

SPAN (S) = 3 FT      HEIGHT (HT) = 2 FT OR 3 FT OR 4 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	10	8	8	8	4	8.5	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	12	35.3	28	40	52	4	12	24.5	5	12	5	12	12
2 FT	10	8	8	8	4	9	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	12	33.0	28	40	52	4	12	24.5	5	12	5	12	12
2'-4'	10	8	8	8	4	9	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	12	33.0	28	40	52	4	12	24.5	5	12	5	12	12
4 FT	8	8	8	8	4	12	4	12	23.8	24.0	24.0	24.0	4	24	39.5	4	24	15.5	4	12	4	12	30.1	28	40	52	4	12	23.5	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	12	30.0	24.0	24.0	24.0	4	24	24.5	4	24	15.0	4	12	4	12	28.0	28	40	52	4	12	23.0	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	12	28.0	24.0	24.0	24.0	4	24	23.5	4	24	15.0	4	12	4	12	27.0	28	40	52	4	12	23.0	5	12	5	12	0
10 FT	8	8	8	8	4	12	4	12	25.0	24.0	24.0	24.0	4	24	22.0	4	24	14.5	4	12	4	12	24.6	28	40	52	4	12	22.5	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	12	24.9	24.0	24.0	24.0	4	24	22.0	4	24	15.5	4	12	4	12	24.5	28	40	52	4	12	22.5	5	12	5	12	0
14 FT	8	8	8	8	4	12	4	12	24.8	24.0	24.0	24.0	4	24	22.0	4	24	16.0	4	12	4	12	24.5	28	40	52	4	11.5	22.5	5	12	5	12	0
16 FT	8	8	8	8	4	12	4	12	24.6	24.0	24.0	24.0	4	24	22.0	4	24	17.0	4	12	4	12	24.4	28	40	52	4	10.5	22.5	5	12	5	12	0
18 FT	8	8	8	8	4	12	4	12	24.6	24.0	24.0	24.0	4	24	22.0	4	24	17.5	4	12	4	12	24.4	28	40	52	4	10	22.5	5	12	5	12	0
20 FT	8	8	8	8	4	12	4	12	24.5	24.0	24.0	24.0	4	24	22.0	4	24	17.5	4	12	4	12	24.3	28	40	52	4	9.5	22.5	5	12	5	12	0
22 FT	8	8	8	8	4	12	4	12	24.5	24.0	24.0	24.0	4	24	22.0	4	24	18.0	4	12	4	12	24.3	28	40	52	4	9	22.5	5	12	5	12	0
24 FT	8	8	8	8	4	12	4	12	24.5	24.0	24.0	24.0	4	24	22.0	4	24	18.0	4	12	4	12	24.3	28	40	52	4	8.5	22.5	5	12	5	12	0
26 FT	8	8	8	8	4	12	4	12	24.5	24.0	24.0	24.0	4	24	22.0	4	24	18.0	4	11	4	11	24.3	28	40	52	4	8	22.5	5	12	5	12	0
28 FT	8	8	8	8	4	12	4	11	24.4	24.0	24.0	24.0	4	23	22.0	4	23	18.0	4	10.5	4	10.5	24.1	28	40	52	4	7.5	22.5	5	12	5	12	0
30 FT	8	8	8	8	4	11.5	4	10.5	24.4	24.0	24.0	24.0	4	22	22.0	4	22	18.0	4	9	4	9.5	24.1	28	40	52	4	7.5	22.5	5	12	5	12	0
32 FT	8	9	8	8	4	11	4	9.5	24.5	24.0	24.0	24.0	4	21	22.0	4	21	18.0	4	10.5	4	12	24.5	29	41	53	4	8	22.5	5	12	5	12	0
34 FT	8	9	8	8	4	10.5	4	9	24.5	24.0	24.0	24.0	4	20	22.0	4	20	18.0	4	9.5	4	11.5	24.4	29	41	53	4	8	22.5	5	12	5	12	0
36 FT	8	9	8	8	4	10	4	8.5	24.4	24.0	24.0	24.0	4	19	22.0	4	19	18.0	4	9	4	11	24.4	29	41	53	4	7.5	22.5	5	12	5	12	0
38 FT	8	10	8	8	4	9.5	4	8	24.5	24.0	24.0	24.0	4	18	22.0	4	18	17.5	4	10	4	12	24.8	30	42	54	4	8.5	22.5	5	12	5	12	0
40 FT	8	10	8	8	4	9	4	7.5	24.5	24.0	24.0	24.0	4	17	22.0	4	17	17.5	4	9.5	4	12	24.8	30	42	54	4	8	22.5	5	12	5	12	0
42 FT	9	10	8	8	4	9	4	9	24.6	25.0	25.0	25.0	4	19	22.0	4	19	17.5	4	9	4	11.5	24.8	30	42	54	4	8	22.5	5	12	5	12	0
44 FT	9	10	8	8	4	9	4	8.5	24.6	25.0	25.0	25.0	4	18	22.0	4	18	17.5	4	8.5	4	11	24.8	30	42	54	4	8	22.5	5	12	5	12	0
46 FT	9	11	8	8	4	8.5	4	8	24.8	25.0	25.0	25.0	4	18	22.0	4	18	17.5	4	9	4	10.5	25.0	31	43	55	4	8.5	22.5	5	12	5	12	0
48 FT	9	11	8	8	4	8	4	7.5	24.8	25.0	25.0	25.0	4	17	22.0	4	17	17.5	4	8.5	4	10.5	25.0	31	43	55	4	8	22.5	5	12	5	12	0
50 FT	10	11	8	8	4	8.5	4	8	24.9	26.0	26.0	26.0	4	19	21.5	4	19	17.5	4	8.5	4	10.5	25.1	31	43	55	4	8	22.5	5	12	5	12	0

SPAN (S) = 3 FT      HEIGHT (HT) = 5 FT OR 6 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS				
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.
1 FT	10	8	8	8	4	8.5	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	11.5	39.0	64	76	4	12	24.5	5	12	5	12	12
2 FT	10	8	8	8	4	8.5	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	11	39.9	64	76	4	11.5	24.5	5	12	5	12	12
2'-4'	10	8	8	8	4	8.5	4	10.5	23.8	26.0	26.0	26.0	4	24	39.5	4	24	16.0	4	12	4	10	39.9	64	76	4	11.5	24.5	5	12	5	12	12
4 FT	8	8	8	8	4	12	4	12	23.8	24.0	24.0	24.0	4	24	39.5	4	24	15.0	4	12	4	10	38.6	64	76	4	12	23.5	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	12	36.9	24.0	24.0	24.0	4	24	25.0	4	24	14.5	4	12	4	9.5	36.9	64	76	4	12	23.0	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	12	38.6	24.0	24.0	24.0	4	24	23.5	4	24	15.0	4	12	4	9	35.8	64	76	4	12	23.0	5	12	5	12	0
10 FT	8	8	8	8	4	12	4	12	33.1	24.0	24.0	24.0	4	24	21.5	4	24	14.0	4	12	4	9.5	32.8	64	76	4	12	22.5	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	12	32.8	24.0	24.0	24.0	4	24	21.5	4	24	15.0	4	12	4	9	32.5	64	76	4	12	22.5	5	12	5	12	0
14 FT	8	8	8	8	4	12	4	11	32.4	24.0	24.0	24.0	4	24	21.5	4	24	16.0	4	12	4	8.5	32.3	64	76	4	12	22.5	5	12	5	12	0
16 FT	8	8	8	8	4	12	4	10	32.1	24.0	24.0	24.0	4	24	21.5	4	24	16.5	4	12	4	8	32.1	64	76	4	11.5	22.5	5	12	5	12	0
18 FT	8	8	8	8	4	12	4	9	32.0	24.0	24.0	24.0	4	24	21.5	4	24	17.0	4	12	4	7.5	32.0	64	76	4	11	22.5	5	12	5	12	0
20 FT	8	8	8	8	4	12	4	8	31.8	24.0	24.0	24.0	4	24	21.5	4	24	17.0	4	12	4	7	31.9	64	76	4	10	22.5	5	12	5	12	0
22 FT	8	8	8	8	4	12	4	7.5	31.6	24.0	24.0	24.0	4	24	21.5	4	24	17.5	4	12	4	6.5	31.8	64	76	4	9.5	22.5	5	12	5	12	0
24 FT	8	8	8	8	4	12	4	7	31.6	24.0	24.0	24.0	4	24	21.5	4	24	17.5	4	12	4	6	31.6	64	76	4	9.5	22.5	5	12	5	12	0
26 FT	8	8	8	8	4	12	4	6.5	31.5	24.0	24.0	24.0	4	24	21.5	4	24	17.5	4	11.5	5	6.5	31.6	64	76	4	9	22.5	5	12	5	12	0
28 FT	8	8	8	8	4	12	4	6	31.5	24.0	24.0	24.0	4	24	21.5	4	24	17.5	4	10.5	5	6	31.5	64	76	4	8.5	22.5	5	12	5	12	0
30 FT	8	9	8	8	4	12	5	6.5	31.3	24.0	28.0	28.0	4	24	21.5	4	24	17.5	4	11.5	5	6.5	32.8	65	77	4	10	22.5	5	12	5	11.5	0
32 FT	8	9	8	8	4	11	5	6	31.3	24.0	28.0	28.0	4	24	21.5	4	24	17.5	4	11	5	6	32.6	65	77	4	9.5	22.5	5	12	5	11	0
34 FT	8	9	8	8	4	10.5	5	6																									

		SPAN (S) = 4 FT										HEIGHT (HT) = 2 FT OR 3 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=2' HT=3'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=2' HT=3'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	12	29.3	28	40	4	9.5	28.0	5	12	5	12	12
2 FT	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.0	4	12	4	12	27.3	28	40	4	9	27.5	5	12	5	12	12
2' - 4'	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.0	4	12	4	12	27.3	28	40	4	9	27.5	5	12	5	12	12
4 FT	8	8	8	8	4	12	4	12	26.3	24.0	24.0	4	24	34.0	4	24	19.0	4	12	4	12	25.0	28	40	4	9.5	27.0	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	12	24.8	24.0	24.0	4	24	28.5	4	24	19.0	4	12	4	12	24.0	28	40	4	9.5	26.5	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	12	24.1	24.0	24.0	4	24	27.0	4	24	19.0	4	12	4	12	23.4	28	40	4	9	26.0	5	12	5	12	0
10 FT	8	8	8	8	4	12	4	12	22.6	24.0	24.0	4	24	25.5	4	24	18.5	4	12	4	12	22.1	28	40	4	9	25.5	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	12	22.5	24.0	24.0	4	24	25.5	4	24	18.5	4	12	4	12	22.1	28	40	4	8	25.5	5	12	5	12	0
14 FT	8	8	8	8	4	12	4	12	22.5	24.0	24.0	4	22	25.5	4	22	18.5	4	12	4	12	22.1	28	40	4	7.5	25.5	5	12	5	12	0
16 FT	8	8	8	8	4	12	4	12	22.5	24.0	24.0	4	20	25.5	4	20	18.5	4	11	4	12	22.1	28	40	4	7	25.5	5	12	5	12	0
18 FT	8	8	8	8	4	12	4	12	22.5	24.0	24.0	4	18	25.5	4	18	18.5	4	10	4	11.5	22.0	28	40	4	6.5	25.5	5	12	5	12	0
20 FT	8	8	8	8	4	10.5	4	11.5	22.5	24.0	24.0	4	17	25.5	4	17	18.5	4	9	4	10.5	22.0	28	40	4	6	25.5	5	12	5	12	0
22 FT	8	9	8	8	4	10	4	10.5	22.6	24.0	24.0	4	15	25.5	4	15	18.5	4	9	4	12	21.4	29	41	4	6.5	26.0	5	12	5	12	0
24 FT	8	9	8	8	4	9	4	9.5	22.6	24.0	24.0	4	14	25.5	4	14	18.5	4	8.5	4	12	21.4	29	41	4	6	26.0	5	12	5	12	0
26 FT	8	10	8	8	4	8.5	4	8.5	22.8	24.0	24.0	4	13	25.5	4	13	18.5	4	8.5	4	12	20.9	30	42	4	6.5	26.0	5	12	5	12	0
28 FT	8	10	8	8	4	7.5	4	8	22.8	24.0	24.0	4	12	25.5	4	12	18.5	4	8	4	12	20.9	30	42	4	6.5	26.0	5	12	5	12	0
30 FT	9	10	8	8	4	8	4	10.5	22.3	25.0	25.0	4	13	25.5	4	13	18.5	4	7.5	4	12	21.0	30	42	4	6	26.0	5	12	5	12	0
32 FT	9	11	8	8	4	7.5	4	10	22.4	25.0	25.0	4	12	25.5	4	12	18.5	4	8	4	10.5	20.6	31	43	4	6.5	26.0	5	12	5	12	0
34 FT	10	11	8	8	4	7.5	4	10.5	22.0	26.0	26.0	4	13	25.0	4	13	18.5	4	7.5	4	10.5	20.9	31	43	4	6	26.0	5	12	5	12	0
36 FT	10	12	8	8	4	7.5	4	10	22.1	26.0	26.0	4	12	25.0	4	12	18.5	4	7.5	4	9.5	20.6	32	44	4	6.5	26.0	5	12	5	12	0
38 FT	10	12	8	8	4	7	4	9.5	22.1	26.0	26.0	4	12	25.0	4	12	18.5	4	7.5	4	9.5	20.6	32	44	4	6	26.0	5	12	5	12	0
40 FT	11	12	8	8	4	7	4	9.5	21.8	27.0	27.0	4	13	25.0	4	13	18.5	4	7	4	9.5	20.9	32	44	4	6	26.0	5	12	5	12	0
42 FT	11	13	8	8	4	6.5	4	9.5	21.9	27.0	27.0	4	12	25.0	4	12	18.5	4	7	4	8.5	20.6	33	45	4	6	26.0	5	12	5	12	0
44 FT	11	13	8	8	4	6.5	4	9	21.9	27.0	27.0	4	12	25.0	4	12	18.5	4	7	4	8.5	20.6	33	45	4	6	26.0	5	12	5	12	0
46 FT	12	13	8	8	4	6.5	4	8.5	21.6	28.0	28.0	4	12	24.5	4	12	18.5	4	6.5	4	8.5	20.9	33	45	5	8.5	26.0	5	12	5	12	0
48 FT	12	13	8	8	4	6.5	4	8.5	21.6	28.0	28.0	4	12	24.5	4	12	18.5	4	6	4	8.5	20.9	33	45	5	8.5	26.0	5	12	5	12	0
50 FT	12	14	8	8	4	6	4	8.5	21.8	28.0	28.0	4	12	24.5	4	12	18.5	4	6.5	4	7.5	20.8	34	46	5	9	26.0	5	12	5	12	0

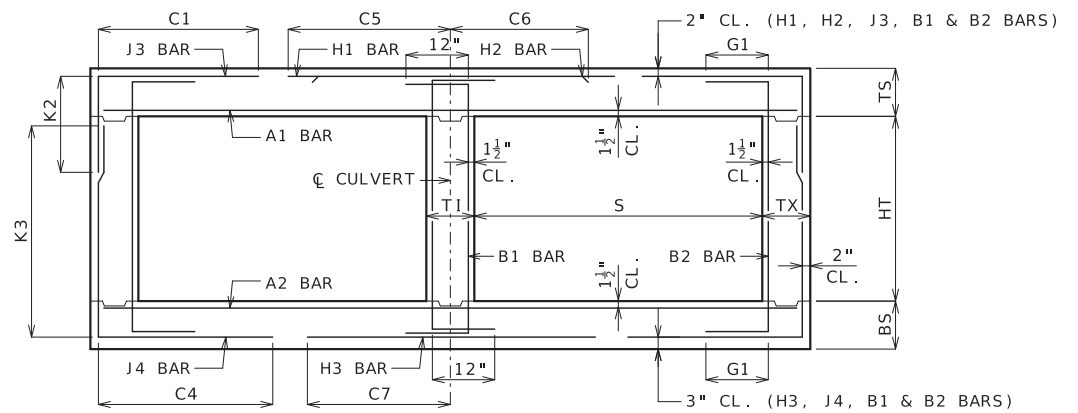
		SPAN (S) = 4 FT										HEIGHT (HT) = 4 FT OR 5 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=4' HT=5'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=4' HT=5'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	12	39.9	52	64	4	9	28.0	5	12	5	12	12
2 FT	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	12	36.8	52	64	4	9	27.5	5	12	5	12	12
2' - 4'	10	8	8	8	4	7	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	12	36.8	52	64	4	9	27.5	5	12	5	12	12
4 FT	8	8	8	8	4	12	4	12	27.3	24.0	24.0	4	24	48.0	4	24	19.5	4	12	4	12	33.8	52	64	4	9	27.0	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	12	33.5	24.0	24.0	4	24	28.5	4	24	19.0	4	12	4	11.5	31.3	52	64	4	9	26.5	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	12	30.6	24.0	24.0	4	24	27.0	4	24	19.0	4	12	4	11	29.9	52	64	4	8.5	26.0	5	12	5	12	0
10 FT	8	8	8	8	4	12	4	12	27.4	24.0	24.0	4	24	25.5	4	24	18.5	4	12	4	12	27.1	52	64	4	9	25.5	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	12	27.1	24.0	24.0	4	24	25.5	4	24	18.5	4	12	4	11	26.9	52	64	4	8	25.5	5	12	5	12	0
14 FT	8	8	8	8	4	12	4	12	27.0	24.0	24.0	4	22	25.0	4	22	18.5	4	12	4	10.5	26.8	52	64	4	7.5	25.5	5	12	5	12	0
16 FT	8	8	8	8	4	12	4	11	26.9	24.0	24.0	4	21	25.0	4	21	18.5	4	10.5	4	10	26.6	52	64	4	7	25.5	5	12	5	12	0
18 FT	8	8	8	8	4	11.5	4	10	26.8	24.0	24.0	4	19	25.0	4	19	18.5	4	9.5	4	9	26.6	52	64	4	6.5	25.5	5	12	5	12	0
20 FT	8	8	8	8	4	10.5	4	9	26.6	24.0	24.0	4	17	25.0	4	17	18.5	4	8.5	4	8	26.5	52	64	4	6	25.5	5	12	5	12	0
22 FT	8	9	8	8	4	9.5	4	8	26.8	24.0	24.0	4	15	25.0	4	15	18.5	4	9	4	9.5	26.8	53	65	4	6.5	26.0	5	12	5	12	0
24 FT	8	9	8	8	4	9	4	7.5	26.6	24.0	24.0	4	14	25.0	4	14	18.5	4	8.5	4	9	26.6	53	65	4	6.5	26.0	5	12	5	12	0
26 FT	8	10	8	8	4	8.5	4	6.5	26.6	24.0	24.0	4	13	25.0	4	13	18.5	4	8.5	4	10.5	26.9	54	66	4	7	26.0	5	12	5	12	0
28 FT	8	10	8	8	4	7.5	4	6	26.6	24.0	24.0	4	12	25.0	4	12	18.5	4	8	4	10	26.9	54	66	4	6.5	26.0	5	12	5	12	0
30 FT	9	10	8	8	4	8	4	7.5	26.8	25.0	25.0	4	13	25.0	4	13	18.5	4	7	4	9	26.9	54	66	4	6	26.0	5	12	5	12	0
32 FT	9	11	8	8	4	7.5	4	6.5	26.9	25.0	25.0	4	12	25.0	4	12	18.5	4	8	4	9	27.1	55	67	4	6.5	26.0	5	12	5	12	0
34 FT	10	11	8	8	4	7.5	4	6.5	27.0	26.0	26.0	4	14	24.5	4	14	18.5	4	7.5	4	8.5	27.1	55	67	4	6	26.0	5	12	5	12	0
36 FT	10	12	8	8	4	7.5	4	6.5	27.1	26.0	26.0	4	13	24.5	4	13	18.5	4	8	4	8.5	27.4	56	68	4	6.5	26.0	5	12	5	12	0
38 FT	10	12	8	8	4	7	4	6	27.1	26.0</																						

