STATE	PROJECT NUMBER	SHEET No.	TOTAL SHEETS
GA.	EDF-017-3(39)	114	194

REINFORCING STEEL

BARREL DESIGN NO. 1 — 1.5' TO 12.0' FILL OVER BBL. INCL. PAVING

CLEAR SPAN	CLEAR HEIGHT	"A" BARS SIZE	"A" NO.	"A" LENGTH	"A" SPACING	"B" BARS ½"Φ NO.	"B" LENGTH	"B" SPACING	"C" ½"Φ NO.	"C" LENGTH	"D" ½"Φ NO.	"D" LENGTH
4'	5'	3/4 Ø	2 x ("L" in inches ÷ spacing) + 2 Bars	5'-0"	6½	2 x ("L" in feet) + 2 Bars	6'-0"	12"	12	½ at "L" in Feet + 4'-2" + 2T1 + 2'-0" for each Lap; ½ at "L" in Feet + 5'-10" + 2'-0" for each Lap	10	"L" in Ft. + 4'-6" + 2'-0" for each Lap.
3'	2'	5/8 Ø		3'-8"	5½		2'-10"	12"	8		4	
3'	2'-6"			3'-8"	5½		3'-4"	12"	8		6	
3'	3'			3'-8"	5½		3'-10"	12"	8		6	
4'	2'-6"	3/4" Ø		4'-8"	7½		3'-6"	12"	10		6	
4'	3'			4'-8"	7½		4'-0"	12"	10		6	
4'	4'			5'-0"	7		5'-0"	12"	10		8	
5'	2'-6"			5'-8"	6½		3'-7"	12"	12		6	
5'	3'			5'-8"	6½		4'-1"	12"	12		6	
5'	4'			6'-0"	6½		5'-1"	12"	12		8	
5'	5'			6'-0"	6½		6'-1"	12"	12		10	
6'	3'			6'-10"	6"		4'-2"	12"	14		6	
6'	4'			7'-0"	6"		5'-2"	12"	14		8	
6'	5'			7'-2"	6"		6'-2"	12"	14		10	
6'	6'			7'-2"	5½		7'-2"	12"	14		12	

BARREL DESIGN NO. 2 — FOR 12.1' TO 20.0' FILL

CLEAR SPAN	CLEAR HEIGHT	"A" BARS SIZE	"A" NO.	"A" LENGTH	"A" SPACING	"B" BARS ½"Φ NO.	"B" LENGTH	"B" SPACING	"C" ½"Φ NO.	"C" LENGTH	"D" ½"Φ NO.	"D" LENGTH
4'	5'	7/8 Ø	2 x ("L" in inches ÷ Spacing) + 2 Bars	5'-2"	6"	2 x ("L" in feet) + 2 Bars	6'-2"	12"	12	½ at "L" in feet + 4'-2" + 2T1 + 2'-0" for each Lap; ½ at "L" in feet + 5'-10" + 2'-0" for Each Lap	10	"L" in feet + 4'-6" + 2'-0" for each Lap.
3'	2'	5/8 Ø		3'-8"	5½		2'-10"	12"	8		4	
3'	2'-6"			3'-8"	5½		3'-4"	12"	8		6	
3'	3'			3'-8"	5½		3'-10"	12"	8		6	
4'	2'-6"	3/4" Ø		4'-8"	7½		3'-6"	12"	10		6	
4'	3'			4'-8"	7½		4'-0"	12"	10		6	
4'	4'			5'-0"	7"		5'-0"	12"	10		8	
5'	2'-6"			7'-2"	6½		3'-7"	12"	12		6	
5'	3'			7'-2"	6½		4'-1"	12"	12		6	
5'	4'			7'-6"	6½		5'-1"	12"	12		8	
5'	5'			7'-8"	6"		6'-2"	12"	12		10	
6'	3'	7/8 Ø		8'-6"	7½		4'-3"	12"	14		6	
6'	4'			8'-8"	7"		5'-3"	12"	14		8	
6'	5'			8'-10"	7½		6'-4"	12"	14		10	
6'	6'			9'-0"	7"		7'-4"	12"	14		12	

