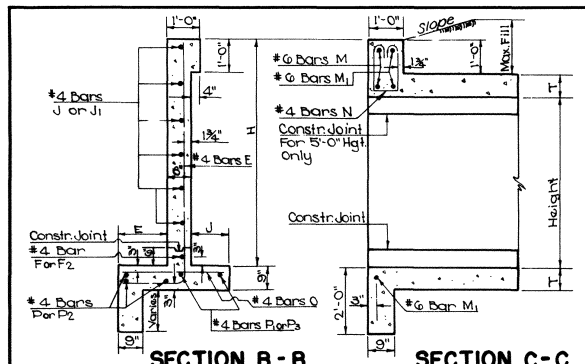
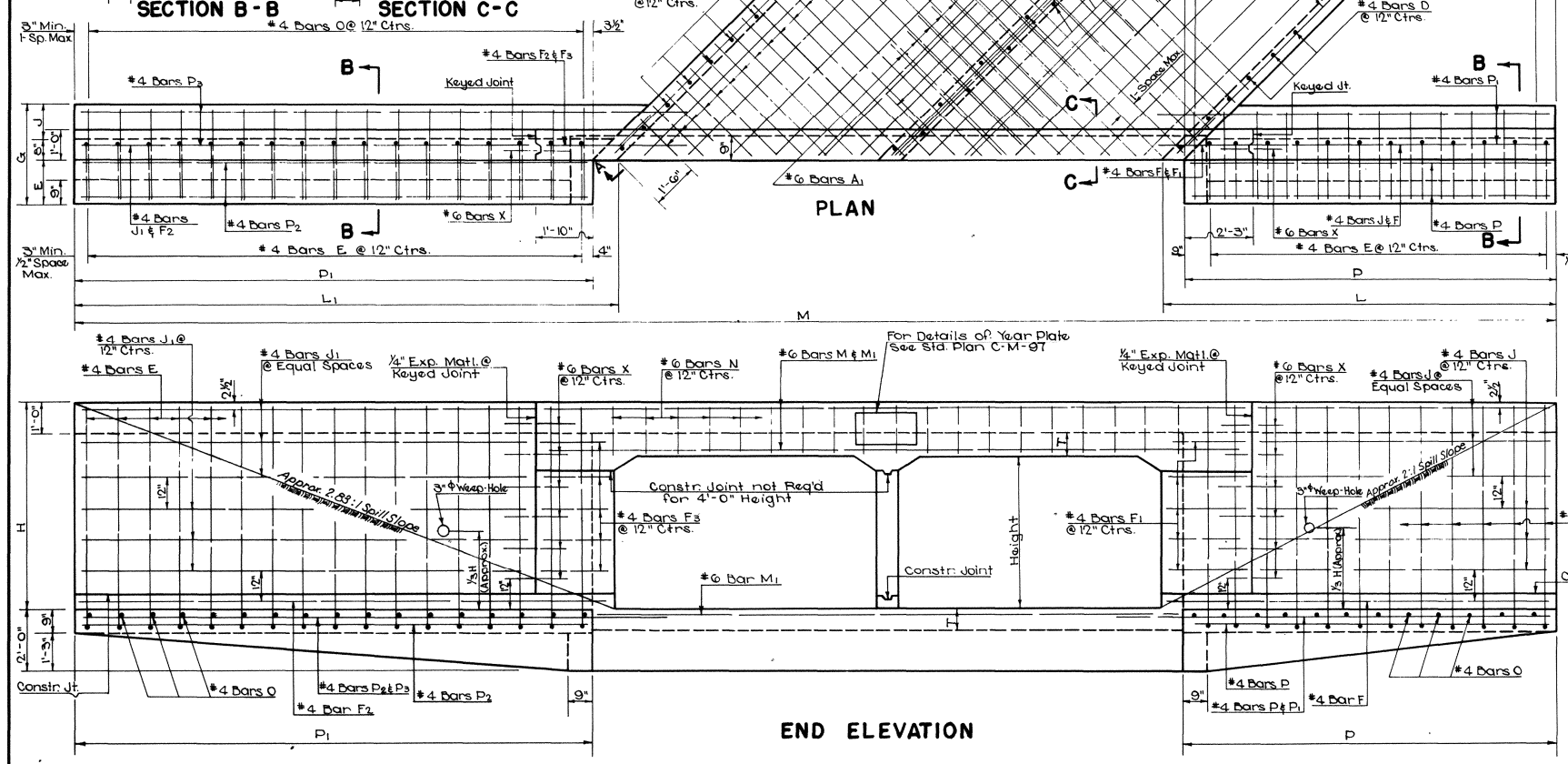
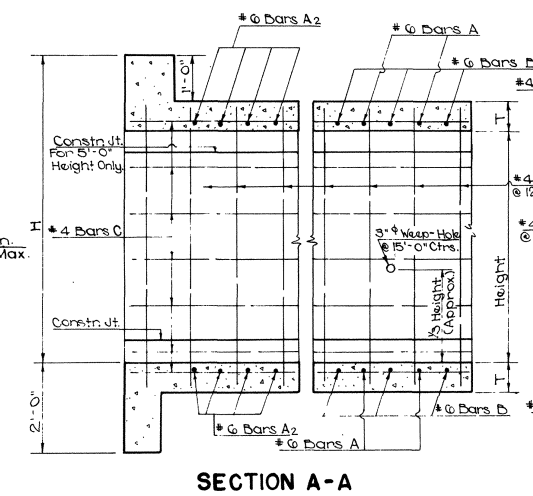
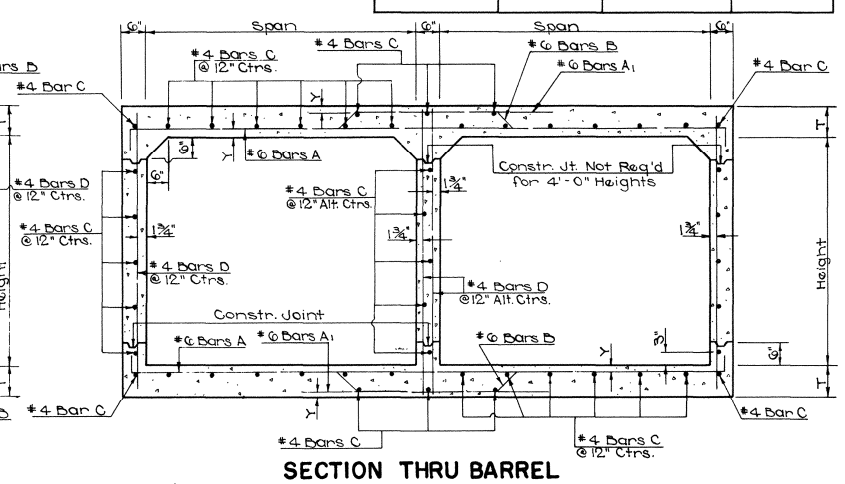
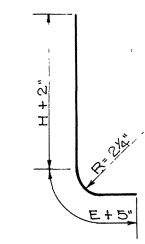
STATE PROJECT	PARISH	SHEET NO.



