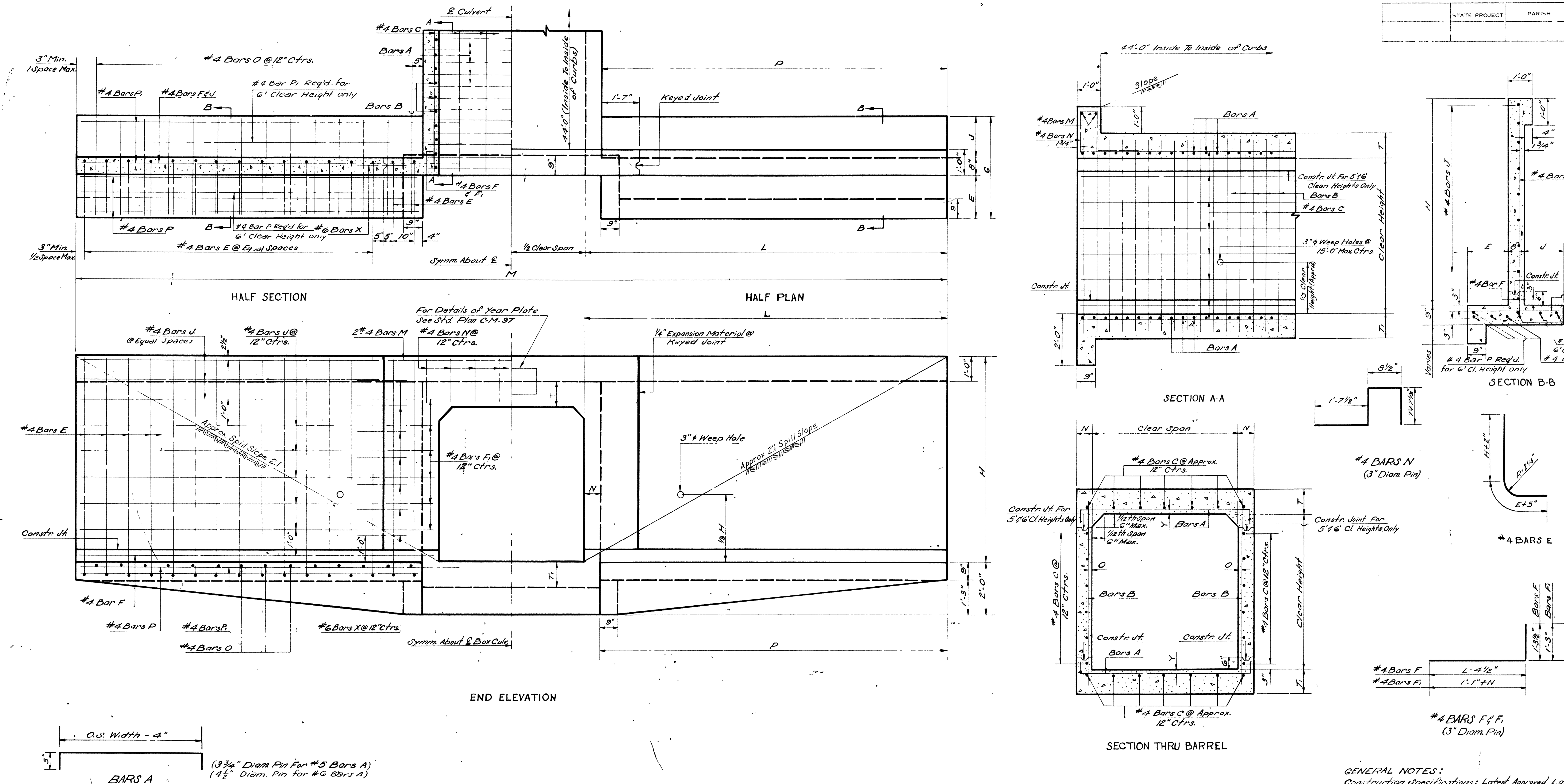

STATE PROJECT	PARISH	SHEET NO.

APPROVED BY:

Original Signed by Chief Engineer

CHIEF ENGINEER   DATE

Ⓐ *6 Bars X to be ¾"φ Smooth and Greased for 1'-0" of Length.

