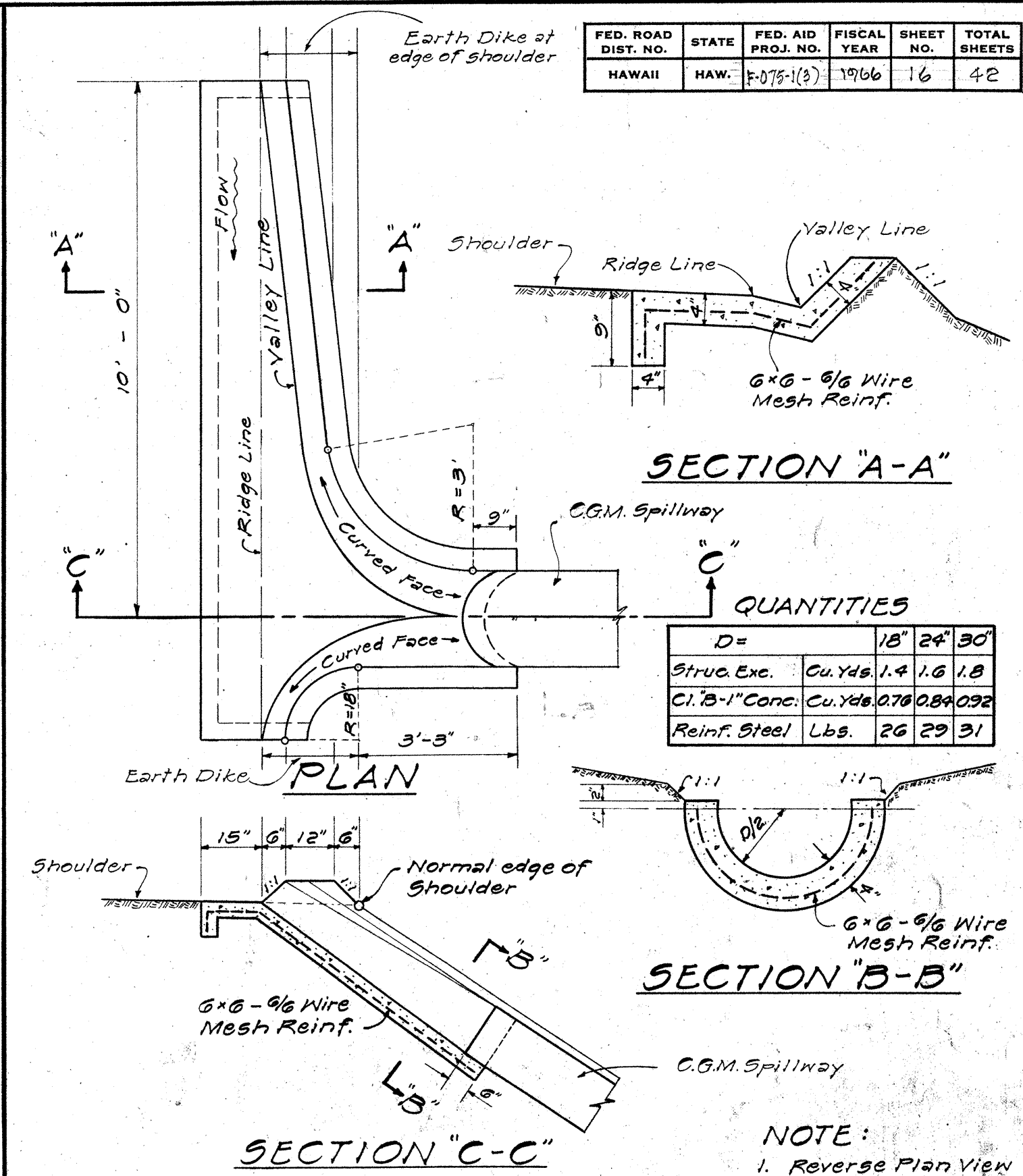
NOTE: "6" to conform to cut or fill slope

