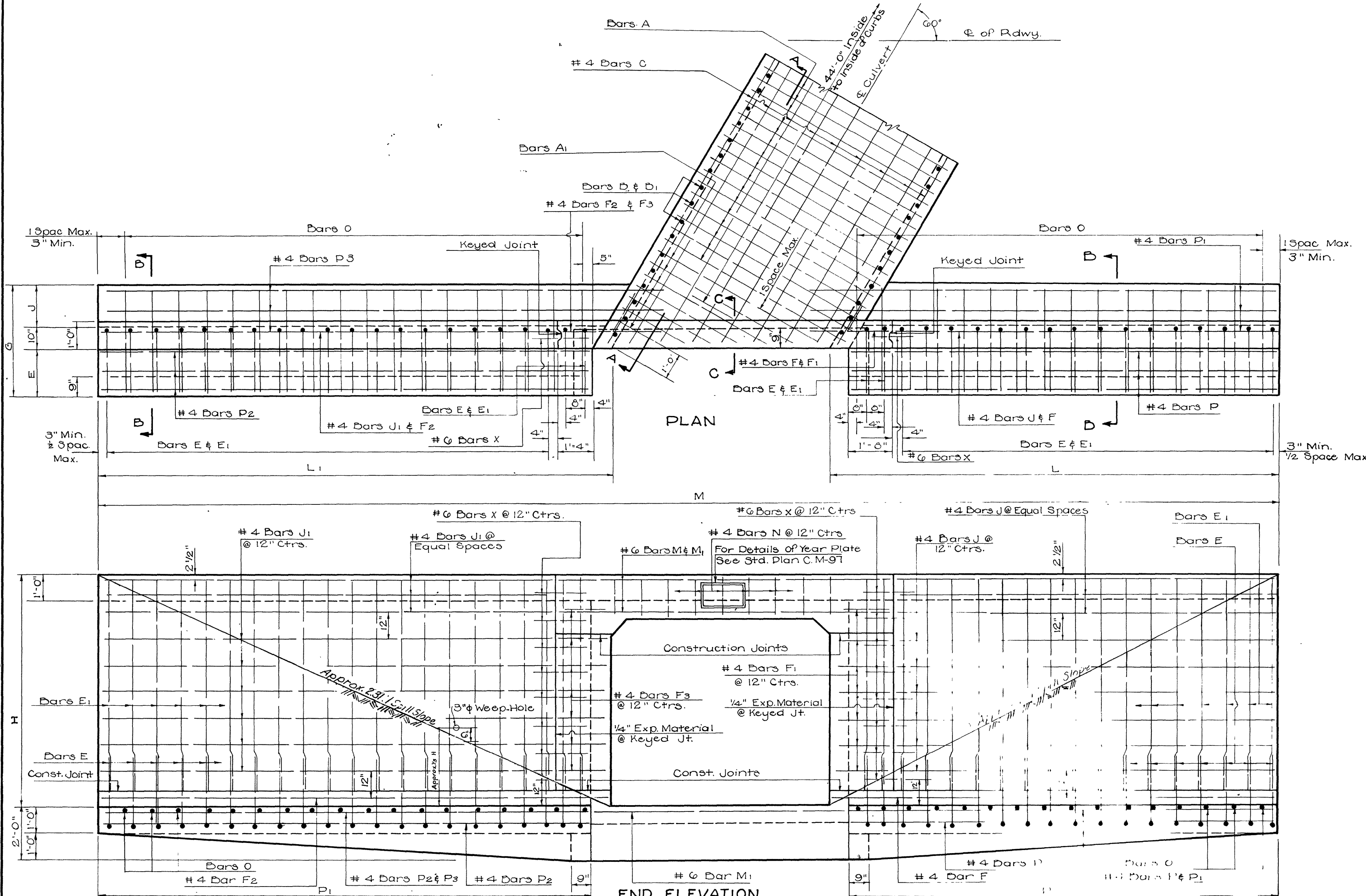