		SPAN (S) = 4 FT										HEIGHT (HT) = 6 FT OR 7 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=6' HT=7'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=6' HT=7'		SIZE	SPA.	C7	SIZE	SPA.	G1				
1 FT	10	8	8	8	4	6.5	4	10.5	27.3	26.0	26.0	4	24	48.0	4	24	20.5	4	12	4	8.5	46.6	76	88	4	8.5	28.0	5	12	5	12	12
2 FT	10	8	8	8	4	6.5	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	8.5	45.3	76	88	4	8.5	27.5	5	12	5	12	12
2'- 4'	10	8	8	8	4	6.5	4	10.5	27.3	26.0	26.0	4	23	48.0	4	23	20.5	4	12	4	7.5	45.3	76	88	4	8.5	27.5	5	12	5	12	12
4 FT	8	8	8	8	4	12	4	10.5	27.3	24.0	24.0	4	24	48.0	4	24	19.5	4	12	4	7.5	43.0	76	88	4	9	27.0	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	10	47.3	24.0	24.0	4	24	28.5	4	24	19.0	4	12	4	7	40.8	76	88	4	9	26.5	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	9	41.4	24.0	24.0	4	24	27.0	4	24	19.0	4	12	4	6.5	39.0	76	88	4	8.5	26.0	5	12	5	12	0
10 FT	8	8	8	8	4	12	4	10	35.4	24.0	24.0	4	24	25.0	4	24	18.5	4	12	4	7	35.1	76	88	4	8.5	25.5	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	8.5	34.9	24.0	24.0	4	24	25.0	4	24	18.5	4	12	4	6.5	34.9	76	88	4	8	25.5	5	12	5	12	0
14 FT	8	8	8	8	4	12	4	7.5	34.6	24.0	24.0	4	23	25.0	4	23	18.5	4	12	4	6	34.6	76	88	4	7.5	25.5	5	12	5	12	0
16 FT	8	8	8	8	4	12	4	6.5	34.4	24.0	24.0	4	22	25.0	4	22	18.5	4	10.5	5	6.5	34.4	76	88	4	7	25.5	5	12	5	12	0
18 FT	8	8	8	8	4	12	4	6	34.1	24.0	24.0	4	19	25.0	4	19	18.5	4	9.5	5	6	34.3	76	88	4	6.5	25.5	5	12	5	12	0
20 FT	8	9	9	8	4	11	4	6.5	33.6	24.0	24.0	4	18	24.5	4	18	18.5	4	10	4	6.5	34.9	77	89	4	7.5	25.5	5	12	5	12	0
22 FT	8	9	9	8	4	10	4	6	33.5	24.0	24.0	4	16	25.0	4	16	18.5	4	9	4	6	34.8	77	89	4	7	25.5	5	12	5	12	0
24 FT	8	9	9	8	4	9	5	6.5	33.4	24.0	28.0	4	15	25.0	4	15	18.5	4	8.5	5	7	34.6	77	89	4	6.5	25.5	5	12	5	12	0
26 FT	8	10	9	8	4	8.5	5	6	33.1	24.0	24.0	4	14	24.5	4	14	18.5	4	9	4	6	35.5	78	90	4	7	26.0	5	12	5	11.5	0
28 FT	8	10	9	8	4	8	6	7.5	36.1	24.0	28.0	4	13	24.5	4	13	18.5	4	8.5	5	7	35.5	78	90	4	6.5	26.0	5	12	5	10.5	0
30 FT	9	10	9	8	4	8	5	6	34.0	25.0	29.0	4	14	24.5	4	14	18.5	4	7.5	5	6.5	35.3	78	90	4	6	25.5	5	12	5	10	0
32 FT	9	11	9	8	4	8	5	6	33.9	25.0	29.0	4	13	24.5	4	13	18.5	4	8	5	6.5	35.9	79	91	4	6.5	26.0	5	12	5	9.5	0
34 FT	9	11	9	8	4	7.5	5	6	33.9	25.0	29.0	4	13	24.5	4	13	18.5	4	7.5	5	6.5	35.9	79	91	4	6	26.0	5	12	5	9	0
36 FT	10	11	9	8	4	7.5	5	6.5	34.6	26.0	30.0	4	14	24.0	4	14	18.0	4	7	5	6	35.8	79	91	4	6	25.5	5	12	5	8.5	0
38 FT	10	12	9	8	4	7	5	6	34.5	26.0	30.0	4	14	24.0	4	14	18.0	4	7.5	5	6	36.3	80	92	4	6	25.5	5	12	5	8.5	0
40 FT	10	12	9	8	4	7	5	6	34.5	26.0	30.0	4	13	24.0	4	13	18.0	4	7.5	5	6	36.3	80	92	4	6	25.5	5	12	5	8.5	0
42 FT	11	12	9	8	4	7	5	6	35.1	31.0	31.0	4	14	23.5	4	14	18.0	4	6.5	6	7.5	39.1	80	92	5	9	25.5	5	12	5	8.5	0
44 FT	11	13	10	8	4	6.5	5	7	35.1	27.0	31.0	4	14	23.0	4	14	18.0	4	7.5	5	7.5	36.8	81	93	4	6	25.5	5	12	5	8	0
46 FT	11	13	10	8	4	6.5	5	6.5	35.0	27.0	31.0	4	13	23.0	4	13	18.0	4	7	5	7	36.8	81	93	5	9	26.0	5	12	5	8	0
48 FT	11	13	10	8	4	6	5	6	35.0	27.0	31.0	4	13	23.0	4	13	18.0	4	6.5	5	6.5	36.8	81	93	5	8.5	25.5	5	12	5	8	0
50 FT	12	14	11	8	4	6.5	5	7	35.6	28.0	32.0	4	15	23.0	4	15	18.0	4	7	5	7.5	37.3	82	94	5	9	26.0	5	12	5	8	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**  
 IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.  
 SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.  
 DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.  
 CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>CONCRETE DOUBLE BOX CULVERT</b> MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 4 FEET HEIGHT (HT): 6 THRU 7 FEET
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>3 OF 27</b>

		SPAN (S) = 5 FT										HEIGHT (HT) = 3 FT OR 4 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS				H1 BARS		H2 BARS		A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS							
	TS	BS	TX	TI	SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	11	8	8	8	4	6.5	4	9.5	30.9	27.0	27.0	4	20	56.0	4	20	21.5	4	12	4	12	33.3	40	52	4	7.5	31.0	5	12	5	12	12
2 FT	11	8	8	8	4	6.5	4	9.5	30.9	27.0	27.0	4	19	56.0	4	19	21.5	4	11.5	4	11.5	31.0	40	52	4	7	31.0	5	12	5	12	12
2' - 4'	11	8	8	8	4	6.5	4	9.5	30.9	27.0	27.0	4	18	56.0	4	18	21.5	4	11.5	4	11.5	31.0	40	52	4	7	31.0	5	12	5	12	12
4 FT	8	8	8	8	4	11	4	12	30.0	24.0	24.0	4	18	39.0	4	18	20.0	4	12	4	12	28.4	40	52	4	7	30.0	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	12	27.4	24.0	24.0	4	19	32.0	4	19	20.0	4	11.5	4	12	26.9	40	52	4	7	29.5	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	12	26.6	24.0	24.0	4	18	30.5	4	18	19.5	4	10.5	4	11.5	26.0	40	52	4	6.5	29.0	5	12	5	12	0
10 FT	8	8	8	8	4	11	4	12	26.1	24.0	24.0	4	16	29.5	4	16	19.5	4	9.5	4	10.5	25.5	40	52	4	6	29.0	5	12	5	12	0
12 FT	8	8	8	8	4	12	4	12	24.6	24.0	24.0	4	16	28.5	4	16	19.0	4	9.5	4	11	24.4	40	52	5	7.5	28.5	5	12	5	12	0
14 FT	8	8	8	8	4	10	4	11	24.6	24.0	24.0	4	14	28.5	4	14	19.0	4	8.5	4	10	24.3	40	52	5	7	28.5	5	12	5	12	0
16 FT	8	9	8	8	4	9	4	9.5	24.8	24.0	24.0	4	12	28.5	4	12	19.0	4	8.5	4	12	23.5	41	53	5	7.5	29.0	5	12	5	12	0
18 FT	8	9	8	8	4	8	4	8.5	24.8	24.0	24.0	5	17	28.5	5	17	19.5	4	7.5	4	11.5	23.5	41	53	5	7	29.0	5	12	5	12	0
20 FT	8	10	8	8	4	7.5	4	7.5	24.9	24.0	24.0	5	17	28.0	5	17	20.0	4	7.5	4	12	22.9	42	54	5	7.5	29.0	5	12	5	12	0
22 FT	9	10	8	8	4	7	4	9	24.3	25.0	25.0	5	16	28.5	5	16	19.0	4	7	4	12	23.1	42	54	5	7	29.0	5	12	5	12	0
24 FT	9	11	8	8	4	6.5	4	8	24.5	25.0	25.0	5	16	28.5	5	16	20.0	4	7	4	10.5	22.8	43	55	5	7.5	29.0	5	12	5	12	0
26 FT	10	11	8	8	4	6.5	4	8.5	24.0	26.0	26.0	5	16	28.5	5	16	19.0	4	6.5	4	10.5	23.0	43	55	5	7	29.0	5	12	5	12	0
28 FT	10	12	8	8	4	6.5	4	8	24.1	26.0	26.0	5	15	28.0	5	15	19.5	4	6.5	4	9.5	22.6	44	56	5	7.5	29.0	5	12	5	12	0
30 FT	11	12	8	8	4	6.5	4	8.5	23.8	27.0	27.0	5	15	28.0	5	15	19.0	4	6	4	9.5	22.9	44	56	5	7	29.0	5	12	5	12	0
32 FT	11	13	8	8	4	6	4	7.5	23.9	27.0	27.0	5	15	28.0	5	15	19.0	4	6.5	4	8.5	22.8	45	57	5	7.5	29.0	5	12	5	12	0
34 FT	12	13	8	8	4	6	4	8.5	23.6	28.0	28.0	5	15	28.0	5	15	19.0	4	6	4	8.5	22.9	45	57	5	7	29.0	5	12	5	12	0
36 FT	12	14	8	8	5	9	4	7.5	23.8	28.0	28.0	5	15	28.0	5	15	19.0	4	6	4	7.5	22.8	46	58	5	7.5	29.0	5	12	5	12	0
38 FT	13	14	8	8	5	9	4	7.5	23.5	29.0	29.0	5	15	27.5	5	15	19.0	4	6	4	7.5	23.0	46	58	5	7	29.0	5	12	5	12	0
40 FT	13	15	8	8	5	8.5	4	7.5	23.8	29.0	29.0	5	15	27.5	5	15	19.0	4	6	4	7	22.9	47	59	5	7.5	29.0	5	12	5	12	0
42 FT	13	15	8	8	5	8	4	7	23.8	29.0	29.0	5	14	27.5	5	14	19.0	5	9	4	7	22.9	47	59	5	7	29.0	5	12	5	12	0
44 FT	14	15	8	8	5	8.5	4	7	23.5	30.0	30.0	5	15	27.0	5	15	19.0	5	8.5	4	7	23.1	47	59	5	6.5	29.0	5	12	5	12	0
46 FT	14	16	8	8	5	8	4	7	23.6	30.0	30.0	5	14	27.0	5	14	19.0	5	9	4	6.5	23.1	48	60	5	7	29.0	5	12	5	12	0
48 FT	14	16	8	8	5	7.5	4	6.5	23.6	30.0	30.0	5	14	27.0	5	14	19.0	5	8.5	4	6.5	23.1	48	60	5	6.5	29.0	5	12	5	12	0
50 FT	15	16	8	8	5	7.5	4	6.5	25.6	31.0	31.0	5	15	31.5	5	15	24.0	5	8	4	6.5	23.3	48	60	5	6.5	29.0	5	12	5	12	0

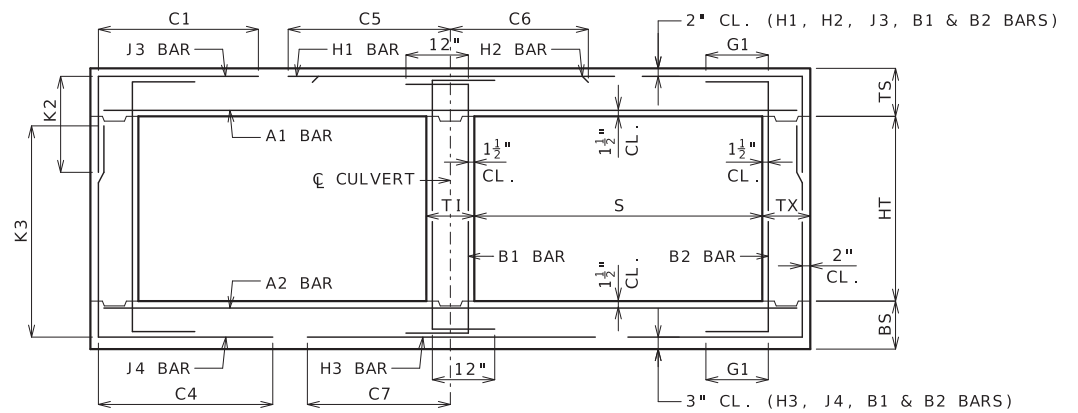
		SPAN (S) = 5 FT										HEIGHT (HT) = 5 FT OR 6 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS				H1 BARS		H2 BARS		A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS							
	TS	BS	TX	TI	SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	11	8	8	8	4	6	4	9.5	30.9	27.0	27.0	4	20	56.0	4	20	22.0	4	11.5	4	9.5	44.1	64	76	4	7	31.0	5	12	5	12	12
2 FT	11	8	8	8	4	6	4	9.5	30.9	27.0	27.0	4	19	56.0	4	19	21.5	4	10.5	4	9	40.6	64	76	4	7	31.0	5	12	5	12	12
2' - 4'	11	8	8	8	4	6	4	9.5	30.9	27.0	27.0	4	18	56.0	4	18	21.5	4	10.5	4	9	40.6	64	76	4	7	31.0	5	12	5	12	12
4 FT	8	8	8	8	4	10.5	4	10.5	30.9	24.0	24.0	4	18	56.0	4	18	20.0	4	11.5	4	9	37.6	64	76	4	7	30.0	5	12	5	12	12
6 FT	8	8	8	8	4	12	4	10.5	37.1	24.0	24.0	4	19	32.0	4	19	20.0	4	11	4	8.5	34.6	64	76	4	6.5	29.5	5	12	5	12	12
8 FT	8	8	8	8	4	12	4	10	33.8	24.0	24.0	4	18	30.5	4	18	19.5	4	10	4	8	33.0	64	76	4	6	29.0	5	12	5	12	0
10 FT	8	8	8	8	4	11	4	9	32.3	24.0	24.0	4	16	29.5	4	16	19.5	4	9	4	7.5	31.9	64	76	5	7.5	29.0	5	12	5	12	0
12 FT	8	8	8	8	4	11.5	4	9.5	29.5	24.0	24.0	4	16	28.5	4	16	19.0	4	9	4	7.5	29.4	64	76	5	7.5	28.5	5	12	5	12	0
14 FT	8	8	8	8	4	10	4	8	29.3	24.0	24.0	4	14	28.5	4	14	19.0	4	8	4	7	29.1	64	76	5	7	28.5	5	12	5	12	0
16 FT	8	9	8	8	4	9	4	7	29.3	24.0	24.0	4	12	28.0	4	12	19.0	4	8	4	8	29.3	65	77	5	7.5	29.0	5	12	5	12	0
18 FT	8	9	8	8	4	8	4	6.5	29.1	24.0	24.0	5	17	28.0	5	17	19.5	4	7	4	7.5	29.1	65	77	5	7	29.0	5	12	5	12	0
20 FT	8	10	8	8	4	7	5	7	29.0	24.0	24.0	5	17	28.0	5	17	20.0	4	7.5	4	8.5	29.3	66	78	5	7.5	29.0	5	12	5	12	0
22 FT	9	10	8	8	4	7	4	6.5	29.1	25.0	25.0	5	16	28.0	5	16	19.0	4	7	4	7.5	29.3	66	78	5	7	29.0	5	12	5	12	0
24 FT	9	11	8	8	4	6.5	4	6	29.1	25.0	25.0	5	16	28.0	5	16	19.5	4	7	4	7.5	29.5	67	79	5	7.5	29.0	5	12	5	12	0
26 FT	10	11	8	8	4	6.5	5	8	29.3	26.0	26.0	5	16	28.0	5	16	19.0	4	6.5	4	6.5	29.5	67	79	5	7.5	29.0	5	12	5	12	0
28 FT	10	12	8	8	4	6.5	5	7.5	29.3	26.0	26.0	5	15	28.0	5	15	19.0	4	6.5	4	6.5	29.6	68	80	5	7.5	29.0	5	12	5	12	0
30 FT	11	12	8	8	4	6.5	5	8.5	29.4	27.0	27.0	5	16	27.5	5	16	19.0	4	6.5	4	6	29.8	68	80	5	7.5	29.0	5	12	5	12	0
32 FT	11	13	8	8	4	6	5	8	29.5	27.0	27.0	5	15	27.5	5	15	19.0	4	6.5	4	6	29.9	69	81	5	7.5	29.0	5	12	5	12	0
34 FT	12	13	8	8	4	6	5	8.5	29.5	28.0	32.0	5	16	27.5	5	16	19.0	4	6	5	8.5	30.0	69	81	5	7	29.0	5	12	5	11.5	0
36 FT	12	14	8	8	5	9	5	7.5	29.6	28.0	32.0	5	15	27.0	5	15	19.0	4	6.5	5	9	30.1	70	82	5	7.5	29.0	5	12	5	10.5	0
38 FT	12	14	8	8	5	8.5	5	7.5																								

		SPAN (S) = 5 FT										HEIGHT (HT) = 7 FT OR 8 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=7' HT=8'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=7' HT=8'		SIZE	SPA.	C7	SIZE	SPA.	G1				
1 FT	11	8	8	8	4	6	4	9.5	30.9	27.0	27.0	4	20	56.0	4	20	22.0	4	10.5	4	7	52.1	88	100	4	7	31.0	5	12	5	12	12
2 FT	11	8	8	8	4	6	4	9	30.9	27.0	27.0	4	20	56.0	4	20	22.0	4	10	4	6.5	50.0	88	100	4	6.5	31.0	5	12	5	12	12
2' - 4'	11	8	8	8	4	6	4	7	30.9	27.0	27.0	4	18	56.0	4	18	22.0	4	10	4	6	50.0	88	100	4	6.5	31.0	5	12	5	12	12
4 FT	8	8	8	8	4	10	4	7	30.9	24.0	24.0	4	18	56.0	4	18	20.5	4	10.5	4	6	47.4	88	100	4	6.5	30.0	5	12	5	12	12
6 FT	8	9	8	8	4	12	4	7	51.6	24.0	24.0	4	19	32.5	4	19	20.0	4	12	4	6.5	46.3	89	101	4	7.5	29.5	5	12	5	12	12
8 FT	8	9	8	8	4	12	4	6.5	44.5	24.0	24.0	4	18	30.5	4	18	19.5	4	11	4	6	44.0	89	101	4	7	29.5	5	12	5	12	0
10 FT	8	9	9	8	4	11.5	4	7	40.8	24.0	24.0	4	16	29.5	4	16	19.5	4	10	4	6.5	41.4	89	101	4	6.5	29.0	5	12	5	12	0
12 FT	8	9	9	8	4	12	4	7	36.9	24.0	24.0	4	17	28.0	4	17	19.0	4	10.5	4	7	38.3	89	101	4	6.5	29.0	5	12	5	12	0
14 FT	8	9	9	8	4	10.5	4	6.5	36.4	24.0	24.0	4	15	28.0	4	15	19.0	4	9	4	6.5	37.9	89	101	4	6	29.0	5	12	5	12	0
16 FT	8	9	9	8	4	9	5	7	36.0	24.0	28.0	4	13	28.0	4	13	19.0	4	8	5	7	37.5	89	101	5	7.5	28.5	5	12	5	12	0
18 FT	8	9	9	8	4	8	5	6	35.8	24.0	28.0	5	18	28.0	5	18	19.0	4	7.5	5	6	37.3	89	101	5	7	28.5	5	12	5	12	0
20 FT	8	10	9	8	4	7.5	6	7	38.4	24.0	28.0	5	17	28.0	5	17	19.5	4	7.5	5	6.5	38.1	90	102	5	7.5	29.0	5	12	5	11	0
22 FT	9	10	9	8	4	7.5	5	6	36.4	25.0	29.0	5	17	27.5	5	17	19.0	4	7	5	6	37.8	90	102	5	7.5	29.0	5	12	5	10	0
24 FT	9	11	9	8	4	7	5	6	36.1	25.0	29.0	5	16	27.5	5	16	19.0	4	7	5	6	38.5	91	103	5	8	29.0	5	12	5	9.5	0
26 FT	10	11	9	8	4	7	5	6	36.9	26.0	30.0	5	17	27.5	5	17	19.0	4	6.5	5	6	38.3	91	103	5	7.5	29.0	5	12	5	9	0
28 FT	10	12	9	8	4	6.5	5	6	36.8	30.0	30.0	5	16	27.5	5	16	19.0	4	7	5	6	38.9	92	104	5	8	29.0	5	12	5	8.5	0
30 FT	11	12	9	8	4	6.5	5	6	37.4	31.0	31.0	5	17	27.0	5	17	19.0	4	6.5	6	7.5	41.6	92	104	5	7.5	29.0	5	12	5	8.5	0
32 FT	11	13	9	8	4	6.5	6	7	40.3	31.0	31.0	5	16	27.0	5	16	19.0	4	6.5	5	6	39.1	93	105	5	7.5	29.0	5	12	5	8.5	0
34 FT	11	13	9	8	4	6	6	7	40.1	31.0	35.0	5	15	27.0	5	15	19.0	4	6.5	6	7	42.1	93	105	5	7.5	29.0	5	12	5	8.5	0
36 FT	12	14	10	8	4	6	5	6.5	37.8	32.0	32.0	5	17	26.0	5	17	19.0	4	6.5	5	7	39.5	94	106	5	7.5	29.0	5	12	5	8	0
38 FT	12	14	10	8	5	9	5	6	37.6	32.0	32.0	5	16	26.0	5	16	19.0	4	6	5	6.5	39.5	94	106	5	7	29.0	5	12	5	8	0
40 FT	12	15	11	8	5	8.5	5	7	37.8	28.0	32.0	5	15	26.0	5	15	19.0	4	6	5	7	40.0	95	107	5	7.5	29.0	5	12	5	7.5	0
42 FT	13	15	11	8	5	8.5	5	7	38.3	33.0	33.0	5	17	25.5	5	17	18.5	4	6	5	7	39.9	95	107	5	7	29.0	5	12	5	7.5	0
44 FT	13	15	11	8	5	8.5	5	6.5	38.1	33.0	33.0	5	16	25.5	5	16	18.5	5	9	5	7	39.9	95	107	5	6.5	29.0	5	12	5	7.5	0
46 FT	13	16	12	8	5	8	5	6.5	38.3	29.0	33.0	5	16	25.5	5	16	18.5	4	6	5	7	40.4	96	108	5	7	29.0	5	12	5	7.5	0
48 FT	14	16	12	8	5	8	5	6.5	38.8	34.0	34.0	5	17	25.0	5	17	18.5	5	9	5	6.5	40.4	96	108	5	6.5	29.0	5	12	5	7	0
50 FT	14	16	12	8	5	7.5	5	6.5	38.8	34.0	34.0	5	17	25.0	5	17	18.5	5	8.5	5	6.5	40.3	96	108	5	6.5	29.0	5	12	5	7	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**  
 IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.  
 SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.  
 DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.  
 CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>CONCRETE DOUBLE BOX CULVERT</b> MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 5 FEET HEIGHT (HT): 7 THRU 8 FEET
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>5 OF 27</b>

