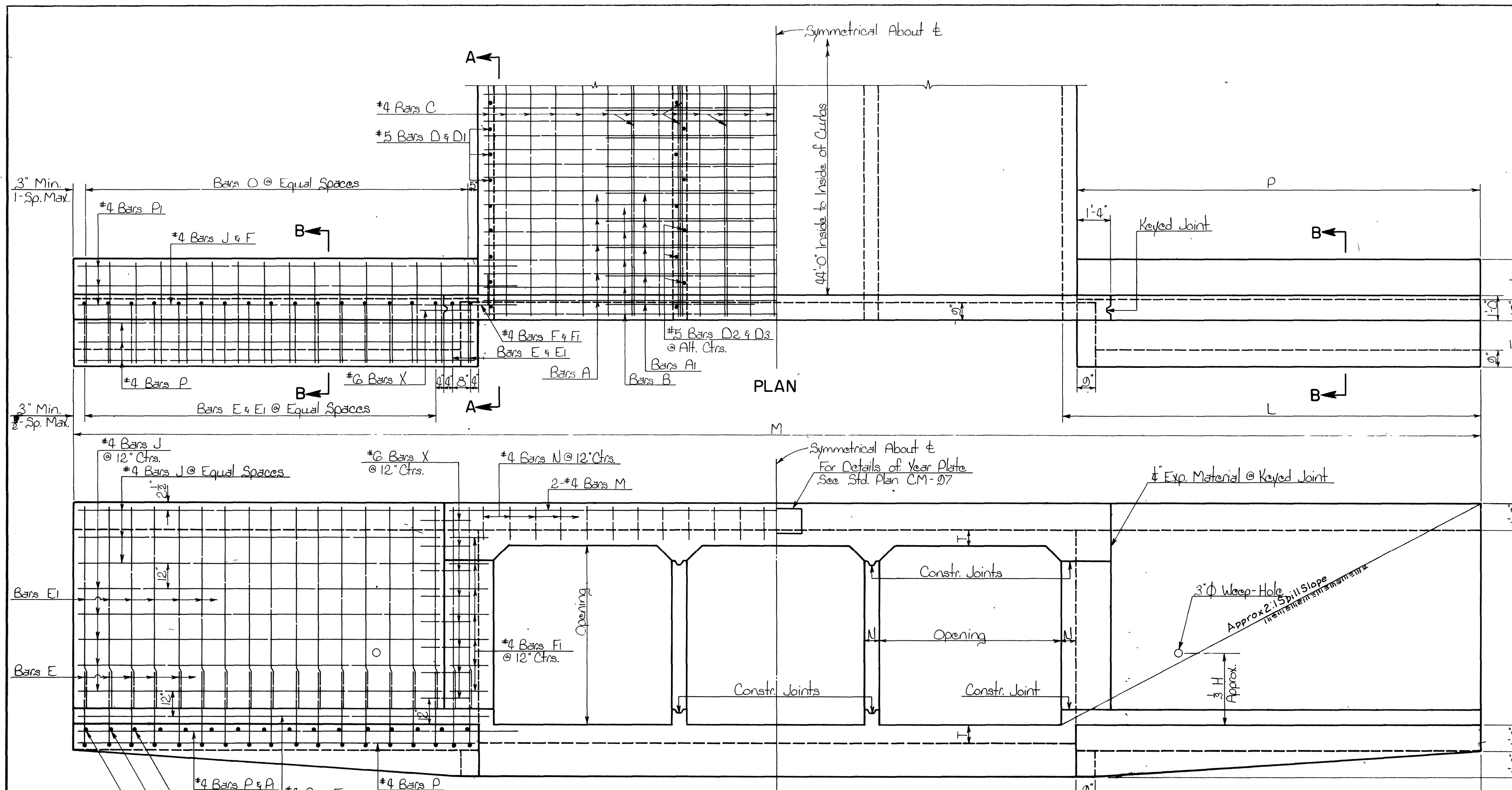
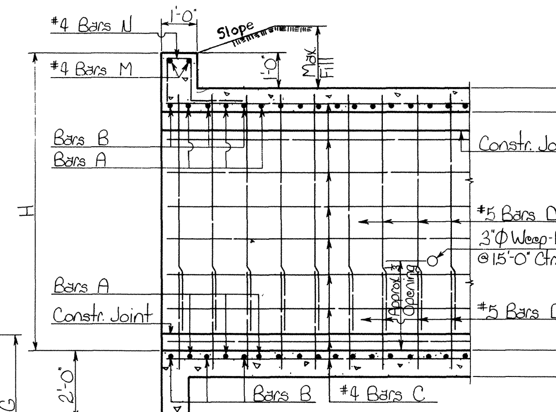
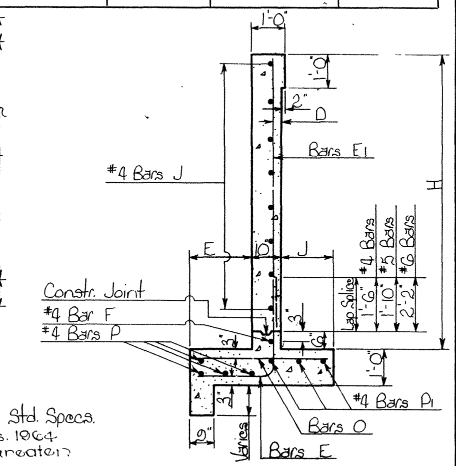