DETAIL OF CULVERT TO SPILLWAY CONNECTION
NOT TO SCALE



NOTE: "6" to conform to cut or fill slope

DETAIL OF CULVERT TO SPILLWAY "Y" CONNECTION
NOT TO SCALE

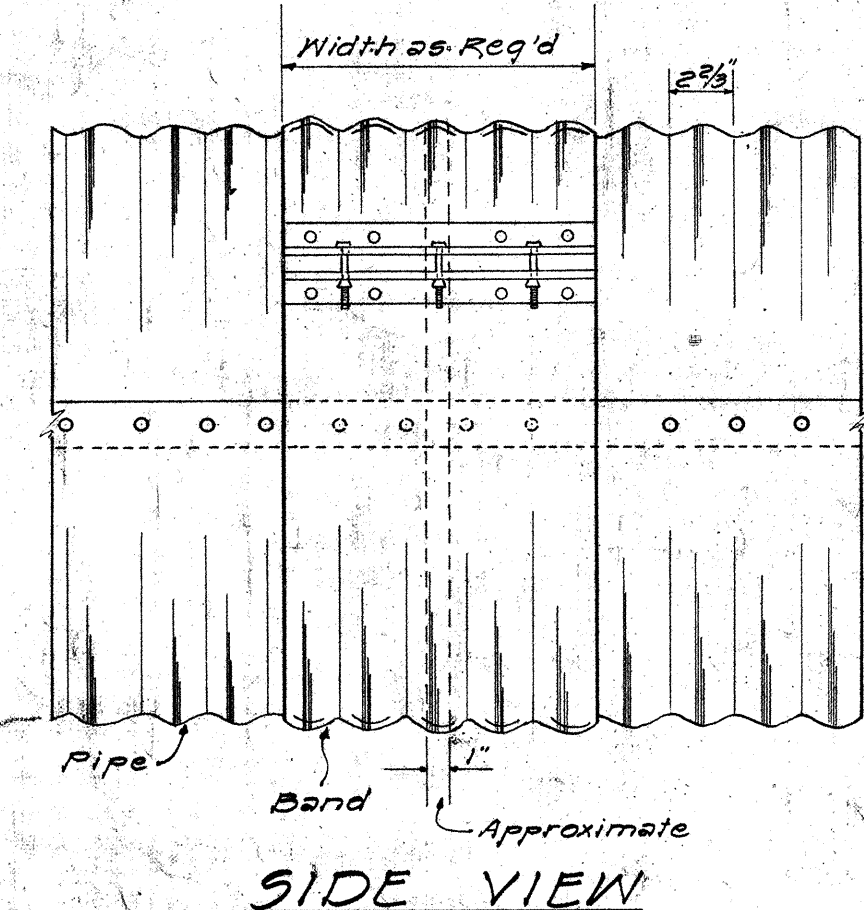
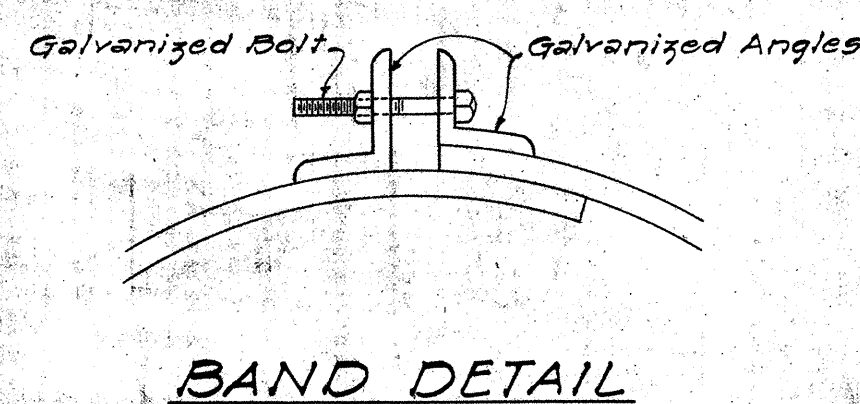


