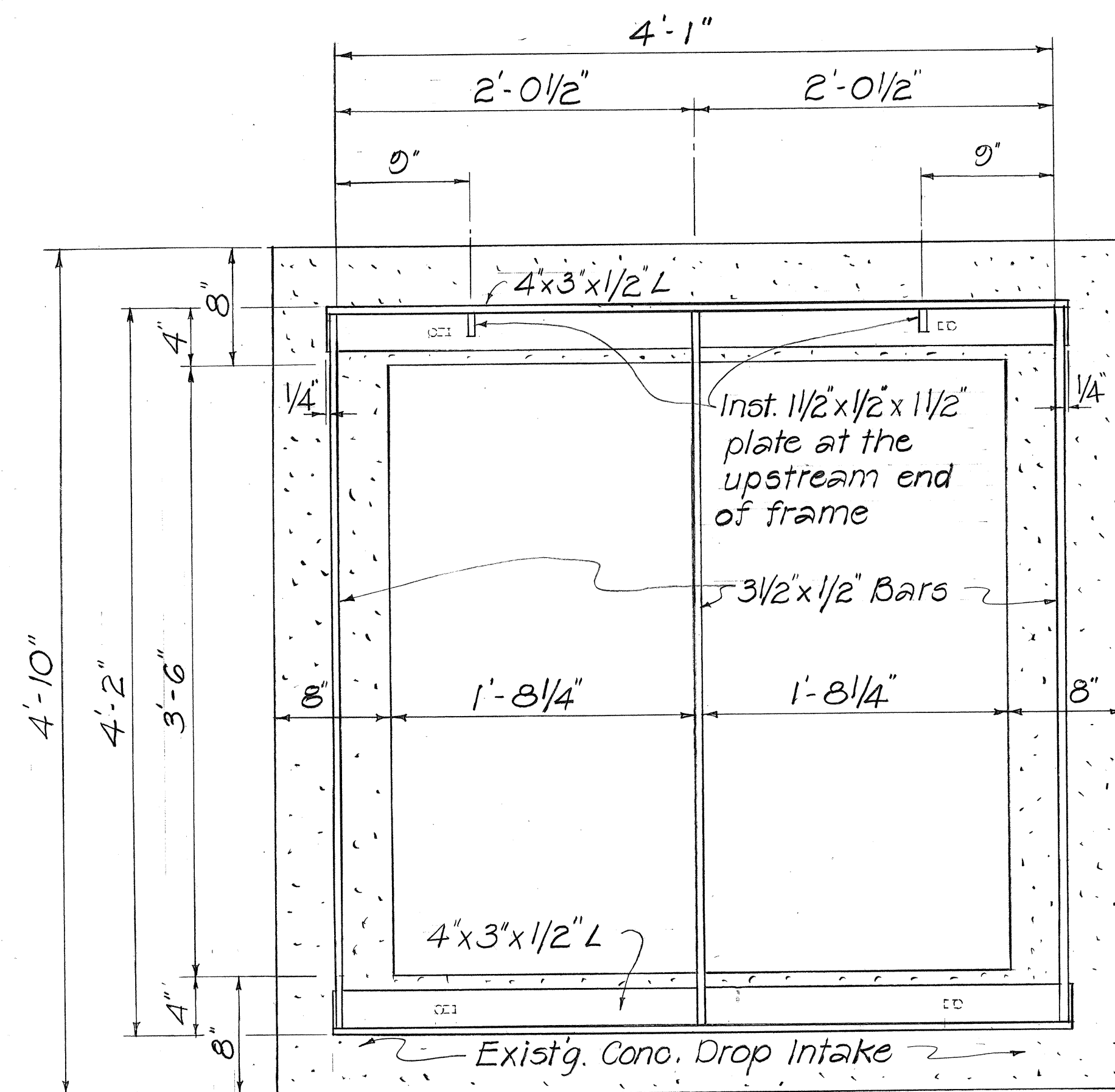
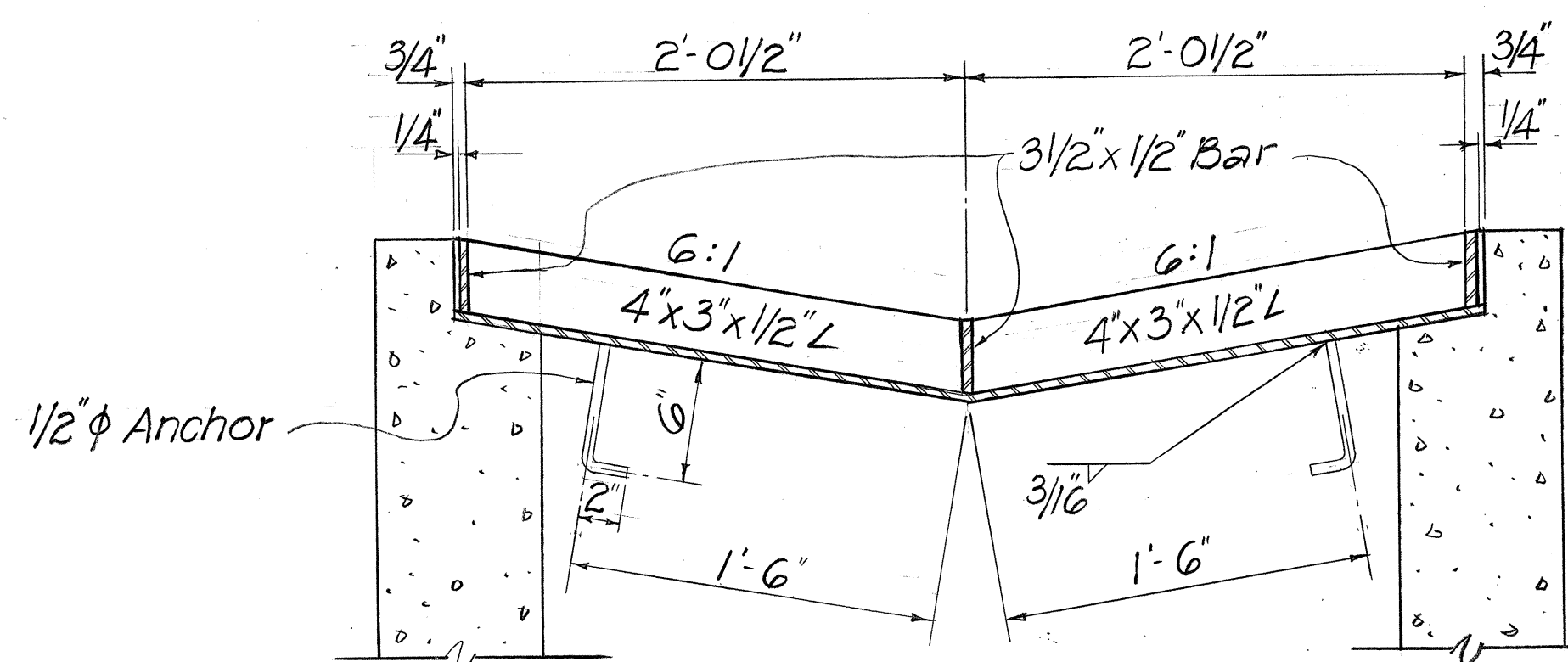