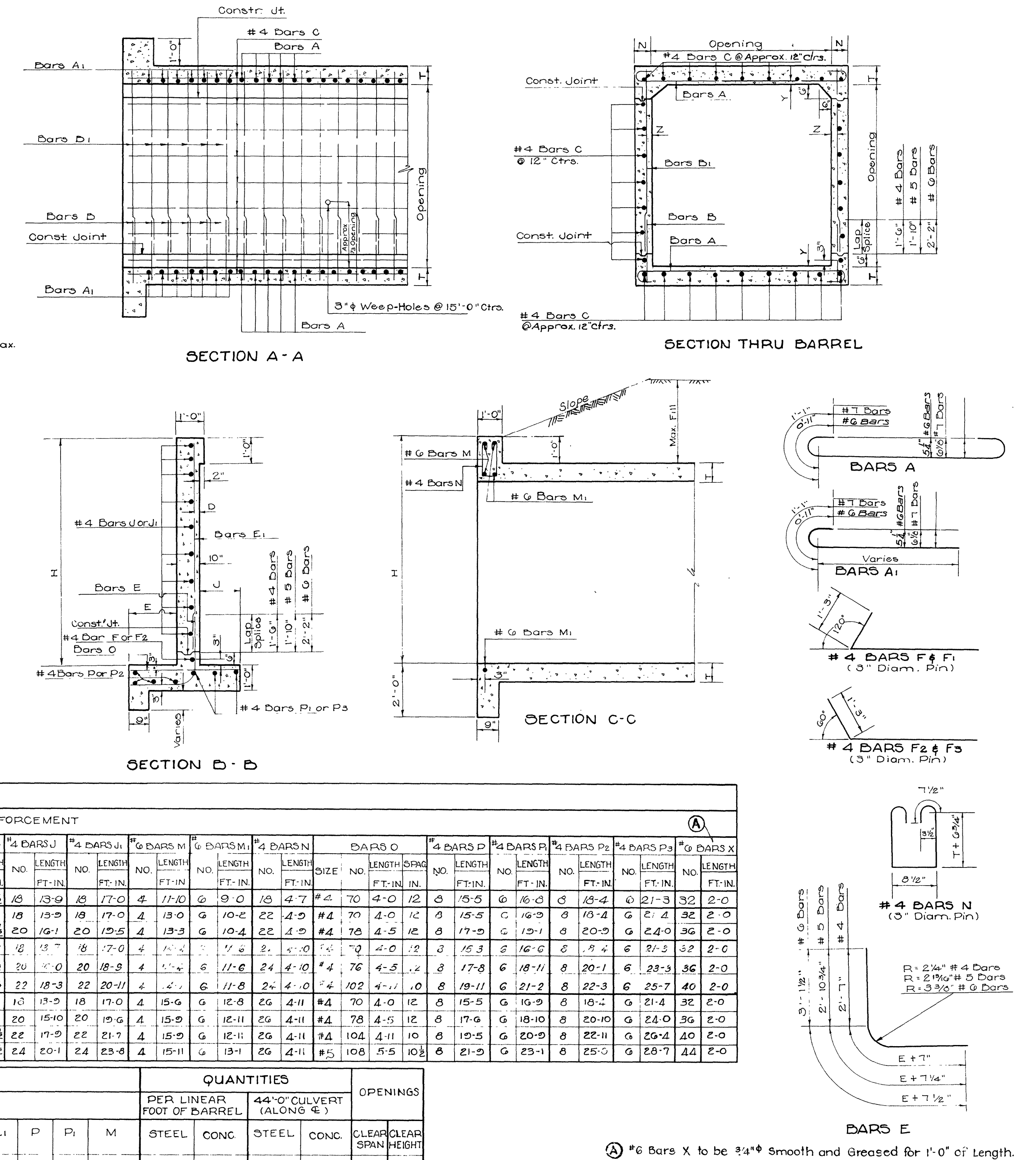
STATE PROJECT	PARISH	SHEET NO.