SECTION A-A

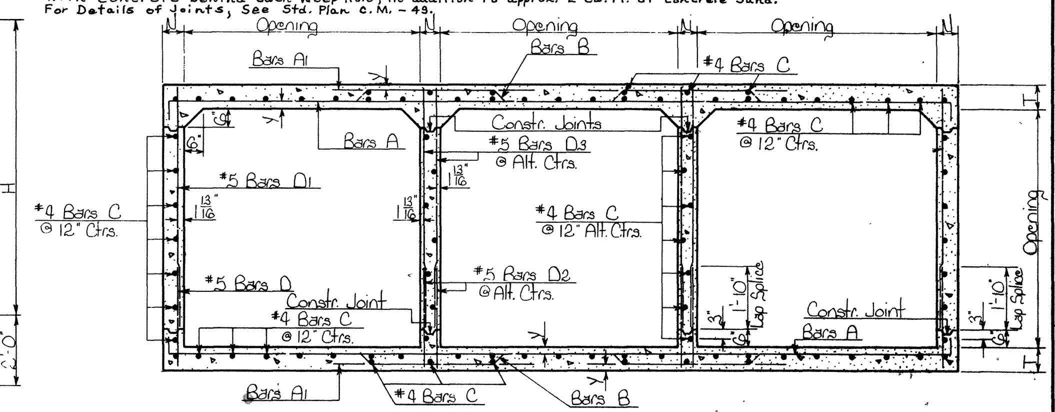


SECTION B-B

Lap Splice	
1'-6"	#4 Bars
1'-10"	#5 Bars
2'-2"	#6 Bars

GENERAL NOTES:

Construction Specifications: Latest Approved La. Dept. of Highways Std. Specs.
Design Specifications: A.A.S.H.O. 1961 as amended by Int. Spes. 1964.
Live Load: HS 20-44, or Military Loading, whichever is Greater.
All Concrete to be Class "A".
All Exposed Corners to have ¾" 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 Details of Joints, See Std. Plan C.M. - 49.