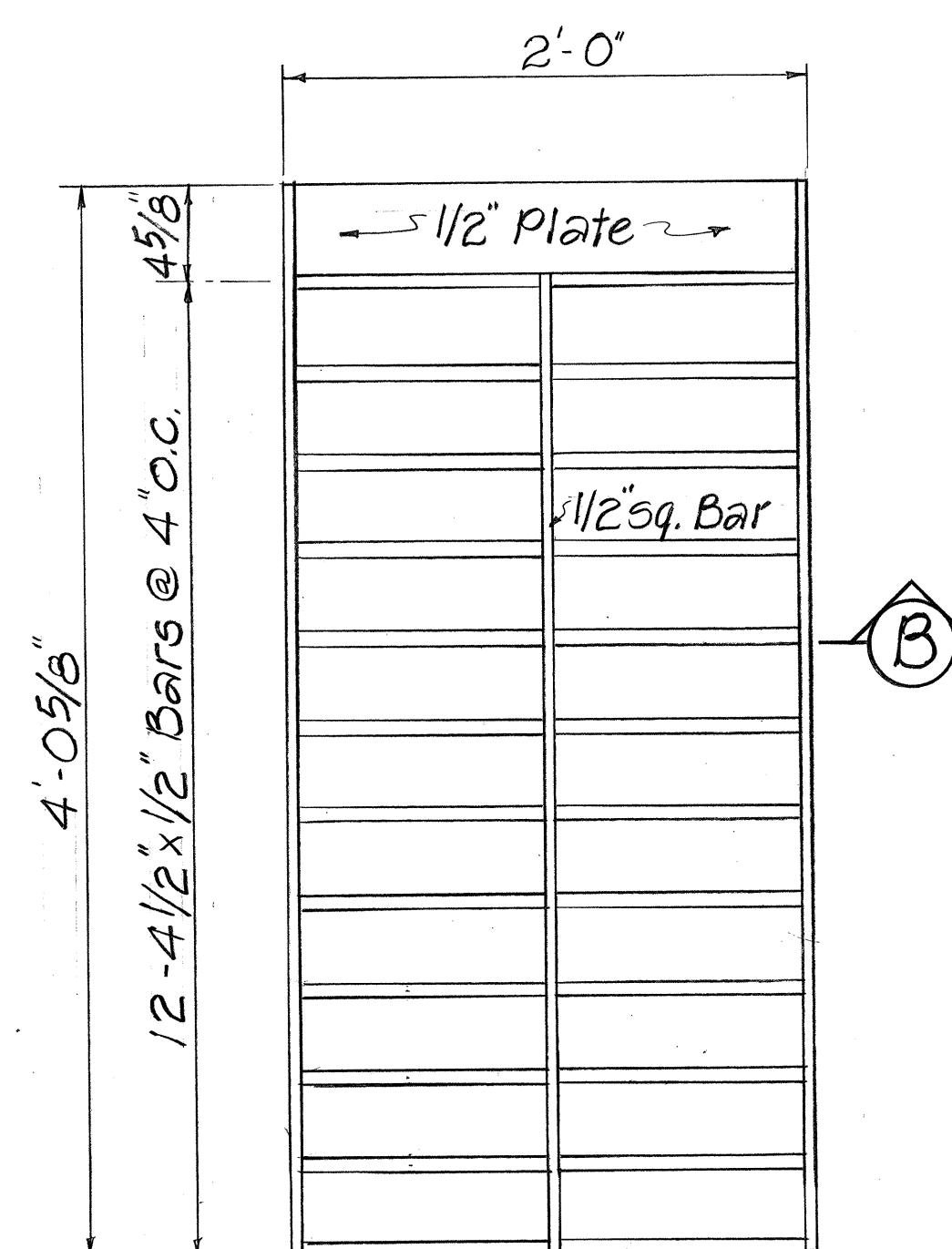
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30C-01-78	1980	32	40



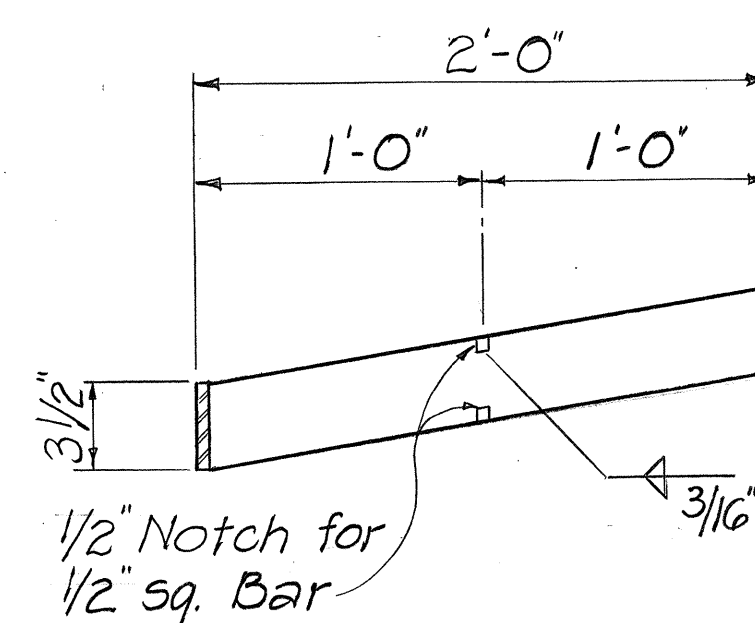
PLAN - FRAME
Scale: 1 1/2" = 1'-0"