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7-075-1(3)	1966	16	42

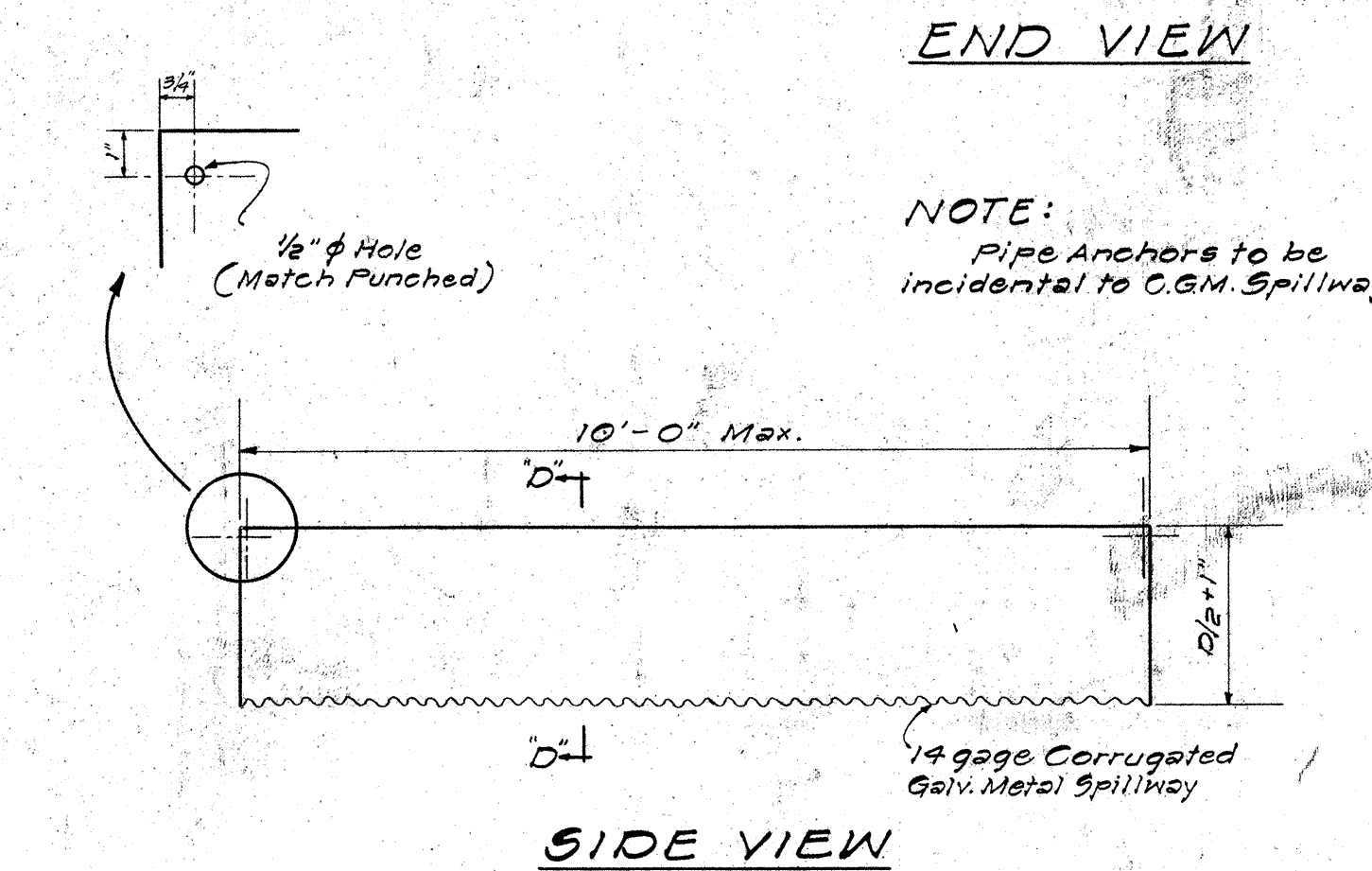
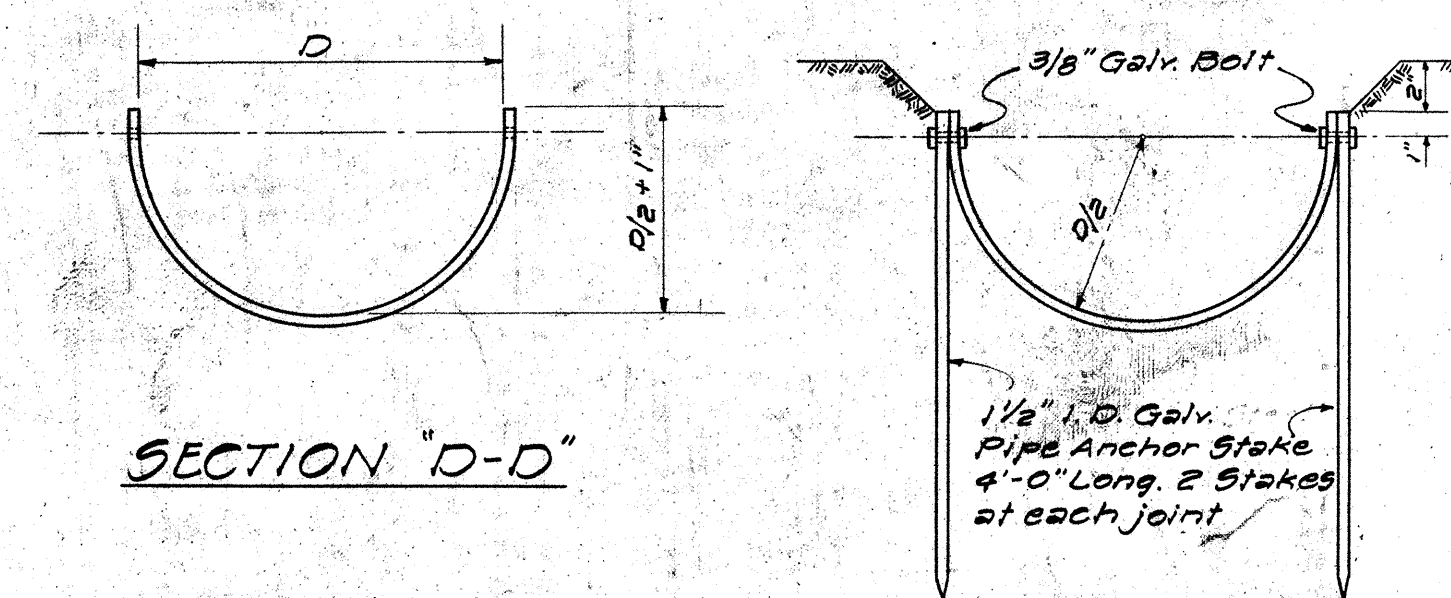
QUANTITIES					
D=	18"	24"	30"		
Struc. Exc.	Cu. Yds.	1.4	1.6	1.8	
Cl. B-1 Conc.	Cu. Yds.	0.78	0.84	0.92	
Reinf. Steel	Lbs.	26	29	31	