		SPAN (S) = 6 FT												HEIGHT (HT) = 3 FT OR 4 FT OR 5 FT																			
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS				
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1			
									HT=3'	HT=4'	HT=5'											HT=3'	HT=4'	HT=5'									
1 FT	11	8	8	8	5	8.5	4	9.5	34.5	27.0	27.0	4	16	64.5	4	16	23.0	4	9.5	4	9.5	37.6	40	52	64	4	6	34.5	5	12	5	12	12
2 FT	11	8	8	8	5	8.5	4	9.5	34.5	27.0	27.0	4	15	64.5	4	15	22.5	4	9	4	9	35.0	40	52	64	5	7.5	34.0	5	12	5	12	12
2' - 4'	11	8	8	8	5	8.5	4	9	34.5	27.0	27.0	4	13	64.5	4	13	22.5	4	9	4	9	35.0	40	52	64	5	7.5	34.0	5	12	5	12	12
4 FT	8	8	8	8	4	8	4	9	34.0	24.0	24.0	4	13	43.5	4	13	21.0	4	9	4	9.5	32.0	40	52	64	5	7.5	33.5	5	12	5	12	12
6 FT	8	8	8	8	4	9.5	4	9.5	30.4	24.0	24.0	4	13	35.5	4	13	20.5	4	8.5	4	9	29.9	40	52	64	5	7	32.5	5	12	5	12	12
8 FT	8	8	8	8	4	9	4	9	29.3	24.0	24.0	4	12	34.0	4	12	20.5	4	7.5	4	8	28.9	40	52	64	5	6.5	32.0	5	12	5	12	0
10 FT	8	9	8	8	4	8	4	8	28.8	24.0	24.0	4	17	33.0	5	17	20.5	4	7.5	4	10	27.8	41	53	65	5	7	32.0	5	12	5	12	0
12 FT	8	9	8	8	4	7	4	7	28.4	24.0	24.0	4	16	32.5	5	16	21.5	4	6.5	4	9	27.3	41	53	65	5	6.5	32.0	5	12	5	12	0
14 FT	8	9	8	8	4	7.5	4	7	27.0	24.0	24.0	4	16	31.5	5	16	21.5	4	6.6	4	9.5	25.9	41	53	65	5	6	32.0	5	12	5	12	0
16 FT	8	10	8	8	4	6.5	4	6	27.1	24.0	24.0	4	15	31.5	5	15	22.5	4	6.5	4	11.5	25.3	42	54	66	5	6.5	32.0	5	12	5	12	0
18 FT	9	11	8	8	4	6.5	4	7.5	26.6	25.0	25.0	4	16	31.5	5	16	21.5	4	6.5	4	10.5	25.0	43	55	67	5	7	32.0	5	12	5	12	0
20 FT	10	11	8	8	4	6	4	7.5	26.1	26.0	26.0	4	15	31.5	5	15	21.0	4	6	4	10	25.3	43	55	67	5	6.5	32.0	5	12	5	12	0
22 FT	10	12	8	8	5	9	4	6.5	26.3	26.0	26.0	4	15	31.5	5	15	21.5	4	6	4	9.5	24.9	44	56	68	5	6.5	32.0	5	12	5	12	0
24 FT	11	12	8	8	5	9	4	7	25.9	27.0	27.0	4	14	31.5	5	14	21.0	5	8.5	4	9	25.1	44	56	68	5	6	32.0	5	12	5	12	0
26 FT	11	13	8	8	5	8.5	4	6	26.0	27.0	27.0	4	14	31.5	5	14	21.5	5	8.5	4	8.5	24.9	45	57	69	5	6	32.0	5	12	5	12	0
28 FT	12	14	8	8	5	8.5	4	6.5	25.9	28.0	28.0	4	13	31.5	5	13	20.5	5	9	4	7.5	25.0	46	58	70	5	6.5	32.0	5	12	5	12	0
30 FT	13	14	8	8	5	8.5	4	6.5	25.6	29.0	29.0	4	12	31.0	5	12	20.0	5	8.5	4	7.5	25.1	46	58	70	5	6	32.0	5	12	5	12	0
32 FT	13	15	8	8	5	8	4	6	25.8	29.0	29.0	4	12	31.0	5	12	20.5	5	8.5	4	7	25.1	47	59	71	5	6	32.0	5	12	5	12	0
34 FT	14	15	8	8	5	8	4	6	25.5	30.0	30.0	4	12	31.0	5	12	20.0	5	8	4	7	25.3	47	59	71	6	8.5	35.0	5	12	5	12	0
36 FT	14	16	8	8	5	7.5	5	8.5	25.8	30.0	30.0	4	12	31.0	5	12	20.0	5	8	4	6.5	25.3	48	60	72	5	6	32.0	5	12	5	12	0
38 FT	15	16	8	8	5	7.5	4	6	27.5	31.0	31.0	4	12	35.5	5	12	25.0	5	7.5	4	6.5	25.4	48	60	72	6	8	35.0	5	12	5	12	0
40 FT	15	17	8	8	5	7	5	8	30.8	31.0	31.0	4	17	39.5	6	17	29.0	5	7.5	4	6	25.4	49	61	73	6	8.5	35.0	5	12	5	12	0
42 FT	16	17	8	8	5	7	5	7	30.6	32.0	32.0	4	12	35.0	5	12	25.0	5	7.5	4	6	25.6	49	61	73	6	8	35.0	5	12	5	12	0
44 FT	16	18	8	8	5	6.5	5	7	30.8	32.0	32.0	4	17	39.0	6	17	29.0	5	7.5	5	6.5	25.6	50	62	74	6	8	35.0	5	12	5	12	0
46 FT	16	18	8	8	5	6	5	7	30.8	32.0	32.0	4	16	39.0	6	16	29.0	5	7	5	6.5	25.6	50	62	74	6	8	35.0	5	12	5	11.5	0
48 FT	17	19	8	8	5	6.5	5	6.5	30.8	37.0	37.0	4	12	34.5	5	12	24.5	5	7.5	5	6.5	25.9	51	63	75	6	8	35.0	5	12	5	10.5	0
50 FT	17	19	8	8	5	6	5	6.5	30.8	37.0	37.0	4	16	38.5	6	16	28.5	5	7	5	6.5	25.9	51	63	75	6	7.5	35.0	5	12	5	10	0

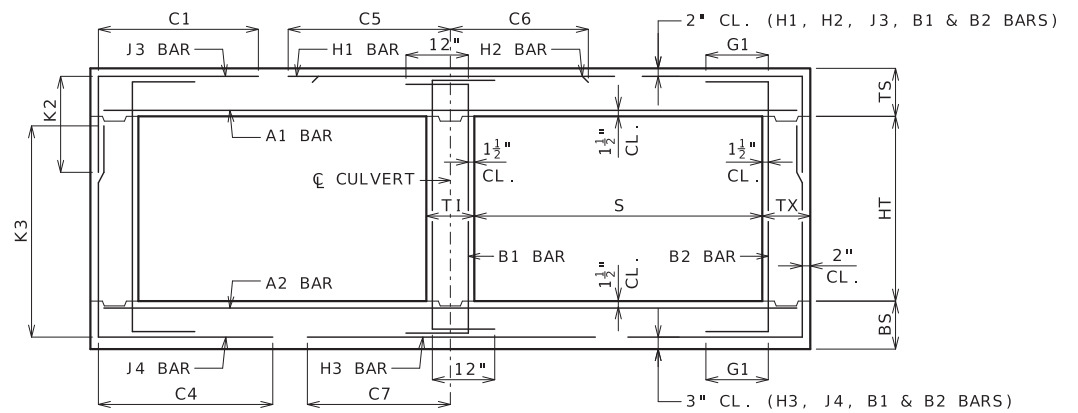
		SPAN (S) = 6 FT												HEIGHT (HT) = 6 FT OR 7 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS			
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS						
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1		
									HT=6'	HT=7'												HT=6'	HT=7'									
1 FT	11	8	8	8	5	8	4	9.5	34.5	27.0	27.0	4	16	64.5	4	16	23.0	4	9	4	7.5	48.9	76	88	5	7.5	34.5	5	12	5	12	12
2 FT	11	8	8	8	5	8	4	9.5	34.5	27.0	27.0	4	15	64.5	4	15	23.0	4	8.5	4	7	45.0	76	88	5	7.5	34.0	5	12	5	12	12
2' - 4'	11	8	8	8	5	8	4	7.5	34.5	27.0	27.0	4	13	64.5	4	13	23.0	4	8.5	4	7	45.0	76	88	5	7	34.0	5	12	5	12	12
4 FT	8	8	8	8	4	7.5	4	7.5	34.5	24.0	24.0	4	13	64.5	4	13	21.0	4	8.5	4	7	41.6	76	88	5	7	33.5	5	12	5	12	12
6 FT	8	8	8	8	4	9	4	7.5	40.9	24.0	24.0	4	13	36.0	4	13	20.5	4	8	4	6.5	38.1	76	88	5	7	32.5	5	12	5	12	12
8 FT	8	8	8	8	4	9	4	7	37.0	24.0	24.0	4	12	34.0	4	12	20.5	4	7.5	4	6	36.3	76	88	5	6.5	32.0	5	12	5	12	0
10 FT	8	9	8	8	4	8	4	6	35.1	24.0	24.0	4	17	33.0	5	17	21.0	4	7.5	4	6.5	35.5	77	89	5	7	32.0	5	12	5	12	0
12 FT	8	9	8	8	4	7	5	6.5	34.1	24.0	24.0	4	16	32.5	5	16	21.5	4	6.5	4	6	34.5	77	89	5	6.5	32.0	5	12	5	12	0
14 FT	8	9	8	8	4	7	5	6.5	31.8	24.0	24.0	4	16	31.5	5	16	21.5	4	6.5	4	6	32.0	77	89	5	6	32.0	5	12	5	12	0
16 FT	8	10	8	8	4	6.5	5	6	31.6	24.0	24.0	4	15	31.0	5	15	22.5	4	6.5	4	7	32.0	78	90	5	6.5	32.0	5	12	5	12	0
18 FT	9	11	8	8	4	6.5	5	6.5	31.8	25.0	25.0	4	16	31.0	5	16	21.5	4	6.5	4	6.5	32.3	79	91	5	7	32.0	5	12	5	12	0
20 FT	10	11	8	8	4	6	5	7.5	31.8	26.0	30.0	4	15	31.0	5	15	21.0	4	6	5	7.5	32.1	79	91	5	6.5	32.0	5	12	5	12	0
22 FT	10	12	8	8	5	9	5	7	31.6	26.0	30.0	4	15	31.0	5	15	21.5	4	6	5	8	32.3	80	92	5	6.5	32.0	5	12	5	12	0
24 FT	11	12	8	8	5	9	5	7.5	31.8	27.0	31.0	4	14	31.0	5	14	20.5	5	8.5	5	7.5	32.1	80	92	5	6	32.0	5	12	5	12	0
26 FT	11	13	8	8	5	8.5	5	6.5	31.8	27.0	31.0	4	14	31.0	5	14	21.0	5	9	5	7.5	32.3	81	93	5	6	32.0	5	12	5	11	0
28 FT	12	14	8	8	5	8.5	5	7	31.9	28.0	32.0	4	13	30.5	5	13	20.0	5	9	5	8	32.6	82	94	5	6.5	32.0	5	12	5	10	0
30 FT	12	14	8	8	5	7.5	5	6.5	31.8	28.0	32.0	4	13	30.5	5	13	20.5	5	8.5	5	7.5	32.5	82	94	5	6	32.0	5	12	5	9.5	0
32 FT	13	15	8	8	5	8	5	6.5	32.0	29.0	33.0	4	12	30.0	5	12	20.0	5	8.5	5	7.5	32.8	83	95	5	6	32.0	5	12	5	9.5	0
34 FT	13	15	8	8	5	7	5	6	31.																							

		SPAN (S) = 6 FT										HEIGHT (HT) = 8 FT OR 9 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=8' HT=9'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=8' HT=9'		SIZE	SPA.	C7	SIZE	SPA.	G1				
1 FT	11	9	8	8	5	8	4	7	34.5	27.0	27.0	4	16	64.5	4	16	23.5	4	9.5	4	6.5	59.4	101	113	4	6.5	34.5	5	12	5	12	12
2 FT	11	9	8	8	5	8	4	6.5	34.5	27.0	27.0	4	16	64.5	4	16	23.0	4	9	4	6	57.0	101	113	4	6	34.0	5	12	5	12	12
2'- 4'	11	9	9	8	5	8	4	6.5	35.1	27.0	27.0	4	13	65.0	4	13	23.0	4	9	4	6	57.0	101	113	4	6	34.0	5	12	5	12	12
4 FT	8	9	9	8	4	7.5	4	6.5	35.1	24.0	24.0	4	13	65.0	4	13	21.0	4	9.5	4	6.5	53.0	101	113	4	6	33.5	5	12	5	12	12
6 FT	8	9	9	8	4	9	4	6	53.1	24.0	24.0	4	13	36.0	4	13	20.5	4	9	4	6	49.5	101	113	4	6	33.0	5	12	5	12	12
8 FT	8	9	9	8	4	9	5	7	46.5	24.0	28.0	4	12	33.5	4	12	20.5	4	8	5	6.5	46.5	101	113	5	7.5	32.5	5	12	5	12	0
10 FT	8	9	9	8	4	8	5	6	43.8	24.0	28.0	5	17	32.5	5	17	20.5	4	7.5	5	6	44.6	101	113	5	6.5	32.0	5	12	5	11.5	0
12 FT	8	9	10	8	4	7.5	5	6.5	41.8	24.0	28.0	5	17	32.0	5	17	21.5	4	6.5	5	6.5	42.9	101	113	5	6.5	32.0	5	12	5	11.5	0
14 FT	8	9	10	8	4	7.5	5	6.5	38.5	24.0	28.0	5	17	31.0	5	17	21.0	4	6.5	5	6.5	39.6	101	113	5	6	31.5	5	12	5	12	0
16 FT	8	10	10	8	4	6.5	5	6	38.1	24.0	28.0	5	16	31.0	5	16	22.0	4	6.5	5	7	40.6	102	114	5	6.5	32.0	5	12	5	11.5	0
18 FT	9	11	10	8	4	6.5	5	6	38.8	25.0	29.0	5	16	31.0	5	16	21.0	4	6.5	5	7	41.1	103	115	5	7	32.0	5	12	5	10.5	0
20 FT	9	11	10	8	4	6	5	6	38.5	25.0	29.0	5	16	31.0	5	16	22.0	4	6	5	6.5	40.9	103	115	5	6	32.0	5	12	5	10	0
22 FT	10	12	10	8	4	6	5	6.5	39.1	30.0	30.0	5	15	30.5	5	15	21.0	4	6	5	6.5	41.4	104	116	5	6.5	32.0	5	12	5	9	0
24 FT	11	13	10	8	4	6	5	6.5	39.6	31.0	31.0	5	14	30.5	5	14	20.0	4	6	5	6.5	41.8	105	117	5	6.5	32.0	5	12	5	8.5	0
26 FT	11	13	10	8	5	9	5	6	39.4	31.0	31.0	5	14	30.5	5	14	20.5	5	9	5	6.5	41.6	105	117	5	6	32.0	5	12	5	8	0
28 FT	12	14	10	8	5	9	5	6	40.0	32.0	32.0	5	13	30.0	5	13	19.5	4	6	5	6.5	42.0	106	118	5	6.5	32.0	5	12	5	8	0
30 FT	12	14	10	8	5	8	5	6	39.9	32.0	32.0	5	13	30.0	5	13	20.0	5	8.5	5	6	41.9	106	118	5	6	32.0	5	12	5	8	0
32 FT	13	15	11	8	5	8.5	5	7	40.4	33.0	33.0	5	13	29.0	5	13	19.5	5	8.5	5	7	42.3	107	119	5	6	32.0	5	12	5	7.5	0
34 FT	13	15	11	8	5	8	5	6.5	40.3	33.0	33.0	5	13	29.0	5	13	19.5	5	8	5	7	42.1	107	119	6	8	35.0	5	12	5	7.5	0
36 FT	14	16	11	8	5	8	5	6	40.8	34.0	34.0	5	14	28.5	5	14	19.5	5	8.5	5	7	42.6	108	120	5	6	32.0	5	12	5	7.5	0
38 FT	14	16	12	8	5	7.5	5	6.5	40.8	34.0	34.0	5	13	28.5	5	13	19.5	5	7.5	5	6.5	42.5	108	120	6	8	35.0	5	12	5	7	0
40 FT	14	17	12	8	5	7	5	6	40.8	34.0	34.0	5	12	28.5	5	12	19.5	5	8	5	6.5	43.0	109	121	6	8	35.0	5	12	5	7	0
42 FT	15	17	13	8	5	7	5	6	46.4	35.0	35.0	5	13	33.0	5	13	24.5	5	7	5	6	42.8	109	121	6	7.5	35.0	5	12	5	7	0
44 FT	15	18	13	8	5	7	5	6	46.4	35.0	35.0	5	13	33.0	5	13	24.5	5	7.5	5	6	43.3	110	122	6	8	35.0	5	12	5	6.5	0
46 FT	15	18	13	8	5	6	5	6	46.3	35.0	35.0	5	12	33.0	5	12	24.5	5	7.5	5	6	43.3	110	122	6	7.5	35.0	5	12	5	6.5	0
48 FT	16	19	14	8	5	6.5	5	6	47.0	36.0	36.0	5	14	32.5	5	14	24.0	5	7.5	5	6	43.8	111	123	6	7.5	35.0	5	12	5	6.5	0
50 FT	16	19	14	8	5	6	5	6	46.9	36.0	36.0	5	13	32.5	5	13	24.0	5	7	5	6	43.6	111	123	6	7.5	35.0	5	12	5	6.5	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**  
 IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.  
 SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.  
 DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.  
 CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>CONCRETE DOUBLE BOX CULVERT</b> MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 6 FEET HEIGHT (HT): 8 THRU 9 FEET
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>7 OF 27</b>

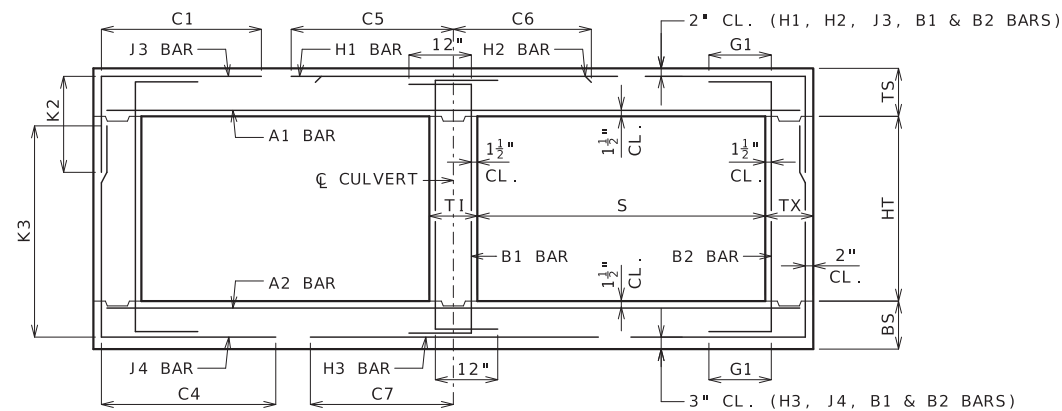
		SPAN (S) = 7 FT												HEIGHT (HT) = 4 FT OR 5 FT OR 6 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
									HT=4'	HT=5'	HT=6'											HT=4'	HT=5'	HT=6'										
1 FT	12	8	8	8	5	8	4	8.5	38.1	28.0	28.0	28.0	4	15	73.0	4	15	25.5	4	7	4	6.5	41.8	52	64	76	5	6.5	37.5	5	12	5	12	12
2 FT	12	9	8	8	5	7.5	4	8.5	38.1	28.0	28.0	28.0	4	14	73.0	4	14	24.5	4	7.5	4	8.5	39.9	53	65	77	5	7	37.5	5	12	5	12	12
2'- 4'	12	9	8	8	5	7.5	4	6.5	38.4	28.0	28.0	28.0	5	17	73.0	5	17	24.5	4	7	4	7	39.9	53	65	77	5	6	37.5	5	12	5	12	12
4 FT	8	8	8	8	4	6	4	6.5	38.4	24.0	24.0	24.0	5	17	48.0	5	17	23.5	4	7	4	7	35.8	52	64	76	5	6	36.5	5	12	5	12	12
6 FT	8	8	8	8	4	7	4	7	33.9	24.0	24.0	24.0	5	17	39.0	5	17	23.5	4	6.5	4	6.5	33.3	52	64	76	6	7	38.5	5	12	5	12	12
8 FT	8	9	8	8	4	7	4	6.5	32.1	24.0	24.0	24.0	5	16	37.0	5	16	24.0	4	6.5	4	8	31.8	53	65	77	5	6	35.5	5	12	5	12	0
10 FT	8	10	8	8	4	6	5	7	31.5	24.0	24.0	24.0	5	15	36.0	5	15	24.0	4	6.5	4	9.5	30.5	54	66	78	5	6.5	35.5	5	12	5	12	0
12 FT	9	10	8	8	4	6	4	6.5	30.5	25.0	25.0	25.0	5	15	35.5	5	15	24.0	5	9	4	8.5	29.8	54	66	78	5	6	35.5	5	12	5	12	0
14 FT	9	11	8	8	5	8.5	5	7	30.4	25.0	25.0	25.0	5	14	35.5	5	14	24.0	5	9	4	8.5	29.1	55	67	79	5	6	35.5	5	12	5	12	0
16 FT	10	11	8	8	4	6	4	6.5	28.5	26.0	26.0	26.0	5	15	34.5	5	15	23.0	5	8.5	4	8	27.8	55	67	79	5	6	35.0	5	12	5	12	0
18 FT	10	12	8	8	5	8	5	8	28.6	26.0	26.0	26.0	5	14	34.5	5	14	23.5	5	8.5	4	8.5	27.4	56	68	80	5	6	35.0	5	12	5	12	0
20 FT	11	12	8	8	5	8	5	9	28.1	27.0	27.0	27.0	5	14	34.5	5	14	23.5	5	7	4	7	27.5	56	68	80	6	7	38.0	5	12	5	12	0
22 FT	12	13	8	8	5	8	5	8.5	27.9	28.0	28.0	28.0	5	13	34.5	5	13	23.0	5	7.5	4	7	27.5	57	69	81	6	7.5	38.0	5	12	5	12	0
24 FT	12	14	8	8	5	7.5	5	8.5	28.0	28.0	28.0	28.0	5	13	34.5	5	13	23.5	5	7.5	4	7	27.3	58	70	82	6	7.5	38.0	5	12	5	12	0
26 FT	13	15	8	8	5	7	5	8.5	27.9	29.0	29.0	29.0	5	12	34.5	5	12	22.5	5	7.5	4	7	27.4	59	71	83	6	7.5	38.0	5	12	5	12	0
28 FT	14	15	8	8	5	7	5	8.5	27.6	30.0	30.0	30.0	5	12	34.0	5	12	22.0	5	7	4	6.5	27.6	59	71	83	6	7	38.0	5	12	5	12	0
30 FT	14	16	8	8	5	6.5	5	8.5	27.8	30.0	30.0	30.0	5	12	34.0	5	12	22.5	5	7	4	6.5	27.5	60	72	84	6	7	38.0	5	12	5	12	0
32 FT	15	17	8	8	5	6.5	5	8	32.8	31.0	31.0	31.0	6	16	43.0	6	16	30.5	5	7.5	4	6	27.8	61	73	85	6	7.5	38.0	5	12	5	12	0
34 FT	16	17	8	8	5	6.5	5	7	32.6	32.0	32.0	32.0	6	15	42.5	6	15	29.5	5	7	4	6	27.9	61	73	85	6	7	38.0	5	12	5	11.5	0
36 FT	16	18	8	8	5	6	5	7	32.8	32.0	32.0	32.0	6	15	42.5	6	15	30.0	5	7	5	6.5	27.9	62	74	86	6	7	38.0	5	12	5	10.5	0
38 FT	17	18	8	8	5	6	5	6.5	32.8	37.0	37.0	37.0	6	14	42.0	6	14	29.5	5	6	5	6.5	28.0	62	74	86	6	6.5	38.0	5	12	5	10	0
40 FT	17	19	8	8	5	6	5	6.5	32.8	37.0	37.0	37.0	6	14	42.0	6	14	30.0	5	6.5	5	6.5	28.0	63	75	87	6	7	38.0	5	12	5	9.5	0
42 FT	18	20	8	8	5	6	5	6.5	32.9	38.0	38.0	38.0	6	14	41.5	6	14	29.5	5	6.5	5	6	28.3	64	76	88	6	7	38.0	5	12	5	9.5	0
44 FT	18	20	8	8	6	8	5	6.5	32.9	38.0	38.0	38.0	6	14	41.5	6	14	29.5	5	6.5	5	6	28.3	64	76	88	6	6.5	38.0	5	12	5	9.5	0
46 FT	19	21	8	8	6	8	5	6	33.0	39.0	39.0	39.0	6	14	41.0	6	14	29.5	5	6.5	6	7.5	31.5	65	77	89	6	6.5	38.0	5	12	5	9.5	0
48 FT	19	21	8	8	6	8	5	6	32.9	39.0	39.0	39.0	6	14	41.0	6	14	29.5	5	6	6	7.5	31.4	65	77	89	6	6.5	38.0	5	12	5	9.5	0
50 FT	20	22	9	8	6	8	5	6.5	33.8	40.0	40.0	40.0	6	15	40.0	6	15	29.0	5	6	5	6	29.0	66	78	90	6	6.5	38.0	5	12	5	8.5	0