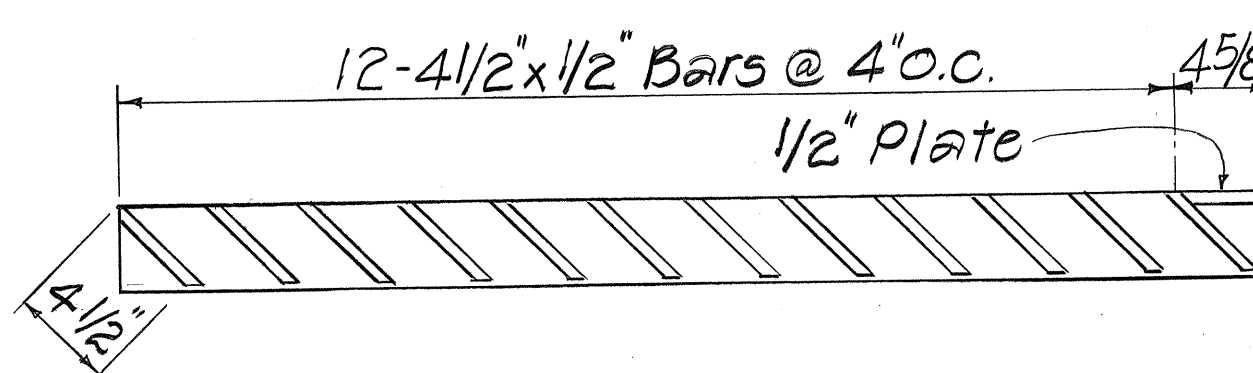
SECTION 'A'
Scale: 1 1/2" = 1'-0"



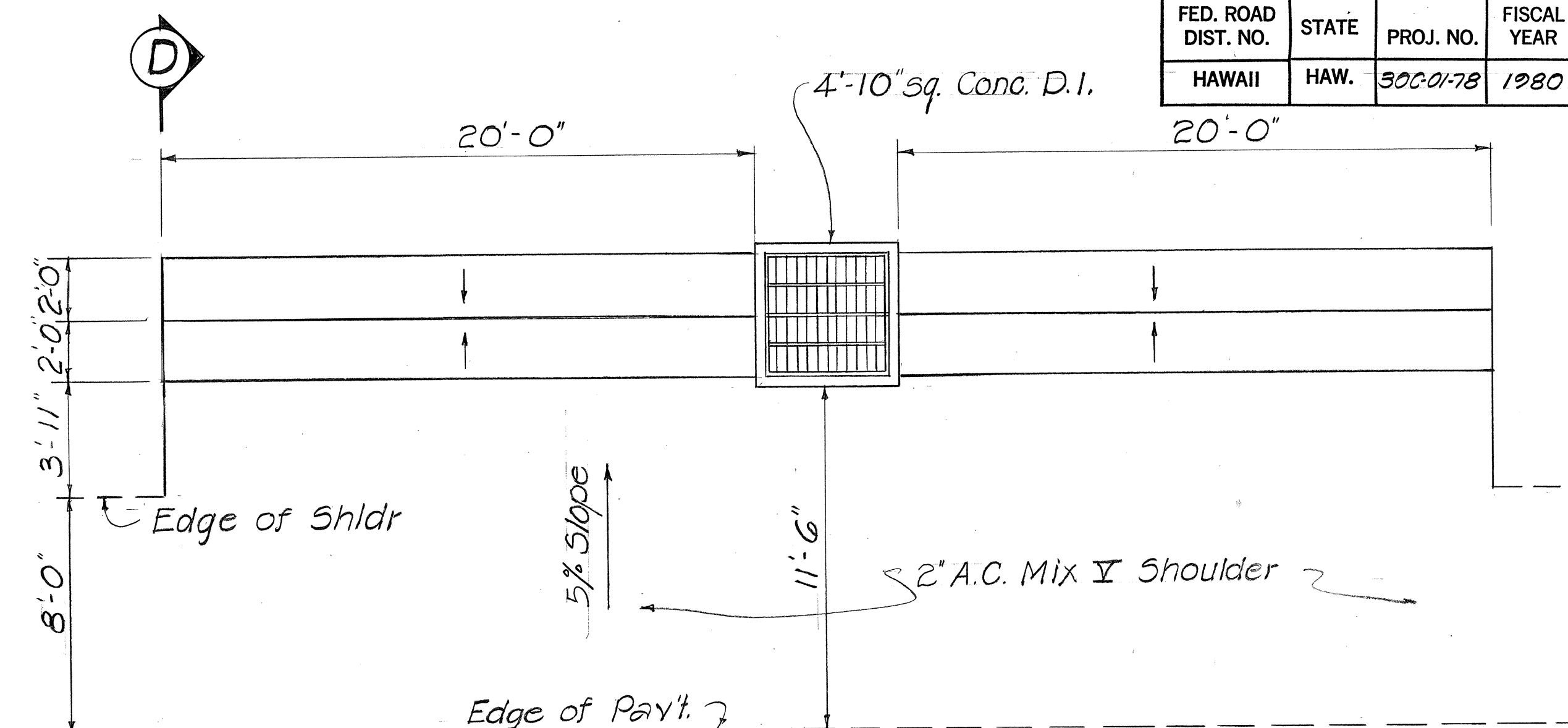
PLAN - GRATE
Scale: 1 1/2" = 1'-0"



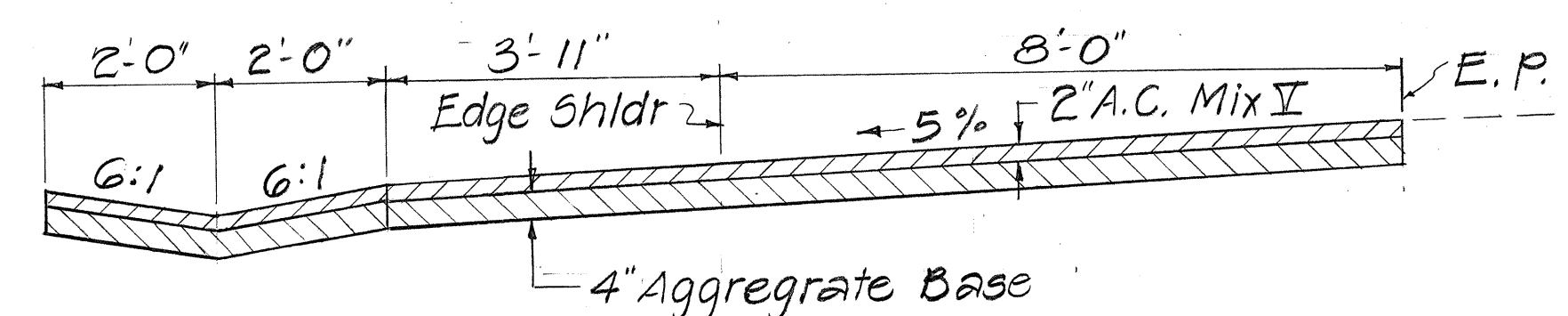
SECTION 'B'
Scale: 1 1/2" = 1'-0"