BILL OF REINFORCING STEEL FOR 44'-0" CULVERT

BARREL REINFORCEMENT

Clear Span (Feet)	Clear Height (Feet)	Bars A Size	Bars A No.	Bars A Length (Ft-In)	Bars A Spac (In)	Bars A1 Size	Bars A1 No.	Bars A1 Short (Ft-In)	Bars A1 Var (In)	Bars A1 Long (Ft-In)	Bars A1 Spac (In)	Bars B & B1 Size	Bars B & B1 No.	Length B (Ft-In)	Length B1 (Ft-In)	Bars B & B1 Spac (In)	#4 Bars C No.	#4 Bars C Length* (Ft-In)
7	7	#6	200	9-2½	5	#6	36	2-6	8.6250	8-3	5	#5	94	2-11	7-1	12	30	47-5
8	7	#6	198	10-2¾	5	#6	40	2-6	8.6667	9-0	5	#4	124	3-0	7-2	9	32	47-5
	8	#6	198	10-4¼	5	#6	40	2-7	8.6667	9-1	5	#5	94	3-0	8-2	12	34	47-5
9	7	#7	164	11-7½	6	#7	36	2-8	10.3750	9-7	6	#5	94	3-0	7-2	12	34	47-5
	8	#7	164	11-7½	6	#7	36	2-8	10.3750	9-7	6	#5	98	3-0	8-2	11½	36	47-5
	9	#7	162	11-9½	6	#7	40	2-9	10.4444	10-7	6	#5	106	3-0	9-2	10½	38	47-5
10	7	#7	158	12-7½	6	#7	44	2-8	10.4000	11-4	6	#4	124	2-9	7-3	9	36	47-5
	8	#7	158	12-9½	6	#7	44	2-9	10.4000	11-5	6	#5	94	3-1	8-3	12	38	47-5
	9	#7	158	12-9½	6	#7	44	2-9	10.4000	11-5	6	#5	118	3-1	9-3	9½	40	47-5
	10	#7	158	12-11½	6	#7	44	2-10	10.4000	11-6	6	#6	94	3-5	10-3	12	42	47-5

*Includes 1'-6" Lap Splice.

WINGS AND CURBS REINFORCEMENT

Clear Span (Feet)	Clear Height (Feet)	Bars E & E1 Size E	Size E1	No.	Length E (Ft-In)	Length E1 (Ft-In)	Spac (In)	#4 Bars F No.	F Length	#4 Bars F1 No.	F1 Length	#4 Bars F2 No.	F2 Length	#4 Bars F3 No.	F3 Length	#4 Bars J No.	J Length	#4 Bars J1 No.	J1 Length
7	7	#4	#4	84	5-1	8-1	10	2	16-11	14	2-8½	2	20-7	14	3-1½	18	13-9	18	17-0
8	7	#4	#4	84	5-1	8-2	10	2	16-11	14	2-9	2	20-7	14	3-2	18	13-9	18	17-0
	8	#5	#4	96	5-6	9-2	10	2	19-4	16	2-10	2	23-1	16	3-2½	20	16-1	20	19-5
9	7	#4	#4	84	5-1	8-2	10	2	16-10	14	2-10	2	20-8	14	3-2½	18	13-7	18	17-0
	8	#5	#4	86	5-6	9-2	11	2	19-3	16	2-10	2	22-5	16	3-2½	20	[illegible]	20	18-9
	9	#5	#4	128	5-8	10-2	8	2	21-7	18	2-11	2	24-8	18	3-3½	22	18-3	22	20-11
10	7	#4	#4	84	5-1	8-3	10	2	17-0	14	2-10	2	20-8	14	3-3	18	13-9	18	17-0
	8	#5	#4	88	5-6	9-3	11	2	19-2	16	2-11	2	23-3	16	3-3½	20	15-10	20	19-6
	9	#5	#4	128	5-8	10-3	8	2	21-1	18	2-11	2	25-4	18	3-3½	22	17-9	22	21-7
	10	#6	#5	134	6-1	11-3	8½	2	23-6	20	3-0	2	27-6	20	3-4½	24	20-1	24	23-8