		SPAN (S) = 7 FT												HEIGHT (HT) = 7 FT OR 8 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS			
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS					
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
									HT=7'	HT=8'												HT=7'	HT=8'									
1 FT	12	9	8	8	5	7.5	4	8.5	38.1	28.0	28.0	4	15	73.0	4	15	25.5	4	7.5	4	7	56.0	89	101	5	7	37.5	5	12	5	12	12
2 FT	12	9	8	8	5	7.5	4	8	38.1	28.0	28.0	4	15	73.0	4	15	25.0	4	7	4	6.5	51.4	89	101	5	7	37.5	5	12	5	12	12
2'- 4'	12	9	8	8	5	7.5	5	6.5	40.1	28.0	28.0	5	17	75.0	5	17	25.0	4	7	4	6.5	51.4	89	101	5	7	37.5	5	12	5	12	12
4 FT	8	9	8	8	4	6	5	6.5	40.1	24.0	24.0	5	17	75.0	5	17	23.5	4	7.5	4	6.5	47.8	89	101	5	7	37.0	5	12	5	12	12
6 FT	8	9	8	8	4	7	5	6.5	44.6	24.0	24.0	5	17	39.5	5	17	23.5	4	7	4	6	43.5	89	101	5	6.5	36.0	5	12	5	12	12
8 FT	8	9	9	8	4	7	4	6	40.1	24.0	24.0	5	16	37.0	5	16	23.5	4	6.5	4	6.5	40.4	89	101	5	6	35.5	5	12	5	12	0
10 FT	8	10	9	8	4	6.5	5	6	38.4	24.0	24.0	5	15	36.0	5	15	24.0	4	6.5	4	7	39.5	90	102	5	6.5	35.5	5	12	5	12	0
12 FT	9	10	9	8	4	6	5	6.5	37.8	25.0	25.0	5	15	35.5	5	15	24.0	5	9	4	6	38.1	90	102	5	6	35.0	5	12	5	12	0
14 FT	9	11	9	8	5	8.5	5	6	37.1	25.0	25.0	5	14	35.0	5	14	23.5	5	9	4	6	37.9	91	103	5	6	35.5	5	12	5	12	0
16 FT	9	11	9	8	5	8.5	5	6	34.8	25.0	25.0	5	14	34.0	5	14	23.5	5	8.5	4	6	35.3	91	103	5	6	35.0	5	12	5	12	0
18 FT	10	12	9	8	5	8.5	5	7	34.9	26.0	30.0	5	14	34.0	5	14	23.5	5	8.5	5	8.5	35.3	92	104	5	6	35.0	5	12	5	12	0
20 FT	11	13	9	8	5	8	5	7.5	34.9	27.0	31.0	5	14	34.0	5	14	23.0	5	8.5	5	8	35.4	93	105	6	8	38.0	5	12	5	12	0
22 FT	11	13	9	8	5	7	5	6.5	34.8	27.0	31.0	5	13	34.0	5	13	23.5	5	7.5	5	8	35.1	93	105	6	7.5	38.0	5	12	5	11.5	0
24 FT	12	14	9	8	5	7.5	5	7	34.8	28.0	32.0	5	13	34.0	5	13	23.0	5	8	5	8	35.4	94	106	6	7.5	38.0	5	12	5	10.5	0
26 FT	13	15	9	8	5	7.5	5	7	34.9	29.0	33.0	5	12	33.5	5	12	22.0	5	8	5	8	35.6	95	107	6	7.5	38.0	5	12	5	9.5	0
28 FT	13	15	9	8	5	6.5	5	6.5	34.8	33.0	33.0	5	12	33.5	5	12	22.5	5	7	5	7.5	35.4	95	107	6	7	38.0	5	12	5	9	0
30 FT	14	16	9	8	5	7	5	6.5	34.9	34.0	34.0	5	12	33.0	5	12	21.5	5	7.5	5	7.5	35.6	96	108	6	7	38.0	5	12	5	8.5	0
32 FT	15	17</																														



DESIGN FILL	MEMBER THICKNESS				SPAN (S) = 7 FT												HEIGHT (HT) = 9 FT OR 10 FT															
					TOP SLAB BARS						BOTTOM SLAB BARS						WALL BARS															
	TS	BS	TX	T1	A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS						
					SIZE	SPA.	SIZE	SPA.	C1	K2 HT=9' HT=10'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3 HT=9' HT=10'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	12	9	8	8	5	7.5	4	6	38.1	28.0	28.0	4	16	73.0	4	16	26.0	4	7	6	7	68.1	113	125	5	7	38.0	5	12	5	12	12
2 FT	12	9	8	8	5	7.5	5	8.5	38.1	28.0	32.0	4	15	73.0	4	15	25.0	4	6.5	6	6.5	64.9	113	125	5	6.5	37.5	5	12	5	12	12
2'- 4'	12	9	9	8	5	7.5	5	6	40.8	28.0	32.0	5	17	75.5	5	17	25.0	4	6.5	6	6.5	64.9	113	125	5	6.5	37.5	5	12	5	11.5	12
4 FT	8	9	9	8	4	6	5	6	40.8	24.0	28.0	5	17	75.5	5	17	23.5	4	7.5	5	6	57.8	113	125	5	7	37.0	5	12	5	11.5	12
6 FT	8	9	10	8	4	7	5	6.5	55.0	24.0	28.0	5	17	39.5	5	17	23.0	4	7	5	6.5	51.9	113	125	5	6.5	36.0	5	12	5	11.5	12
8 FT	8	9	10	8	4	7	5	6	49.0	28.0	28.0	5	16	37.0	5	16	23.5	4	6.5	5	6	49.3	113	125	5	6	35.5	5	12	5	10.5	0
10 FT	8	10	10	8	4	6.5	6	7	49.0	28.0	28.0	5	15	36.0	5	15	24.0	4	6.5	5	6	49.1	114	126	5	6	35.5	5	12	5	10	0
12 FT	9	10	10	8	4	6	5	6	46.1	29.0	29.0	5	16	35.5	5	16	23.5	5	9	6	7	50.3	114	126	5	6	35.0	5	12	5	9.5	0
14 FT	9	11	10	8	5	9	5	6	44.6	29.0	29.0	5	15	35.0	5	15	23.5	5	9	6	7.5	50.6	115	127	5	6	35.0	5	12	5	8.5	0
16 FT	9	11	10	8	5	9	5	6	41.5	29.0	29.0	5	14	34.0	5	14	23.5	5	8.5	5	6	44.0	115	127	5	6	35.0	5	12	5	9.5	0
18 FT	10	12	10	8	5	8.5	5	6.5	42.0	30.0	30.0	5	15	34.0	5	15	23.5	5	8.5	5	6	44.3	116	128	5	6	35.0	5	12	5	8.5	0
20 FT	11	13	10	8	5	8.5	5	6	42.4	31.0	31.0	5	14	33.5	5	14	22.5	5	8.5	5	6	44.6	117	129	6	8	38.0	5	12	5	8	0
22 FT	11	13	10	8	5	7.5	5	6	42.1	31.0	31.0	5	14	33.5	5	14	23.5	5	7.5	6	7	47.3	117	129	6	7.5	38.0	5	12	5	8	0
24 FT	12	14	10	8	5	7.5	5	6	42.5	32.0	32.0	5	13	33.5	5	13	22.5	5	8	6	7.5	47.6	118	130	6	7.5	38.0	5	12	5	8	0
26 FT	13	15	10	8	5	7.5	6	7	45.8	33.0	37.0	5	12	33.0	5	12	21.5	5	8	6	7.5	47.9	119	131	6	7.5	38.0	5	12	5	8	0
28 FT	13	16	11	8	5	7	5	6	42.9	33.0	33.0	5	12	32.5	5	12	22.0	5	8	5	6.5	45.3	120	132	6	7.5	38.0	5	12	5	7.5	0
30 FT	14	16	11	8	5	7	6	7.5	46.1	34.0	34.0	5	12	32.0	5	12	21.0	5	7.5	5	6	45.0	120	132	6	7	38.0	5	12	5	7.5	0
32 FT	14	17	12	8	5	7	5	6	43.4	34.0	34.0	5	12	32.0	5	12	21.5	5	7.5	5	6.5	45.4	121	133	6	7	38.0	5	12	5	7	0
34 FT	15	17	12	8	5	6.5	6	8.5	52.6	35.0	35.0	6	16	40.5	6	16	29.5	5	6.5	5	6.5	45.1	121	133	6	7	38.0	5	12	5	7	0
36 FT	15	18	13	8	5	6	6	8.5	52.9	35.0	35.0	6	16	40.0	6	16	29.5	5	7	5	6	45.5	122	134	6	7	38.0	5	12	5	6.5	0
38 FT	16	19	13	8	5	6.5	6	8	53.1	36.0	36.0	6	16	39.5	6	16	29.0	5	7	5	6	45.9	123	135	6	7	38.0	5	12	5	6.5	0
40 FT	17	19	13	8	5	6	6	7.5	53.4	37.0	37.0	5	12	35.0	5	12	25.0	5	6.5	5	6	45.8	123	135	6	6.5	38.0	5	12	5	6.5	0
42 FT	17	20	14	8	5	6	6	8	53.8	37.0	37.0	6	16	39.0	6	16	29.0	5	6.5	5	6	46.1	124	136	6	6.5	38.5	5	12	5	6	0
44 FT	17	20	14	8	6	8.5	6	7.5	53.6	37.0	37.0	6	15	39.0	6	15	29.0	5	6	5	6	46.1	124	136	6	6.5	38.5	5	12	5	6	0
46 FT	18	21	14	8	6	8	6	7	53.9	38.0	38.0	6	17	38.5	6	17	29.0	5	6.5	5	6	46.5	125	137	6	6.5	38.0	5	12	5	6	0
48 FT	18	22	15	8	6	8	6	7.5	54.3	38.0	42.0	6	16	38.5	6	16	29.0	5	6.5	6	8	49.9	126	138	6	6.5	38.5	5	12	5	6	0
50 FT	18	22	15	8	6	7.5	6	7.5	54.3	38.0	42.0	6	15	38.5	6	15	29.0	5	6	6	8	49.9	126	138	6	6	38.5	5	12	6	8	0

BAR DIMENSIONS DIAGRAM  
SYMMETRICAL ABOUT CULVERT.



GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 7 FEET HEIGHT (HT): 9 THRU 10 FEET	
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>9 OF 27</b>

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

SPAN (S) = 8 FT      HEIGHT (HT) = 4 FT OR 5 FT OR 6 FT

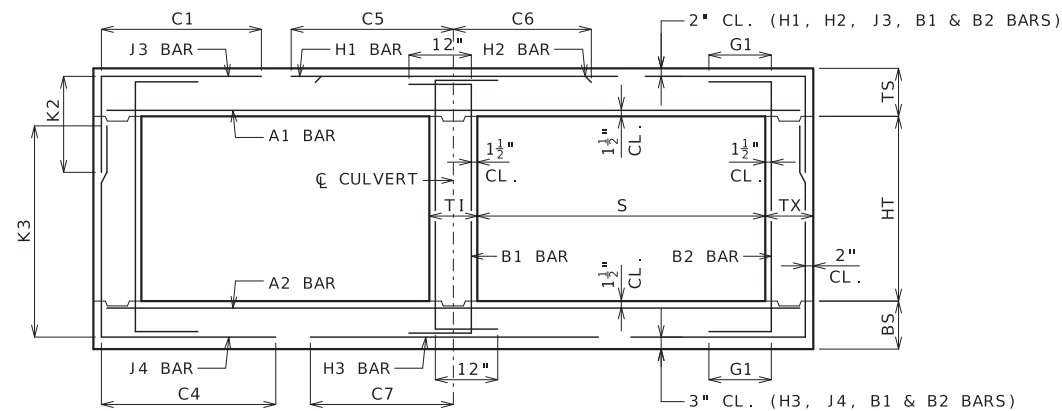
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS									
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS										
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	12	9	8	8	5	7	4	8.5	41.8	28.0	28.0	28.0	4	12	81.5	4	12	26.5	4	7	4	8	43.0	53	65	77	5	6.5	41.0	5	12	5	12	12
2 FT	13	9	8	8	5	7.5	4	7.5	41.8	29.0	29.0	29.0	4	13	81.5	4	13	26.5	4	6.5	4	7	39.1	53	65	77	5	6	40.5	5	12	5	12	12
2' - 4'	13	9	8	8	5	7.5	5	6.5	41.8	29.0	29.0	29.0	5	15	81.5	5	15	26.5	4	6	4	6	39.1	53	65	77	6	6.5	42.5	5	9.5	5	12	12
4 FT	8	8	8	8	4	6	5	6.5	36.4	24.0	24.0	24.0	5	15	51.0	5	15	26.5	4	6	4	6	35.3	52	64	76	6	6.5	42.5	5	9.5	5	12	12
6 FT	8	9	8	8	4	6	5	6.5	34.3	24.0	24.0	24.0	5	15	42.5	5	15	26.0	4	6	4	7.5	33.1	53	65	77	6	7	42.0	5	12	5	12	12
8 FT	8	9	8	8	4	6	5	6	33.1	24.0	24.0	24.0	5	13	40.5	5	13	25.5	5	8.5	4	7	31.6	53	65	77	6	6.5	41.5	5	12	5	12	0
10 FT	9	10	8	8	5	8.5	4	6	31.9	25.0	25.0	25.0	5	14	39.5	5	14	25.5	5	8	4	8	30.4	54	66	78	6	7	41.5	5	12	5	12	0
12 FT	10	11	8	8	5	8	4	6	30.6	26.0	26.0	26.0	5	14	39.0	5	14	25.0	5	8	4	8	29.3	55	67	79	6	7	41.5	5	12	5	12	0
14 FT	11	12	8	8	5	8	4	6	29.8	27.0	27.0	27.0	5	14	38.5	5	14	25.0	5	7.5	4	7.5	28.6	56	68	80	6	7	41.5	5	12	5	12	0
16 FT	11	13	8	8	5	7.5	5	8.5	29.6	27.0	27.0	27.0	5	12	38.5	5	12	25.0	5	7.5	4	8	28.0	57	69	81	6	7	41.5	5	12	5	12	0
18 FT	12	13	8	8	5	7.5	4	6	27.5	28.0	28.0	28.0	5	13	37.5	5	13	25.0	5	7	4	7.5	26.8	57	69	81	6	7	41.0	5	12	5	12	0
20 FT	12	14	8	8	5	7	5	8.5	27.8	28.0	28.0	28.0	5	12	37.5	5	12	25.0	5	7	4	7.5	26.4	58	70	82	6	7	41.5	5	12	5	12	0
22 FT	13	15	8	8	5	6.5	6	8.5	27.4	29.0	29.0	29.0	5	12	37.5	5	12	25.0	5	7	4	7	26.4	59	71	83	6	7	41.5	5	12	5	12	0
24 FT	14	16	8	8	5	6.5	5	8.5	27.3	30.0	30.0	30.0	5	12	37.5	5	12	24.5	5	7	4	6.5	26.5	60	72	84	6	7	41.5	5	12	5	12	0
26 FT	15	16	8	8	5	6.5	5	8	31.9	31.0	31.0	31.0	6	16	46.5	6	16	33.0	5	6.5	4	6.5	26.6	60	72	84	6	7	41.0	5	12	5	12	0
28 FT	16	17	8	8	5	6	5	7	31.8	32.0	32.0	32.0	6	15	46.0	6	15	32.0	5	6.5	4	6	26.8	61	73	85	6	6.5	41.0	5	12	5	12	0
30 FT	16	18	8	8	5	6	5	7	32.0	32.0	32.0	36.0	6	15	46.0	6	15	33.0	5	6.5	5	6.5	26.6	62	74	86	6	6.5	41.0	5	12	5	12	0
32 FT	17	19	8	8	5	6	5	6.5	31.9	37.0	37.0	37.0	6	14	45.5	6	14	32.0	5	6.5	5	6.5	26.8	63	75	87	6	6.5	41.0	5	12	5	12	0
34 FT	18	19	8	8	6	8.5	5	6.5	31.8	38.0	38.0	38.0	6	13	45.5	6	13	31.0	5	6	5	6.5	26.9	63	75	87	6	6	41.0	5	12	5	11	0
36 FT	18	20	8	8	6	8	5	6.5	31.9	38.0	38.0	38.0	6	13	45.5	6	13	32.0	5	6	5	6	26.9	64	76	88	6	6	41.0	5	12	5	10	0
38 FT	19	21	8	8	6	8	5	6	32.0	39.0	39.0	39.0	6	13	45.0	6	13	31.0	5	6	6	7.5	30.1	65	77	89	6	6	41.0	5	12	5	9.5	0
40 FT	20	22	8	8	6	7.5	6	7.5	36.0	44.0	44.0	44.0	6	13	44.5	6	13	30.5	5	6	6	7	30.4	66	78	90	6	6	41.0	5	12	5	9.5	0
42 FT	20	22	8	8	6	7.5	6	7.5	36.0	44.0	44.0	44.0	6	12	44.5	6	12	30.5	6	8.5	6	7	30.3	66	78	90	6	6	41.0	5	12	5	9.5	0
44 FT	21	23	8	8	6	7.5	6	7	36.0	45.0	45.0	45.0	6	12	43.5	6	12	30.0	6	8.5	6	6.5	30.5	67	79	91	6	6	41.0	5	12	5	9.5	0
46 FT	21	23	8	8	6	7	6	7	36.0	45.0	45.0	45.0	6	12	43.5	6	12	30.0	6	8	6	6.5	30.5	67	79	91	7	7.5	44.0	5	12	5	9.5	0
48 FT	22	24	8	8	6	7	6	6.5	36.1	46.0	46.0	46.0	6	12	43.0	6	12	30.0	6	8	6	6	30.8	68	80	92	7	7.5	44.0	5	12	5	9	0
50 FT	22	24	8	8	6	6.5	6	6.5	36.1	46.0	46.0	46.0	6	12	43.0	6	12	30.0	6	7.5	6	6	30.8	68	80	92	7	7.5	44.0	5	12	5	8.5	0

