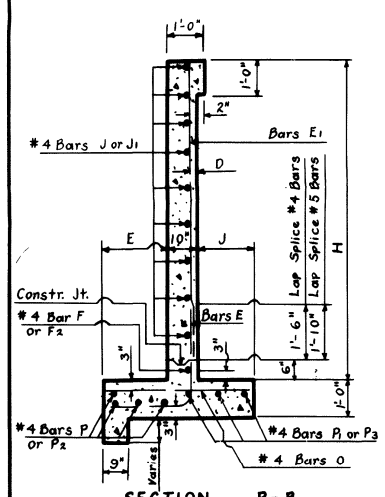
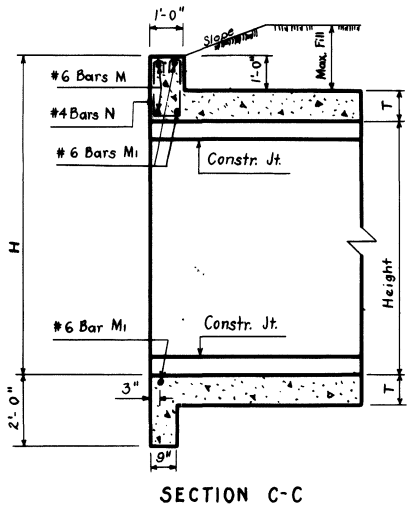
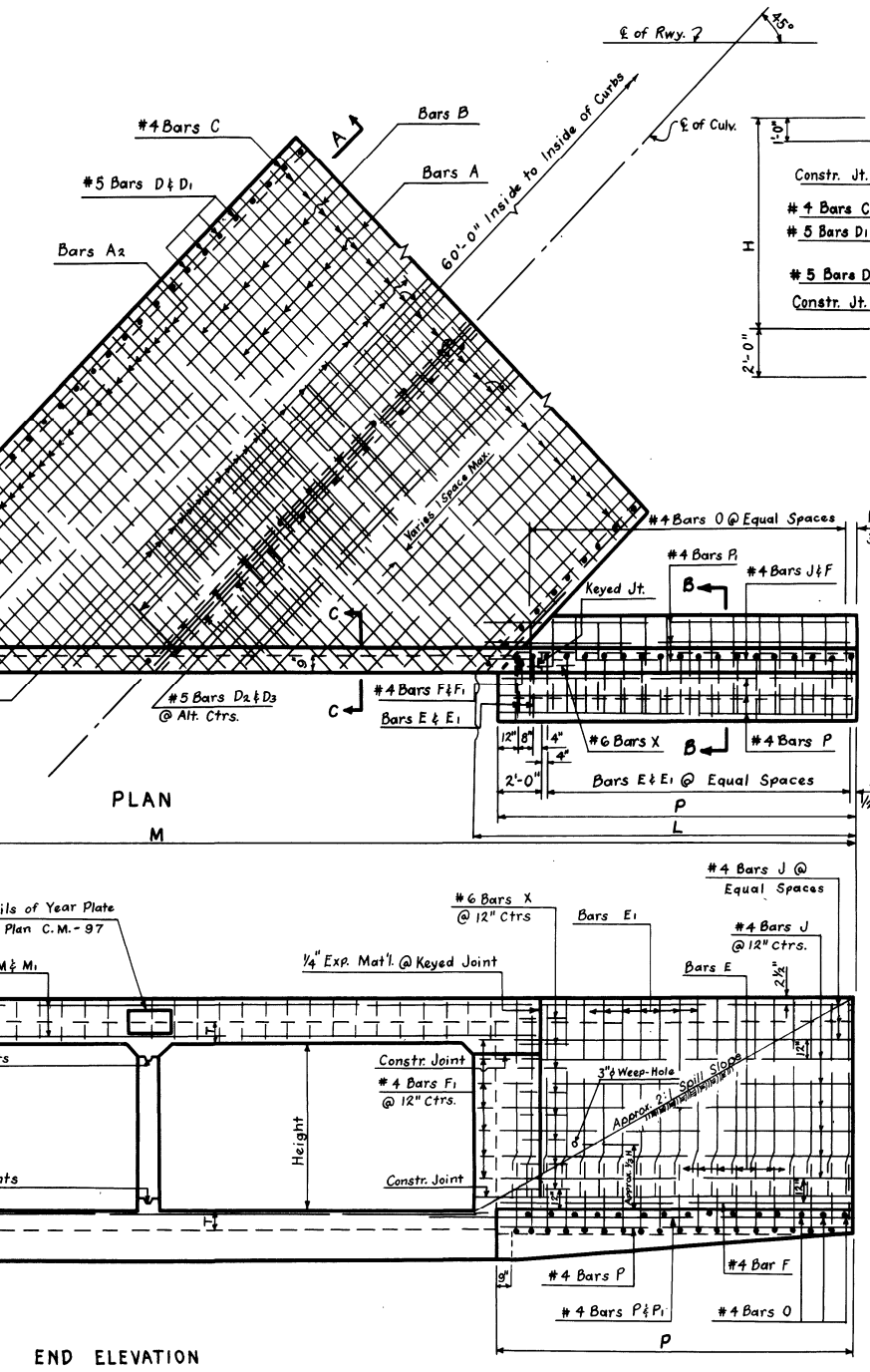
STATE PROJECT	PARISH	SHEET NO.