NOTE:
1. Reverse Plan View when flow is in direction opposite to that shown.
2. All Conc. to be cl. B-1

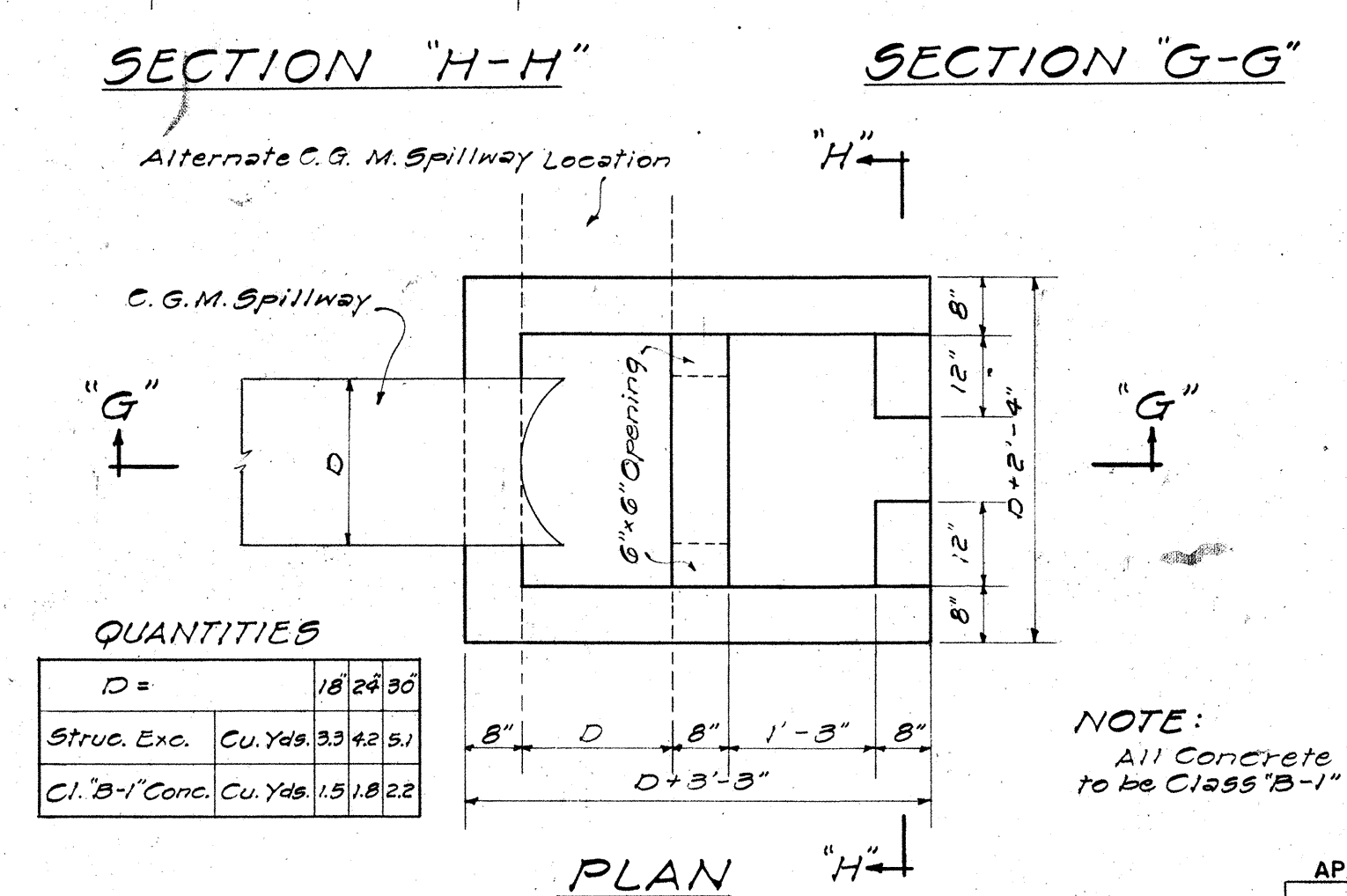
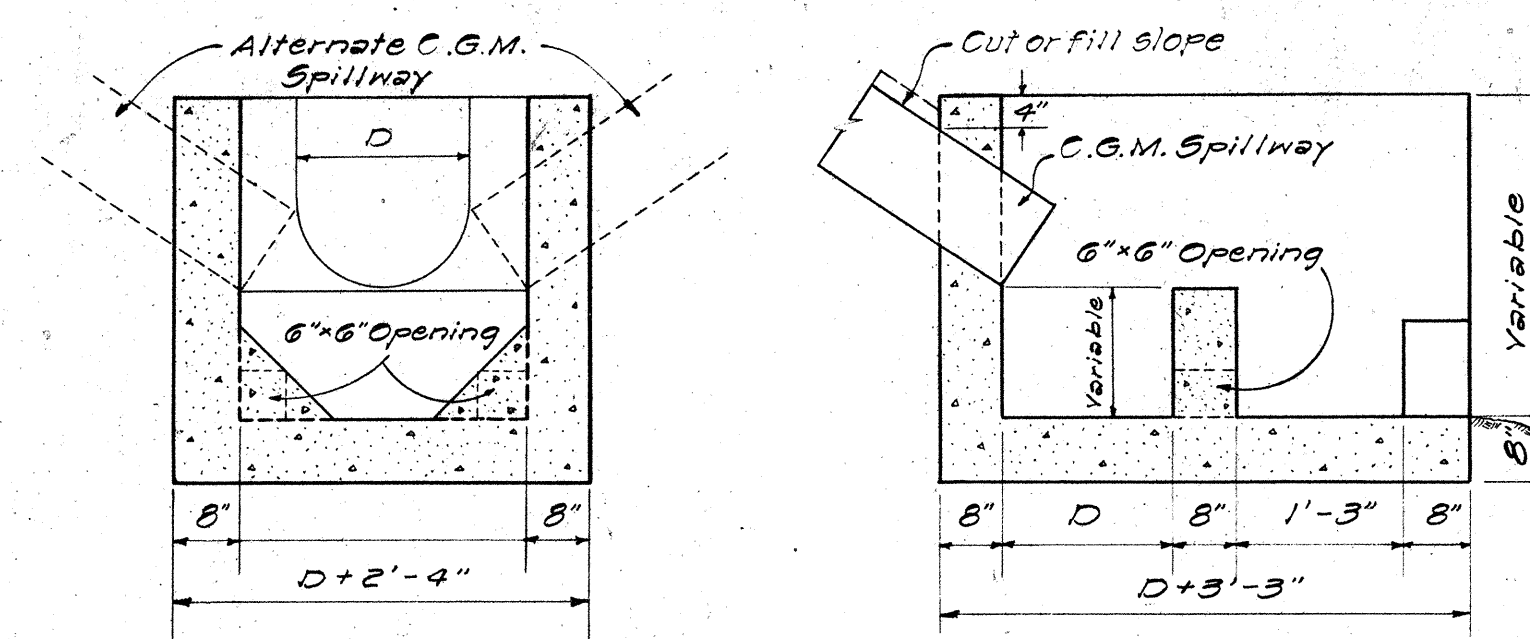
DETAIL OF SPILLWAY INLET
NOT TO SCALE