SPAN (S) = 8 FT      HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS									
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS										
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	12	9	8	8	5	7	4	6.5	41.8	28.0	28.0	28.0	4	12	81.5	4	12	27.5	4	6	5	6.5	61.6	89	101	113	5	6	41.0	5	12	5	12	12
2 FT	13	10	8	8	5	7	4	6.5	41.8	29.0	29.0	29.0	4	13	81.5	4	13	27.0	4	6.5	4	6	58.3	90	102	114	5	6.5	40.5	5	12	5	12	12
2' - 4'	13	10	8	8	5	7	6	7.5	43.8	29.0	29.0	29.0	5	15	83.5	5	15	27.0	4	6	5	6	58.3	90	102	114	5	6	40.5	5	11	5	12	12
4 FT	8	9	8	8	4	6	6	7.5	43.8	24.0	24.0	28.0	5	15	83.5	5	15	27.0	4	6	5	6	52.3	89	101	113	5	6	40.0	5	11	5	12	12
6 FT	8	10	8	8	4	6	6	7.5	51.4	24.0	24.0	28.0	5	15	43.0	5	15	26.0	4	6.5	5	6	49.0	90	102	114	5	6.5	39.5	5	12	5	12	12
8 FT	8	11	8	8	4	6	6	7.5	46.6	24.0	24.0	28.0	5	13	40.5	5	13	25.5	4	6.5	5	6.5	46.3	91	103	115	5	6	39.0	5	12	5	12	0
10 FT	9	11	8	8	5	8.5	6	7	45.3	25.0	25.0	29.0	5	14	39.5	5	14	25.5	5	8.5	5	6	43.6	91	103	115	5	6	38.5	5	12	5	11	0
12 FT	10	12	8	8	5	8	6	7	44.4	26.0	30.0	30.0	5	14	39.0	5	14	25.0	5	8.5	5	6	42.5	92	104	116	5	6	38.5	5	12	5	10	0
14 FT	11	12	8	8	5	8	6	7	43.5	27.0	31.0	35.0	5	14	38.5	5	14	25.0	5	7.5	6	7	44.4	92	104	116	6	7	41.5	5	12	5	9.5	0
16 FT	11	13	8	8	5	7.5	6	6.5	42.9	27.0	31.0	35.0	5	12	38.0	5	12	25.0	5	7.5	6	7	44.0	93	105	117	6	7.5	41.5	5	12	5	9.5	0
18 FT	12	13	8	8	5	7.5	5	6	37.1	28.0	32.0	32.0	5	13	37.5	5	13	25.0	5	7	6	7.5	41.1	93	105	117	6	7	41.0	5	12	5	9.5	0
20 FT	12	14	8	8	5	7	6	7	39.9	32.0	32.0	36.0	5	12	37.5	5	12	25.0	5	7	6	7.5	41.1	94	106	118	6	7	41.0	5	12	5	9.5	0
22 FT	13	15	8	8	5	6.5	6	7	39.9	33.0	33.0	37.0	5	12	37.0	5	12	25.0	5	7	6	7.5	41.3	95	107	119	6	7	41.0	5	12	5	9.5	0
24 FT	14	16	8	8	5	6.5	6	7	40.0	34.0	34.0	38.0	5	12	37.0	5	12	24.0	5	7	6	7	41.4	96	108	120	6	7	41.0	5	12	5	9	0
26 FT	15	16	9	8	5	6.5	5	6	42.4	35.0	35.0	35.0	6	16	45.5	6	16	32.0	5	6.5	5	6	38.5	96	108	120	6	7	41.0	5	12	5	8.5	0
28 FT	15	17	10	8	5	6	5	6.5	42.9	31.0	35.0	35.0	6	16	45.5	6	16	33.0	5	6.5	5	7.5	38.8	97	109	121	6	6.5	41.5	5	12	5	8	0
30 FT	16	18	11	8	5	6	5	6.5	43.6	32.0	36.0	36.0	6	15	44.5	6	15	31.5	5	6.5	5	7	39.1	98	110	122	6	6.5	41.5	5	12	5	8.5	0
32 FT	17	19	11	8	5	6	5	6.5	43.6	33.0	37.0	37.0	6	14	44.0	6	14	31.0	5	6.5	5	7	39.4											

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS			
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS						
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1			
									HT=10'	HT=11'										HT=10'	HT=11'											
1 FT	12	9	8	9	5	7	5	7.5	41.9	32.0	32.0	4	12	81.5	4	12	27.5	5	9	6	6	73.9	125	137	5	6	41.5	5	12	5	10.5	12
2 FT	13	10	9	9	5	7	5	8	42.5	29.0	33.0	4	13	82.0	4	13	27.0	4	6	5	6	66.8	126	138	5	6.5	41.0	5	12	5	11	12
2'- 4'	13	11	9	9	5	7	6	7	44.5	29.0	33.0	5	16	84.0	5	16	27.0	4	6	5	6	66.8	127	139	5	6.5	41.0	5	10.5	5	9.5	12
4 FT	8	11	9	9	4	6	6	7	44.5	24.0	28.0	5	16	84.0	5	16	27.0	4	7	5	6	66.0	127	139	5	7.5	41.0	5	10.5	5	9.5	12
6 FT	8	11	9	9	4	6	6	7	61.5	28.0	32.0	5	15	43.0	5	15	26.0	4	6.5	6	7	64.5	127	139	5	7	40.0	5	11.5	5	9	12
8 FT	8	11	9	9	4	6	6	7	55.6	28.0	32.0	5	14	40.5	5	14	25.5	4	6	6	6.5	60.4	127	139	5	6	39.5	5	11.5	5	8.5	0
10 FT	9	11	9	9	5	8.5	6	7.5	54.9	29.0	33.0	5	14	39.5	5	14	25.5	5	8.5	6	6	57.5	127	139	5	6	39.0	5	12	5	8.5	0
12 FT	10	11	9	9	5	8	5	6	51.1	30.0	30.0	5	14	39.0	5	14	25.5	5	7.5	6	6	55.3	127	139	6	7	41.5	5	12	5	8.5	0
14 FT	10	12	9	9	5	8	6	6.5	52.0	30.0	34.0	5	13	38.5	5	13	25.5	5	7.5	6	6	54.8	128	140	6	7	41.5	5	12	5	8.5	0
16 FT	11	13	10	9	5	7.5	5	6	48.6	31.0	31.0	5	13	38.0	5	13	25.5	5	7.5	6	6.5	54.1	129	141	6	7.5	41.5	5	12	5	8	0
18 FT	11	13	10	9	5	7.5	5	6	45.1	31.0	31.0	5	12	37.0	5	12	25.0	5	7	6	6.5	50.4	129	141	6	7	41.5	5	12	5	8	0
20 FT	12	14	10	9	5	7	6	7.5	48.4	32.0	36.0	5	13	37.0	5	13	25.0	5	7	6	6.5	50.5	130	142	6	7.5	41.5	5	12	5	8	0
22 FT	13	15	10	9	5	7	6	7	48.5	33.0	37.0	5	12	37.0	5	12	24.5	5	7	6	6.5	50.6	131	143	6	7	41.5	5	12	5	8	0
24 FT	13	16	11	9	5	6.5	6	8	48.5	33.0	33.0	5	12	36.5	5	12	25.0	5	7	5	6	47.8	132	144	6	7	41.5	5	12	5	7.5	0
26 FT	14	16	12	9	5	6.5	5	6	46.0	34.0	34.0	5	12	36.0	5	12	24.5	5	6	5	6	47.5	132	144	6	7	41.5	5	12	5	7	0
28 FT	15	17	12	9	5	6.5	6	8	55.3	35.0	35.0	6	16	44.5	6	16	32.5	5	6.5	5	6	47.8	133	145	6	6.5	41.5	5	12	5	7	0
30 FT	16	18	13	9	5	6.5	6	8	55.8	36.0	36.0	6	15	44.0	6	15	31.5	5	6.5	5	6	48.0	134	146	6	6.5	41.5	5	12	5	6.5	0
32 FT	16	19	13	9	5	6	6	7.5	55.8	36.0	36.0	6	15	44.0	6	15	32.0	5	6.5	5	6	48.3	135	147	6	6	41.5	5	12	5	6.5	0
34 FT	17	20	13	9	5	6	6	7	56.0	37.0	37.0	6	14	43.5	6	14	31.0	5	6.5	5	6	48.5	136	148	6	6.5	41.5	5	12	5	6.5	0
36 FT	17	20	14	9	6	8	6	7.5	56.1	37.0	37.0	6	14	43.0	6	14	31.5	5	6	5	6	48.6	136	148	6	6	41.5	5	12	5	6	0
38 FT	18	21	14	9	6	8	6	7	56.4	38.0	38.0	6	13	42.5	6	13	30.5	5	6	5	6	48.9	137	149	6	6	41.5	5	12	5	6	0
40 FT	18	22	15	9	6	7	6	7.5	56.8	38.0	42.0	6	13	42.5	6	13	30.5	5	6	6	8	52.3	138	150	6	6	41.5	5	12	6	8	0
42 FT	19	22	15	9	6	7.5	6	7	57.0	39.0	43.0	6	14	42.0	6	14	30.0	6	8.5	6	8	52.3	138	150	7	7.5	44.5	5	12	6	8	0
44 FT	19	23	15	9	6	6.5	6	6.5	56.9	39.0	43.0	6	13	42.0	6	13	30.0	6	8.5	6	8	52.5	139	151	7	8	44.5	5	12	6	8	0
46 FT	20	24	16	9	6	7	6	7	57.6	40.0	44.0	6	14	41.5	6	14	30.0	6	8	6	7.5	52.9	140	152	7	8	44.5	5	12	6	8	0
48 FT	20	24	16	9	6	6.5	6	6.5	57.5	40.0	44.0	6	13	41.5	6	13	30.0	6	8	6	7.5	52.9	140	152	7	7.5	44.5	5	12	6	8	0
50 FT	21	25	16	9	6	6.5	6	6	57.8	41.0	45.0	6	14	41.0	6	14	30.0	6	8	6	7.5	53.1	141	153	7	7.5	44.5	5	12	6	8	0

BAR DIMENSIONS DIAGRAM  
SYMMETRICAL ABOUT CULVERT.



GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 8 FEET HEIGHT (HT): 10 THRU 11 FEET	
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>11 OF 27</b>

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

SPAN (S) = 9 FT      HEIGHT (HT) = 5 FT OR 6 FT OR 7 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
									HT=5'	HT=6'	HT=7'											HT=5'	HT=6'	HT=7'										
1 FT	13	9	8	8	5	6.5	4	7.5	45.3	29.0	29.0	29.0	5	17	89.5	5	17	28.5	4	6	4	6	47.3	65	77	89	5	6	44.0	5	12	5	12	12
2 FT	13	10	8	8	5	6.5	4	7.5	45.3	29.0	29.0	29.0	5	16	89.5	5	16	27.5	4	6	4	7.5	44.5	66	78	90	5	6.5	44.0	5	12	5	12	12
2' - 4'	13	10	8	8	5	6.5	5	6.5	45.3	29.0	29.0	29.0	5	15	89.5	5	15	28.5	5	8	4	6	44.5	66	78	90	6	6.5	46.0	5	11	5	12	12
4 FT	9	9	8	8	5	8.5	5	6.5	42.1	25.0	25.0	25.0	5	15	59.0	5	15	28.5	5	8	4	6	39.5	65	77	89	6	6.5	46.0	5	11	5	12	12
6 FT	9	9	8	8	5	8.5	5	6.5	36.9	25.0	25.0	29.0	5	14	47.0	5	14	27.5	5	7.5	5	7	36.5	65	77	89	6	6	45.0	5	12	5	12	12
8 FT	9	10	8	8	5	8.5	5	6.5	35.6	25.0	25.0	25.0	5	12	44.0	5	12	27.0	5	7.5	4	6.5	34.6	66	78	90	6	6.5	45.0	5	12	5	12	0
10 FT	10	11	8	8	5	8	5	7.5	34.3	26.0	26.0	26.0	5	12	43.0	5	12	26.5	5	7.5	4	6.5	33.3	67	79	91	6	6.5	44.5	5	12	5	12	0
12 FT	11	12	8	8	5	7.5	5	8.5	33.0	27.0	27.0	27.0	5	12	42.5	5	12	26.5	5	7	4	6	32.1	68	80	92	6	6.5	44.5	5	12	5	12	0
14 FT	12	13	8	8	5	7	5	8.5	32.1	28.0	28.0	28.0	5	12	42.0	5	12	26.5	5	6.5	4	6	31.5	69	81	93	6	6.5	44.5	5	12	5	12	0
16 FT	13	14	8	8	5	6.5	5	8.5	31.5	29.0	29.0	33.0	6	16	44.5	6	16	29.5	5	6.5	5	8.5	31.0	70	82	94	6	6.5	44.5	5	12	5	12	0
18 FT	13	15	8	8	5	6.5	5	8	31.3	29.0	29.0	33.0	6	15	44.5	6	15	29.5	5	6.5	5	8.5	30.5	71	83	95	6	6.5	44.5	5	12	5	12	0
20 FT	14	15	8	8	5	6	5	8.5	29.3	30.0	30.0	34.0	6	16	43.5	6	16	29.0	5	6	5	8.5	29.1	71	83	95	6	6.5	44.5	5	12	5	12	0
22 FT	15	16	8	8	5	6	5	8	34.1	31.0	31.0	35.0	6	15	49.5	6	15	35.0	5	6	5	8	29.1	72	84	96	6	6.5	44.5	5	12	5	12	0
24 FT	15	17	8	8	6	7.5	5	8	34.3	31.0	31.0	35.0	6	14	49.5	6	14	35.0	5	6	5	7	28.9	73	85	97	6	6.5	44.5	5	12	5	12	0
26 FT	16	18	8	8	6	8	5	7	34.1	32.0	36.0	36.0	6	14	49.0	6	14	35.0	5	6	5	6.5	29.0	74	86	98	6	6.5	44.5	5	12	5	11	0
28 FT	17	19	8	8	6	7.5	5	6.5	34.0	37.0	37.0	37.0	6	14	49.0	6	14	35.0	5	6	5	6.5	29.1	75	87	99	6	6	44.5	5	12	5	10	0
30 FT	18	20	8	8	6	7.5	5	6.5	34.0	38.0	38.0	38.0	6	13	48.5	6	13	34.0	6	8.5	5	6	29.3	76	88	100	6	6	44.5	5	12	5	9.5	0
32 FT	19	21	8	8	6	7.5	5	6	34.1	39.0	39.0	39.0	6	13	48.0	6	13	33.0	6	8.5	6	7.5	32.5	77	89	101	7	7.5	47.0	5	12	5	9.5	0
34 FT	20	21	8	8	6	7.5	6	7.5	38.0	44.0	44.0	44.0	6	12	47.5	6	12	32.5	6	7.5	6	7.5	32.6	77	89	101	7	7.5	47.0	5	12	5	9.5	0
36 FT	20	22	8	8	6	7	6	7.5	38.0	44.0	44.0	44.0	6	12	47.5	6	12	33.0	6	8	6	7	32.6	78	90	102	7	7.5	47.0	5	12	5	9.5	0
38 FT	21	23	8	8	6	7	6	7	38.1	45.0	45.0	45.0	6	12	47.0	6	12	32.0	6	7.5	6	6.5	32.8	79	91	103	7	7	47.0	5	12	5	9	0
40 FT	22	24	8	8	6	6.5	6	6.5	38.3	46.0	46.0	46.0	7	15	51.5	7	15	36.0	6	7.5	6	6	33.0	80	92	104	7	7	47.0	5	12	5	8	0
42 FT	22	24	8	8	6	6.5	6	6	38.1	46.0	46.0	46.0	7	15	51.5	7	15	36.5	6	7.5	6	6	33.0	80	92	104	7	7	47.0	5	12	5	7.5	0
44 FT	23	25	9	8	6	6.5	6	7	39.0	47.0	47.0	47.0	7	15	50.5	7	15	36.0	6	7.5	6	7	33.5	81	93	105	7	7	47.0	5	12	5	8.5	0
46 FT	24	26	9	8	6	6	6	7	39.0	48.0	48.0	48.0	7	15	49.5	7	15	35.5	6	7.5	6	6.5	33.8	82	94	106	7	7	47.0	5	12	5	8	0
48 FT	24	26	9	8	6	6	6	7	39.0	48.0	48.0	48.0	7	15	49.5	7	15	35.5	6	6.5	6	6.5	33.8	82	94	106	7	6.5	47.0	5	12	5	8	0
50 FT	25	27	9	8	6	6	6	6.5	39.0	49.0	49.0	49.0	7	15	49.0	7	15	35.5	6	7	6	6.5	34.0	83	95	107	7	6.5	47.0	5	12	5	7.5	0

SPAN (S) = 9 FT      HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
									HT=8'	HT=9'	HT=10'													HT=8'	HT=9'	HT=10'								
1 FT	13	10	8	8	5	6.5	5	8.5	47.3	29.0	29.0	33.0	5	18	91.5	5	18	29.0	4	6	5	6	69.0	102	114	126	5	6.5	44.5	5	12	5	12	12
2 FT	13	10	8	8	5	6.5	5	8.5	47.3	29.0	29.0	33.0	5	17	91.5	5	17	28.0	5	9	6	7	66.6	102	114	126	5	6	44.0	5	12	5	12	12
2' - 4'	13	10	8	8	5	6.5	6	7	47.3	29.0	33.0	33.0	5	15	91.5	5	15	29.0	5	7.5	6	6	66.6	102	114	126	6	6	46.0	5	12	5	10.5	12
4 FT	9	9	8	8	5	8.5	6	7	47.3	29.0	33.0	33.0	5	15	91.5	5	15	29.0	5	7.5	6	6	59.4	101	113	125	6	6	46.0	5	12	5	10.5	12
6 FT	9	10	9	8	5	8.5	5	6	54.1	25.0	25.0	29.0	5	14	48.0	5	14	27.5	5	8	5	6	51.8	102	114	126	6	6.5	45.5	5	12	5	11.5	12
8 FT	9	11	9	8	5	8.5	5	6	48.0	25.0	29.0	29.0	5	13	44.0	5	13	27.0	5	8	5	6	49.3	103	115	127	6	7	45.0	5	12	5	11	0
10 FT	10	11	9	8	5	8	5	6	46.6	26.0	30.0	30.0	5	12	43.0	5	12	26.5	5	7	6	7	50.0	103	115	127	6	6.5	44.5	5	12	5	10	0
12 FT	11	12	9	8	5	7.5	6	7	48.4	31.0	31.0	35.0	5	12	42.0	5	12	26.5	5	7	6	7	49.0	104	116	128	6	6.5	44.5	5	12	5	9.5	0
14 FT	12	13	9	8	5	7	6	7.5	47.4	32.0	32.0	36.0	5	12	41.5	5	12	26.5	5	6.5	6	7	48.1	105	117	129	6	6.5	44.5	5	12	5	8.5	0
16 FT	12	14	9	8	5	7	6	6.5	46.4	32.0	32.0	36.0	6	15	44.5	6	15	29.5	5	6.5	6	7	47.5	106	118	130	6	6.5	44.5	5	12	5	8.5	0
18 FT	13	15	9	8	5	6.5	6	6.5	46.0	33.0	33.0	37.0	6	15	44.0	6	15	29.0	5	6.5	6	7.5	47.3	107	119	131	6	7	44.5	5	12	5	8.5	0
20 FT	14	15	9	8	5	6.5	5	6	40.1	34.0	34.0	34.0	6	16	43.0	6	16	29.0	5	6	6	7.5	44.4	107	119	131	6	6.5	44.5	5	12	5	8.5	0
22 FT	14	16	10	8	5	6	5	6	40.5	34.0	34.0	34.0	6	15	43.0	6	15	29.0	5	6	5	7	41.5	108	120	132	6	6.5	44.5	5	12	5	8	0
24 FT	15	17	10	8	6	8	6	8	49.5	35.0	35.0	35.0	6	15	48.5	6	15	35.0	5	6	5	6.5	41.6	109	121	133	6	6.5	44.5	5	12	5	8	0
26 FT	16	18	11	8	6	8	5	6	46.1	36.0	36.0	36.0	6	15	48.0	6	15	34.5	5	6	5	7	41.9	110	122	134	6	6.5	44.5	5	12	5	7.5	0
28 FT	17	19	11	8	6	8	6	8	50.1	37.0	37.0	37.0	6	14	47.5	6	14	33.5	5															