SECTION THRU BARREL

DIMENSIONS

OPENINGS SIZE (Feet)	No.	AREA (Sq. Ft.)	MAX. FILL SLAB (Ft.)	MAX. FILL WALLS (Ft.)	BARREL T (In.)	BARREL N (In.)	BARREL Y (In.)	D (In.)	E (Ft.-In.)	J (Ft.-In.)	G (Ft.-In.)	H (Ft.-In.)	L (Ft.-In.)	P (Ft.-In.)	M (Ft.-In.)
7x7	2	98	11	6	8½	7	1 7/8	1¾	1-10	1-7	4-3	8-8½	16-5	15-10	47-5
	3	147	15												55-0
	4	196													62-7
	5	245													70-2
	6	294													77-9
8x8	2	128	9	5	9	8	1 7/8	1 13/16	2-0	2-0	4-10	9-9	18-6	17-10	53-8
	3	192	13												62-4
	4	256													71-0
	5	320													79-8
	6	384													88-4
9x9	2	162	7	5	9½	9	1 7/8	1 13/16	2-2	2-4	5-4	10-9½	20-8	19-11	60-1
	3	243	11												69-10
	4	324													79-7
	5	405													89-4
10x10	2	200	5	5	10	10	1 15/16	1 7/8	2-5	2-8	5-11	11-10	22-8	21-10	66-2
	3	300	9												77-0
	4	400													87-10
	5	500													98-8

BILL OF REINFORCING STEEL FOR 44'-0" CULVERT

BARREL REINFORCEMENT

SIZE	No.	BARS A Size	BARS A No.	BARS A Length (Ft.-In.)	BARS A Spac. (In.)	BARS A1 Size	BARS A1 No.	BARS A1 Length	BARS A1 Spac.	BARS B Size	BARS B No.	BARS B Length	BARS B Spac.	#4 BARS C No.	#4 BARS C Length ①	#5 BARS D & D1 No.	Length Bars D	Length Bars D1	Spac.	#5 BARS D2 & D3 No.	Length Bars D2	Length Bars D3	Spac.
7x7	2	#6	84	16-5	13	#6	84	5-8	13	#6	86	16-9	13	59	47-2	92	2-10	7-0	12	46	2-10	7-0	12
	3	#6	84	24-0	13	#6	168	5-8	13	#6	86	24-8	13	86	47-2	92	2-10	7-0	12	92	2-10	7-0	12
	4	#6	84	31-7	13	#6	252	5-8	13	#6	86	32-7	13	113	47-2	92	2-10	7-0	12	138	2-10	7-0	12
	5	#6	84	39-2	13	#6	336	5-8	13	#6	86	40-6	13	140	47-2	92	2-10	7-0	12	184	2-10	7-0	12
	6	#6	84	②48-11	13	#6	420	5-8	13	#6	86	②50-7	13	167	47-2	92	2-10	7-0	12	230	2-10	7-0	12
8x8	2	#6	92	18-8	12	#6	92	6-3	12	#6	92	19-0¼	12	66	47-2	92	2-11	8-1	12	46	2-11	8-1	12
	3	#6	92	27-4	12	#6	184	6-3	12	#6	92	28-0½	12	96	47-2	92	2-11	8-1	12	92	2-11	8-1	12
	4	#6	92	36-0	12	#6	276	6-3	12	#6	92	37-0¾	12	126	47-2	92	2-11	8-1	12	138	2-11	8-1	12
	5	#6	92	②46-10	12	#6	368	6-3	12	#6	92	②48-3	12	156	47-2	92	2-11	8-1	12	184	2-11	8-1	12
	6	#6	92	②55-6	12	#6	460	6-3	12	#6	92	②57-3¼	12	186	47-2	92	2-11	8-1	12	230	2-11	8-1	12
9x9	2	#6	100	20-11	11	#6	100	6-9	11	#6	102	21-3¾	11	73	47-2	106	2-11	9-1	10½	53	2-11	9-1	10½
	3	#6	100	30-8	11	#6	200	6-9	11	#6	102	31-5½	11	106	47-2	106	2-11	9-1	10½	106	2-11	9-1	10½
	4	#6	100	40-5	11	#6	300	6-9	11	#6	102	41-7¼	11	139	47-2	106	2-11	9-1	10½	159	2-11	9-1	10½
	5	#6	100	②52-4	11	#6	400	6-9	11	#6	102	②53-11	11	172	47-2	106	2-11	9-1	10½	212	2-11	9-1	10½
10x10	2	#7	78	23-2	14	#7	78	7-8	14	#7	80	23-7	14	80	47-2	124	3-0	10-2	9	62	3-0	10-2	9
	3	#7	78	34-0	14	#7	156	7-8	14	#7	80	34-10	14	116	47-2	124	3-0	10-2	9	124	3-0	10-2	9
	4	#7	78	③47-5	14	#7	234	7-8	14	#7	80	③48-8	14	152	47-2	124	3-0	10-2	9	186	3-0	10-2	9
	5	#7	78	③58-3	14	#7	312	7-8	14	#7	80	③59-11	14	188	47-2	124	3-0	10-2	9	248	3-0	10-2	9