WING WALLS AND PARAPETS SAME FOR ALL DEPTHS OF FILL — "E" BARS ½"Φ AT 12" C. TO C. — 4 BARS OF EACH LENGTH

CLEAR SPAN	CLEAR HEIGHT												
4'	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"		
3'	2'	5'-4"	5'-3"	4'-10"	4'-5"	4'-1"	3'-8"						
3'	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"					
3'	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"					
4'	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"					
4'	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"					
4'	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"			
5'	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"					
5'	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"					
5'	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"			
5'	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"		
6'	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"					
6'	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"			
6'	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"		
6'	6'	9'-6"	9'-4"	9'-0"	8'-7"	8'-2"	7'-9"	7'-4"	7'-0"	6'-7"	6'-2"	5'-9"	5'-5"

"F" BARS ½"Φ AT 12" C. TO C. — 4 BARS OF EACH LENGTH; K ½"Φ

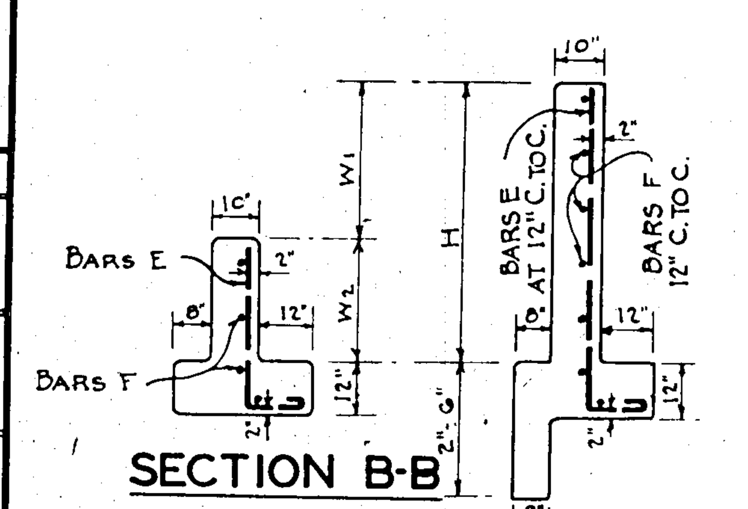
CLEAR SPAN	CLEAR HEIGHT										K NO.	K LENGTH
4'	5'	9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	6'-3"
3'	2'	5'-2"	5'-2"	5'-2"	3'-9"	1'-3"					4	5'-3"
3'	2'-6"	6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	5'-3"
3'	3'	6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	5'-3"
4'	2'-6"	6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	6'-3"
4'	3'	6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	6'-3"
4'	4'	8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	6'-3"
5'	2'-6"	6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	7'-3"
5'	3'	6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	7'-3"
5'	4'	8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	7'-3"
5'	5'	9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	7'-3"
6'	3'	6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	8'-3"
6'	4'	8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	8'-3"
6'	5'	9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	8'-3"
6'	6'	11'-2"	11'-2"	11'-2"	11'-2"	11'-2"	9'-0"	6'-7"	4'-1"	1'-7"	4	8'-3"