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



PLAN - STA. 38+25
Scale: 1/4" = 1'-0"



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

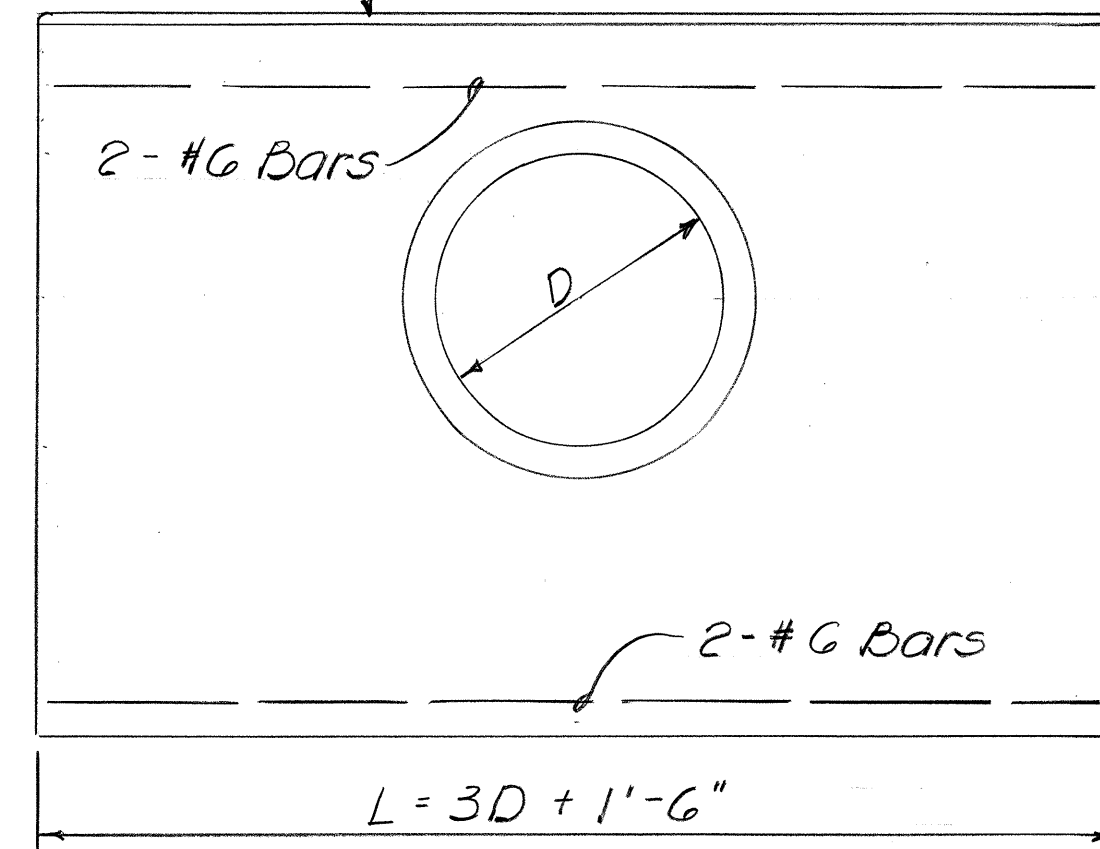
NOTES:

1. Grates and Frames shall be hot dip galvanized after fabrication, see specification.
2. All welds 3/8" unless otherwise noted.
3. The frame and grate materials shall conform to the specifications of ASTM Designation Structural Steel A283, Grade D and the Standard Specifications.
4. Invert of grating shall be determine in the field by the Engineer.
5. All concrete shall be Class A unless otherwise noted
6. Exposed edges of all drainage structures shall be chamfered one inch.
7. All Class A concrete and reinforced steel to be incidental to Reconstruction of Drop Intake Item No. 668.0200

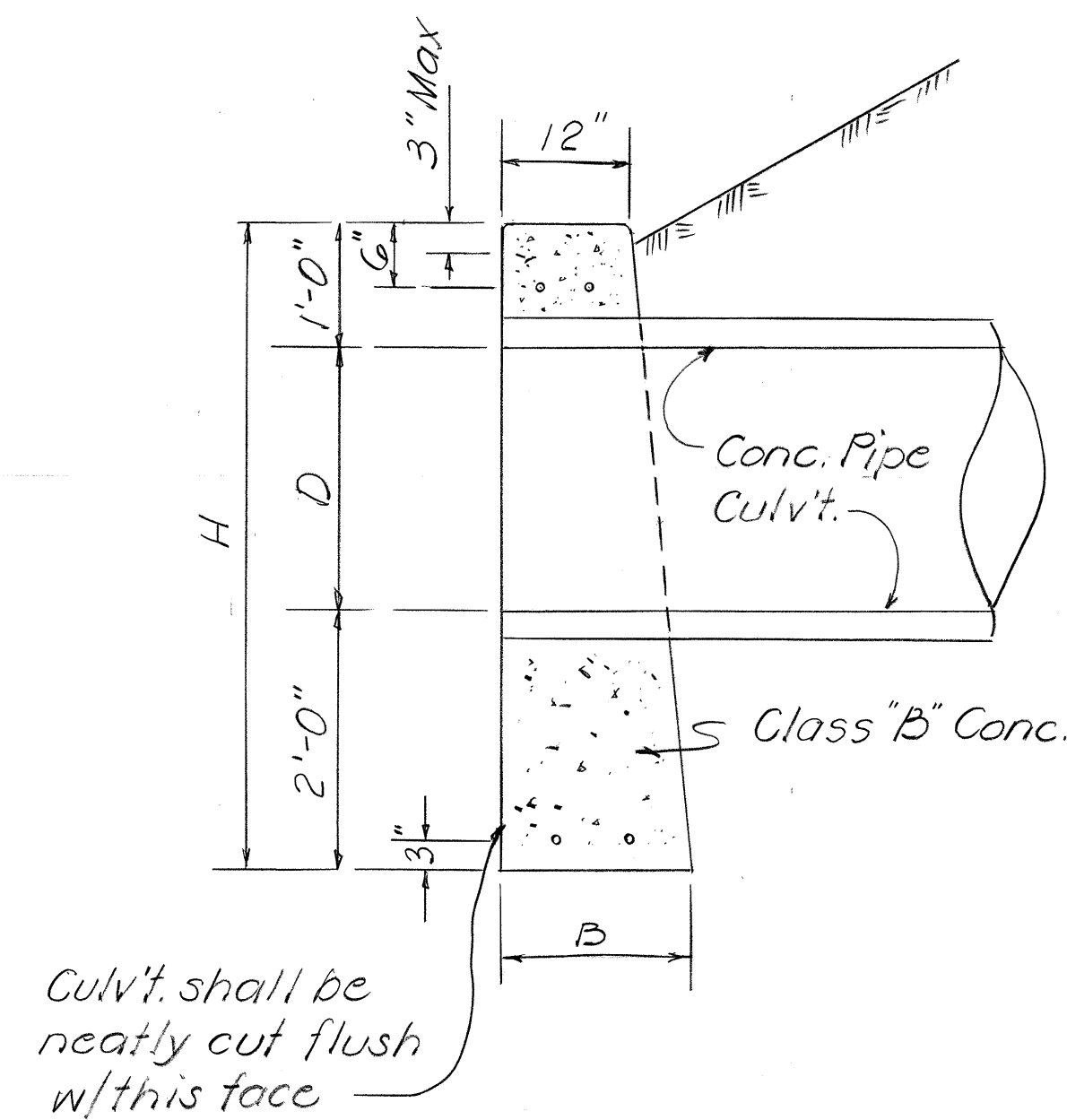
**DETAIL OF TYPE 61614-45°
FRAME & GRATES**
Scale: As shown

