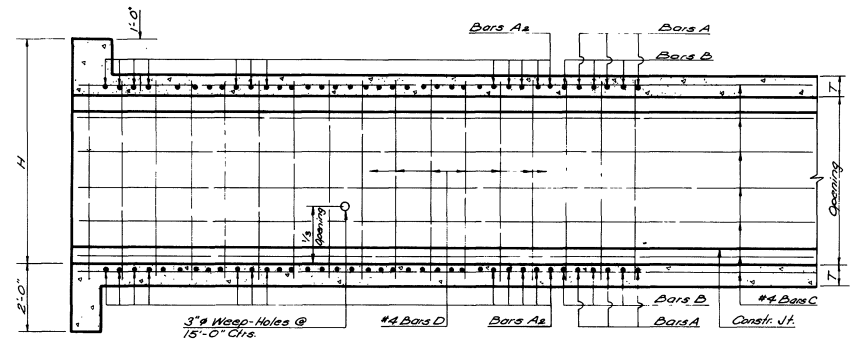
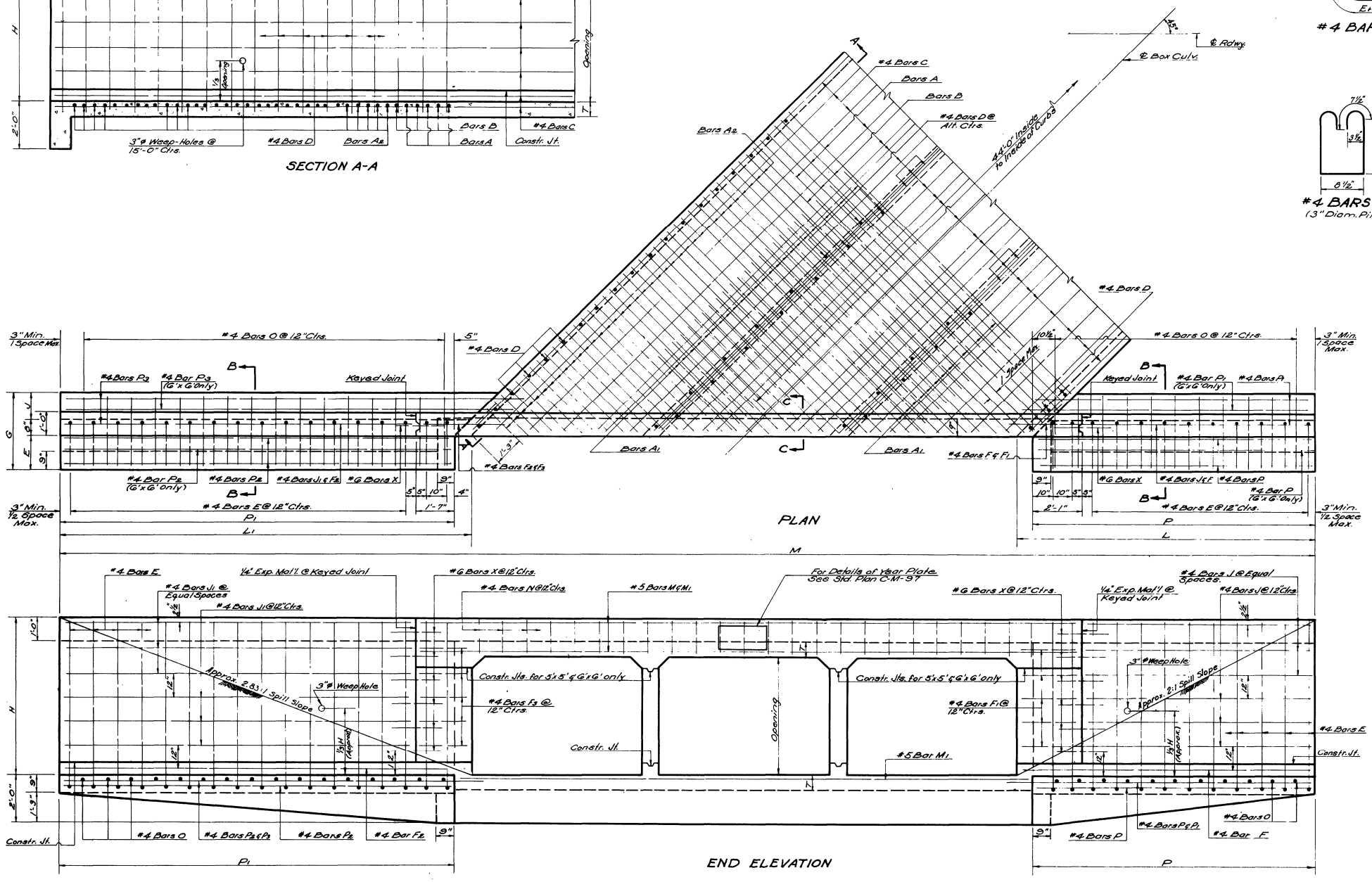
APPROVED BY:
Original Signed by Chief Engineer
CHIEF ENGINEER DATE