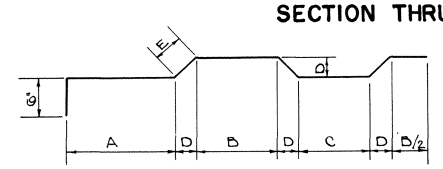






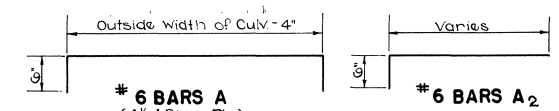


#4 BARS E



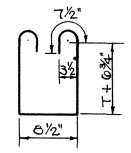
#6 BARS B

DIMENSIONS FOR BARS B						
SIZE	DIAM. PIN.	A	B	C	D	E
6'-0"	4 1/2"	4'-7 7/8"	3'-1 3/4"	2'-7 3/8"	4 1/4"	6"
7'-0"	4 1/2"	5'-4 3/8"	3'-7 1/4"	3'-1 1/4"	4 3/4"	6 3/4"



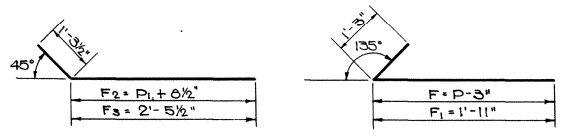
#6 BARS A (4 1/2" Diam. Pin)

#6 BARS A2 (4 1/2" Diam. Pin)



#4 BARS N (3" Diam. Pin)