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION	
DRAINAGE DETAILS	
HONOAPIILANI HIGHWAY	
PROJ. NO. 30C-01-78	
SCALE: AS SHOWN	MAY 1980
SHEET NO. 1 OF 3 SHEETS	

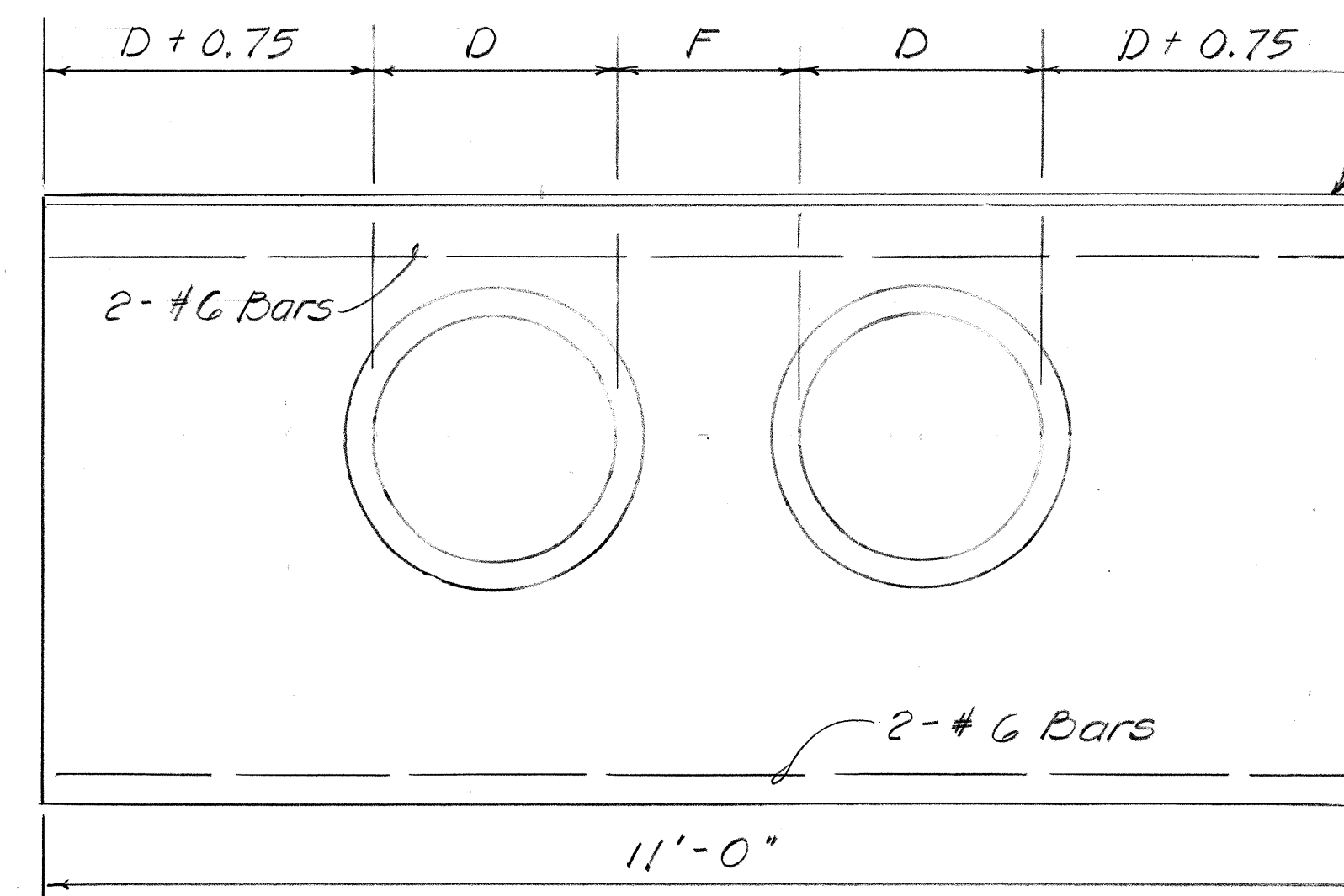
Chamfer all exposed edges one inch



ELEVATION



SECTION



Chamfer all exposed edges one inch

ELEVATION

(TWIN 24" CONCRETE CULVERT PIPE)