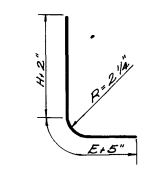
CC·S·M·4-6·S·45°·I

STATE PROJECT	PARISH	SHEET NO.

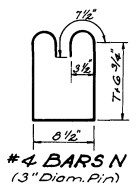


SECTION A-A

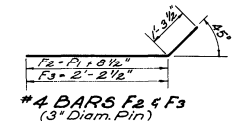




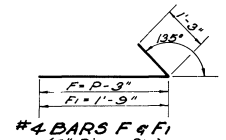
#4 BARS E



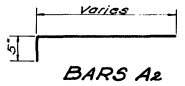
#4 BARS N
(3" Diam. Pin)



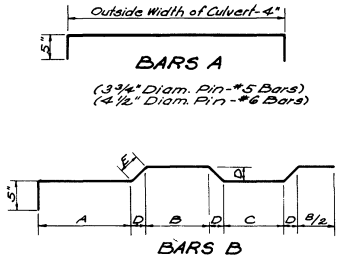
#4 BARS F2 & F3
(3" Diam. Pin)



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



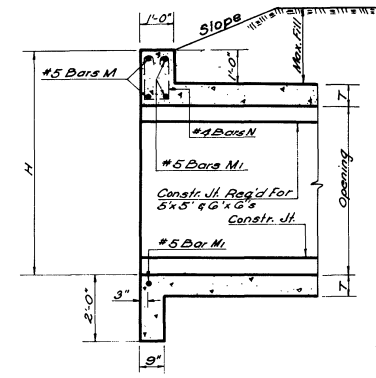
BARS A2
(3 3/4" Diam. Pin - #5 Bars)
(4 1/2" Diam. Pin - #6 Bars)



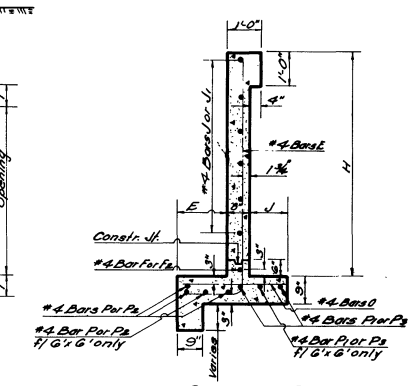
BARS A

BARS B

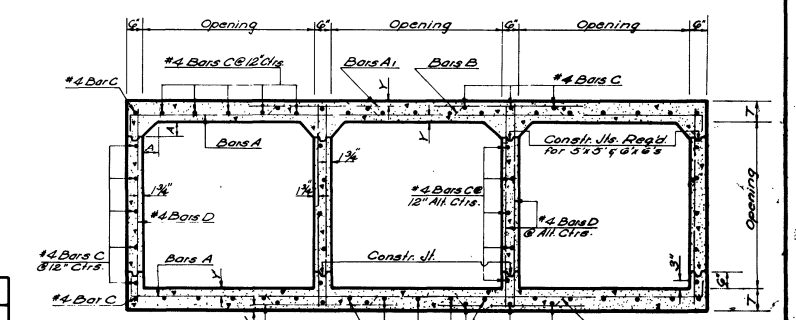
DIMENSIONS FOR BARS B						
SIZE	PIN DIAM	A	B	C	D	E
4'x4'	3 3/8"	3'-2 5/16"	2'-2 3/16"	1'-8 3/8"	3 3/8"	4 1/4"
5'x5'	3 3/8"	3'-11 1/16"	2'-8 11/16"	2'-2 1/8"	3 3/8"	5 1/2"
6'x6'	4 1/2"	4'-7 7/8"	3'-1 1/16"	2'-7 3/8"	4 1/4"	6'