WINGS AND CURBS REINFORCEMENT

SIZE	BARS E Size	BARS E No.	BARS E Length	BARS E Spac.	BARS E1 Size	BARS E1 No.	BARS E1 Length	BARS E1 Spac.	#4 BARS F No.	#4 BARS F Length	#4 BARS F1 No.	#4 BARS F1 Length	#4 BARS J No.	#4 BARS J Length	BARS O Size	BARS O No.	BARS O Length	BARS O Spac.	#4 BARS P No.	#4 BARS P Length	#4 BARS P1 No.	#4 BARS P1 Length
7x7	#4	72	5-0	11	#4	72	8-0	11	4	17-4	28	2-9	32	14-2	#4	64	3-10	12	16	15-6	12	17-2
8x8	#5	88	5-6	10	#4	88	9-1	10	4	19-5	32	2-10	36	16-2	#4	72	4-5	12	16	17-6	12	19-2
9x9	#5	120	5-8	8	#4	120	10-1	8	4	21-7	36	2-11	44	18-3	#4	96	4-11	10	16	19-7	12	21-3
10x10	#6	124	6-2	8½	#5	124	11-2	8½	4	23-7	40	3-0	48	20-2	#5	96	5-6	11	16	21-6	12	23-2

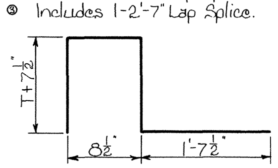
SIZE	No.	#4 BARS N No.	#4 BARS N Length	#4 BARS M No.	#4 BARS M Length	#6 BARS X Ⓐ No.	#6 BARS X Length
7x7	2	32	5-0	4	17-10	32	2-0
	3	48	5-0	4	25-5	32	2-0
	4	62	5-0	4	33-0	32	2-0
	5	78	5-0	4	①42-1	32	2-0
	6	92	5-0	4	①49-8	32	2-0
8x8	2	36	5-1	4	20-1	36	2-0
	3	54	5-1	4	28-9	36	2-0
	4	72	5-1	4	37-5	36	2-0
	5	88	5-1	4	①47-7	36	2-0
	6	106	5-1	4	①56-3	36	2-0
9x9	2	42	5-2	4	22-4	40	2-0
	3	60	5-2	4	32-1	40	2-0
	4	80	5-2	4	①43-4	40	2-0
	5	100	5-2	4	①53-1	40	2-0
10x10	2	46	5-3	4	24-7	44	2-0
	3	68	5-3	4	35-5	44	2-0
	4	90	5-3	4	①47-9	44	2-0
	5	110	5-3	4	①58-7	44	2-0