DIMENSIONS

CLEAR SPAN	CLEAR HEIGHT	BARREL DESIGN NO. 1 T1	T2	V	H	W1	BARREL DESIGN NO. 2 T1	T2	V	H	W1	FOR ALL DESIGNS P	R	W2	M
4'	5'	8½"	8"	6'-4"	6'-2½"	3'-8½"	9"	9"	6'-6"	6'-3"	3'-9"	5'-4" / 5'-6"	6'-7"	2'-6"	9'-0"
3'	2'	7"	6"	3'-2"	3'-1"	1'-9½"	7"	6"	3'-2"	3'-1"	1'-9½"	4'-0"	5'-7"	1'-3½"	4'-6"
3'	2'-6"	7"	6"	3'-8"	3'-7"	2'-2"	7"	6"	3'-8"	3'-7"	2'-2"	4'-0"	5'-7"	1'-5"	5'-6"
3'	3'	7"	6"	4'-2"	4'-1"	2'-3½"	7"	6"	4'-2"	4'-1"	2'-3½"	4'-0"	5'-7"	1'-9½"	6'-0"
4'	2'-6"	8"	6"	3'-10"	3'-8"	2'-3"	8"	6"	3'-10"	3'-8"	2'-3"	5'-0"	6'-7"	1'-5"	5'-6"
4'	3'	8"	6"	4'-4"	4'-2"	2'-4½"	8"	6"	4'-4"	4'-2"	2'-4½"	5'-0"	6'-7"	1'-9½"	6'-0"
4'	4'	8"	8"	5'-4"	5'-2"	2'-11½"	8"	8"	5'-4"	5'-2"	2'-11½"	5'-4"	6'-7"	2'-2½"	7'-6"
5'	2'-6"	8½"	6"	3'-11"	3'-8½"	2'-3½"	8½"	6"	3'-11"	3'-8½"	2'-3½"	6'-0"	7'-7"	1'-5"	5'-6"
5'	3'	8½"	6"	4'-5"	4'-2½"	2'-5"	8½"	6"	4'-5"	4'-2½"	2'-5"	6'-0"	7'-7"	1'-9½"	6'-0"
5'	4'	8½"	8"	5'-5"	5'-2½"	3'-0"	8½"	8"	5'-5"	5'-2½"	3'-0"	6'-4"	7'-7"	2'-2½"	7'-6"
5'	5'	8½"	8"	6'-5"	6'-2½"	3'-8½"	9"	9"	6'-6"	6'-3"	3'-9"	6'-4" / 6'-6"	7'-7"	2'-6"	9'-0"
6'	3'	9"	7"	4'-6"	4'-3"	2'-4½"	9½"	7"	4'-7"	4'-3½"	2'-5"	7'-2"	8'-7"	1'-10½"	6'-0"
6'	4'	9"	8"	5'-6"	5'-3"	3'-0½"	9½"	8"	5'-7"	5'-3½"	3'-1"	7'-4"	8'-7"	2'-2½"	7'-6"
6'	5'	9"	9"	6'-6"	6'-3"	3'-9"	10"	9"	6'-8"	6'-4"	3'-10"	7'-6"	8'-7"	2'-6"	9'-0"
6'	6'	9"	9"	7'-6"	7'-3"	4'-3"	10"	10"	7'-8"	7'-4"	4'-4"	7'-6" / 7'-8"	8'-7"	3'-0"	10'-6"

