STATE	PROJECT NUMBER	SHEET No.	TOTAL SHEETS
GA.	TSAP193(1)	54	135

DELETED 5-19-83

REINFORCING STEEL

CLEAR SPAN	CLEAR HEIGHT	BARREL DESIGN NO. 1 — 1.5' TO 12.0' FILL OVER BBL. INCL. PAVING — "A" BARS SIZE	"A" BARS NO.	"A" BARS LENGTH	"A" BARS SPACING	"B" BARS ½"Φ NO.	"B" BARS LENGTH	"B" BARS SPACING	"C" ½"Φ NO.	"C" LENGTH	"D" ½"Φ NO.	"D" LENGTH	BARREL DESIGN NO. 2 — FOR 12.1' TO 20.0' FILL — "A" BARS SIZE	"A" BARS NO.	"A" BARS LENGTH	"A" BARS SPACING	"B" BARS ½"Φ NO.	"B" BARS LENGTH	"B" BARS 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.	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		5/8"Ø		3'-8"	5½		2'-10"	12"	8		4	
	2'-6"			3'-8"	5½		3'-4"	12"	8		6				3'-8"	5½		3'-4"	12"	8		6	
	3'			3'-8"	5½		3'-10"	12"	8		6				3'-8"	5½		3'-10"	12"	8		6	
4'	2'-6"	3/4"Ø		4'-8"	7½		3'-6"	12"	10		6		3/4"Ø		4'-8"	7½		3'-6"	12"	10		6	
	3'			4'-8"	7½		4'-0"	12"	10		6				4'-8"	7½		4'-0"	12"	10		6	
	4'			5'-0"	7"		5'-0"	12"	10		8				5'-0"	7"		5'-0"	12"	10		8	
5'	2'-6"			5'-8"	6½		3'-7"	12"	12		6				7'-2"	6½		3'-7"	12"	12		6	
	3'			5'-8"	6½		4'-1"	12"	12		6				7'-2"	6½		4'-1"	12"	12		6	
	4'			6'-0"	6½		5'-1"	12"	12		8				7'-6"	6½		5'-1"	12"	12		8	
	5'			6'-0"	6½		6'-1"	12"	12		10				7'-8"	6"		6'-2"	12"	12		10	
6'	3'			6'-10"	6"		4'-2"	12"	14		6		7/8"Ø		8'-6"	7½		4'-3"	12"	14		6	
	4'			7'-0"	6"		5'-2"	12"	14		8				8'-8"	7"		5'-3"	12"	14		8	
	5'			7'-2"	6"		6'-2"	12"	14		10				8'-10"	7½		6'-4"	12"	14		10	
	6'			7'-2"	5½		7'-2"	12"	14		12				9'-0"	7"		7'-4"	12"	14		12	

WING WALLS AND PARAPETS SAME FOR ALL DEPTHS OF FILL

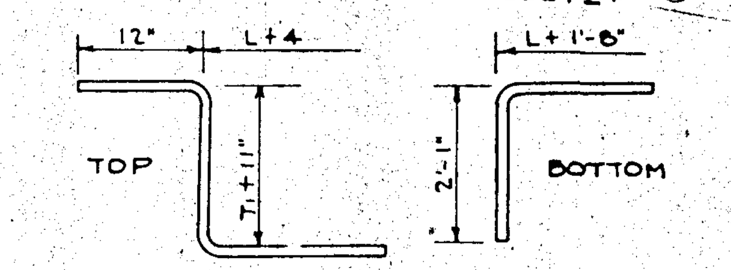
CLEAR SPAN	CLEAR HEIGHT	"E" BARS ½"Φ AT 12" C. TO C. — 4 BARS OF EACH LENGTH												"F" BARS ½"Φ AT 12" C. TO C. — 4 BARS OF EACH LENGTH									K ½"Φ NO.	K ½"Φ LENGTH
4'	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"			9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	6'-3"
3'	2'	5'-4"	5'-3"	4'-10"	4'-5"	4'-1"	3'-8"							5'-2"	5'-2"	5'-2"	3'-9"	1'-3"					4	5'-3"
	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"						6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	5'-3"
	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"						6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	5'-3"
4'	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"						6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	6'-3"
	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"						6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	6'-3"
	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"				8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	6'-3"
5'	2'-6"	5'-10"	5'-9"	5'-4"	5'-0"	4'-7"	4'-2"	3'-9"						6'-2"	6'-2"	6'-2"	5'-1"	2'-7"					4	7'-3"
	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"						6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	7'-3"
	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"				8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	7'-3"
	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"			9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	7'-3"
6'	3'	6'-5"	6'-4"	5'-11"	5'-7"	5'-2"	4'-9"	4'-4"						6'-8"	6'-8"	6'-8"	6'-6"	4'-0"	1'-6"				4	8'-3"
	4'	7'-5"	7'-4"	6'-11"	6'-7"	6'-2"	5'-9"	5'-4"	4'-11"	4'-6"				8'-2"	8'-2"	8'-2"	8'-2"	6'-6"	4'-0"	1'-7"			4	8'-3"
	5'	8'-6"	8'-4"	7'-11"	7'-6"	7'-2"	6'-9"	6'-4"	5'-11"	5'-6"	5'-1"			9'-8"	9'-8"	9'-8"	9'-8"	8'-10"	6'-4"	3'-11"	1'-6"		4	8'-3"
	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"	11'-2"	11'-2"	11'-2"	11'-2"	11'-2"	9'-0"	6'-7"	4'-1"	1'-7"	4	8'-3"

