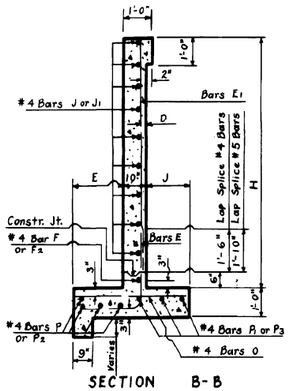
F.A.P.	STATE PROJECT	PARISH	SHEET NO.

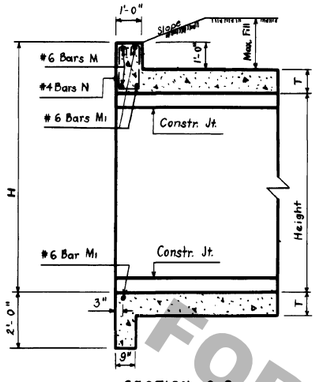
28-NOV-2007 09:48

R:\Standard Plans\English\Old Sheets\CCSM10R45_1.dgn

FOR INFORMATIONAL PURPOSES ONLY



SECTION B-B



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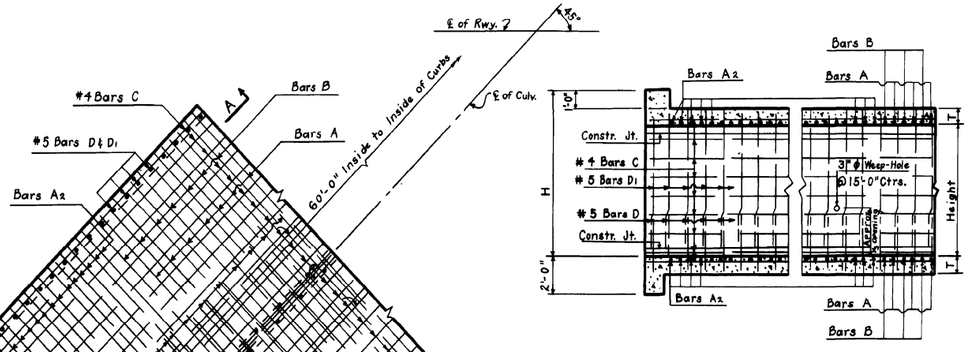
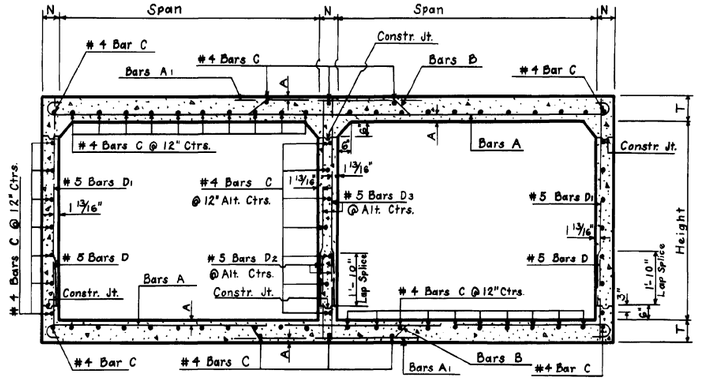


SECTION A-A



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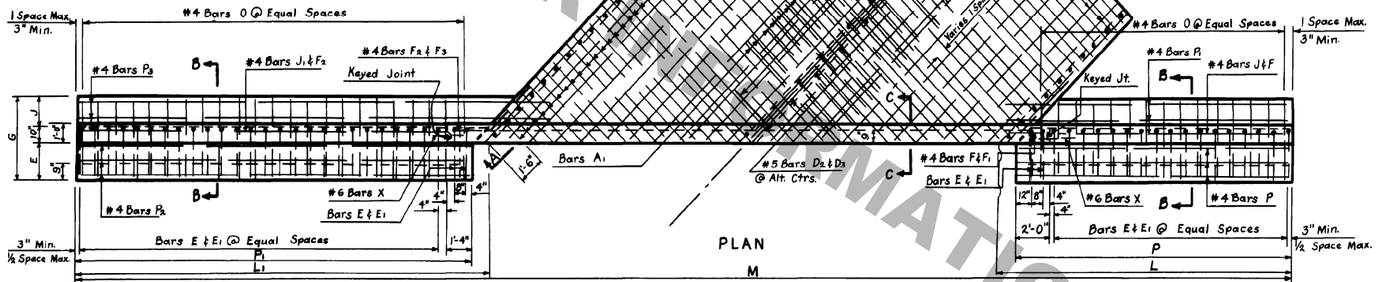
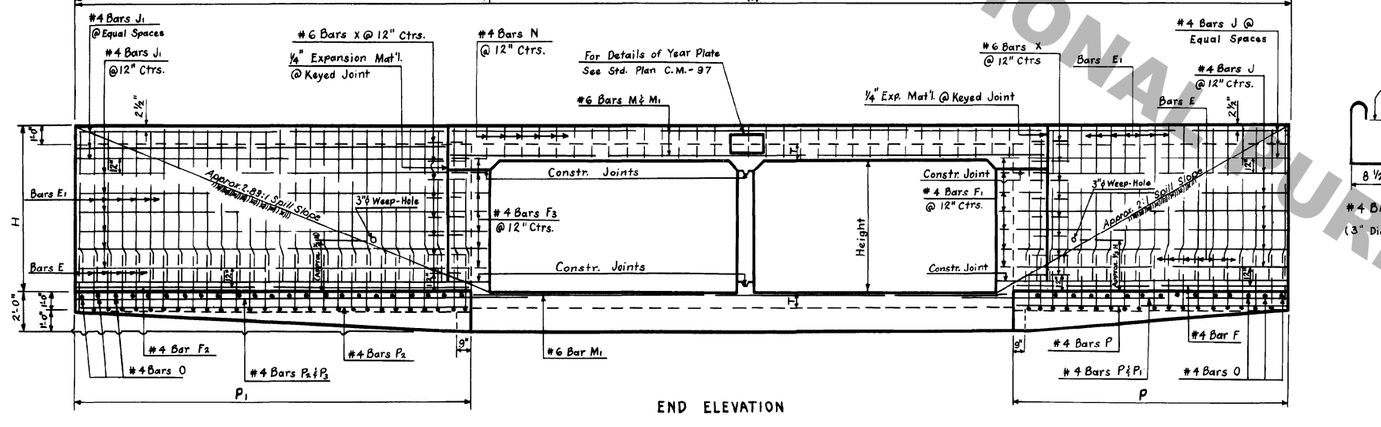
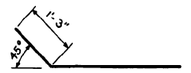