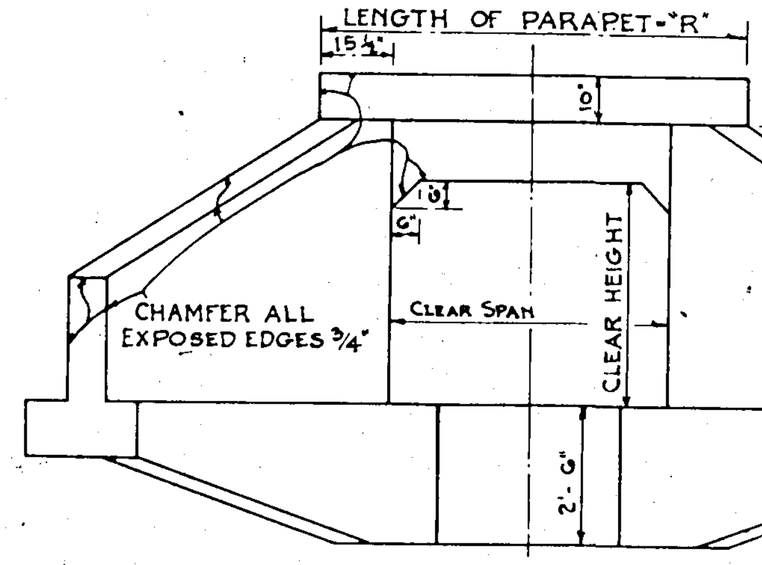
QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	REINFORCING STEEL: LBS. PER LIN. FT. OF BARREL DESIGN NO. 1	DESIGN NO. 2	WINGWALLS & PARAPETS TOTAL LBS.	CONCRETE: CU. YDS. PER LIN. FT. OF BARREL DESIGN NO. 1	DESIGN NO. 2	WINGWALLS & PARAPETS TOTAL CU. YDS. DES. 1	DES. 2	CLEAR HEIGHT	CLEAR SPAN
4'	5'	52.6	65.5	352	0.539	0.596	12.33	12.42	5'	4'
3'	2'	30.2	30.2	143	0.256	0.256	5.71	5.71	2'	3'
3'	2'-6"	32.4	32.4	176	0.275	0.275	6.73	6.73	2'-6"	3'
3'	3'	33.1	33.1	202	0.293	0.293	7.53	7.53	3'	3'
4'	2'-6"	40.2	40.2	179	0.349	0.349	7.11	7.11	2'-6"	4'
4'	3'	40.9	40.9	205	0.367	0.367	7.91	7.91	3'	4'
4'	4'	47.3	47.3	283	0.470	0.470	10.03	10.03	4'	4'
5'	2'-6"	51.0	59.5	181	0.417	0.417	7.47	7.47	2'-6"	5'
5'	3'	51.7	60.2	203	0.435	0.435	8.27	8.27	3'	5'
5'	4'	56.5	65.0	286	0.539	0.539	10.39	10.39	4'	5'
5'	5'	59.5	72.4	362	0.588	0.648	12.66	12.75	5'	5'
6'	3'	63.1	78.1	210	0.537	0.559	8.68	8.72	3'	6'
6'	4'	67.0	86.6	288	0.614	0.637	10.76	10.80	4'	6'
6'	5'	71.0	86.3	365	0.704	0.750	13.07	13.16	5'	6'
6'	6'	77.7	94.9	470	0.759	0.853	15.73	15.89	6'	6'