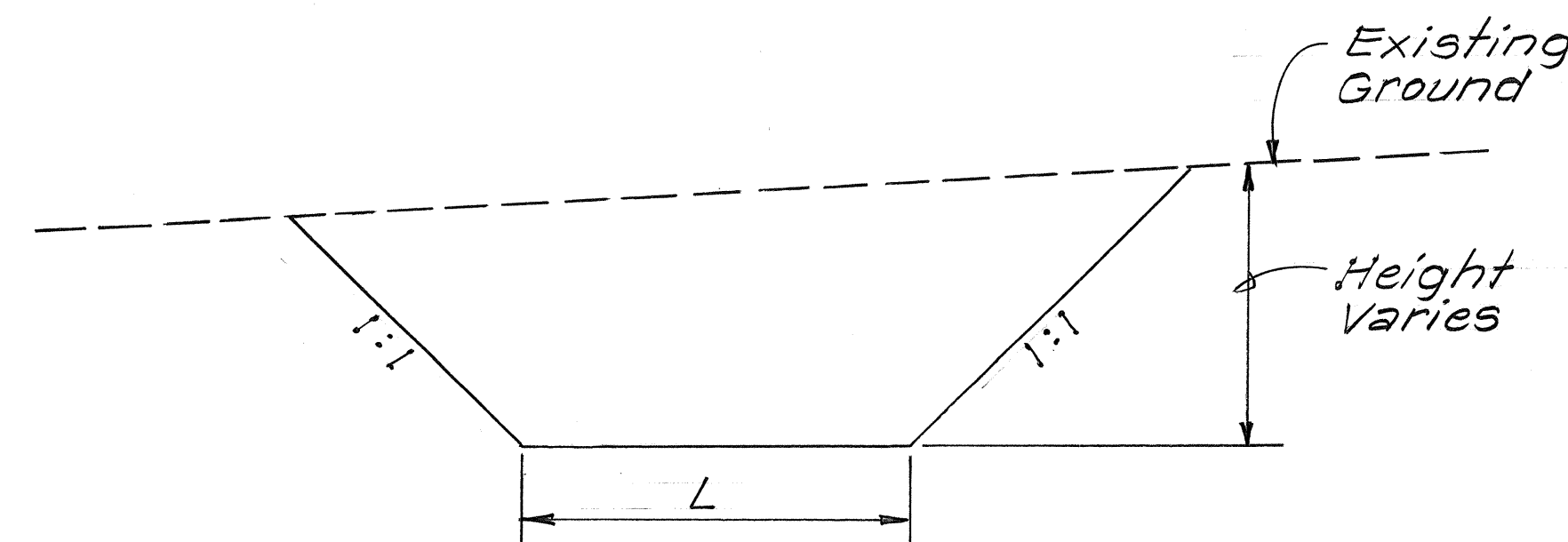
CONCRETE HEADWALL DETAILS

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

DATA FOR CONC. HDWL					
D	B	L	H	F	CL. B CONC. FOR RCP
18"	1'-6"	6'-0"	4'-6"	-	1.12 c.y.
24"	1'-6"	7'-6"	5'-0"	-	1.52 c.y.
30"	2'-0"	9'-0"	5'-6"	-	2.36 c.y.
36"	2'-0"	10'-6"	6'-0"	-	2.94 c.y.
42"	2'-6"	12'-0"	6'-6"	-	4.19 c.y.
48"	2'-6"	13'-6"	7'-0"	-	5.01 c.y.
2-24"	1'-6"	11'-0"	5'-0"	1'-6"	2.30 c.y.

NOTE:

Reinforcing steel to be considered incidental to Class "B" conc. Item No. 503.2010.



TYPICAL DRAINAGE CHANNEL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE DETAILS

HONOAPIILANI HIGHWAY

Proj. No. 30C-01-78

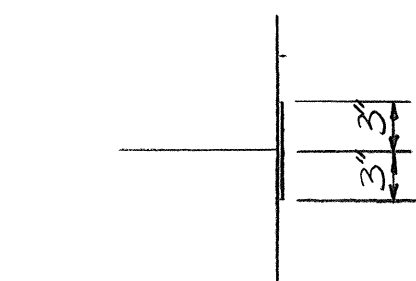
Scale: As Shown May 1980

SHEET NO. 2 OF 3 SHEETS

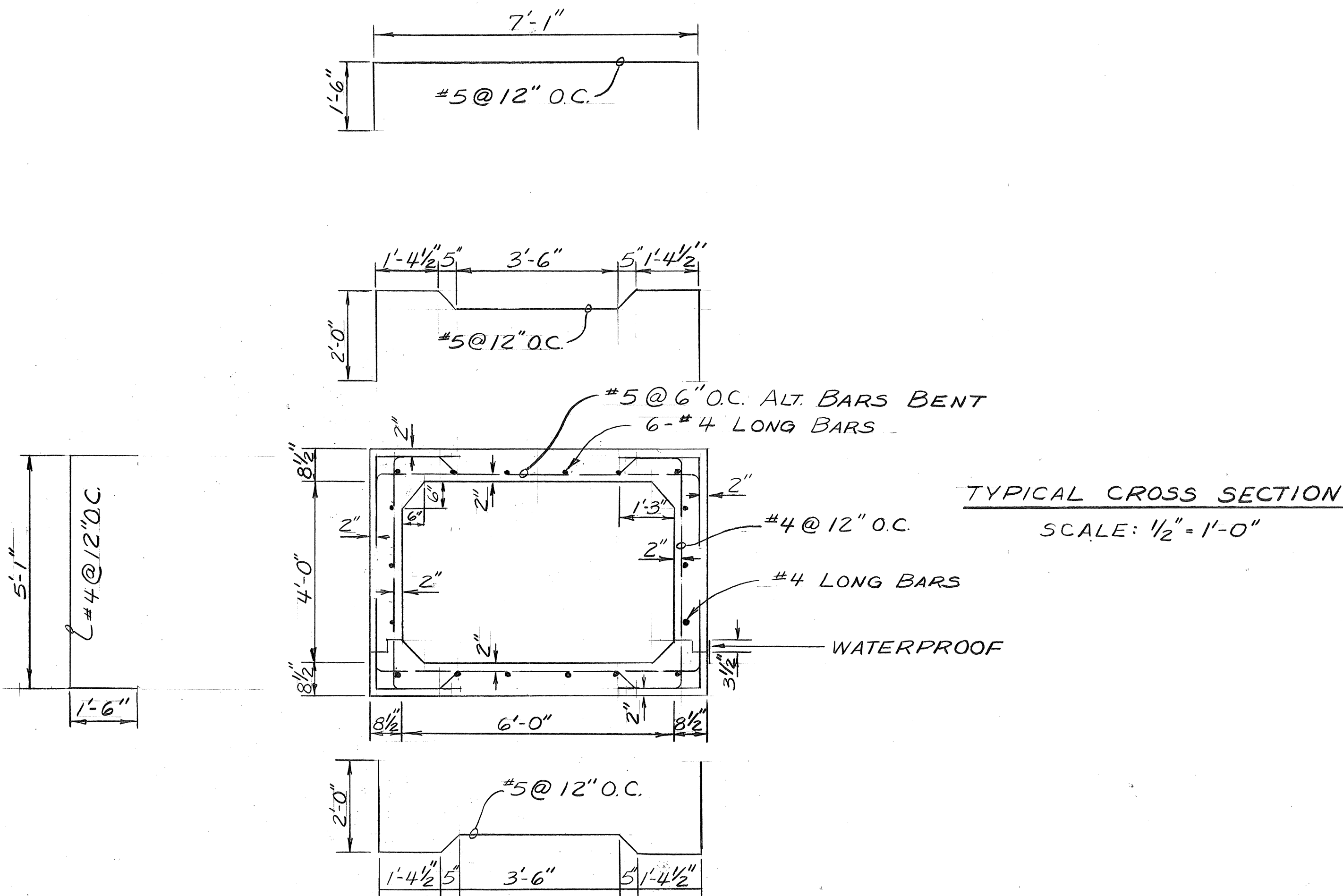
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30C-01-78	1980	34	40