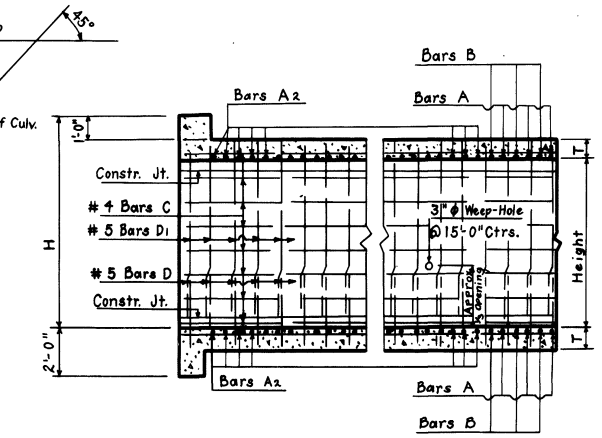
SECTION B-B



SECTION C-C



PLAN



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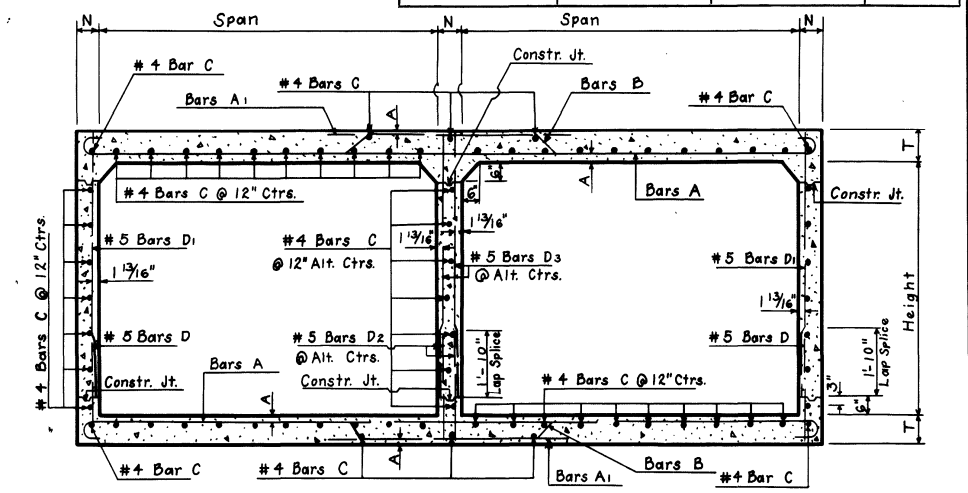
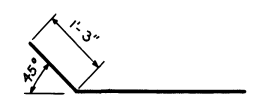
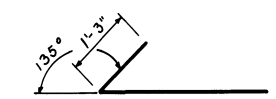