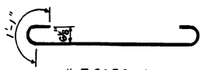
PLAN



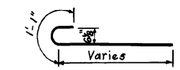
END ELEVATION



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

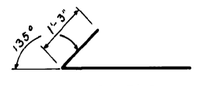


#7 BARS A

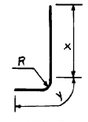


#7 BARS A2

#4 BARS N
(3" Diam. Pin)

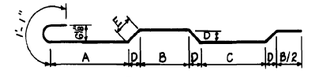


#4 BARS F & F1
(3" Diam. Pin)



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 3/8"	2'-7 7/8"
10'x 9'	#5	2 13/16"	2'-10 3/8"	2'-9 3/8"



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

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

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														69-3 3/8							270.50	1.8951	19816	138.92
	3	210		8	10	8	1 5/16	1-11	1-8	4-5	1 3/4	8-10	16-10 1/4	23-8 1/8	15-11	22-9	84-10 3/8							405.93	2.7356	29456	213.83
	4	280	10														99-11 3/8							559.47	3.5761	33925	268.73
	5	350															115-0 3/8							694.90	4.4167	50713	323.64
10x8	2	160	5														74-7 5/8							277.38	2.0586	20841	177.36
	3	240		6	10	9	1 5/16	2-0	2-0	4-10	1 5/16	9-10	18-5 3/4	26-9 3/4	17-5	25-9	89-10 1/16							415.11	2.9537	30477	235.71
	4	320	10														108-0 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														78-9 5/8							287.96	2.1420	22449	191.48
	3	270		8.5	10	9	1 5/16	2-2	2-4	5-4	1 13/16	10-10	20-4 1/2	29-0 3/4	19-4	28-0	94-0 1/16							429.21	3.0648	32307	251.57
	4	360	10														103-2 1/2							588.56	3.9877	43216	311.67
	5	450															124-4 7/8							729.81	4.9105	54424	371.76

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	NO.	SIZE	NO.	LENGTH FT-IN.	SP. IN.	SIZE	NO.	LENGTH FT-IN.	SP. IN.	SIZE	NO.	SHORT BAR FT-IN.	VARIATION IN.	LONG BAR FT-IN.	SP. IN.	SIZE	NO.	LENGTH FT-IN.	SP. IN.	NO.	LENGTH BARS D FT-IN.	LENGTH BARS D1 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	34-9 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 M1		#6 BARS X Ⓐ	
SIZE	NO.	LENGTH FT-IN.	SP. IN.	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.
#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	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	66-3 ③	6	62-11 ③	32	2-0
																															152	4-9	4	81-4 ③	6	78-0 ③	32	2-0
#5	96	5-6	11	#4	96	9-2	11	2	18-8	16	3-1	2	26-3	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	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
#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	62	4-9	4	34-3	6	30-11	40	2-0
																															92	4-9	4	51-7 ③	6	48-4 ③	40	2-0
																															124	4-9	4	66-10 ③	6	63-6 ③	40	2-0
																															154	4-9	4	82-0 ③	6	78-9 ③	40	2-0

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.

℄ Quantities do not Include Expansion Joint Block.

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

APPROVED BY:
Dempsey D. White 1-11-78
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

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'

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

CCSM10R45-1