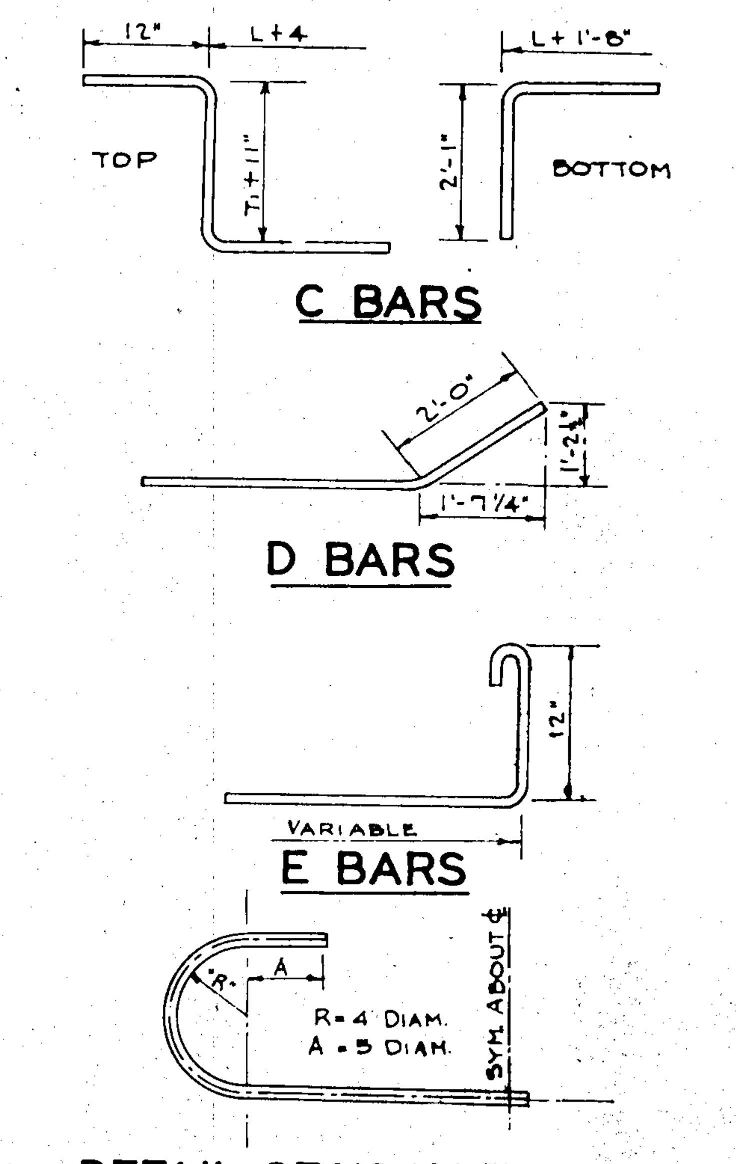


SECTION B-B

SECTION A-A



END ELEVATION



DETAIL OF HOOK FOR A BARS
REQUIRED FOR 5' & 6' CLEAR SPANS FOR DESIGN No. 2

BENDING DIAGRAMS

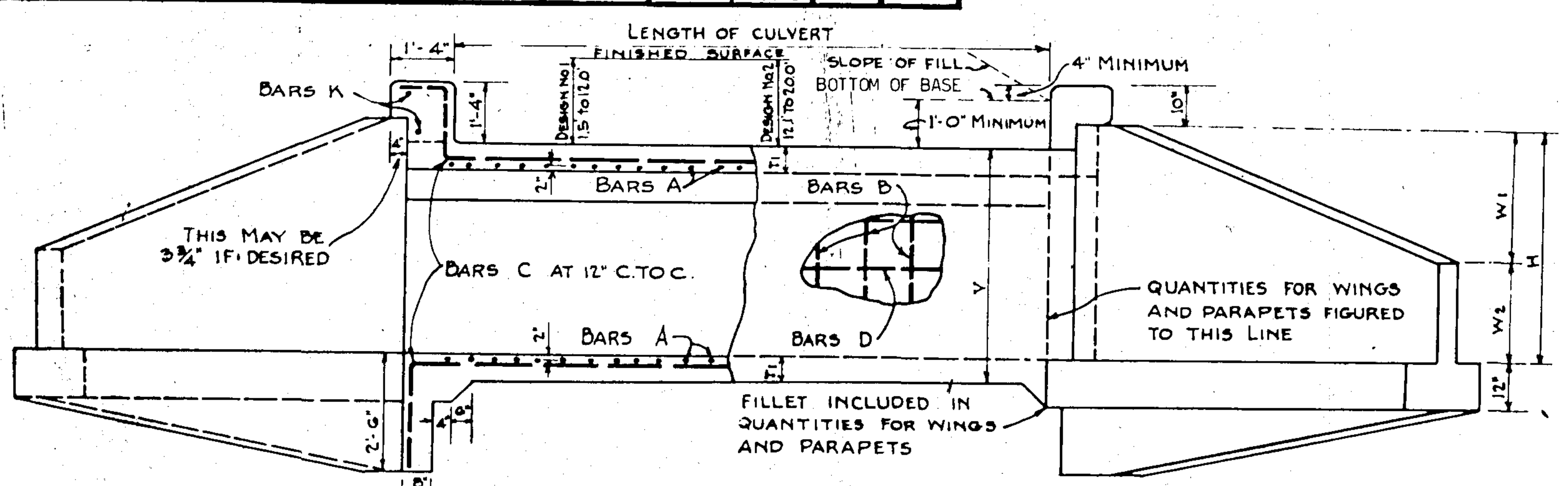
GENERAL NOTES

CHAMFER - CHAMFER ALL EXPOSED EDGES 3/4".

QUANTITIES - QUANTITIES FOR STEEL SHOWN ON THIS SHEET COMPUTED CONSIDERING ALL A, B, C, AND D BARS AS PART OF BARREL QUANTITIES. STEEL PER LINEAR FOOT IS AN AVERAGE VALUE FOR A CULVERT OF 40' LENGTH ALLOWING ONE LAP IN LONGITUDINAL BAR.