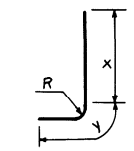
SECTION THRU BARREL



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

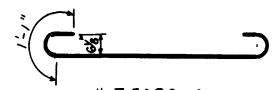


#4 BARS F & F1
(3" Diam. Pin)

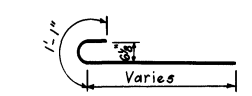


BARS E

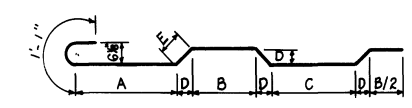
DIMENSIONS FOR BARS E				
Opening	Bar Size	R	X	Y
10'x 7'	#4	2 1/4"	2'-7"	2'-6"
10'x 8'	#5	2 13/16"	2'-10 9/16"	2'-7 7/16"
10'x 9'	#5	2 13/16"	2'-10 9/16"	2'-9 9/16"



#7 BARS A

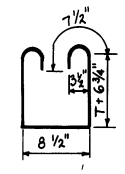


#7 BARS A2



#7 BARS B
(5 1/4" Diam. Pin)

DIMENSIONS FOR BARS B					
SIZE	A	B	C	D	E
10'x7'	7'-5 11/16"	5'-1 7/8"	4'-5 7/8"	6 1/8"	8 5/8"
10'x8'	7'-6 11/16"	5'-2 7/8"	4'-5 7/8"	6 1/8"	8 5/8"
10'x9'	7'-6 9/16"	5'-2 7/8"	4'-5 7/8"	6 1/8"	8 5/8"



#4 BARS N
(3" Diam. Pin)

END ELEVATION

DIMENSIONS																												QUANTITIES FOR 60'-0" ALONG ℄ OF CULVERT			
OPENINGS			MAX. FILL		BARREL			WINGS AND CURBS																				PER LINEAR FOOT OF BARREL		TOTAL QUANTITIES	
SIZE	NO.	AREA	SLAB	WALL	T	N	A	E	J	G	D	H	L	L1	P	P1	M											STEEL	CONC.	STEEL	CONC. ⊛
FT.		SQ. FT.	FT.	FT.	IN.	IN.	IN.	FT.-IN.	FT.-IN.	FT.-IN.	IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.											LBS.	CU. YDS.	LBS.	CU. YDS.
10x7	2	140	6	8	10	8	1 15/16	1-11	1-8	4-5	1 3/4	8-10	16-10 9/16	23-8 5/16	15-11	22-9	69-9 3/8											270.50	1.8951	19816	158.92
	3	210															84-10 3/8											405.93	2.7356	29456	213.83
	4	280															99-11 3/8											559.47	3.5761	39925	268.73
	5	350															115-0 3/8											694.90	4.4167	50713	323.64
10x8	2	160	5	6	10	9	1 15/16	2-0	2-0	4-10	1 13/16	9-10	18-5 3/4	26-9 3/4	17-5	25-9	74-7 5/8											277.38	2.0586	20841	177.36
	3	240															89-10 11/16											415.11	2.9537	30477	235.71
	4	320															105-0 1/2											570.94	3.8488	41164	294.06
	5	400															120-2 7/8											708.67	4.7438	52149	352.40
10x9	2	180	5	6	10	9	1 15/16	2-2	2-4	5-4	1 13/16	10-10	20-4 3/4	29-0 3/4	19-4	28-0	78-9 5/8											287.96	2.1420	22449	191.48
	3	270															94-0 11/16											429.21	3.0648	32307	251.57
	4	360															109-2 1/2											588.56	3.9877	43216	311.67
	5	450															124-4 7/8											729.81	4.9105	54424	371.76

⊛ Quantities do not Include Expansion Joint Block.