DIMENSIONS

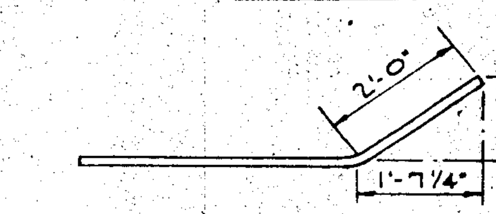
CLEAR SPAN	CLEAR HEIGHT	BARREL DESIGN NO. 1 T1	T2	V	H	W1	BARREL DESIGN NO. 2 T1	T2	V	H	W1	FOR ALL DESIGNS P	R	W2	M
4'	5'	8½"	8"	6'-4"	6'-2½"	3'-8½"	9"	9"	6'-6"	6'-3"	3'-9"	5'-4 / 5'-6"	6'-7"	2'-6"	9'-0"
3'	2'	7"	6"	3'-2"	3'-1"	1'-9½"	7"	6"	3'-2"	3'-1"	1'-9½"	4'-0"	5'-7"	1'-3½"	4'-6"
	2'-6"	7"	6"	3'-8"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

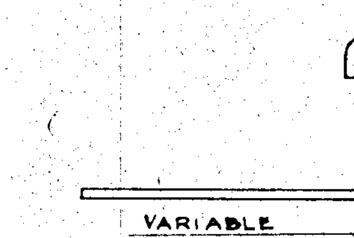
CLEAR SPAN	CLEAR HEIGHT	REINFORCING STEEL — LBS. PER LIN. FT. OF BARREL — DESIGN NO. 1	DESIGN NO. 2	WINGWALLS & PARAPETS TOTAL LBS.	CONCRETE — CU. YDS. PER LIN. FT. OF BARREL — DESIGN NO. 1	DESIGN NO. 2	WINGWALLS & PARAPETS TOTAL CU. YDS. — DES. 1	DES. 2	CLEAR HEIGHT	CLEAR SPAN
4'	5'	52.6	65.5	352	0.539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