Clear Span (Feet)	Clear Height (Feet)	#6 Bars M No.	M Length	#6 Bars M1 No.	M1 Length	#4 Bars N No.	N Length	Bars O Size	O No.	O Length	O Spac (In)	#4 Bars P No.	P Length	#4 Bars P1 No.	P1 Length	#4 Bars P2 No.	P2 Length	#4 Bars P3 No.	P3 Length	#6 Bars X (A) No.	X Length
7	7	4	11-10	6	9-0	18	4-7	#4	70	4-0	12	8	15-5	6	16-8	8	18-4	6	21-3	32	2-0
8	7	4	13-0	6	10-2	22	4-9	#4	70	4-0	12	8	15-5	6	16-9	8	18-4	6	21-4	32	2-0
	8	4	13-3	6	10-4	22	4-9	#4	78	4-5	12	8	17-9	6	19-1	8	20-9	6	24-0	36	2-0
9	7	4	[illegible]	6	11-6	24	4-10	#4	70	4-0	12	8	15-3	6	16-6	8	18-4	6	21-3	32	2-0
	8	4	[illegible]	6	11-6	24	4-10	#4	76	4-5	12	8	17-8	6	18-11	8	20-1	6	23-3	36	2-0
	9	4	[illegible]	6	11-8	24	4-10	#4	102	4-11	10	8	19-11	6	21-2	8	22-3	6	25-7	40	2-0
10	7	4	15-6	6	12-8	26	4-11	#4	70	4-0	12	8	15-5	6	16-9	8	18-4	6	21-4	32	2-0
	8	4	15-9	6	12-11	26	4-11	#4	78	4-5	12	8	17-6	6	18-10	8	20-10	6	24-0	36	2-0
	9	4	15-9	6	12-11	26	4-11	#4	104	4-11	10	8	19-5	6	20-9	8	22-11	6	26-4	40	2-0
	10	4	15-11	6	13-1	26	4-11	#5	108	5-5	10½	8	21-9	6	23-1	8	25-6	6	28-7	44	2-0

(A) #6 Bars X to be 3/4"φ Smooth and Greased for 1'-0" of Length.