SIZE OF CULVERTS - IN DESIGNATING SIZES OF CULVERTS STATE CLEAR SPAN FIRST, I.E., A 6'x4' CULVERT HAS A 6' CLEAR SPAN AND A 4' CLEAR HEIGHT.
L = LENGTH OF CULVERT = DISTANCE BETWEEN BACKS OF PARAPETS.

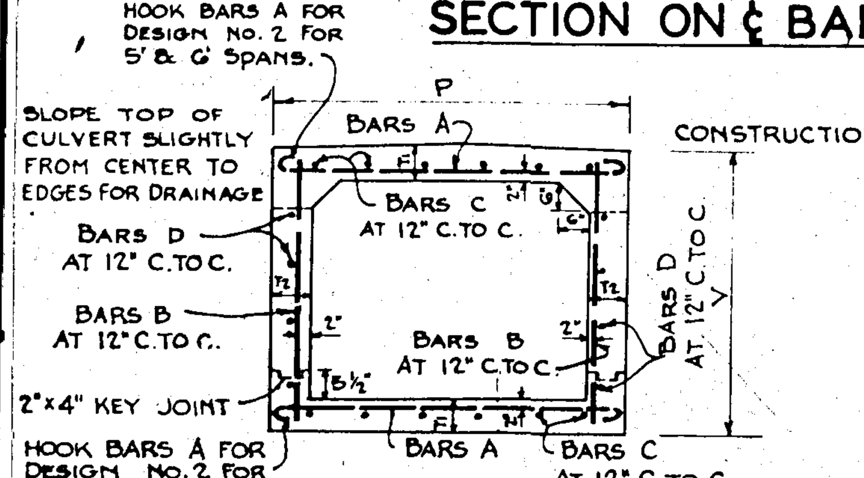
COVER - CULVERT TO HAVE MINIMUM COVER OF 1.0' BELOW BOTTOM OF BASE OR CONCRETE PAVEMENT.