BILL OF REINFORCING STEEL FOR 44'-0" CULVERT

DIMENSIONS

Openings Clear Span (Feet)	Openings Clear Height (Feet)	Area (Sq. Ft.)	Max. Fill Slab (Feet)	Max. Fill Wall (Feet)	Barrel N (In.)	Barrel T (In.)	Barrel T1 (In.)	Barrel O (In.)	Barrel Y (In.)	Wings & Curbs E (Ft.-In.)	J (Ft.-In.)	G (Ft.-In.)	H (Ft.-In.)	L (Ft.-In.)	P (Ft.-In.)	M (Ft.-In.)
4	3	12	28	23	6	7½	7½	1¾	1 13/16	1-0	0-8	2-4	4-7½	7-11	7-5	19-10
	4	16	28	13	6	7½	7½	1¾	1 13/16	1-3	0-10	2-9	5-7½	9-11	9-5	23-10
5	3	15	22	23	6	8	8	1¾	1⅞	1-0	0-8	2-4	4-8	7-11	7-5	20-10
	4	20	22	12	6	8	8	1¾	1⅞	1-3	0-10	2-9	5-8	9-11	9-5	24-10
	5	25	21	7	6	8	8	1¾	1⅞	1-5	1-2	3-3	6-8	11-11	11-5	28-10
6	3	18	17	22	6	8½	8½	1¾	1⅞	1-0	0-8	2-4	4-8½	8-9	8-3	23-6
	4	24	17	12	6	8½	8½	1¾	1⅞	1-3	0-10	2-9	5-8½	10-9	10-3	27-6
	5	30	17	7	6	8½	8½	1¾	1⅞	1-5	1-2	3-3	6-8½	12-9	12-3	31-6
	6	36	17	5	6	8½	8½	1¾	1⅞	1-7	1-7	3-10	7-8½	14-9	14-3	35-6
7	3	21	15	21	6	9	9	1¾	1⅞	1-0	0-8	2-4	4-9	8-9	8-3	24-6
	4	28	15	12	6	9	9	1¾	1⅞	1-3	0-10	2-9	5-9	10-9	10-3	28-6
	5	35	14	6	6	9	9	1¾	1⅞	1-5	1-2	3-3	6-9	12-9	12-3	32-6
	6	42	14	5	6	9	9	1¾	1⅞	1-7	1-7	3-10	7-9	14-9	14-3	36-6

BARREL REINFORCEMENT

Clear Span	Clear Height	Bars A Size	Bars A No.	Bars A Length (Ft.-In.)	Bars A Spac. (In.)	Bars B Size	Bars B No.	Bars B Length (Ft.-In.)	Bars B Spac. (In.)	#4 Bars C* No.	#4 Bars C* Length (Ft.-In.)
4	3	#5	246	5-6	4½	#4	92	3-11	12	16	47-2
	4	#5	246	5-6	4½	#4	92	4-11	12	18	47-2
5	3	#6	202	6-6	5½	#4	92	4-0	12	18	47-2
	4	#6	202	6-6	5½	#4	92	5-0	12	20	47-2
	5	#6	202	6-6	5½	#4	92	6-0	12	22	47-2
6	3	#6	202	7-6	5½	#4	92	4-1	12	20	47-2
	4	#6	202	7-6	5½	#4	92	5-1	12	22	47-2
	5	#6	202	7-6	5½	#4	92	6-1	12	24	47-2
	6	#6	202	7-6	5½	#4	110	7-1	10	26	47-2
7	3	#6	220	9-6	5	#4	92	4-2	12	22	47-2
	4	#6	220	8-6	5	#4	92	5-2	12	24	47-2
	5	#6	220	8-6	5	#4	92	6-2	12	26	47-2
	6	#6	220	8-6	5	#4	110	7-2	10	28	47-2