NOTES

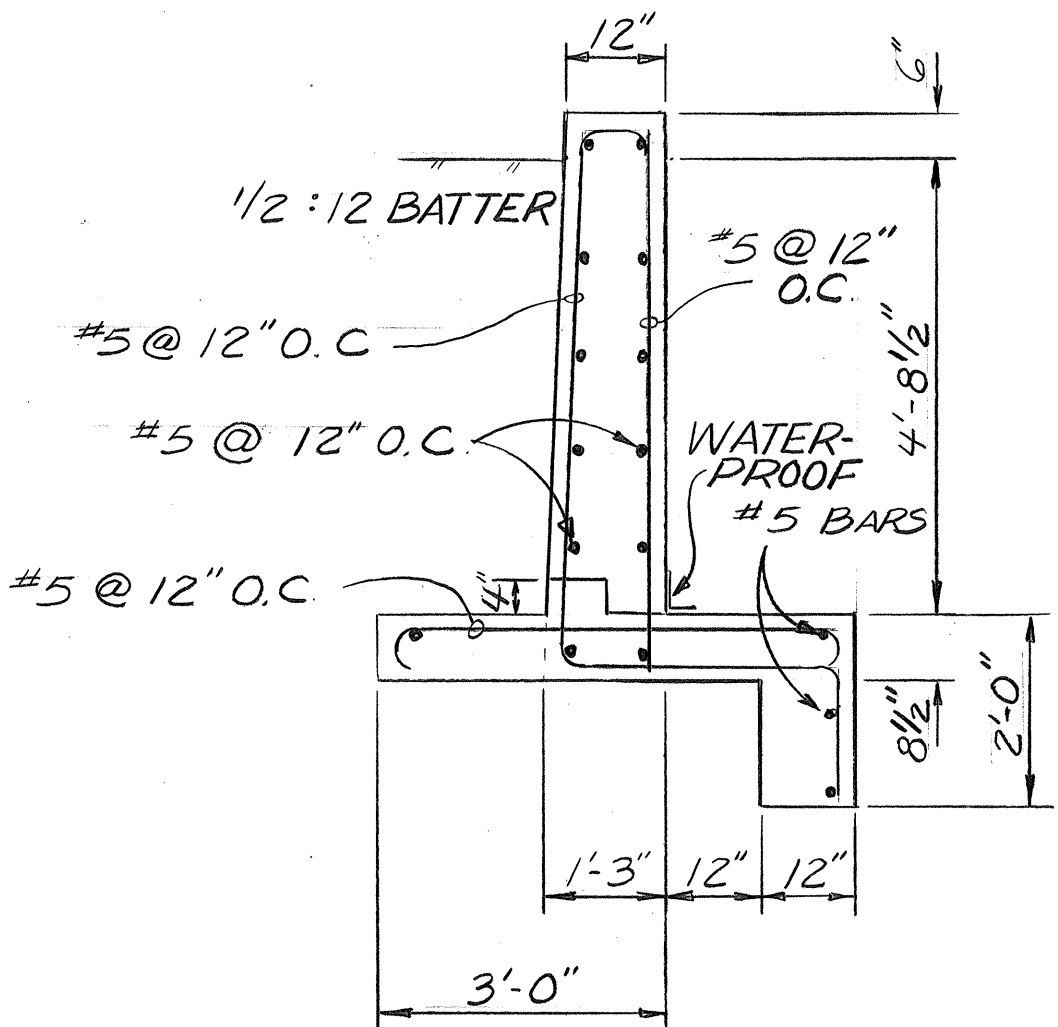
1. EXPOSED EDGES SHALL BE CHAMFERED ONE INCH.
2. ALL CONCRETE SHALL BE CLASS A. TO BE PAID UNDER ITEM 503.1030, CONCRETE IN BOX CULVERT.
3. ALL REINFORCED STEEL TO BE INCIDENTAL TO ITEM 503.1030.
4. ALL EXCAVATION, BACKFILLING, WATERPROOFING ARE INCIDENTAL TO ITEM 503.1030.
5. NOTES 2 AND 3 APPLY TO WINGWALL SECTIONS AND BOX CULVERT SECTION.