BILL OF REINFORCING STEEL FOR 60'-0" CULVERT

BARREL REINFORCEMENT

OPENINGS		BARS A					BARS A1				BARS A2						BARS B				#5 BARS D & D1					#5 BARS D2 & D3					#4 BARS C			
SIZE												SHORT BAR	VARIATION	LONG BAR							LENGTH BARS D	LENGTH BARS D1				LENGTH BARS D2	LENGTH BARS D3							
FT.	NO.	SIZE	NO.	LENGTH FT.-IN.	SP. IN.	SIZE	NO.	LENGTH FT.-IN.	SP. IN.	SIZE	NO.	FT.-IN.	IN.	FT.-IN.	SP. IN.	SIZE	NO.	LENGTH FT.-IN.	SP. IN.	NO.	FT.-IN.	FT.-IN.	SP. IN.	NO.	FT.-IN.	FT.-IN.	SP. IN.	NO.	LENGTH FT.-IN.	SP. IN.	NO.	LENGTH FT.-IN.
10x7	2	#7	68	23-3 1/2	14	#7	120	7-7	7/14	#7	140	2-7	7.0000	22-5	7	#7	70	23-8 1/2	14	126	3-0	7-2	12	63	3-0	7-2	12	71	63-10				
	3	#7	52	33-11 1/2	14	#7	276	7-7	7/14	#7	212	2-7	7.0000	32-11	7	#7	52	34-3 1/2	14	126	3-0	7-2	12	126	3-0	7-2	12	104	63-10				
	4	#7	34	47-2 1/2 ③	14	#7	466	7-7	7/14	#7	284	2-7	7.0000	43-5 ③	7	#7	34	48-5 1/2 ③	14	126	3-0	7-2	12	189	3-0	7-2	12	137	63-10				
	5	#7	14	57-10 1/2 ③	14	#7	700	7-7	7/14	#7	360	2-7	7.0000	54-6 ③	7	#7	14	59-6 1/2 ③	14	126	3-0	7-2	12	252	3-0	7-2	12	170	63-10				
10x8	2	#7	70	23-6 1/2	14	#7	118	7-7	7/14	#7	140	2-8	7.0000	22-6	7	#7	70	23-11 1/2	14	126	3-0	8-2	12	63	3-0	8-2	12	74	63-10				
	3	#7	52	34-3 1/2	14	#7	272	7-7	7/14	#7	212	2-8	7.0000	33-0	7	#7	52	35-1 1/2	14	126	3-0	8-2	12	126	3-0	8-2	12	108	63-10				
	4	#7	32	47-7 1/2 ③	14	#7	468	7-7	7/14	#7	288	2-8	7.0000	44-1 ③	7	#7	32	48-10 1/2 ③	14	126	3-0	8-2	12	189	3-0	8-2	12	142	63-10				
	5	#7	14	58-4 1/2 ③	14	#7	692	7-7	7/14	#7	360	2-8	7.0000	54-7 ③	7	#7	16	60-0 1/2 ③	14	126	3-0	8-2	12	252	3-0	8-2	12	176	63-10				
10x9	2	#7	70	23-6 1/2	14	#7	118	7-7	7/14	#7	140	2-8	7.0000	22-6	7	#7	70	23-11 1/2	14	144	3-0	9-2	10 1/2	72	3-0	9-2	10 1/2	77	63-10				
	3	#7	52	34-3 1/2	14	#7	272	7-7	7/14	#7	212	2-8	7.0000	33-0	7	#7	52	35-1 1/2	14	144	3-0	9-2	10 1/2	144	3-0	9-2	10 1/2	112	63-10				
	4	#7	32	47-7 1/2 ③	14	#7	468	7-7	7/14	#7	288	2-8	7.0000	44-1 ③	7	#7	32	48-10 1/2 ③	14	144	3-0	9-2	10 1/2	216	3-0	9-2	10 1/2	147	63-10				
	5	#7	14	58-4 1/2 ③	14	#7	692	7-7	7/14	#7	360	2-8	7.0000	54-7 ③	7	#7	16	60-0 1/2 ③	14	144	3-0	9-2	10 1/2	288	3-0	9-2	10 1/2	182	63-10				