DIMENSIONS																QUANTITIES				OPENINGS	
OPENINGS			MAX. FILL		BARREL		WINGS AND CURBS									PER LIN. FT. OF BARREL		60'-0" CULVERT			
SIZE FEET	NO.	AREA SQ. FT.	SLABS FT.	WALLS FT.	T IN.	Y IN.	E FT-IN	J FT-IN	G FT-IN	H FT-IN	L FT-IN	L1 FT-IN	P FT-IN	P1 FT-IN	M FT-IN	STEEL POUNDS	CONCRETE CU. YDS.	STEEL POUNDS	CONCRETE CU. YDS.	NO.	SIZE FEET
6x4	2	48	16	20	12	8	1 7/8	1-3	10	2-9	5-8	10-8 1/2	14-6 1/2	10-0	13-10	42-11 7/8	127.76	9,190	71.79	2	6x4
	3	72														52-1 7/8	193.32	13,724	98.56	3	
	4	96														61-3 3/4	256.88	17,161	125.32	4	
	5	120														70-6 5/8	324.45	21,204	152.09	5	
	6	144														79-8 3/8	401.17	25,247	178.85	6	
6x5	2	60	15	20	7	8	1 7/8	1-5	1-2	3-3	6-8	12-8 1/2	17-5 1/2	12-0	16-9	47-10 7/8	131.76	9,963	79.94	2	6x5
	3	90														57-0 7/8	198.66	13,856	107.87	3	
	4	120														66-2 3/4	265.56	18,087	135.80	4	
	5	150														75-5 5/8	332.46	22,315	163.73	5	
	6	180														84-7 3/8	410.52	26,544	191.66	6	
7x4	2	56	12	16	12	8 1/2	1 7/8	1-3	10	2-9	5-8 1/2	10-8 1/2	14-6 1/2	10-0	13-10	45-9 7/8	149.88	10,540	81.42	2	7x4
	3	84														52-4 3/8	227.54	15,309	112.93	3	
	4	112														60-11 3/8	305.20	20,077	144.44	4	
	5	140														77-6 1/8	382.86	24,846	175.94	5	
	6	168														86-2 3/8	472.54	29,614	207.45	6	



#4 BARS F2 & F3 (3" Diam. Pin)

#4 BARS F & F1 (3" Diam. Pin)

General Notes:

Construction Specifications: Latest Approved La. Dept. of Hwys. Standard Specifications.
Design Specifications: A.A.S.H.O. 1961 as Amended by Int. Specs. 1964.
Live Load: HS 20-44 or Military; Whichever is Greater.
All Concrete to be Class "A".
All Exposed Corners to Have 3/4" Chamfer, Unless Otherwise Noted.
Reinforcement Shall Be Billet-Steel A.S.T.M. A615 or Rail-Steel A.S.T.M. A616 or Axle-Steel A.S.T.M. A617.
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.

BILL OF REINFORCING STEEL FOR 60'-0" CULVERT

BARREL REINFORCEMENT

OPENINGS Size Feet	No.	#6 BARS A No.	Length Ft.-In.	Spac. In.	#6 BARS A1 No.	Length Ft.-In.	Spac. In.	#6 BARS A2 No.	Short Bar Ft.-In.	Var. In.	Long Bar Ft.-In.	Spac. In.	#6 BARS B No.	Length Ft.-In.	Spac. In.	#4 BARS C No.	Length ① Ft.-In.	#4 BARS D No.	Length Ft.-In.
6x4	2	64	14-2	14	112	5-2	14	80	2-1	7.0000	13-2	7	86	14-5 1/2	14	46	63-10	169	5-0
	3	74	20-8	14	244	5-2	14	124	2-1	7.0000	19-7	7	76	21-3	14	68	63-10	252	5-0
	4	82	27-2	14	400	5-2	14	172	2-1	7.0000	26-7	7	82	28-0 1/2	14	90	63-10	315	5-0
	5	150	33-8	14	550	5-2	14	216	2-1	7.0000	33-0	7	52	34-10	14	112	63-10	378	5-0
	6	40	40-2	14	764	5-2	14	260	2-1	7.0000	39-8	7	40	④ 43-9 1/2	14	134	63-10	441	5-0
6x5	2	64	14-2	14	112	5-2	14	80	2-1	7.0000	13-2	7	86	14-5 1/2	14	49	63-10	189	6-0
	3	74	20-8	14	244	5-2	14	124	2-1	7.0000	19-7	7	76	21-3	14	72	63-10	252	6-0
	4	82	27-2	14	406	5-2	14	172	2-1	7.0000	26-7	7	82	28-0 1/2	14	95	63-10	315	6-0
	5	150	33-8	14	560	5-2	14	216	2-1	7.0000	33-0	7	52	34-10	14	118	63-10	378	6-0
	6	40	40-2	14	764	5-2	14	260	2-1	7.0000	39-8	7	40	④ 43-9 1/2	14	141	63-10	441	6-0
7x4	2	66	16-2	13	122	5-8	6 1/2 13	104	2-1	0.4800	15-7	6 1/2	66	16-6	13	50	63-10	189	5-1
	3	74	23-8	13	266	5-8	6 1/2 13	156	2-1	0.5000	22-8	6 1/2	76	24-4	13	74	63-10	252	5-1
	4	60	31-2	13	448	5-8	6 1/2 13	212	2-1	0.5000	30-3	6 1/2	60	32-2	13	96	63-10	315	5-1
	5	46	36-8	13	650	5-8	6 1/2 13	266	2-1	0.5000	37-10	6 1/2	46	40-0	13	122	63-10	378	5-1
	6	32	② 46-4	13	892	5-8	6 1/2 13	324	2-1	0.5000	③ 45-5	6 1/2	32	② 50-0	13	146	63-10	441	5-1