DETAIL OF STANDARD BAND COUPLER
NOT TO SCALE



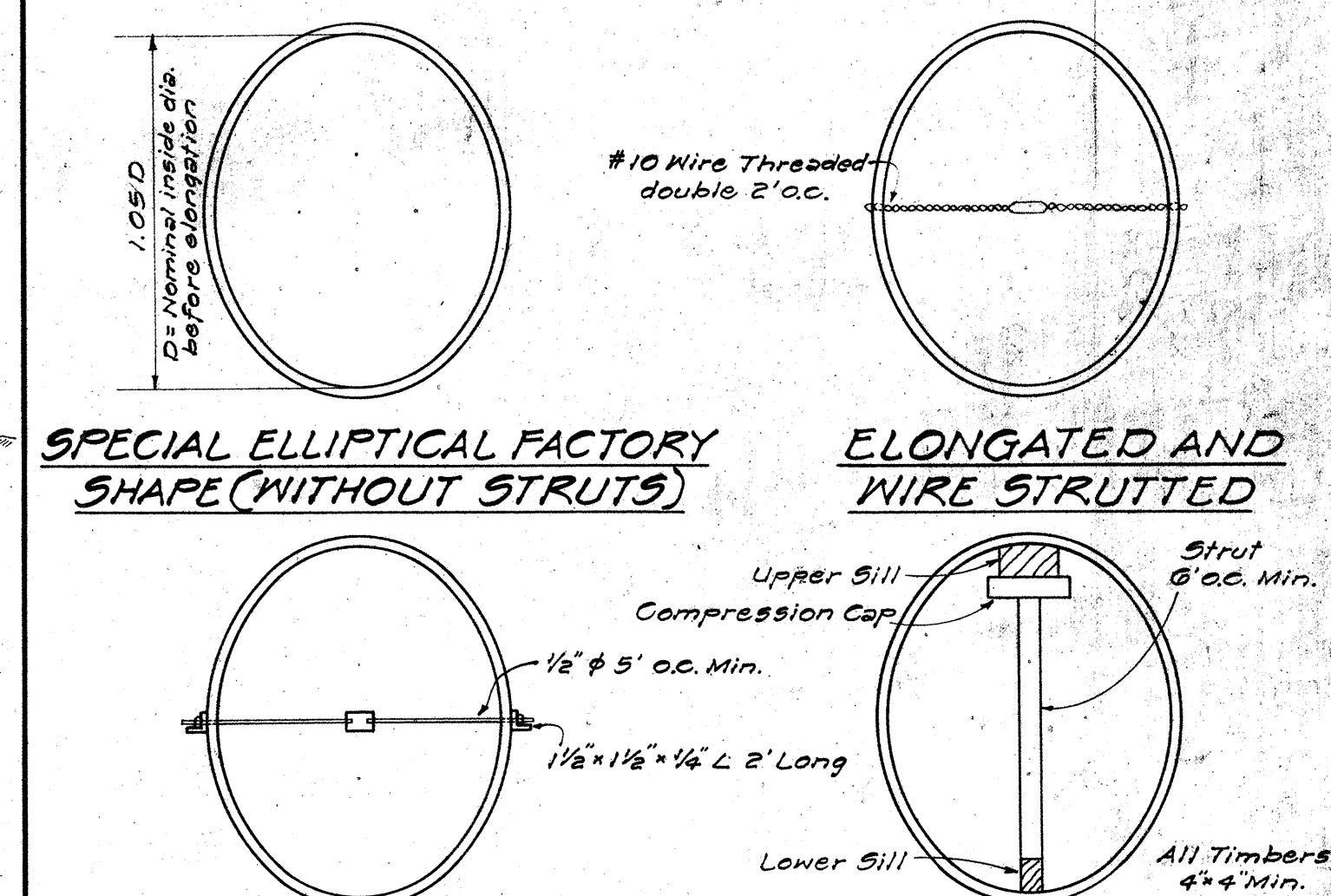
C. G. M. SPILLWAY
NOT TO SCALE



QUANTITIES					
D=	18"	24"	30"		
Struc. Exc.	Cu. Yds.	3.3	4.2	5.1	
Cl. B-1 Conc.	Cu. Yds.	1.5	1.8	2.2	

NOTE: All Concrete to be Class "B-1"

DETAILS OF CONC. DROP BOX AT OUTLET OF C. G. M. SPILLWAY
NOT TO SCALE



ELONGATED WITH ROD AND TURNBUCKLE METHOD OF ELONGATING AND STRUTTING CORRUGATED PIPE
NOT TO SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CORRUGATED GALVANIZED METAL
CULVERTS, SPILLWAYS, AND
SPECIAL DETAILS
SCALES AS NOTED
SHEET NO. 4 OF 4 SHEETS

ORIGINAL PLAN	DATE	5-24-66
SURVEY PLOTTED BY	DATE	5-24-66
TRACED BY	DATE	5-24-66
NOTED BY	DATE	5-24-66
CHECKED BY	DATE	5-24-66
NO.		