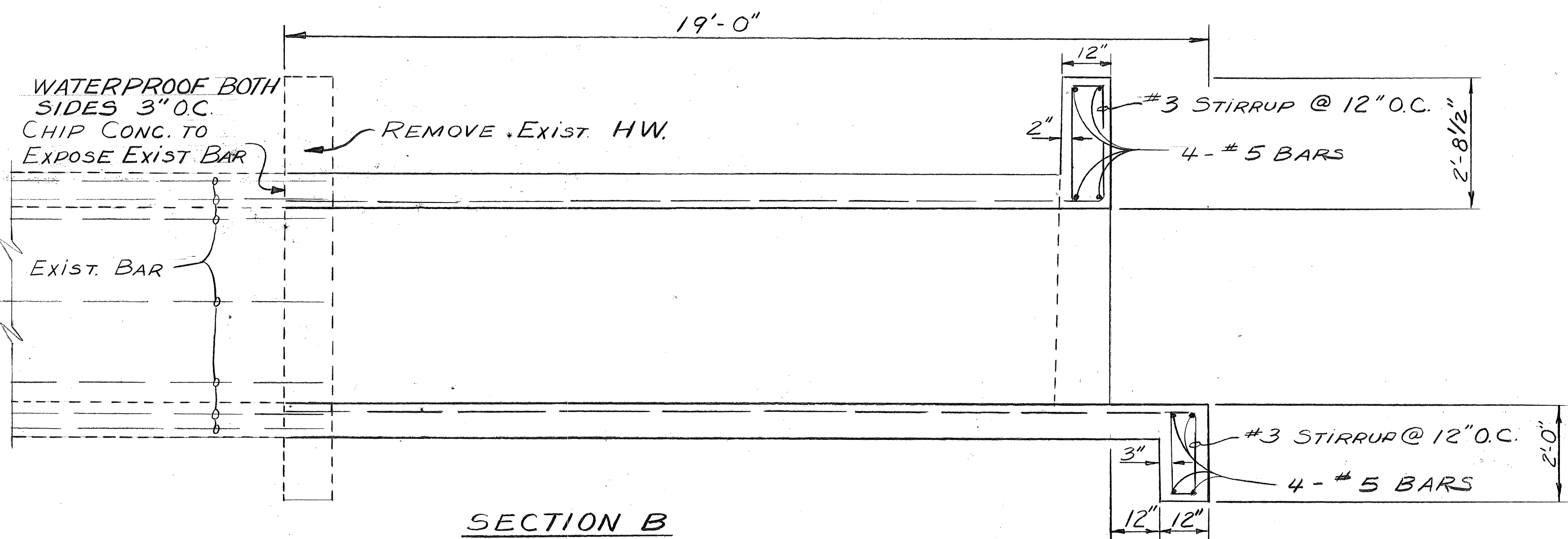
WATERPROOF DETAIL
SCALE: 1"=1'-0"



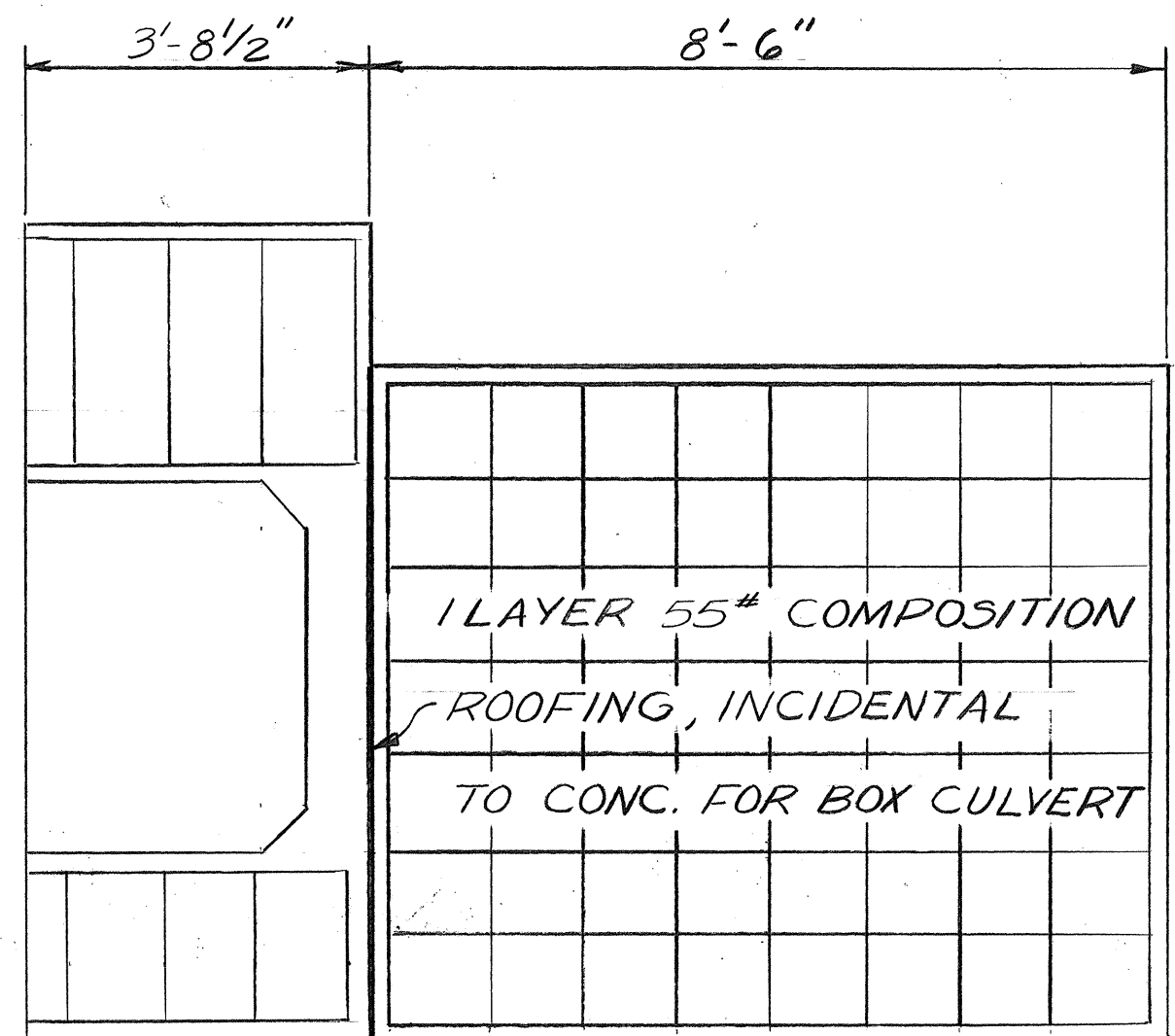
TYPICAL CROSS SECTION
SCALE: 1/2"=1'-0"



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



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



ELEVATION OF HALF BOX CULVERT
AND ONE WINGWALL SECTION
SCALE: 1/2"=1'-0"

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

6' x 4' CONCRETE BOX

CULVERT EXTENSION

STA 132+40, RT.

HONOAPIILANI HIGHWAY

PROJECT NO. 30C-01-78

SCALE: AS SHOWN

MAY 1980

SHEET NO. 3 OF 3 SHEETS

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