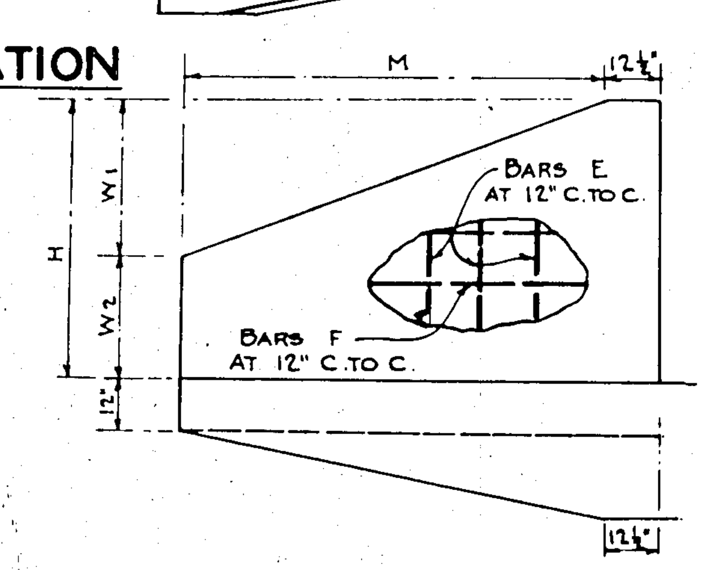
SECTION ON ℄ BARREL

ELEVATION

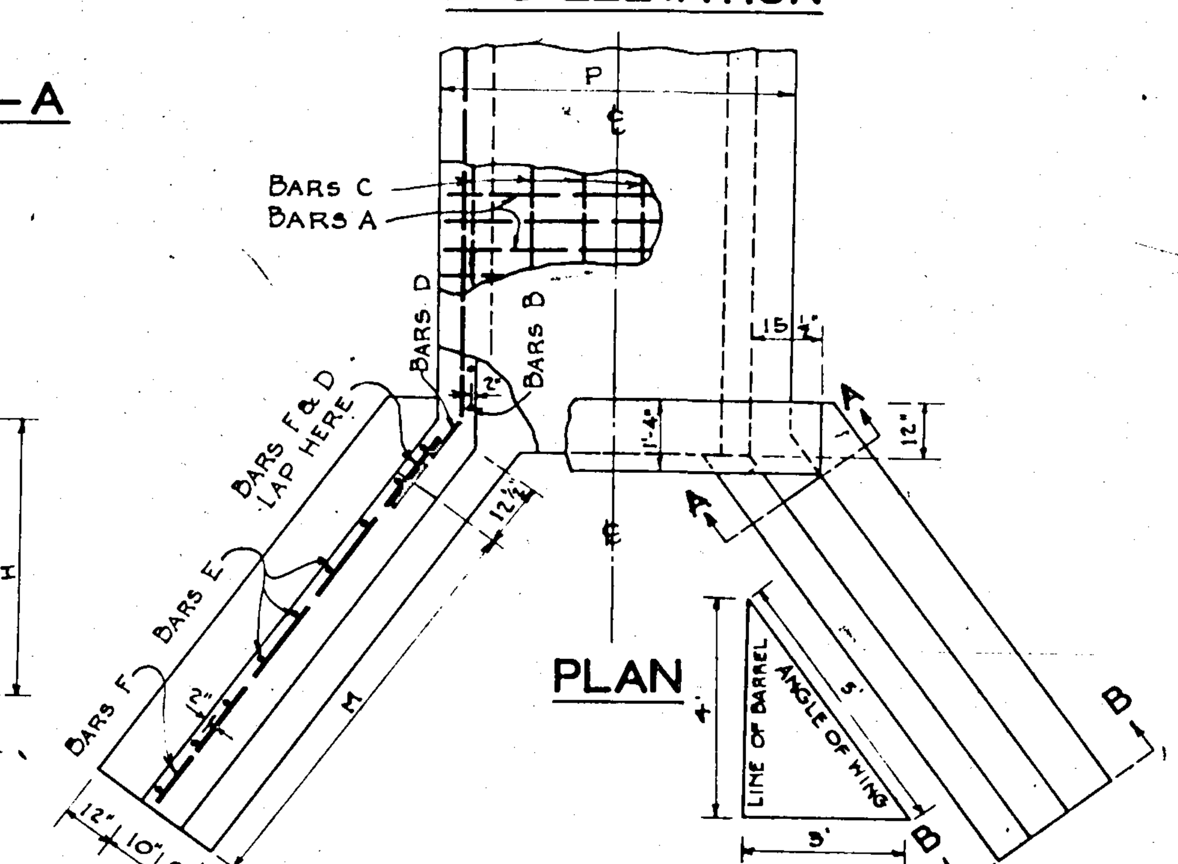
SIDE VIEW



SECTION OF BARREL



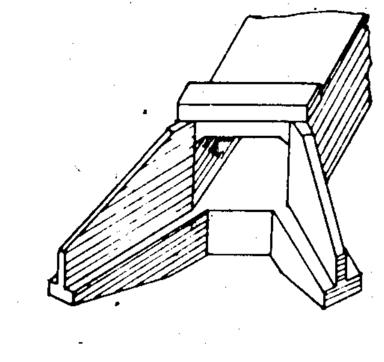
ELEVATION OF WING



PLAN

DESIGN DATA

LOADING - TYPICAL HS 20-44 AND/OR MILITARY LOADING



DATE	REVISIONS	BY
4-22-69	QUANTITIES	G.H.S.-A.J.H.
2-26-80	ADD 4'x5', REM. 2'x2'	R.M.U.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

S T A N D A R D
REINFORCED CONCRETE BOX CULVERTS
SINGLE 3'x2' TO SINGLE 6'x6'
FOR DEPTHS OF FILL UP TO 20 FT.

NO SCALE — DECEMBER 1959

DESIGNED R.B.R.
TRACED
CHECKED O.P.G., JR.-W.C.H.
REVISED

SUBMITTED [signature]
APPROVED M.L. Shadburn

NUMBER 2321