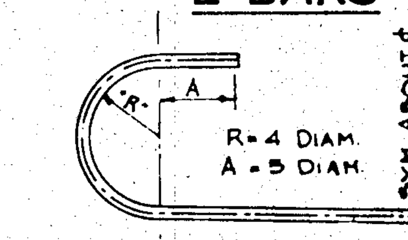
C BARS



D BARS



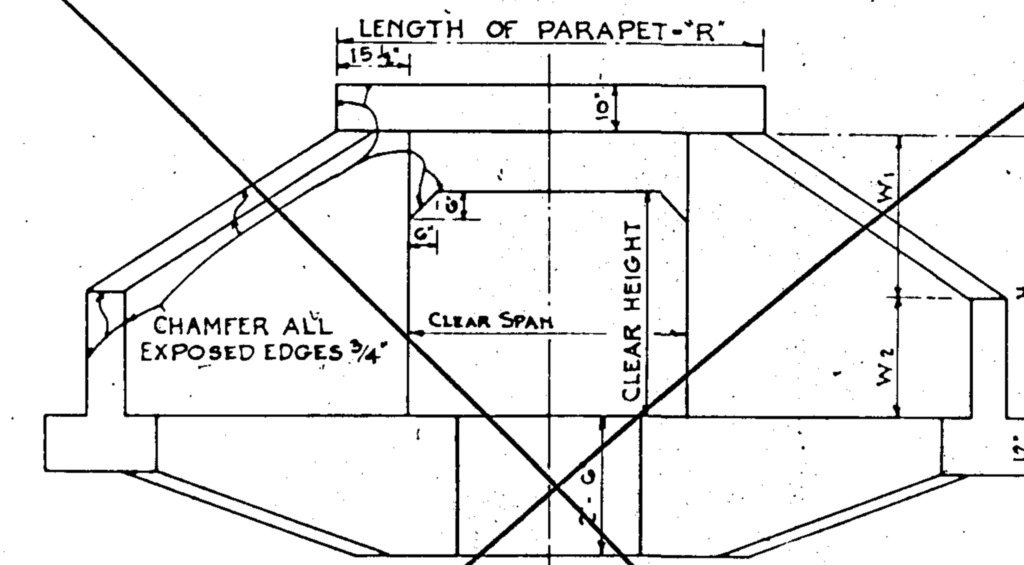
E BARS



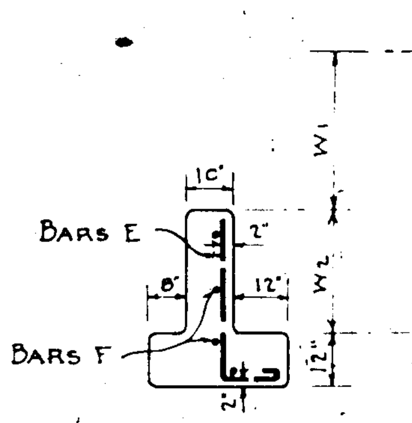
DETAIL OF HOOK FOR A BARS

REQUIRED FOR 5' & 6' CLEAR SPANS FOR DESIGN No. 2

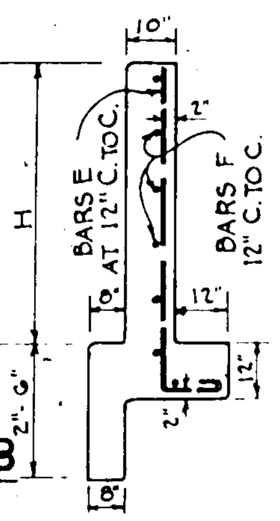
BENDING DIAGRAMS



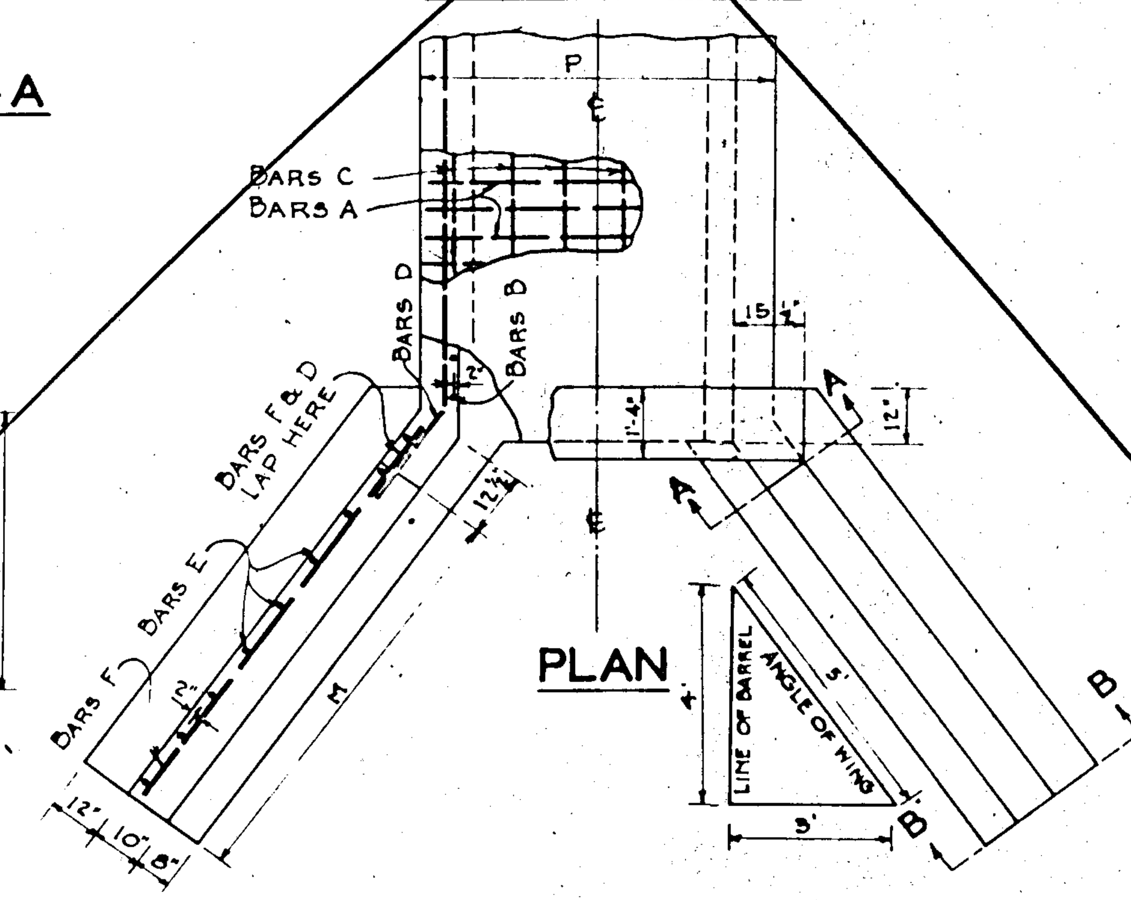
END ELEVATION



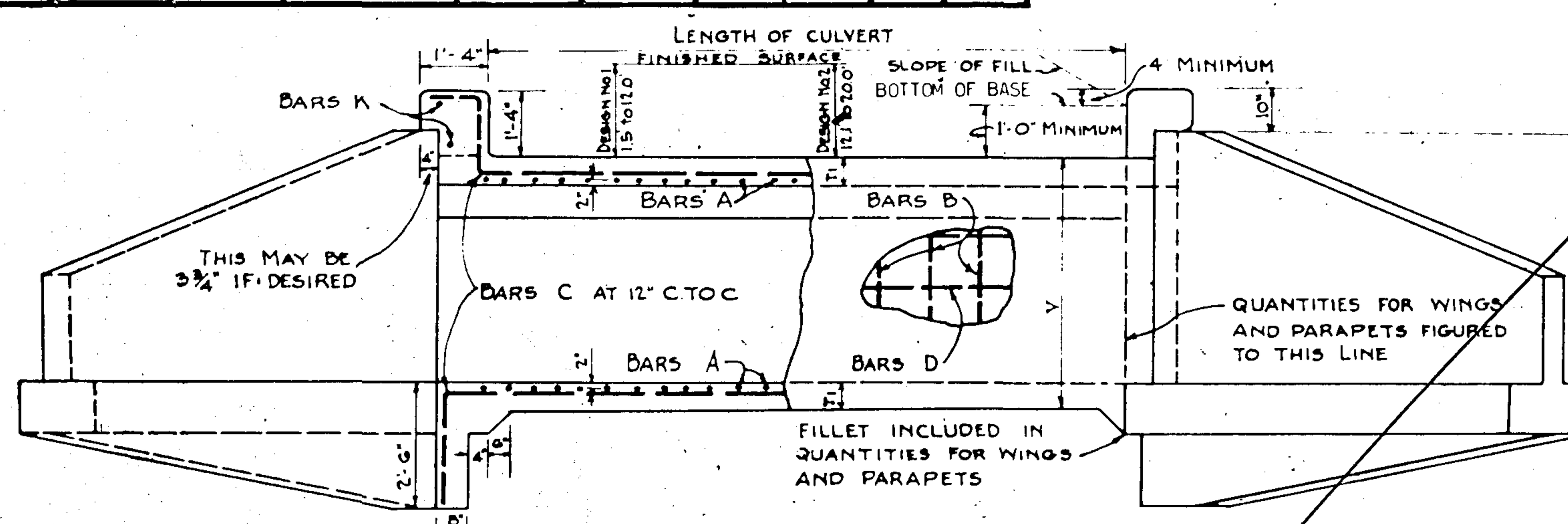