CURBS AND WINGS REINFORCEMENT

OPENINGS Size Feet	#4 BARS E No.	Length Ft.-In.	#4 BARS F No.	Length Ft.-In.	#4 BARS F1 No.	Length Ft.-In.	#4 BARS F2 No.	Length Ft.-In.	#4 BARS F3 No.	Length Ft.-In.	#4 BARS J No.	Length Ft.-In.	#4 BARS J1 No.	Length Ft.-In.	#4 BARS O No.	Length Ft.-In.	#4 BARS P No.	Length Ft.-In.	#4 BARS P1 No.	Length Ft.-In.	#4 BARS P2 No.	Length Ft.-In.	#4 BARS P3 No.	Length Ft.-In.	#4 BARS N No.	Length Ft.-In.	#6 BARS M No.	Length Ft.-In.	#6 BARS M1 No.	Length Ft.-In.	Ⓐ #6 BARS X No.	Length Ft.-In.
6x4	48	7-6	2	11-0	8	3-2	2	15-10	8	3-9	10	7-5	10	11-8	48	2-4	6	9-8	4	10-10	6	13-6	4	16-5	36	4-5	4	22-7	6	16-7	20	2-0
																									56	4-5	4	③ 31-10	6	27-10	20	2-0
																									74	4-5	4	③ 43-2	6	37-0	20	2-0
																									92	4-5	4	③ 52-4	6	② 46-4	20	2-0
																									110	4-5	4	③ 61-7	6	② 57-7	20	2-0
6x5	58	8-8	2	13-0	10	3-2	2	18-9	10	3-9	12	9-5	12	14-7	58	2-10	6	11-8	4	12-10	6	16-5	4	19-8	38	4-5	4	22-7	6	16-7	24	2-0
																									56	4-5	4	31-10	6	27-10	24	2-0
																									74	4-5	4	③ 43-2	6	37-0	24	2-0
																									92	4-5	4	③ 52-4	6	② 46-4	24	2-0
																									110	4-5	4	③ 61-7	6	② 57-7	24	2-0
7x4	48	7-6 1/2	2	11-0	8	3-2	2	15-10	8	3-9	10	7-5	10	11-8	48	2-4	6	9-8	4	10-10	6	13-6	4	16-5	44	4-6	4	25-5	6	21-5	20	2-0
																									64	4-6	4	36-1	6	32-0	20	2-0
																									86	4-6	4	③ 46-10	6	② 44-10	20	2-0
																									106	4-6	4	③ 59-5	6	② 55-5	20	2-0
																									126	4-6	4	③ 70-0	6	② 66-0	20	2-0

① Incl. One 1'-6" Lap Splice.
② Incl. One 2'-2" Lap Splice.
③ Does Not Incl. Lap Splice. When Bar Length Exceeds 40'-0" Add One 2'-2" Lap Splice.

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

APPROVED BY:
Original Signed by Chief Engineer
CHIEF ENGINEER DATE

DATE	DESCRIPTION	BY
1-5-78	Rev. Weep Hole Note	W.T.J.
6-10-75	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.

REVISIONS

C·C·S·M·6-7·R-45°·1

STANDARD PLAN
MULTIPLE OPENINGS
REINF. CONCRETE BOX CULVERT
STRAIGHT WINGS 45° CROSSING
2:1 SPILL SLOPE, NORMAL TO CHANNEL
DATED Dec. 29, 1964 6'x4' 6'x5' 7'x4'

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED | DETAILED Earl J. Martel | TRACED J.L. Read
CHECKED | CHECKED W.E. Grice | CHECKED W.E. Grice
IN CHARGE OF

C·C·S·M·6-7·R-45°·1