WING & CURB REINFORCEMENT

Clear Span	Clear Height	#4 Bars E No.	#4 Bars E Length (Ft.-In.)	#4 Bars E Spac. (In.)	#4 Bars F No.	#4 Bars F Length	#4 Bars F1 No.	#4 Bars F1 Length	#4 Bars J No.	#4 Bars J Length	#4 Bars N No.	#4 Bars N Length	#4 Bars O No.	#4 Bars O Length	#4 Bars P No.	#4 Bars P Length	#4 Bars P1 No.	#4 Bars P1 Length	#4 Bars M No.	#4 Bars M Length	Ⓐ #6 Bars X No.	#6 Bars X Length
4	3	32	6-2½	12	4	8-10	12	2-10	16	5-6	10	4-10	28	1-11	12	7-1	8	8-9	4	7-7	16	2-0
	4	40	7-5½	12	4	10-10	16	2-10	20	7-6	12	4-10	36	2-4	12	9-1	8	10-9	4	7-7	20	2-0
5	3	32	6-3	12	4	8-10	12	2-10	16	5-6	12	4-11	28	1-11	12	7-1	8	8-9	4	8-7	16	2-0
	4	40	7-6	12	4	10-10	16	2-10	20	7-6	12	4-11	36	2-4	12	9-1	8	10-9	4	8-7	20	2-0
	5	48	8-8	12	4	12-10	20	2-10	24	9-6	12	4-11	44	2-10	12	11-1	8	12-9	4	8-7	24	2-0
6	3	36	6-3½	12	4	9-8	12	2-10	16	6-4	14	5-0	32	1-11	12	7-11	8	9-7	4	9-7	16	2-0
	4	44	7-6½	12	4	11-8	16	2-10	20	8-4	14	5-0	40	2-4	12	9-11	8	11-7	4	9-7	20	2-0
	5	52	8-8½	12	4	13-8	20	2-10	24	10-4	14	5-0	48	2-10	12	11-11	8	13-7	4	9-7	24	2-0
	6	60	9-10½	12	4	15-8	24	2-10	28	12-4	14	5-0	56	3-5	16	13-11	12	15-7	4	9-7	28	2-0
7	3	36	6-4	12	4	9-8	12	2-10	16	6-4	16	5-1	32	1-11	12	7-11	8	9-7	4	10-7	16	2-0
	4	44	7-7	12	4	11-8	16	2-10	20	8-4	16	5-	40	2-4	12	9-11	8	11-7	4	10-7	20	2-0
	5	52	8-9	12	4	13-8	20	2-10	24	10-4	16	5-1	48	2-10	12	11-11	8	13-7	4	10-7	24	2-0
	6	60	9-11	12	4	15-8	24	2-10	28	12-4	16	5-1	56	3-5	16	13-11	12	15-7	4	10-7	28	2-0

QUANTITIES

Per Lin. Ft. of Barrel Steel (Lbs.)	Per Lin. Ft. of Barrel Conc. (Cu. Yds.)	44'-0" Culvert Steel (Lbs.)	44'-0" Culvert Conc. (Cu. Yds.)	Openings Clear Span (Feet)	Openings Clear Height (Feet)
46.52	0.3467	2634	23.08	4	3
49.19	0.3837	2938	27.86		4
59.97	0.4138	3274	26.34	5	3
62.64	0.4509	3579	31.12		4
65.31	0.4879	3912	36.58		5
67.97	0.4877	3700	30.60	6	3
70.64	0.5247	4012	35.51		4
73.32	0.5617	4352	41.10		5
77.88	0.5988	4887	47.45		6
81.54	0.5648	4313	34.31	7	3
84.22	0.6019	4625	39.23		4
86.89	0.6389	4965	44.83		5
91.48	0.6759	5501	51.18		6

*Includes One 1'-6" Lap Splice

Date	Description	By
1-5-78	Rev. Weep Hole Note	W.T.J.
1-28-75	Rev. Slope Intercept	W.T.J.
6-8-72	Rev. General Notes for Steel	W.E.M.
4-27-67	Added Axle Steel	W.E.M.

GENERAL NOTES:

Construction Specifications: Latest Approved La. Dept. of Highways Standard Specifications.
Design Specifications: A.A.S.H.O. 1961 As Amended by Int. Spec. 1964. Live Load HS 20-44 or Military Load, Whichever is Greater.
All Concrete To Be Class "A".
All Exposed Corners To Have ¾" Chamfer, Unless Otherwise noted.
Reinforcement Bars shall be Billet Steel A.S.T.M. A ... or Rail ... A.S.T.M. A 616 or Axle Steel A.S.T.M. A 617.
Dimensions Relating 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.
For Detail of Joints, See Std. Plan C.M.-49.

Date	Description	By
12-14-64	Rev. 4' & 5' Spans to Military Loading; # Deleted 3' Span	W.E.M.
4-3-64	DEFORMED DOWELS 'X' TO SMOOTH	W.E.M.
7-27-62	4' Thru 7' Cl. Spans Added	J.H.A. / M.K.K.

STANDARD PLAN
REINF. CONCRETE BOX CULVERTS

STRAIGHT WINGS — 90° CROSSING
2:1 SPILL SLOPE NORMAL TO CHANNEL
3' TO 6' HEIGHTS — 4' TO 7' SPANS

DATED April 23, 1962

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED Q.A. Hester | DETAILED Q.A. Hester | TRACED R.O.
CHECKED M. Yoshii | CHECKED W.C. Mauer | CHECKED Q.A. Hester

CC-S-S-4-7-RS-90-1