WINGS AND CURBS REINFORCEMENT

OPENINGS	BARS E				BARS E1				#4 BARS F		#4 BARS F1		#4 BARS F2		#4 BARS F3		#4 BARS J		#4 BARS J1		#4 BARS O		#4 BARS P		#4 BARS P1		#4 BARS P2		#4 BARS P3		#4 BARS N		#6 BARS M		#6 BARS N		#6 BARS X Ⓐ	
SIZE	NO.	LENGTH FT.-IN.	SP. IN.	SIZE	NO.	LENGTH FT.-IN.	SP. IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.	NO.	LENGTH FT.-IN.
																																62	4-9	4	33-11	6	30-7	32	2-0
																																92	4-9	4	51-2 ③	6	47-10 ③	32	2-0
																																122	4-9	4	66-5 ③	6	62-11 ③	32	2-0
																																152	4-9	4	81-8 ③	6	78-0 ③	32	2-0
																																62	4-9	4	34-3	6	30-11	36	2-0
																																92	4-9	4	51-7 ③	6	48-4 ③	36	2-0
																																124	4-9	4	66-10 ③	6	63-6 ③	36	2-0
																																154	4-9	4	82-0 ③	6	78-9 ③	36	2-0
#4	94	5-1	10	#4	94	8-2	10	2	17-0	14	3-0	2	25-1	14	3-7	18	13-7	18	21-1	76	4-0	12	8	15-7	6	16-9	8	22-5	6	26-4	62	4-9	4	34-0	6	30-7	40	2-0
																																92	4-9	4	51-2 ③	6	48-4 ③	40	2-0
																																122	4-9	4	66-5 ③	6	63-6 ③	40	2-0
																																154	4-9	4	82-0 ③	6	78-9 ③	40	2-0
#5	96	5-6	11	#4	96	9-2	11	2	18-8	16	3-1	2	28-3	16	3-8	20	15-1	20	24-1	86	4-5	12	8	17-1	6	18-2	8	25-5	6	29-8								
#5	140	5-8	8	#4	140	10-2	8	2	20-6	18	3-1	2	30-6	18	3-8	22	17-0	22	26-4	114	4-11	10	8	19-0	6	20-0	8	27-8	6	32-1								

① Includes one 1'-6" Lap Splice.
② Includes one 2'-7" Lap Splice.
③ Includes one 2'-2" Lap Splice.
④ Does not Include Lap Splice. When Length of Bar Exceeds 40'-0" add 2'-7" Lap Splice.

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

General Notes:

CONSTRUCTION SPECIFICATIONS: Latest Approved La. Dept. of Highways Std. Specs.
DESIGN SPECIFICATIONS: A.A.S.H.O. 1969 as amended by Int. Spec. 1971.
LIVE LOAD: HS 20-44 or Military Loading 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 Ctrs.
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 Details of Joints, See Standard Plan CM-49

STANDARD PLAN
MULTIPLE OPENINGS
REINFORCED CONCRETE BOX CULVERTS
STRAIGHT WINGS 45° CROSSING
2:1 SPILL SLOPE NORMAL TO CHANNEL

DATED March 20, 1972 10'x 7' TO 10'x 9'

APPROVED BY:
Original Signed by Chief Engineer
CHIEF ENGINEER DATE

DATE	DESCRIPTION	BY
1-11-78	Rev. Weep Hole Note	W.T.J.
6-10-75	Revised Slope Intercept	W.T.J.
6-8-72	Rev. General Notes for Steel	W.E.M.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	DETAILED J.D. BACCI	TRACED E.B. ALLEN
CHECKED	CHECKED H. BAROUSSE	CHECKED J.D. BACCI

CC-S-M-10-R-45°-1

CC-S-M-10-R-45°-1