SECTION C-C



SECTION B-B



SECTION THRU BARREL

DIMENSIONS / QUANTITIES

OPENINGS SIZE Feet	No.	AREA Sq. Ft.	MAX. FILL SLAB Ft	MAX. FILL WALLS Ft	BARREL T in.	BARREL A in.	BARREL Y in.	WINGS AND CURBS 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.	QUANTITIES PER LIN. FT. OF BARREL STEEL Pounds	CONCRETE Cu. Yds.	44'-0" CULVERT STEEL Pounds	CONCRETE Cu. Yds.	OPENINGS No.	OPENINGS SIZE Feet
4x4	2	32	25	13	7	4	1 3/16	1-3	0-10	2-9	5-7	10-5 1/2	14-1 1/2	3-9	13-5	36-7 1/16	85.26	0.6408	4373	43.60	2	4x4
	3	48														42-11 9/16	127.77	0.9136	7147	57.34	3	
	4	64	32													49-3 1/8	170.27	1.1862	9335	71.07	4	
	5	80														55-5 9/16	212.77	1.4588	11652	84.82	5	
	6	96														62-0 7/16	255.27	1.7315	14015	98.55	6	
5x5	2	50	21	27	7	5	1 3/16	1-5	1-2	3-3	6-7 1/2	12-5 1/2	17-1 1/2	11-9	16-5	44-5 3/16	113.52	0.8231	6578	57.21	2	5x5
	3	75														52-2 1/16	170.56	1.1767	9504	74.04	3	
	4	100														59-11 3/16	227.60	1.5303	12517	92.78	4	
	5	125														67-3 7/16	284.64	1.8840	15726	110.42	5	
	6	150														75-6 1/16	341.68	2.2397	18880	128.16	6	
6x6	2	72	15	20	5	8	6	1-7	1-6	3-9	7-8	14-5 1/2	20-1 1/2	13-9	19-5	58-3 7/8	137.76	1.0185	8154	74.23	2	6x6
	3	108														61-5 3/16	206.89	1.4599	11720	94.26	3	
	4	144														70-7 7/16	276.06	1.9012	15460	116.29	4	
	5	180														79-10	345.23	2.3426	19330	138.32	5	
	6	216														89-0 5/16	414.40	2.7939	23403	160.35	6	

BILL OF REINFORCING STEEL FOR 44'-0" CULVERT

OPENINGS SIZE Feet	No.	BARREL REINFORCEMENT BARS A No.	Size	Length Ft.-In.	Spac In.	BARS A1 No.	Size	Length Ft.-In.	Spac In.	BARS A2 No.	Size	Short Bar Ft.-In.	Var.	Long Bar Ft.-In.	Spac In.	BARS B No.	Size	Length Ft.-In.	Spac In.	#4 BARS C No.	Length Ft.-In.	#4 BARS D No.	Length Ft.-In.	Spac In.
4x4	2	*5	74	10-0	12	*5	84	3'-10	6 1/2	*5	64	1-9	6.000	8-3	6	*5	76	10-2 3/4	12	38	47-10	141	4-10	12
	3	*5	66	14-6	12	*5	109	3-10	6 1/2	*5	100	1-9	6.000	13-3	6	*5	66	14-11 1/2	12	56	47-10	188	4-10	12
	4	*5	56	19-0	12	*5	136	3-10	6 1/2	*5	136	1-9	6.000	18-3	6	*5	58	19-8 1/4	12	74	47-10	235	4-10	12
	5	*5	48	23-6	12	*5	168	3-10	6 1/2	*5	172	1-9	6.000	22-8	6	*5	48	24-5	12	92	47-10	282	4-10	12
	6	*5	38	28-0	12	*5	198	3-10	6 1/2	*5	208	1-9	6.000	27-3	6	*5	40	29-1 1/2	12	110	47-10	329	4-10	12
5x5	2	*5	84	12-0	10	*5	116	4-4	5 1/2	*5	96	1-9	5.0000	11-4	5	*5	86	12-3 1/4	10	45	47-10	141	5-11	12
	3	*5	72	17-6	10	*5	160	4-4	5 1/2	*5	148	1-9	5.0000	16-9	5	*5	72	18-0 7/8	10	66	47-10	188	5-11	12
	4	*5	58	23-0	10	*5	226	4-4	5 1/2	*5	200	1-9	5.0000	22-2	5	*5	60	23-9 3/4	10	87	47-10	235	5-11	12
	5	*5	46	28-6	10	*5	284	4-4	5 1/2	*5	252	1-9	5.0000	27-7	5	*5	48	29-7	10	108	47-10	282	5-11	12
	6	*5	34	34-0	10	*5	342	4-4	5 1/2	*5	304	1-9	5.0000	33-0	5	*5	34	35-4 1/8	10	129	47-10	329	5-11	12
6x6	2	*6	58	14-0	14	*6	82	5-2	7 1/4	*6	60	1-9	7.0000	12-10	7	*6	60	14-3 1/8	14	52	47-10	168	7-0	10
	3	*6	46	20-6	14	*6	122	5-2	7 1/4	*6	128	1-9	7.0000	19-10	7	*6	46	21-1	14	76	47-10	224	7-0	10
	4	*6	34	27-0	14	*6	318	5-2	7 1/4	*6	172	1-9	7.0000	26-3	7	*6	36	27-10 3/8	14	100	47-10	280	7-0	10
	5	*6	24	33-6	14	*6	472	5-2	7 1/4	*6	216	1-9	7.0000	32-8	7	*6	24	34-8	14	124	47-10	336	7-0	10
	6	*6	12	40-0	14	*6	640	5-2	7 1/4	*6	260	1-9	7.0000	39-1	7	*6	14	41-5 1/2	14	148	47-10	392	7-0	10