DIMENSIONS

Clear Span (Feet)	Clear Height (Feet)	Area (Sq.Ft.)	Max. Fill Slab (Feet)	Max. Fill Wall (Feet)	Barrel N (In.)	T (In.)	Y (In.)	Z (In.)	E (Ft-In)	J (Ft-In)	G (Ft-In)	H (Ft-In)	D (Ft-In)	L (Ft-In)	L1 (Ft-In)	P (Ft-In)	P1 (Ft-In)	M (Ft-In)	Per Linear Foot of Barrel Steel (Lbs.)	Per Linear Foot Conc. (Cu.Yds.)	44'-0" Culvert (Along ℄) Steel (Lbs.)	44'-0" Culvert Conc. (Cu.Yds.)	Clear Span (Feet)	Clear Height (Feet)
7	7	49	13	6	7	9	1 7/8	1 13/16	1-11	1-8	4-5	8-9	1 3/4	16-5 1/16	19-4 1/16	15-9	18-8	43-10 3/16	107.29	0.7654	7023	68.28	7	7
8	7	56	13	6	7	10	1 7/8	1 3/4	1-11	1-8	4-5	8-10	1 3/4	16-5 1/16	19-4 1/16	15-9	18-8	45-0	113.08	0.8776	7311	73.77	8	7
	8	64	12	5	8	10	1 7/8	1 13/16	2-0	2-0	4-10	9-10	1 13/16	18-10 1/4	21-10 1/4	18-1	21-1	49-11 3/8	120.81	0.9805	8301	86.53		8
9	7	63	11	8	8	10½	1 13/16	1 13/16	1-11	1-8	4-5	8-0½	1 3/4	16-4 1/4	[illegible]	15-7	18-8	46-2 3/16	138.97	1.0247	8520	80.68	9	7
	8	72	11	5	8	[illegible]	1 15/16	1 13/16	2-0	2-0	[illegible]	9-0½	1 13/16	18-9 1/4	21-2 3/4	18-0	20-5	50-4 3/16	143.40	1.0741	9204	90.35		8
	9	81	10	5	9	10½	1 15/16	1 13/16	2-2	2-4	5-4	10-10½	1 13/16	21-1 3/8	23-5 3/8	20-3	22-7	54-11½	150.80	1.1898	10474	104.43		9
10	7	70	6	6	8	11	1 15/16	1 3/4	1-11	1-8	4-5	8-11	1 3/4	16-6 1/4	19-5 1/4	15-9	18-8	47-6 1/16	145.08	1.1245	8809	85.67	10	7
	8	80	6	6	9	11	1 15/16	1 13/16	2-0	2-0	4-10	9-11	1 13/16	18-8 3/8	22-0 3/8	17-10	21-2	52-3 3/8	153.61	1.2346	9738	98.62		8
	9	90	6	6	9	11	1 15/16	1 13/16	2-2	2-4	5-4	10-11	1 13/16	20-7 3/8	24-1 3/8	19-9	23-3	56-3 3/8	163.80	1.2901	11074	109.50		9
	10	100	6	6	10	11	1 15/16	1 7/8	2-4	2-8	5-10	11-11	1 7/8	23-0 9/16	26-3 9/16	22-1	25-4	60-10 11/16	175.06	1.4187	13240	125.08		10

GENERAL NOTES:
CONSTRUCTION SPECIFICATIONS: Latest Approved La. Dept. of Highways Std. Specs.
DESIGN SPECIFICATIONS: A.A.S.H.O. 1961 as Amended by Int. Spec. 1964
Live Load: HS 20-44 or Military Loading, whichever is Greater.
All Exposed Corners to be Chamfered 3/4" Unless Otherwise Noted.
Reinforcing Steel Shall be Billet-Steel A.S.T.M. A 615 or Rail-Steel A.S.T.M. A 616 or Axle-Steel A.S.T.M. A 617.
Dimensions to Reinforcing Steel are to Bar Centers.
A 1'-6" Square of Plastic Filter Cloth (See Qualified Products List) shall be placed in contact with Concrete behind each Weep Hole, in addition to approx. 2 Cu. Ft. of Concrete Sand.
All Concrete to be Class "A".
For Details of Joints, See Std. Plan C-M-49.

APPROVED BY:

Original Signed by Chief Engineer

CHIEF ENGINEER DATE

DATE	DESCRIPTION	BY
1-11-78	Rev. Weep Hole Note	W.T.J.
2-20-75	Rev. Slope Intercept	W.T.J.
6-8-72	Rev. Gen. Notes For Steel	W.E.M.
4-21-70	Added 9-7, 9-8 & 9-9'	W.E.M.
4-2-69	Added 8' x 8'	W.E.M.
8-13-65	Bars B & B1 on 10' Span	W.E.M.
9-30-64	Added 7' x 7'	W.E.M.
4-3-64	DEFORMED DOWELS 'X' TO SMOOTH	W.E.M.
9-20-63	Added 8' x 7' & 8' x 8'	W.E.M.

REVISIONS

STANDARD PLAN
REINFORCED CONC. BOX CULVERT
STRAIGHT WINGWALLS 60° CROSSING
2:1 SPILL SLOPE NORMAL TO CHANNEL
7' THRU 10' CLEAR SPANS, & CL.HTS.

DATED 5-29 1963

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED M. Yoshii | DETAILED M. Yoshii | TRACED Jane Read
CHECKED G. A. Hester | CHECKED W.E. Maxcum | CHECKED W.E. Maxcum

BRIDGE DESIGN SECTION

C·C·S·S·7-10·RS·60·1