QUANTITIES

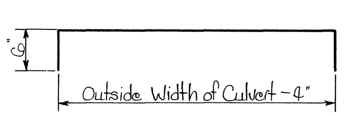
SIZE (Feet)	No.	PER LINEAR FOOT OF BARREL Reinf. Steel (Lbs.)	PER LINEAR FOOT OF BARREL Conc. (Cu. Yds.)	44'-0" CULVERT Reinf. Steel (Lbs.)	44'-0" CULVERT Conc. (Cu. Yds.)
7x7	2	177.86	1.2986	9,968	90.54
	3	264.85	1.8570	14,058	117.33
	4	351.83	2.4154	18,142	144.12
	5	438.82	2.9738	22,237	170.91
	6	537.82	3.5322	26,874	197.71
8x8	2	210.50	1.6111	12,111	112.62
	3	313.92	2.2994	16,976	145.53
	4	417.34	2.9877	21,841	178.43
	5	533.77	3.6759	27,302	211.34
	6	637.20	4.3642	32,168	244.24
9x9	2	252.18	1.9560	14,912	136.99
	3	375.85	2.7870	20,736	176.59
	4	499.44	3.6181	26,571	216.20
	5	637.39	4.4491	33,059	255.80
10x10	2	299.05	2.3333	18,555	163.55
	3	445.65	3.3200	25,436	210.44
	4	610.35	4.3066	33,155	257.33
	5	756.94	5.2932	40,029	304.22

① Includes 1'-1'-6" Lap Splice.
② Includes 1'-2'-2" Lap Splice.
③ Includes 1'-2'-7" Lap Splice.

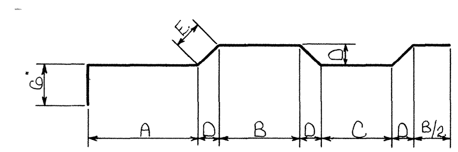
Ⓐ #6 Bars X to be ¾"Φ Smooth and Greased for 1'-0" of Lgth.



№ 4 BARS N
(3" DIAM. PIN)



BARS A



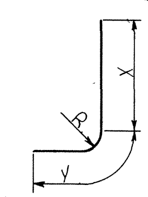
BARS B

DIMENSIONS FOR BARS B

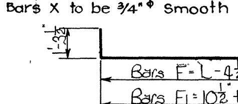
SIZE	PIN DIAM.	A	B	C	D	E
7'x7'	4½"	5'-5 5/8"	3'-8¼"	3'-1¼"	4¾"	6¾"
8'x8'	4½"	6'-3 3/8"	4'-2¾"	3'-6¾"	5¼"	7 3/8"
9'x9'	4½"	7'-1/8"	4'-9¼"	4'-0¼"	5¾"	8 1/8"
10'x10'	5¼"	7'-10 15/16"	5'-3 3/8"	4'-5 7/8"	6 3/8"	8 3/8"

DIMENSIONS FOR BARS E

SIZE	BAR SIZE	R	X	Y
7'x7'	#4	2¼"	2'-7"	2'-5"
8'x8'	#5	2 13/16"	2'-10¾"	2'-7¼"
9'x9'	#5	2 13/16"	2'-10¾"	2'-9¼"
10'x10'	#6	3 3/8"	3'-1½"	3'-0½"



BARS E



№ 4 BARS F & F1
(3" PIN DIAM.)

Approved by
Original Signed by Chief Engineer
Chief Engineer **Date**

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.
12-16-64	Rev. General Notes	W.E.M.
4-3-64	Deformed Dowels "X" to Smooth	W.E.M.

REVISIONS

STANDARD PLAN
MULTIPLE OPENINGS
REINF. CONCRETE BOX CULVERTS
STRAIGHT HDWLS. 2:1 SPILL SLOPE
7'x7' TO 10'x10'
DATED Sept. 13, 1962

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
DESIGNED M. Yoshii DETAILED J. H. Allen TRACED C. Ford
CHECKED W.C. Marcum CHECKED W.C. Marcum CHECKED M. Yoshii
BRIDGE DESIGN SECTION

STATE PROJECT	PARISH	SHEET NO.

C·C·S·M·7—10·S·90°·1

Dietzgen N. O. 135 "Imperial"