SECTION B-B



SECTION A-A



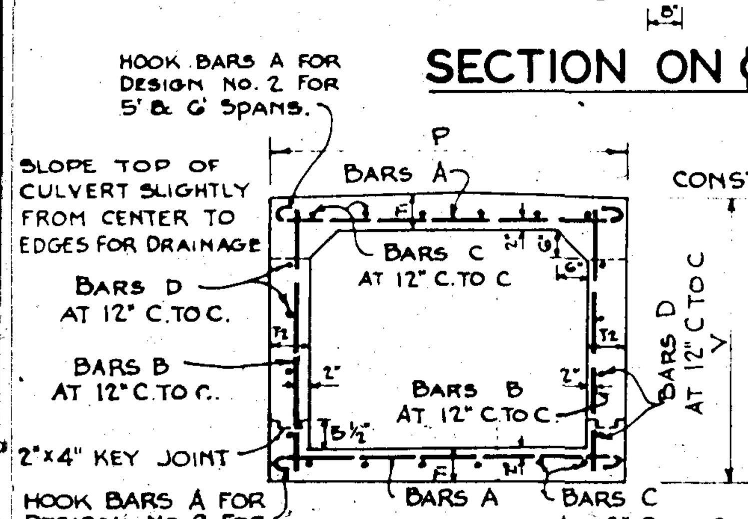
PLAN



SECTION ON ¢ BARREL

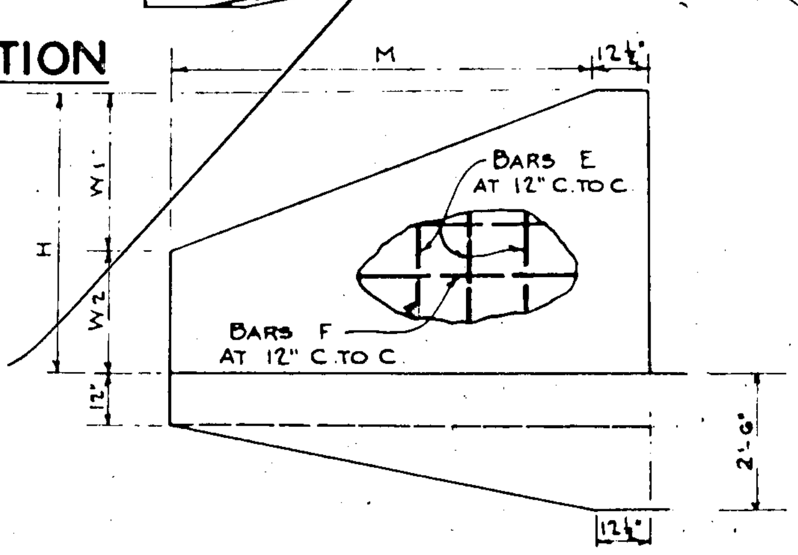
ELEVATION

SIDE VIEW



CONSTRUCTION JOINT

SECTION OF BARREL



ELEVATION OF WING

GENERAL NOTES

CHAMFER - CHAMFER ALL EXPOSED EDGES 3/4".

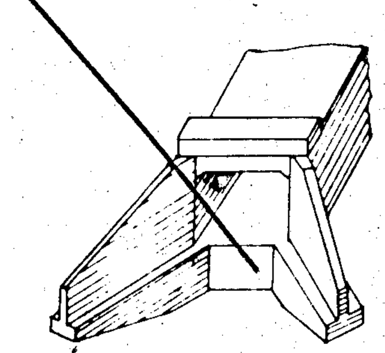
QUANTITIES - QUANTITIES FOR STEEL SHOWN ON THIS SHEET COMPUTED CONSIDERING ALL A, B, C, AND D BARS AS PART OF BARREL QUANTITIES. STEEL PER LINEAR FOOT IS AN AVERAGE VALUE FOR A CULVERT OF 40' LENGTH ALLOWING ONE LAP IN LONGITUDINAL BAR.

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.

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

STANDARD
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