OPENINGS SIZE Feet	CURB AND WING REINFORCEMENT #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.	#5 BARS M No.	Length Ft.-In.	#5 BARS M1 No.	Length Ft.-In.	#6 BARS X No.	Length Ft.-In.
4x4	48	7-5	2	10-9	8	3-0	2	15-5	8	3-6	10	7-4	10	11-6	44	2-4	6	9-5	4	10-7	6	13-1	4	16-0	26	4-3	4	16-7	6	13-0	20	2-0
																									40	4-3	4	22-11				
																									52	4-3	4	29-3				
																									64	4-3	4	35-8				
																									78	4-3	4	①43-10				
5x5	58	8-7 1/2	2	12-9	10	3-0	2	18-5	10	3-6	12	9-4	12	14-6	54	2-10	6	11-5	4	12-7	6	16-1	4	19-4	32	4-4	4	19-4	6	15-9	24	2-0
																									48	4-4	4	27-2				
																									64	4-4	4	34-11				
																									78	4-4	4	①44-7				
																									96	4-4	4	①52-4				
6x6	68	9-10	2	14-9	12	3-0	2	21-5	12	3-6	14	11-4	14	17-6	64	3-4	8	13-5	6	14-7	8	19-1	6	22-8	30	4-5	4	22-2	6	18-7	28	2-0
																									56	4-5	4	31-5				
																									74	4-5	4	①42-5				
																									94	4-5	4	①51-7				
																									116	4-5	4	①60-10				

① Includes 1-1'-6" Lap Splice

② Includes 1-1'-10" Lap Splice

GENERAL NOTES:

Construction Specifications: Latest Approved La. Dept. of Hwy. Standard Specifications.
Design Specifications: A.A.S.H.O. 1961 as amended by Int. Spec. 1964
Live Load: H20-44 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 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.

Ⓐ "G Bars X to be 3/4"ø Smooth and Greased for 1'-0" of Length

DATE	DESCRIPTION	BY
1-11-78	Rev. W.G.&P. Hole Note	W.T.J.
5-30-73	Revised Spill Slope	W.T.J.
6-8-72	Rev. General Notes for Steel	W.E.M.
4-27-67	Added Axle Steel	W.E.M.
12-14-64	Added 3'-0" Opening for H20 (Military) Loading 3'-0" Opening Deleted	W.E.M.
4-5-64	DETORNED BOWELS & TO SMOOTH	W.E.M.

REVISIONS

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

DATED June 19, 1962 4'x4', 5'x5', 6'x6'

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED W. Yoshio | DETAILED N.K. Erwin | TRACED J. Michael
CHECKED J. J. Hutter | CHECKED W. Yoshio | CHECKED W. Yoshio
IN CHARGE OF

CC·S·M·4-6·S·45