		SPAN (S) = 9 FT										HEIGHT (HT) = 11 FT OR 12 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS	B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=11' HT=12'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=11' HT=12'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	13	10	9	10	5	6.5	5	8	48.3	33.0	33.0	5	17	93.0	5	17	29.0	5	9	6	6.5	79.4	138	150	5	6	44.5	5	12	5	9.5	12
2 FT	13	11	9	10	5	6.5	5	7.5	48.3	33.0	33.0	5	16	93.0	5	16	28.0	4	6	6	7	77.0	139	151	5	6	44.5	5	12	5	9	12
2'- 4'	13	11	9	10	5	6.5	5	6	48.3	33.0	33.0	5	15	93.0	5	15	29.0	5	8	6	6	77.0	139	151	6	7	46.5	5	12	5	8.5	12
4 FT	9	10	9	10	5	8.5	5	6	48.3	29.0	29.0	5	15	93.0	5	15	29.0	5	8	6	6	71.4	138	150	6	7	46.5	5	12	5	8.5	12
6 FT	9	11	9	10	5	8.5	6	7	69.3	29.0	33.0	5	15	47.0	5	15	28.0	5	8.5	6	6	68.0	139	151	5	6	43.0	5	12	5	8.5	12
8 FT	9	11	9	10	5	8.5	6	6.5	61.6	29.0	33.0	5	13	44.0	5	13	27.5	5	7.5	6	6	63.8	139	151	6	7	45.5	5	12	5	8.5	0
10 FT	10	11	10	10	5	8	5	6	56.4	30.0	30.0	5	13	43.0	5	13	27.5	5	7	6	6	60.1	139	151	6	6.5	45.0	5	12	5	8	0
12 FT	11	12	10	10	5	7.5	5	6	55.0	31.0	31.0	5	13	42.5	5	13	27.0	5	6.5	6	6.5	59.1	140	152	6	6.5	45.0	5	12	5	8	0
14 FT	11	13	10	10	5	7.5	6	7	55.6	31.0	35.0	6	16	45.0	6	16	30.0	5	6.5	6	6.5	58.5	141	153	6	6.5	45.0	5	12	5	8	0
16 FT	12	14	11	10	5	7	6	8.5	54.6	32.0	36.0	6	16	44.5	6	16	30.0	5	6.5	6	7	57.4	142	154	6	6.5	45.0	5	12	5	7.5	0
18 FT	13	15	11	10	5	6.5	6	7.5	54.6	33.0	37.0	6	16	44.0	6	16	30.0	5	6.5	6	6.5	57.1	143	155	6	7	44.5	5	12	5	7.5	0
20 FT	13	15	11	10	5	6.5	6	7.5	51.5	33.0	37.0	6	15	43.5	6	15	29.5	5	6	6	6.5	53.4	143	155	6	6.5	44.5	5	12	5	7.5	0
22 FT	14	16	12	10	5	6	6	8	51.9	34.0	38.0	6	16	43.0	6	16	29.5	5	6	6	7.5	53.6	144	156	6	6.5	44.5	5	12	5	7	0
24 FT	15	17	12	10	5	6	6	7.5	58.0	35.0	39.0	6	16	48.5	6	16	35.5	5	6	6	7.5	53.8	145	157	6	6.5	44.5	5	12	5	7	0
26 FT	16	18	13	10	6	8.5	6	7.5	58.5	36.0	40.0	6	15	48.0	6	15	34.5	5	6	6	8	54.0	146	158	6	6.5	44.5	5	12	5	6.5	0
28 FT	17	19	13	10	6	8	6	7	58.6	37.0	41.0	6	14	47.5	6	14	33.5	6	8.5	6	8	54.1	147	159	6	6	44.5	5	12	5	6.5	0
30 FT	17	20	13	10	6	7.5	6	6.5	58.5	37.0	41.0	6	14	47.5	6	14	34.5	6	8	6	7	54.4	148	160	6	6	44.5	5	12	5	6.5	0
32 FT	18	21	14	10	6	7.5	6	7	59.1	38.0	42.0	6	13	47.0	6	13	33.5	6	8	6	8	54.6	149	161	7	7.5	47.5	5	12	5	6	0
34 FT	19	22	14	10	6	7.5	6	6.5	59.3	39.0	43.0	6	13	46.5	6	13	32.5	6	8	6	8	54.9	150	162	7	7.5	47.5	5	12	5	6	0
36 FT	19	22	15	10	6	7	6	6.5	59.5	43.0	43.0	6	13	46.0	6	13	33.0	6	7	6	8	54.9	150	162	7	7.5	48.0	5	12	6	8	0
38 FT	20	23	15	10	6	7	6	6.5	59.6	44.0	44.0	6	12	45.5	6	12	32.0	6	7.5	6	8	55.1	151	163	7	7	47.5	5	12	6	8	0
40 FT	20	24	16	10	6	6	6	6.5	60.0	44.0	44.0	6	12	45.0	6	12	32.5	6	7.5	6	7.5	55.5	152	164	7	7	48.0	5	12	6	8	0
42 FT	21	25	16	10	6	6.5	6	6	60.3	45.0	45.0	6	12	44.5	6	12	31.5	6	7.5	6	7.5	55.8	153	165	7	7	48.0	5	12	6	8	0
44 FT	22	25	17	10	6	6.5	6	6.5	60.8	46.0	46.0	6	12	44.0	6	12	31.0	6	6.5	6	7	55.9	153	165	7	6.5	48.0	5	12	6	7.5	0
46 FT	22	26	17	10	6	6	6	6	60.8	46.0	46.0	6	12	44.0	6	12	31.0	6	7	6	7	56.1	154	166	7	6.5	48.0	5	12	6	7.5	0
48 FT	23	27	18	10	6	6	6	6.5	61.5	47.0	47.0	6	12	43.5	6	12	31.0	6	7	6	6.5	56.6	155	167	7	6.5	48.0	5	12	6	7	0
50 FT	23	28	19	10	6	6	6	6.5	62.0	43.0	47.0	6	12	43.5	6	12	31.0	6	7	6	7	57.0	156	168	7	6.5	48.0	5	12	6	7	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

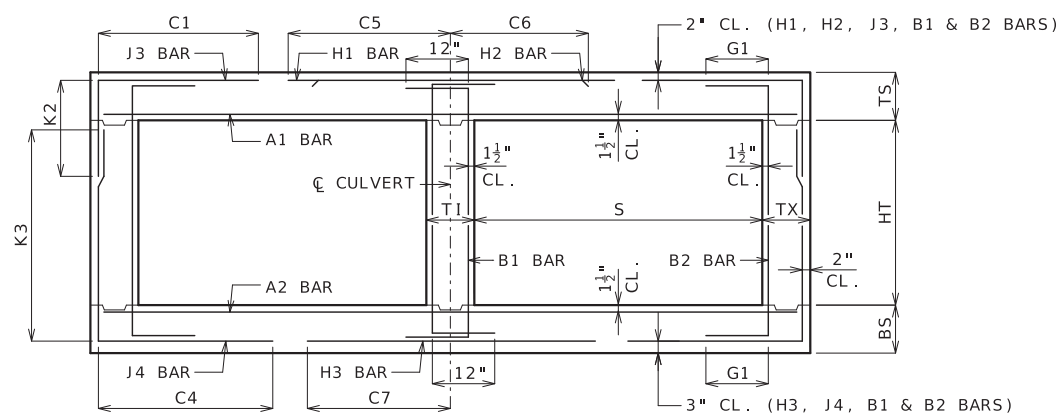
SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM SYMMETRICAL ABOUT CULVERT.



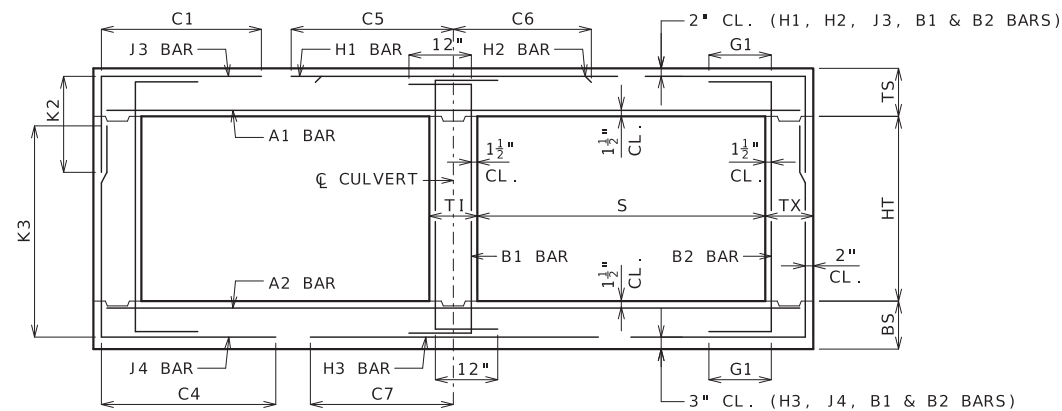
	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 9 FEET HEIGHT (HT): 11 THRU 12 FEET	
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>13 OF 27</b>

		SPAN (S) = 10 FT												HEIGHT (HT) = 5 FT OR 6 FT OR 7 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS									BOTTOM SLAB BARS									WALL BARS											
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS	B2 BARS												
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1				
										HT=5'	HT=6'	HT=7'										HT=5'	HT=6'	HT=7'										
1 FT	13	10	8	8	5	6.5	4	7	48.9	29.0	29.0	29.0	5	15	98.0	5	15	29.0	4	6	4	7	48.1	66	78	90	5	6	47.5	5	12	5	12	12
2 FT	13	10	8	8	5	6.5	4	7	48.9	29.0	29.0	29.0	5	13	98.0	5	13	28.5	5	8.5	4	6.5	43.8	66	78	90	6	7	50.0	5	12	5	12	12
2'- 4'	13	10	8	8	5	6.5	6	7.5	48.9	29.0	29.0	29.0	5	12	98.0	5	12	30.0	5	8	4	6.5	43.8	66	78	90	6	6.5	50.0	5	8.5	5	12	12
4 FT	9	10	8	8	5	7.5	6	7.5	43.1	25.0	25.0	25.0	5	12	62.0	5	12	30.0	5	8	4	7	38.9	66	78	90	6	6.5	49.5	5	8.5	5	12	12
6 FT	9	10	8	8	5	8.5	5	6	38.0	25.0	25.0	25.0	6	15	53.5	6	15	32.0	5	7	4	6.5	36.1	66	78	90	6	6	48.5	5	12	5	12	12
8 FT	10	11	8	8	5	8	5	7.5	36.0	26.0	26.0	26.0	6	16	51.0	6	16	31.5	5	7	4	6.5	34.1	67	79	91	6	6	48.0	5	12	5	12	0
10 FT	11	12	8	8	5	7.5	5	8	34.1	27.0	27.0	27.0	6	15	49.5	6	15	31.0	5	6.5	4	6	32.6	68	80	92	6	6.5	48.0	5	12	5	12	0
12 FT	12	13	8	8	5	7	5	8.5	32.8	28.0	28.0	28.0	6	15	48.5	6	15	31.0	5	6.5	4	6	31.5	69	81	93	6	6.5	48.0	5	12	5	12	0
14 FT	13	14	8	8	5	6.5	5	8.5	31.6	29.0	29.0	33.0	6	15	48.5	6	15	31.0	5	6	5	9	30.8	70	82	94	6	6	47.5	5	12	5	12	0
16 FT	14	15	8	8	5	6	5	8.5	30.8	30.0	30.0	34.0	6	14	48.0	6	14	31.0	5	6	5	8.5	30.1	71	83	95	6	6	47.5	5	12	5	12	0
18 FT	15	16	8	8	6	8	5	8	35.1	31.0	31.0	35.0	6	14	53.5	6	14	36.5	6	8	5	8	29.9	72	84	96	6	6	47.5	5	12	5	12	0
20 FT	15	17	8	8	6	7.5	5	8	35.1	31.0	31.0	35.0	6	13	53.5	6	13	36.5	6	8	5	7	29.4	73	85	97	6	6	47.5	5	12	5	12	0
22 FT	16	18	8	8	6	8	5	7	33.4	32.0	36.0	36.0	6	13	52.5	6	13	36.5	6	8	5	6.5	28.0	74	86	98	6	6.5	47.5	5	12	5	12	0
24 FT	17	19	8	8	6	7.5	5	6.5	33.3	37.0	37.0	37.0	6	13	52.5	6	13	36.5	6	8	5	6.5	28.0	75	87	99	6	6	47.5	5	12	5	12	0
26 FT	18	20	8	8	6	7	5	6.5	33.1	38.0	38.0	38.0	6	13	52.0	6	13	36.0	6	7.5	6	7.5	31.3	77	89	101	7	7.5	50.5	5	12	5	9.5	0
28 FT	19	21	8	8	6	7	5	6	33.1	39.0	39.0	39.0	6	12	52.0	6	12	36.0	6	7	6	7.5	31.7	78	90	102	7	7.5	50.5	5	12	5	9.5	0
30 FT	20	22	8	8	6	7	6	7.5	37.1	44.0	44.0	44.0	6	12	51.5	6	12	35.5	6	7.5	6	7	31.4	78	90	102	7	7.5	50.5	5	12	5	9.5	0
32 FT	21	23	8	8	6	6.5	6	7	37.1	45.0	45.0	45.0	6	12	51.0	6	12	34.5	6	7.5	6	6.5	31.5	79	91	103	7	7	50.5	5	12	5	9.5	0
34 FT	22	23	8	8	6	6.5	6	6.5	37.0	46.0	46.0	46.0	7	15	55.5	7	15	38.5	6	6.5	6	6.5	31.6	79	91	103	7	7	50.5	5	12	5	9.5	0
36 FT	22	24	8	8	6	6	6	6.5	37.1	46.0	46.0	46.0	7	15	55.5	7	15	39.5	6	7	6	6	31.6	80	92	104	7	7	50.0	5	12	5	9	0
38 FT	23	25	8	8	6	6	6	6	37.1	47.0	47.0	47.0	7	15	55.0	7	15	38.5	6	7	6	6	31.9	81	93	105	7	6.5	50.0	5	12	5	8.5	0
40 FT	24	26	9	8	6	6	6	7	38.0	48.0	48.0	48.0	7	14	54.0	7	14	37.5	6	7	6	6.5	32.5	82	94	106	7	6.5	50.0	5	12	5	8.5	0
42 FT	25	27	9	8	6	6	6	6.5	38.0	49.0	49.0	49.0	7	14	53.5	7	14	37.0	6	7	6	6.5	32.6	83	95	107	7	6	50.0	5	12	5	8.5	0
44 FT	25	28	9	8	7	7.5	6	6.5	38.1	49.0	49.0	49.0	7	14	53.0	7	14	37.5	6	6.5	6	6	32.8	84	96	108	7	6	50.0	5	12	5	8.5	0
46 FT	26	28	9	8	7	7.5	6	6.5	38.1	50.0	50.0	50.0	7	13	52.5	7	13	36.5	6	6.5	6	6	32.9	84	96	108	7	6	50.0	5	12	5	8	0
48 FT	27	29	9	8	7	7.5	6	6	38.1	51.0	51.0	51.0	7	14	51.5	7	14	36.5	6	6.5	6	6	33.0	85	97	109	7	6	50.0	5	12	5	7.5	0
50 FT	27	30	10	8	7	7	6	7	39.0	51.0	51.0	51.0	7	13	51.5	7	13	36.0	6	6.5	6	6.5	33.5	86	98	110	7	6	50.0	5	12	5	8	0

		SPAN (S) = 10 FT												HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS									BOTTOM SLAB BARS									WALL BARS											
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS	B2 BARS												
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1				
										HT=8'	HT=9'	HT=10'										HT=8'	HT=9'	HT=10'										
1 FT	13	10	8	8	5	6.5	5	8.5	50.9	29.0	33.0	33.0	5	14	100.0	5	14	29.5	5	8.5	6	7.5	71.6	102	114	126	5	6	47.5	5	12	5	12	12
2 FT	13	11	8	8	5	6.5	5	8.5	50.9	29.0	33.0	33.0	5	13	100.0	5	13	28.5	5	8.5	5	6	64.1	103	115	127	5	6	47.0	5	12	5	12	12
2'- 4'	13	11	9	8	5	6.5	5	6	69.0	29.0	33.0	33.0	5	12	100.0	5	12	30.0	5	7.5	5	6	64.1	103	115	127	6	6.5	49.5	5	10	5	12	12
4 FT	9	10	9	8	5	7.5	5	6	69.0	25.0	25.0	29.0	5	12	73.0	5	12	30.0	5	7.5	5	6	55.4	102	114	126	6	6.5	49.5	5	10	5	12	12
6 FT	9	10	9	8	5	8.5	5	6	51.4	25.0	29.0	29.0	6	15	54.0	6	15	32.0	5	7	6	7	53.4	102	114	126	6	6	48.5	5	12	5	12	12
8 FT	10	11	9	8	5	8	5	6	48.0	26.0	30.0	30.0	5	12	48.0	5	12	28.5	5	7	6	7.5	50.9	103	115	127	6	6	48.0	5	12	5	11.5	0
10 FT	11	12	9	8	5	7.5	5	6	46.0	31.0	31.0	31.0	6	16	49.5	6	16	31.0	5	6.5	5	6	46.3	104	116	128	6	6	48.0	5	12	5	10.5	0
12 FT	12	13	9	8	5	7	5	6	44.5	32.0	32.0	32.0	6	15	48.5	6	15	31.0	5	6.5	5	6	45.0	105	117	129	6	6	47.5	5	12	5	9.5	0
14 FT	13	14	9	8	5	6.5	5	6	43.3	33.0	33.0	33.0	6	15	48.0	6	15	30.5	5	6	5	6	43.9	106	118	130	6	6	47.5	5	12	5	8.5	0
16 FT	14	15	9	8	5	6	5	6	42.1	34.0	34.0	34.0	6	15	47.5	6	15	30.5	5	6	5	6	43.0	107	119	131	6	6	47.5	5	12	5	8.5	0
18 FT	15	16	10	8	6	8.5	5	6.5	47.1	35.0	35.0	35.0	6	15	53.0	6	15	36.5	6	8	5	7	42.8	108	120	132	6	6	47.5	5	12	5	8.5	0
20 FT	15	17	10	8	6	8	6	8	50.6	35.0	35.0	35.0	6	13	52.5	6	13	36.5	6	8	5	6.5	42.3	109	121	133	6	6	47.5	5	12	5	8	0
22 FT	16	18	10	8	6	8	5	6	44.5	36.0	36.0	36.0	6	14	52.0	6	14	36.0	6	8	5	7	40.0	110	122	134	6	6.5	47.5	5	12	5	8	0
24 FT	17	19	10	8	6	7.5	6	8	48.4	37.0	37.0	37.0	6	14	51.5	6	14	36.0	6	8	5	6.5	40.1	111	123	135	6	6	47.5	5	12	5	8	0
26 FT	18	20	11	8	6	7.5	5	6	45.0	38.0	38.0	38.0	6	13	51.0	6	13	35.5	6	7.5	5	7	40.5	112	124	136	6	6	47.5	5	12	5	7.5	0
28 FT	19	21	11	8	6	7	6	8	49.0	39.0	39.0	39.0	6	13	50.5	6	13	35.0	6	7.5	5	7	40.5	113	125	137	7	7.5	50.5	5	12	5	7.5	0
30 FT	19	22	12	8	6	6.5	6	8	49.8	39.0</																								

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS									WALL BARS								
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
										HT=11'	HT=12'	HT=13'													HT=11'	HT=12'	HT=13'							
1 FT	13	10	9	10	5	6.5	5	6.5	51.9	33.0	33.0	33.0	5	14	101.0	5	14	30.0	5	7.5	6	6	85.4	138	150	162	6	7	51.0	5	12	5	8.5	12
2 FT	13	11	9	10	5	6.5	5	6	51.9	33.0	33.0	33.0	5	13	101.0	5	13	29.0	5	8	6	6	82.6	139	151	163	5	6	47.5	5	12	5	8.5	12
2'- 4'	13	11	10	10	5	6.5	6	7	52.5	33.0	33.0	33.0	5	12	101.5	5	12	30.5	5	7	6	6	82.6	139	151	163	6	6	50.0	5	10	5	8	12
4 FT	9	10	10	10	5	7.5	6	7	52.5	29.0	29.0	33.0	5	12	101.5	5	12	30.5	5	7	6	6	74.5	138	150	162	6	6	50.0	5	10	5	8	12
6 FT	9	11	10	10	5	8.5	6	7	70.4	29.0	29.0	33.0	5	12	50.5	5	12	29.5	5	7	6	6	71.0	139	151	163	6	6.5	49.5	5	12	5	8	12
8 FT	10	12	11	10	5	8	5	6	62.6	30.0	30.0	30.0	5	12	47.5	5	12	29.0	5	7	5	6	64.6	140	152	164	6	6.5	48.5	5	12	5	7.5	0
10 FT	11	12	11	10	5	7.5	5	6.5	60.9	31.0	31.0	31.0	5	12	46.5	5	12	28.5	5	6.5	6	6.5	64.4	140	152	164	6	6	48.0	5	12	5	7.5	0
12 FT	11	13	11	10	5	7.5	6	7.5	60.6	31.0	31.0	35.0	6	15	48.5	6	15	31.5	5	6	6	6.5	63.6	141	153	165	6	6	48.0	5	12	5	7.5	0
14 FT	12	14	11	10	5	7	6	7.5	59.6	32.0	32.0	36.0	6	14	48.0	6	14	31.5	5	6	6	6.5	62.5	142	154	166	6	6	48.0	5	12	5	7.5	0
16 FT	13	15	12	10	5	6.5	6	7.5	58.4	33.0	33.0	37.0	6	14	47.5	6	14	31.0	6	8	6	7	61.1	143	155	167	6	6	48.0	5	12	5	7	0
18 FT	14	16	12	10	5	6	6	7	58.0	34.0	38.0	38.0	6	14	47.0	6	14	31.0	6	8	6	6.5	60.5	144	156	168	6	6.5	48.0	5	12	5	7	0
20 FT	15	17	13	10	6	8	6	7	64.0	35.0	39.0	39.0	6	14	52.5	6	14	37.0	6	8	6	6.5	59.9	145	157	169	6	6.5	48.0	5	12	5	6.5	0
22 FT	15	18	13	10	6	7.5	6	7	61.1	35.0	35.0	39.0	6	13	52.0	6	13	37.0	6	8	6	7.5	57.4	146	158	170	6	6.5	48.0	5	12	5	6.5	0
24 FT	16	19	13	10	6	7.5	6	6.5	61.3	36.0	36.0	40.0	6	13	51.5	6	13	36.5	6	7.5	6	7.5	57.4	147	159	171	6	6	48.0	5	12	5	6.5	0
26 FT	17	20	14	10	6	7.5	6	7	61.8	37.0	37.0	41.0	6	13	51.5	6	13	36.5	6	7.5	6	7.5	57.6	148	160	172	6	6	48.0	5	12	5	6	0
28 FT	18	21	14	10	6	7	6	6.5	61.9	38.0	38.0	42.0	6	13	51.0	6	13	36.5	6	7.5	6	7.5	57.8	149	161	173	7	7.5	51.0	5	12	5	6	0
30 FT	19	22	15	10	6	7	6	6.5	62.4	39.0	43.0	43.0	6	13	50.0	6	13	35.5	6	7.5	6	7.5	58.0	150	162	174	7	7.5	51.0	5	12	6	8	0
32 FT	20	23	15	10	6	7	6	6	62.5	44.0	44.0	44.0	6	12	49.5	6	12	34.5	6	7	6	7.5	58.1	151	163	175	7	7	51.0	5	12	6	8	0
34 FT	21	24	16	10	6	6.5	6	6.5	63.0	41.0	45.0	45.0	6	12	48.5	6	12	33.5	6	7	6	7.5	58.5	152	164	176	7	7	51.0	5	12	6	8	0
36 FT	21	25	16	10	6	6	6	6	62.9	45.0	45.0	45.0	6	12	48.5	6	12	34.0	6	7	6	7.5	58.6	153	165	177	7	6.5	51.0	5	12	6	8	0
38 FT	22	26	17	10	6	6.5	6	6	63.5	42.0	46.0	46.0	7	15	52.5	7	15	38.5	6	7	6	7	59.0	154	166	178	7	6.5	51.0	5	12	6	7.5	0
40 FT	23	26	17	10	6	6	6	6	63.5	47.0	47.0	47.0	7	15	52.0	7	15	37.5	6	6	6	7	58.9	154	166	178	7	6.5	51.0	5	12	6	7.5	0
42 FT	24	27	18	10	6	6	6	6	64.1	44.0	48.0	48.0	7	15	51.5	7	15	37.0	6	6.5	6	6.5	59.3	155	167	179	7	6	51.0	5	12	6	7	0
44 FT	24	28	19	10	7	8	6	6	64.6	44.0	48.0	48.0	7	14	51.5	7	14	37.0	6	6.5	6	6.5	59.6	156	168	180	7	6	51.0	5	12	6	7	0
46 FT	25	29	19	10	7	7.5	6	6	64.8	49.0	49.0	49.0	7	15	51.0	7	15	36.5	6	6.5	6	6.5	59.9	157	169	181	7	6	51.0	5	12	6	6.5	0
48 FT	25	30	20	10	7	7.5	7	8	70.3	49.0	49.0	49.0	7	15	51.0	7	15	36.5	6	6.5	6	6.5	60.3	158	170	182	7	6	51.0	5	12	6	6.5	0
50 FT	26	31	20	10	7	7	7	7	70.4	50.0	50.0	50.0	7	15	50.5	7	15	36.5	6	6	6	6	60.5	159	171	183	7	6	51.0	5	12	6	6.5	0

BAR DIMENSIONS DIAGRAM  
SYMMETRICAL ABOUT CULVERT.



GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS	
SPAN (S): 10 FEET HEIGHT (HT): 11 THRU 13 FEET		
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>15 OF 27</b>

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

		SPAN (S) = 11 FT														HEIGHT (HT) = 6 FT OR 7 FT OR 8 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS											BOTTOM SLAB BARS										WALL BARS								
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1				
										HT=6'	HT=7'	HT=8'										HT=6'	HT=7'	HT=8'										
1 FT	14	10	8	8	5	6	4	6.5	52.5	30.0	30.0	30.0	5	13	106.5	5	13	30.0	5	8	5	7	52.9	78	90	102	6	7	53.5	5	12	5	12	12
2 FT	14	11	8	8	5	6	4	6	52.5	30.0	30.0	30.0	5	12	106.5	5	12	29.0	5	8	5	8	49.1	79	91	103	6	7	53.0	5	12	5	12	12
2'- 4'	14	11	8	8	5	6	5	6	52.5	30.0	30.0	30.0	6	16	106.5	6	16	35.0	5	7	5	6.5	49.1	79	91	103	6	6	53.0	5	10.5	5	12	12
4 FT	10	10	8	8	5	7	5	6	45.6	26.0	26.0	30.0	6	16	72.5	6	16	35.0	5	7	5	6.5	43.0	78	90	102	6	6	52.5	5	10.5	5	12	12
6 FT	10	11	8	8	5	7.5	5	6	40.8	26.0	26.0	30.0	6	15	58.5	6	15	33.5	5	6.5	5	7.5	39.5	79	91	103	6	6	52.0	5	12	5	12	12
8 FT	11	12	8	8	5	7.5	5	7	38.6	27.0	27.0	31.0	6	15	54.5	6	15	33.0	5	6.5	5	8	37.3	80	92	104	6	6	51.5	5	12	5	12	0
10 FT	12	13	8	8	5	7	5	7.5	36.6	28.0	28.0	32.0	6	14	53.0	6	14	32.5	5	6	5	8	35.6	81	93	105	6	6	51.0	5	12	5	12	0
12 FT	13	14	8	8	5	6.5	5	7.5	35.3	29.0	33.0	33.0	6	14	52.0	6	14	32.5	6	8.5	5	8.5	34.6	82	94	106	6	6	51.0	5	12	5	12	0
14 FT	14	15	8	8	5	6	5	8	34.1	30.0	34.0	34.0	6	13	51.5	6	13	32.0	6	8	5	8.5	33.8	83	95	107	6	6	51.0	5	12	5	12	0
16 FT	15	16	8	8	6	8	5	7.5	38.3	31.0	35.0	35.0	6	13	57.0	6	13	38.0	6	7.5	5	8	33.1	84	96	108	6	6	51.0	5	12	5	12	0
18 FT	16	17	8	8	6	8	5	7	37.5	32.0	36.0	36.0	6	12	56.5	6	12	38.0	6	7	5	7	32.6	85	97	109	7	7	53.5	5	12	5	10.5	0
20 FT	17	18	8	8	6	7.5	5	6.5	37.1	37.0	37.0	37.0	6	12	56.5	6	12	38.0	6	7	5	6.5	32.4	86	98	110	7	7	53.5	5	12	5	9.5	0
22 FT	18	20	8	8	6	7	5	6.5	37.1	38.0	38.0	38.0	6	12	56.0	6	12	37.5	6	7.5	5	6	32.4	88	100	112	6	6	50.5	5	12	5	9.5	0
24 FT	19	20	8	8	6	6.5	5	6	35.1	39.0	39.0	39.0	6	12	55.0	6	12	37.5	6	7	5	6	30.9	88	100	112	6	6	50.5	5	12	5	9.5	0
26 FT	20	21	8	8	6	6.5	6	7.5	39.1	44.0	44.0	44.0	6	12	54.5	6	12	37.5	6	6.5	6	7.5	33.9	89	101	113	7	7	53.5	5	12	5	9.5	0
28 FT	21	22	8	8	6	6.5	6	7	39.1	45.0	45.0	45.0	6	12	54.5	6	12	37.0	6	6	6	7	34.0	90	102	114	7	7	53.5	5	12	5	9.5	0
30 FT	22	23	8	8	6	6	6	6.5	39.1	46.0	46.0	46.0	7	15	59.0	7	15	41.0	6	6	6	6.5	34.1	91	103	115	7	7	53.5	5	12	5	8.5	0
32 FT	23	24	8	8	6	6	6	6	39.1	47.0	47.0	47.0	7	15	58.5	7	15	40.5	6	6	6	6	34.3	92	104	116	7	7	53.5	5	12	5	8	0
34 FT	23	26	9	8	7	7.5	6	7	40.3	47.0	47.0	47.0	7	15	58.0	7	15	41.0	6	6.5	6	6.5	34.8	94	106	118	7	6.5	53.5	5	12	5	8.5	0
36 FT	24	27	9	8	7	7.5	6	7	40.3	48.0	48.0	48.0	7	14	57.5	7	14	40.5	6	6.5	6	6.5	34.9	95	107	119	7	6	53.5	5	12	5	8	0
38 FT	25	27	9	8	7	7.5	6	6.5	40.1	49.0	49.0	49.0	7	14	57.0	7	14	39.5	6	6	6	6.5	35.0	95	107	119	7	6	53.5	5	12	5	7.5	0
40 FT	26	28	10	8	7	7.5	6	7	40.9	50.0	50.0	50.0	7	13	56.0	7	13	38.5	6	6	6	7	35.5	96	108	120	7	6	53.5	5	12	5	8	0
42 FT	27	29	10	8	7	7	6	7	41.0	51.0	51.0	51.0	7	13	55.0	7	13	37.5	6	6	6	6.5	35.8	97	109	121	8	7.5	59.5	5	12	5	8	0
44 FT	27	30	11	8	7	6.5	5	6	37.9	47.0	47.0	47.0	7	13	54.5	7	13	38.0	6	6	6	7	36.1	98	110	122	8	7.5	59.5	5	12	5	7.5	0
46 FT	28	31	11	8	7	6.5	6	7.5	41.9	52.0	52.0	52.0	7	12	54.0	7	12	37.5	6	6	6	7	36.4	99	111	123	8	7	59.5	5	12	5	7.5	0
48 FT	29	32	11	8	7	6.5	6	7	41.9	53.0	53.0	53.0	7	12	53.5	7	12	37.0	6	6	6	6.5	36.5	100	112	124	8	7	59.0	5	12	5	7.5	0
50 FT	29	33	11	8	7	6.5	6	7	42.0	53.0	53.0	53.0	7	12	53.5	7	12	37.0	6	6	6	6.5	36.6	101	113	125	8	7	59.0	5	12	5	7	0

		SPAN (S) = 11 FT														HEIGHT (HT) = 9 FT OR 10 FT OR 11 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS											BOTTOM SLAB BARS										WALL BARS								
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS				H3 BARS		B1 BARS		B2 BARS									
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1				
										HT=9'	HT=10'	HT=11'										HT=9'	HT=10'	HT=11'										
1 FT	14	10	8	9	5	6	5	8	54.6	34.0	34.0	34.0	5	13	109.0	5	13	30.5	5	7.5	6	6	76.4	114	126	138	6	6.5	54.0	5	12	5	10	12
2 FT	14	11	8	9	5	6	5	8	54.6	34.0	34.0	34.0	5	12	109.0	5	12	29.5	5	7.5	6	6.5	71.8	115	127	139	6	7	53.5	5	12	5	10	12
2'- 4'	14	11	9	9	5	6	5	6	82.4	34.0	34.0	34.0	6	16	109.0	6	16	35.0	5	7	6	6.5	71.8	115	127	139	7	7	55.5	5	10.5	5	10	12
4 FT	10	10	9	9	5	7	5	6	82.4	30.0	30.0	30.0	6	16	84.0	6	16	35.0	5	7	6	6.5	62.1	114	126	138	7	7	55.5	5	10.5	5	10	12
6 FT	10	11	9	9	5	7.5	5	6	56.3	30.0	30.0	30.0	6	15	58.5	6	15	33.5	5	6.5	6	6.5	58.1	115	127	139	6	6	52.0	5	12	5	9.5	12
8 FT	11	12	10	9	5	7.5	5	6	52.4	31.0	31.0	31.0	6	15	54.5	6	15	33.0	5	6	5	6	52.1	116	128	140	6	6	51.5	5	12	5	10.5	0
10 FT	11	13	10	9	5	7.5	5	6	49.6	31.0	31.0	31.0	6	14	52.5	6	14	32.5	5	6	5	6	50.5	117	129	141	6	6	51.5	5	12	5	9.5	0
12 FT	12	14	10	9	5	6.5	5	6	48.1	32.0	32.0	32.0	6	13	52.0	6	13	32.5	6	8	5	6	49.0	118	130	142	6	6	51.0	5	12	5	9	0
14 FT	14	15	10	9	5	6	5	6	47.1	34.0	34.0	34.0	6	14	51.5	6	14	32.5	6	8	5	6	47.9	119	131	143	6	6	51.0	5	12	5	8	0
16 FT	15	16	10	9	6	8	6	8	55.0	35.0	35.0	35.0	6	13	57.0	6	13	38.5	6	7.5	5	6	46.9	120	132	144	6	6	51.0	5	12	5	8	0
18 FT	16	17	10	9	6	8	6	7.5	53.9	36.0	36.0	40.0	6	13	56.5	6	13	38.0	6	7	6	7	49.0	121	133	145	6	6	51.0	5	12	5	8	0
20 FT	17	18	11	9	6	7.5	6	8	54.0	37.0	37.0	37.0	6	13	56.0	6	13	38.0	6	6.5	5	6	45.9	122	134	146	6	6	51.0	5	12	5	7.5	0
22 FT	18	20	12	9	6	7	6	8	54.4	38.0	38.0	38.0	6	13	55.5	6	13	38.0	6	7.5	5	6.5	46.0	124	136	148	6	6	51.0	5	12	5	7	0
24 FT	18	20	12	9	6	7	6	8	52.1	38.0	38.0	38.0	6	12	54.5	6	12	37.5	6	6.5	5	6.5	43.5	124	136	148	6	6	51.0	5	12	5	7.5	0
26 FT	19	22	12	9	6	6.5	6	7.5	52.1	39.0	39.0	39.0	6	12	54.5	6	12	37.5	6	7	5	6.5	43.6	126	138	150	7	7.5	54.0	5	12	5	7	0
28 FT	20	23	12	9	6	6.5	6	7	52.1	40.0	40.0	40.0	6	12	54.0	6	12	37.5	6	7	5	6	43.8	127	139	151	7	7	54.0	5	12	5	7	0
30 FT	21	24	13	9	6																													



		SPAN (S) = 11 FT											HEIGHT (HT) = 12 FT OR 13 FT OR 14 FT																					
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS											BOTTOM SLAB BARS											WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS											
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
									HT=12'	HT=13'	HT=14'													HT=12'	HT=13'	HT=14'								
1 FT	14	12	9	11	5	6	5	6	55.6	34.0	34.0	34.0	5	13	110.0	5	13	30.5	5	8	6	6	94.6	152	164	176	5	6	51.5	5	12	5	8.5	12
2 FT	14	12	9	11	5	6	6	7.5	55.6	34.0	34.0	38.0	5	12	110.0	5	12	30.0	5	7.5	6	6	89.4	152	164	176	5	6	51.0	5	12	5	8.5	12
2'- 4'	14	12	10	11	5	6	6	7	58.3	34.0	34.0	38.0	6	16	112.5	6	16	35.5	5	7	6	6	89.4	152	164	176	6	7	53.5	5	11.5	5	8	12
4 FT	10	12	10	11	5	7	6	7	58.3	30.0	30.0	34.0	6	16	112.5	6	16	35.5	5	7	6	6.5	83.4	152	164	176	6	7	53.5	5	11.5	5	8	12
6 FT	10	12	10	11	5	7.5	6	6.5	78.8	30.0	34.0	34.0	6	15	57.5	6	15	34.0	5	6.5	6	6	77.1	152	164	176	6	6.5	52.5	5	12	5	7.5	12
8 FT	10	13	10	11	5	7.5	6	6	70.1	34.0	34.0	34.0	6	14	54.0	6	14	33.5	5	6	6	6	74.1	153	165	177	6	6.5	52.0	5	12	5	7	0
10 FT	11	13	11	11	5	7.5	6	7	67.0	31.0	31.0	35.0	6	14	52.5	6	14	33.0	5	6	6	6	69.9	153	165	177	6	6	51.5	5	12	5	7.5	0
12 FT	12	14	12	11	5	7	6	8	64.6	32.0	32.0	36.0	6	14	51.5	6	14	33.0	6	8	6	7	67.6	154	166	178	6	6	51.5	5	12	5	7	0
14 FT	13	15	12	11	5	6.5	6	7	63.4	33.0	37.0	37.0	6	13	51.0	6	13	33.0	6	7.5	6	6.5	66.4	155	167	179	6	6	51.0	5	12	5	7	0
16 FT	14	16	13	11	5	6	6	7	62.3	34.0	38.0	38.0	6	13	51.0	6	13	33.0	6	7	6	7	64.8	156	168	180	6	6	51.0	5	12	5	6.5	0
18 FT	15	17	13	11	6	8	6	6.5	67.6	35.0	39.0	39.0	6	12	56.5	6	12	38.5	6	6.5	6	6	63.8	157	169	181	6	6	51.0	5	12	5	6.5	0
20 FT	16	19	14	11	6	8	6	6.5	67.4	36.0	40.0	40.0	6	12	56.0	6	12	38.5	6	7.5	6	6.5	63.8	159	171	183	6	6	51.5	5	12	5	6	0
22 FT	17	20	14	11	6	7.5	6	6	67.3	37.0	41.0	41.0	6	12	55.5	6	12	38.5	6	7	6	6	63.5	160	172	184	6	6	51.0	5	12	5	6	0
24 FT	18	21	15	11	6	7	6	6.5	67.4	42.0	42.0	42.0	6	12	55.0	6	12	38.5	6	7	6	6.5	63.4	161	173	185	7	7.5	54.5	5	12	6	8	0
26 FT	19	22	15	11	6	6.5	6	6.5	65.3	43.0	43.0	43.0	6	13	54.5	6	13	38.0	6	7	6	7	61.1	162	174	186	7	7.5	54.0	5	12	6	8	0
28 FT	20	23	15	11	6	6.5	6	6	65.3	44.0	44.0	44.0	6	12	54.0	6	12	38.0	6	7	6	6.5	61.3	163	175	187	7	7	54.0	5	12	6	8	0
30 FT	21	24	16	11	6	6.5	6	6	65.8	45.0	45.0	45.0	6	12	53.0	6	12	37.0	6	6.5	6	7	61.4	164	176	188	7	7	54.0	5	12	6	8	0
32 FT	22	25	16	11	6	6	7	7.5	70.8	46.0	46.0	46.0	7	15	57.5	7	15	41.0	6	6.5	6	6.5	61.6	165	177	189	7	6.5	54.0	5	12	6	8	0
34 FT	23	26	17	11	6	6	6	6	66.4	47.0	47.0	47.0	7	15	56.5	7	15	40.0	6	6.5	6	7	61.9	166	178	190	7	6.5	54.5	5	12	6	7.5	0
36 FT	23	27	17	11	7	7.5	7	7	71.3	47.0	47.0	47.0	7	15	56.5	7	15	41.0	6	6.5	6	6.5	62.0	167	179	191	7	6	54.5	5	12	6	7.5	0
38 FT	24	28	18	11	7	7.5	7	7.5	71.8	48.0	48.0	48.0	7	14	55.5	7	14	40.0	6	6	6	6.5	62.4	168	180	192	7	6	54.5	5	12	6	7	0
40 FT	25	29	19	11	7	7.5	7	7.5	72.4	49.0	49.0	49.0	7	14	55.0	7	14	39.0	6	6	6	6.5	62.6	169	181	193	8	7.5	60.5	5	12	6	6.5	0
42 FT	26	30	19	11	7	7.5	7	7	72.5	50.0	50.0	50.0	7	13	54.5	7	13	38.0	6	6	6	6.5	62.9	170	182	194	8	7.5	60.5	5	12	6	6.5	0
44 FT	27	31	20	11	7	7	7	7.5	73.0	51.0	51.0	51.0	7	14	54.0	7	14	38.0	6	6	6	6	63.3	171	183	195	8	7	60.5	5	12	6	6.5	0
46 FT	28	32	20	11	7	7	7	6.5	73.1	52.0	52.0	52.0	7	14	53.5	7	14	38.0	6	6	6	6	63.5	172	184	196	8	7	60.5	5	12	6	6.5	0
48 FT	28	32	21	11	7	6.5	7	6.5	73.6	52.0	52.0	52.0	7	14	53.5	7	14	37.5	7	7	6	6	63.5	172	184	196	8	7	60.5	5	12	6	6	0
50 FT	28	33	22	11	7	6.5	7	6.5	74.1	52.0	52.0	52.0	7	13	53.5	7	13	37.5	7	7.5	6	6	63.9	173	185	197	8	7	60.5	5	12	6	6	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

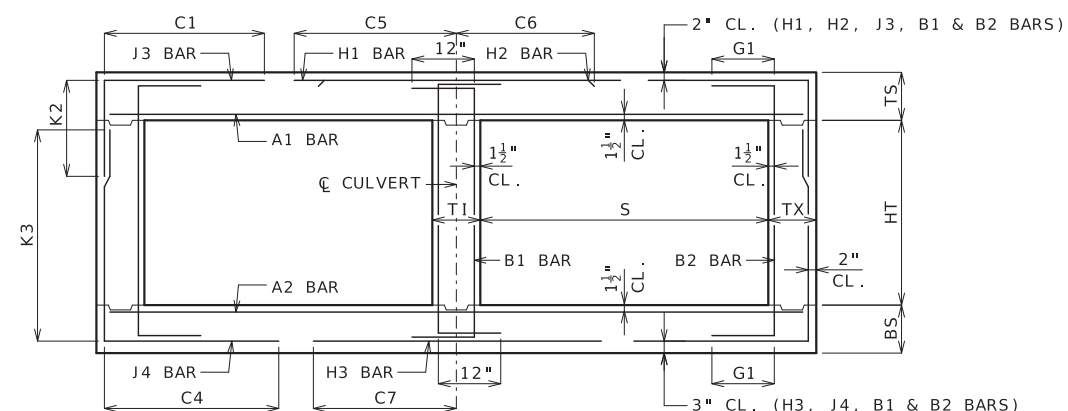
SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.



DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 11 FEET HEIGHT (HT): 12 THRU 14 FEET	
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>17 OF 27</b>

		SPAN (S) = 12 FT												HEIGHT (HT) = 6 FT OR 7 FT OR 8 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
	TS	BS	TX	TI	A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
					SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1	
1 FT	14	10	8	8	5	6	4	6	56.1	30.0	30.0	30.0	5	12	115.0	5	12	31.5	5	7.5	5	6.5	52.4	78	90	102	6	6.5	56.5	5	12	5	12	12
2 FT	15	11	8	8	6	8	4	6.5	59.1	31.0	31.0	31.0	6	16	118.0	6	16	39.0	5	7.5	5	7.5	47.9	79	91	103	6	6.5	56.0	5	12	5	12	12
2' - 4'	15	11	8	8	6	8	5	7	59.1	31.0	31.0	31.0	6	15	118.0	6	15	39.0	5	6.5	5	6	47.9	79	91	103	7	6.5	58.5	5	12	5	12	12
4 FT	11	10	8	8	5	6.5	5	7	43.6	31.0	31.0	31.0	6	15	77.5	6	15	36.5	5	6.5	5	6	42.6	78	90	102	7	6.5	58.5	5	12	5	12	12
6 FT	11	11	8	8	5	7	5	6.5	40.9	27.0	31.0	31.0	6	14	63.0	6	14	35.0	5	6.5	5	7	39.3	79	91	103	7	6.5	57.5	5	12	5	12	12
8 FT	11	13	8	8	5	7	5	6	39.1	27.0	27.0	31.0	6	12	58.0	6	12	34.0	5	6	5	8.5	36.3	81	93	105	6	6	54.5	5	12	5	12	0
10 FT	12	14	8	8	5	6.5	5	6.5	37.0	28.0	28.0	32.0	6	12	56.5	6	12	33.5	6	8	5	8.5	34.5	82	94	106	6	6	54.5	5	12	5	12	0
12 FT	14	15	8	8	5	6	5	8	34.6	30.0	34.0	34.0	6	13	55.5	6	13	33.5	6	7.5	5	8.5	33.8	83	95	107	7	7	57.0	5	12	5	12	0
14 FT	15	16	8	8	6	8	5	7.5	38.4	31.0	35.0	35.0	6	12	61.0	6	12	39.5	6	7.5	5	8	32.9	84	96	108	7	7	57.0	5	12	5	12	0
16 FT	16	17	8	8	6	8	5	7	37.5	32.0	36.0	36.0	7	16	65.5	7	16	44.5	6	7	5	7	32.3	85	97	109	7	6.5	57.0	5	12	5	12	0
18 FT	17	19	8	8	6	7.5	5	6.5	37.0	37.0	37.0	37.0	7	15	65.0	7	15	44.0	6	7	5	6.5	31.6	87	99	111	7	7	57.0	5	12	5	10.5	0
20 FT	18	20	8	8	6	7	5	6.5	36.4	38.0	38.0	38.0	7	15	64.5	7	15	44.0	6	6.5	5	6	31.3	88	100	112	7	7	57.0	5	12	5	9.5	0
22 FT	19	21	8	8	6	6	5	6	36.0	39.0	39.0	39.0	7	14	64.0	7	14	44.0	6	6.5	6	7.5	34.1	89	101	113	7	7	57.0	5	12	5	9.5	0
24 FT	21	22	8	8	6	6	6	7	39.6	45.0	45.0	45.0	7	15	63.5	7	15	44.0	6	6.5	6	7	34.4	90	102	114	7	7	56.5	5	12	5	9.5	0
26 FT	21	23	8	8	6	6	6	7	38.3	45.0	45.0	45.0	7	14	63.0	7	14	43.5	6	6.5	6	6.5	32.8	91	103	115	7	7	56.5	5	12	5	9.5	0
28 FT	23	24	8	8	6	6	6	7	38.3	47.0	47.0	47.0	7	15	62.0	7	15	43.0	6	6	6	6	33.0	92	104	116	7	7	56.5	5	12	5	9	0
30 FT	23	25	8	8	7	7	6	6	38.3	47.0	47.0	47.0	7	14	62.0	7	14	43.5	6	6	6	6	33.0	93	105	117	7	6.5	56.5	5	12	5	8.5	0
32 FT	25	27	9	8	7	7.5	6	6.5	39.1	49.0	49.0	49.0	7	14	61.0	7	14	41.5	6	6	6	6.5	33.8	95	107	119	7	6	56.5	5	12	5	8.5	0
34 FT	25	28	9	8	7	6.5	6	6.5	39.3	49.0	49.0	49.0	7	13	61.0	7	13	42.5	6	6	6	6	33.8	96	108	120	7	6	56.5	5	12	5	8.5	0
36 FT	26	29	9	8	7	6.5	6	6.5	39.3	50.0	50.0	50.0	7	13	60.0	7	13	41.5	6	6	6	6	33.9	97	109	121	8	7.5	62.5	5	12	5	8	0
38 FT	27	30	10	8	7	6.5	6	7	40.1	51.0	51.0	51.0	7	13	59.0	7	13	41.0	6	6	6	6.5	34.5	98	110	122	8	7.5	62.5	5	12	5	8	0
40 FT	28	31	10	8	7	6.5	6	6.5	40.1	52.0	52.0	52.0	7	12	58.5	7	12	40.0	7	8	6	6	34.6	99	111	123	8	7	62.5	5	12	5	8	0
42 FT	29	32	10	8	7	6.5	6	6.5	40.1	53.0	53.0	53.0	7	12	57.5	7	12	39.0	7	8	6	6	34.9	100	112	124	8	7	62.5	5	12	5	7.5	0
44 FT	30	33	10	8	7	6.5	6	6	40.3	54.0	54.0	54.0	7	12	56.5	7	12	38.5	7	7.5	7	6.5	38.1	101	113	125	8	6.5	62.0	5	12	5	7	0
46 FT	31	34	10	8	7	6	6	6	40.3	55.0	55.0	55.0	8	15	64.0	8	15	45.5	7	7.5	7	6.5	38.3	102	114	126	8	6.5	62.0	5	12	5	6.5	0
48 FT	31	34	11	8	7	6	6	6.5	41.0	55.0	55.0	55.0	8	15	64.0	8	15	46.0	7	6.5	6	6	35.6	102	114	126	8	6.5	62.5	5	12	5	7.5	0
50 FT	32	35	11	8	8	7.5	6	6.5	41.0	56.0	56.0	56.0	8	15	63.5	8	15	45.5	7	7	6	6	35.8	103	115	127	8	6.5	62.0	5	12	5	7	0

		SPAN (S) = 12 FT												HEIGHT (HT) = 9 FT OR 10 FT OR 11 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
	TS	BS	TX	TI	A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
					SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1	
1 FT	14	11	8	9	5	6	5	8	58.3	34.0	34.0	34.0	5	12	117.5	5	12	32.0	5	7.5	6	6.5	77.5	115	127	139	6	7	57.0	5	12	5	10	12
2 FT	15	12	8	9	6	8	5	8	62.3	35.0	35.0	35.0	6	16	121.5	6	16	39.5	5	7.5	6	7	71.9	116	128	140	6	7	56.5	5	12	5	10	12
2' - 4'	15	12	9	9	6	8	6	7	76.1	35.0	35.0	35.0	6	15	121.5	6	15	39.5	5	6.5	6	7	71.9	116	128	140	6	6	56.5	5	11.5	5	10	12
4 FT	11	11	9	9	5	6.5	6	7	76.1	31.0	31.0	35.0	6	15	86.0	6	15	37.0	5	6.5	6	7	61.8	115	127	139	6	6	56.0	5	11.5	5	10.5	12
6 FT	11	12	9	9	5	7	6	7	59.0	31.0	31.0	35.0	6	14	63.0	6	14	35.5	5	6	6	7	57.6	116	128	140	6	6	55.0	5	12	5	10	12
8 FT	11	13	9	9	5	7	6	7	54.0	31.0	31.0	35.0	6	13	58.0	6	13	34.5	5	6	6	7	54.5	117	129	141	6	6	55.0	5	12	5	9.5	0
10 FT	12	14	10	9	5	7	5	6	49.0	32.0	32.0	32.0	6	12	56.0	6	12	34.0	6	8	5	6.5	49.3	118	130	142	7	7	57.5	5	12	5	10	0
12 FT	13	15	10	9	5	6.5	6	7.5	50.1	33.0	33.0	33.0	6	12	55.0	6	12	33.5	6	7.5	5	6.5	47.6	119	131	143	7	7	57.5	5	12	5	9	0
14 FT	15	16	10	9	6	8	5	6	50.6	35.0	35.0	35.0	6	12	60.5	6	12	39.5	6	7	5	6	46.4	120	132	144	7	7	57.0	5	12	5	8	0
16 FT	16	17	10	9	6	8	6	7.5	53.8	36.0	36.0	36.0	6	12	60.0	6	12	39.5	6	6.5	5	6	45.4	121	133	145	7	6.5	57.0	5	12	5	8	0
18 FT	17	19	10	9	6	7.5	6	7	53.1	37.0	37.0	41.0	7	16	64.5	7	16	44.5	6	7	6	7.5	47.8	123	135	147	7	7	57.0	5	12	5	8	0
20 FT	18	20	11	9	6	7	6	7.5	53.1	38.0	38.0	38.0	7	15	64.0	7	15	44.0	6	6.5	5	6	44.6	124	136	148	7	7	57.0	5	12	5	7.5	0
22 FT	19	21	12	9	6	6.5	6	7.5	53.5	39.0	39.0	39.0	7	15	63.5	7	15	44.0	6	6.5	5	6.5	44.8	125	137	149	7	7	57.0	5	12	5	7.5	0
24 FT	20	23	12	9	6	6.5	6	7	53.4	40.0	40.0	40.0	7	15	63.0	7	15	44.0	6	6.5	5	6.5	44.6	127	139	151	7	7	57.0	5	12	5	7	0
26 FT	21	23	12	9	6	6	6	7.5	51.4	41.0	41.0	41.0	7	15	62.0	7	15	43.5	6	6	5	6.5	42.8	127	139	151	7	7	57.0	5	12	5	7	0
28 FT	22	25	12	9	6	6	6	7	51.4	42.0	42.0	42.0	7	15	61.5	7	15	43.5	6	6.5	5	6.5	42.9	129	141	153	7	6.5	57.0	5	12	5	7	0
30 FT	23	26	12	9	7	7.5	6	6.5	51.3	43.0	43.0</																							

SPAN (S) = 12 FT      HEIGHT (HT) = 12 FT OR 13 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS								WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=12' HT=13'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=12' HT=13'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	11	9	10	5	6	5	6.5	59.0	34.0	34.0	5	12	118.0	5	12	32.5	5	7	6	6	88.9	151	163	6	6.5	57.5	5	12	5	8.5	12
2 FT	15	12	9	10	6	8	5	7	63.0	35.0	35.0	6	16	122.0	6	16	39.5	5	7	6	6	83.6	152	164	6	7	57.0	5	12	5	8.5	12
2'- 4'	15	12	9	10	6	8	6	6.5	63.0	35.0	35.0	6	15	122.0	6	15	39.5	5	6.5	6	6	83.6	152	164	6	6.5	57.0	5	12	5	8.5	12
4 FT	11	12	9	10	5	6.5	6	7	61.0	35.0	35.0	6	15	120.0	6	15	37.0	5	6.5	6	6	76.5	152	164	6	6.5	56.5	5	12	5	8.5	12
6 FT	11	12	9	10	5	7	6	6.5	73.5	35.0	35.0	6	14	63.5	6	14	35.5	5	6	6	6	70.0	152	164	6	6	55.5	5	12	5	8.5	12
8 FT	11	13	10	10	5	7	6	7	63.9	31.0	35.0	6	13	58.0	6	13	34.5	5	6	6	6.5	65.8	153	165	6	6	55.0	5	12	5	8	0
10 FT	12	14	10	10	5	7	6	7	61.6	36.0	36.0	6	12	56.5	6	12	34.5	6	8	6	6	63.1	154	166	7	7	57.5	5	12	5	8	0
12 FT	13	15	11	10	5	6.5	6	7.5	59.9	33.0	37.0	6	12	55.0	6	12	34.0	6	7.5	6	6.5	61.4	155	167	7	7	57.5	5	12	5	7.5	0
14 FT	14	16	12	10	5	6	6	7.5	58.8	34.0	38.0	6	12	54.5	6	12	34.0	6	7	6	7.5	60.0	156	168	7	7	57.5	5	12	5	7	0
16 FT	16	18	12	10	6	8	6	7	64.1	36.0	40.0	6	12	60.0	6	12	40.0	6	7	6	7.5	59.5	158	170	6	6	54.0	5	12	5	7	0
18 FT	17	19	12	10	6	7.5	6	6.5	63.1	37.0	41.0	6	12	59.5	6	12	39.5	6	7	6	6.5	58.5	159	171	7	7	57.0	5	12	5	7	0
20 FT	18	20	13	10	6	7	6	6.5	62.6	38.0	42.0	6	12	58.5	6	12	39.5	6	6.5	6	7.5	57.9	160	172	7	7	57.0	5	12	5	6.5	0
22 FT	19	21	13	10	6	6.5	6	6.5	62.3	39.0	43.0	7	16	63.0	7	16	44.5	6	6	6	6.5	57.5	161	173	7	7	57.0	5	12	5	6.5	0
24 FT	20	23	14	10	6	6.5	6	6.5	62.5	40.0	44.0	7	16	62.5	7	16	44.0	6	6.5	6	7.5	57.8	163	175	7	7	57.0	5	12	5	6	0
26 FT	21	24	14	10	6	6	6	6	62.3	41.0	45.0	7	15	62.0	7	15	44.0	6	6.5	6	7	57.6	164	176	7	7	57.0	5	12	5	6	0
28 FT	22	25	14	10	6	6	6	6	59.8	42.0	46.0	7	15	61.0	7	15	43.5	6	6.5	6	7.5	55.1	165	177	7	6.5	57.0	5	12	5	6	0
30 FT	23	26	15	10	7	8	6	6	60.3	47.0	47.0	7	15	60.0	7	15	42.5	6	6	6	7.5	55.4	166	178	7	6.5	57.0	5	12	6	8	0
32 FT	24	27	15	10	7	7.5	6	6	60.3	48.0	48.0	7	14	59.5	7	14	42.0	6	6	6	7.5	55.5	167	179	7	6	57.0	5	12	6	8	0
34 FT	25	28	16	10	7	7.5	6	6	60.9	49.0	49.0	7	14	58.5	7	14	41.0	6	6	6	7.5	55.8	168	180	7	6	57.0	5	12	6	8	0
36 FT	25	29	16	10	7	6.5	7	7.5	65.8	49.0	49.0	7	13	58.5	7	13	41.5	6	6	6	7.5	55.8	169	181	8	7.5	63.0	5	12	6	8	0
38 FT	26	30	17	10	7	7	6	6	61.5	50.0	50.0	7	13	57.5	7	13	40.5	7	7.5	6	7	56.1	170	182	8	7.5	63.0	5	12	6	7.5	0
40 FT	27	31	17	10	7	6.5	7	7.5	66.5	51.0	51.0	7	13	57.0	7	13	40.0	7	7.5	6	7	56.3	171	183	8	7	63.0	5	12	6	7.5	0
42 FT	28	32	18	10	7	6.5	7	7.5	67.1	52.0	52.0	7	12	56.5	7	12	39.0	7	7.5	6	6.5	56.6	172	184	8	7	63.0	5	12	6	7	0
44 FT	29	33	18	10	7	6.5	7	7	67.1	53.0	53.0	7	12	56.0	7	12	38.0	7	7.5	6	6.5	56.9	173	185	8	6.5	63.0	5	12	6	7	0
46 FT	29	34	19	10	7	6	7	7.5	67.9	53.0	53.0	7	12	56.0	7	12	38.5	7	7.5	6	6.5	57.0	174	186	8	6.5	63.0	5	12	6	6.5	0
48 FT	30	35	19	10	7	6	7	6.5	67.9	54.0	54.0	7	12	55.0	7	12	38.0	7	7	6	6.5	57.3	175	187	8	6.5	63.0	5	12	6	6.5	0
50 FT	31	36	20	10	7	6	7	7	68.6	55.0	55.0	7	13	54.5	7	13	37.5	7	7	6	6.5	57.6	176	188	8	6	63.0	5	12	6	6.5	0

SPAN (S) = 12 FT      HEIGHT (HT) = 14 FT OR 15 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS								WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=14' HT=15'		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=14' HT=15'		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	12	10	12	5	6	5	6	60.0	34.0	34.0	5	12	119.0	5	12	32.5	5	7	6	6	98.8	176	188	6	7	58.0	5	12	5	8	12
2 FT	15	12	10	12	6	8	6	8	67.0	35.0	39.0	6	16	126.0	6	16	40.0	5	6.5	6	6	92.5	176	188	6	6.5	57.0	5	12	5	8	12
2'- 4'	15	13	10	12	6	8	6	6.5	67.0	35.0	39.0	6	16	126.0	6	16	40.0	5	6.5	6	6	92.5	177	189	6	6.5	57.0	5	12	5	7	12
4 FT	11	13	10	12	5	6.5	6	6.5	62.0	35.0	35.0	6	16	121.0	6	16	37.5	5	6.5	6	6	89.8	177	189	6	7	57.0	5	12	5	7	12
6 FT	11	13	11	12	5	7	6	7	83.8	31.0	35.0	6	15	61.0	6	15	36.0	5	6	6	6.5	81.4	177	189	6	6.5	56.0	5	12	5	7	12
8 FT	11	13	12	12	5	7	6	7.5	73.9	35.0	35.0	6	13	57.5	6	13	35.0	5	6	6	6.5	76.1	177	189	7	7	58.0	5	12	5	7	0
10 FT	12	14	12	12	5	7	6	7	71.4	36.0	36.0	6	13	56.0	6	13	35.0	6	8	6	6.5	74.1	178	190	7	7	58.0	5	12	5	7	0
12 FT	13	15	13	12	5	6.5	6	7.5	68.8	37.0	37.0	6	13	55.0	6	13	34.5	6	7.5	6	6.5	71.6	179	191	7	7	57.5	5	12	5	6.5	0
14 FT	14	16	13	12	5	6	6	6.5	67.3	38.0	38.0	6	12	54.5	6	12	34.5	6	6.5	6	6	70.1	180	192	7	7	57.5	5	12	5	6.5	0
16 FT	15	18	14	12	6	8	6	6.5	72.1	39.0	39.0	6	12	60.0	6	12	40.5	6	7	6	6.5	69.5	182	194	6	6	54.5	5	12	5	6	0
18 FT	17	19	14	12	6	7.5	6	6	72.1	41.0	41.0	6	12	59.5	6	12	40.5	6	6.5	6	6	68.1	183	195	6	6	54.5	5	12	5	6	0
20 FT	18	20	15	12	6	7	6	6	71.5	42.0	42.0	6	12	59.0	6	12	40.0	6	6.5	6	6	67.1	184	196	7	7	57.5	5	12	6	8	0
22 FT	19	22	16	12	6	6.5	6	6	71.4	43.0	43.0	6	12	58.5	6	12	40.0	6	6.5	6	6	67.4	186	198	7	7	57.5	5	12	6	8	0
24 FT	20	23	16	12	6	6.5	6	6	71.3	44.0	44.0	6	12	58.0	6	12	40.0	6	6.5	6	6	67.1	187	199	7	7	57.5	5	12	6	8	0
26 FT	21	24	17	12	6	6	6	6	71.4	45.0	45.0	6	12	57.0	6	12	39.5	6	6	6	6	67.1	188	200	7	7	57.5	5	12	6	7.5	0
28 FT	22	25	17	12	6	6	6	6	69.1	46.0	46.0	7	15	61.5	7	15	44.0	6	6	6	6.5	64.9	189	201	7	6.5	57.5	5	12	6	7.5	0
30 FT	23	26	17	12	6	6	7	7.5	74.1	47.0	47.0	7	15	61.0	7	15	43.0	6	6	6	6.5	64.9	190	202	7	6.5	57.5	5	12	6	7.5	0
32 FT	23	27	17	12	7	7	7	6.5	74.0	47.0	47.0	7	14	61.0	7	14	44.0	6	6	6	6	65.0	191	203	7	6	57.5	5	12	6	7.5	0
34 FT	24	28	18	12	7	7	7	7	74.5	48.0	48.0	7	14	60.0	7	14	43.0	6	6	6	6	65.3	192	204	7	6	57.5	5	12	6	7	0
36 FT	25	29	19	12	7	7	7	7	75.0	49.0	49.0	7	14	59.0	7	14	42.0	7	7.5	6	6.5	65.5	193	205	8							

SPAN (S) = 13 FT HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
					SIZE	SPA.	SIZE	SPA.	C1	HT=7'	HT=8'	HT=9'	SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	HT=7'	HT=8'	HT=9'	SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	10	8	8	5	6	5	8.5	61.8	30.0	34.0	34.0	5	12	125.5	5	12	36.5	5	7	6	7	61.0	90	102	114	6	6	60.0	5	12	5	12	12
2 FT	15	12	8	8	6	8	5	8	65.8	31.0	35.0	35.0	6	16	129.5	6	16	43.5	5	7	5	7	53.8	92	104	116	6	6.5	59.5	5	12	5	12	12
2' - 4'	15	12	8	8	6	8	6	7	65.8	31.0	35.0	35.0	6	13	129.5	6	13	43.5	5	6.5	5	6	53.8	92	104	116	7	6.5	62.0	5	11	5	12	12
4 FT	11	11	8	8	6	8	6	7	52.1	31.0	31.0	31.0	6	13	82.0	6	13	38.0	5	6.5	5	6	46.5	91	103	115	7	6.5	62.0	5	11	5	12	12
6 FT	12	12	8	8	5	6.5	5	6.5	44.1	32.0	32.0	32.0	6	13	68.0	6	13	36.5	5	6	5	6.5	42.8	92	104	116	7	6.5	61.0	5	12	5	12	12
8 FT	12	13	8	8	5	6	5	6	41.5	32.0	32.0	32.0	7	16	65.0	7	16	38.5	5	6	5	6.5	40.0	93	105	117	7	6.5	60.5	5	12	5	12	0
10 FT	13	15	8	8	5	6	5	6	39.5	29.0	33.0	33.0	7	15	63.0	7	15	38.0	6	7.5	5	8	38.0	95	107	119	7	7	60.5	5	12	5	12	0
12 FT	15	16	8	8	6	8	5	6.5	42.4	35.0	35.0	35.0	7	16	70.0	7	16	46.0	6	7	5	7.5	37.1	96	108	120	7	6.5	60.0	5	12	5	11	0
14 FT	16	17	8	8	6	8	5	6	41.1	36.0	36.0	36.0	7	15	69.0	7	15	46.0	6	7	5	7	36.1	97	109	121	7	6.5	60.0	5	12	5	10	0
16 FT	17	18	8	8	6	7.5	5	6	40.1	37.0	37.0	37.0	7	14	68.5	7	14	45.5	6	6	5	6.5	35.4	98	110	122	7	6.5	60.0	5	12	5	9.5	0
18 FT	18	20	8	8	6	6.5	6	8	43.5	38.0	38.0	38.0	7	14	68.0	7	14	45.5	6	6.5	5	6	34.8	100	112	124	7	6.5	60.0	5	12	5	9.5	0
20 FT	20	21	8	8	6	6.5	6	7.5	42.6	44.0	44.0	44.0	7	14	67.0	7	14	45.5	6	6	6	7.5	37.5	101	113	125	7	6.5	60.0	5	12	5	9	0
22 FT	21	23	8	8	6	6	6	6.5	42.5	45.0	45.0	45.0	7	14	66.5	7	14	45.0	6	6	6	6.5	37.3	103	115	127	7	6.5	60.0	5	12	5	8	0
24 FT	22	24	9	8	6	6	6	7.5	43.1	42.0	42.0	46.0	7	13	66.0	7	13	45.0	6	6	6	7	37.6	104	116	128	7	6.5	60.0	5	12	5	8.5	0
26 FT	23	25	9	8	7	7.5	6	6.5	42.9	47.0	47.0	47.0	7	13	65.5	7	13	45.0	6	6	6	7	37.6	105	117	129	7	6.5	60.0	5	12	5	8.5	0
28 FT	24	26	9	8	7	7.5	6	7	41.3	48.0	48.0	48.0	7	13	64.5	7	13	44.5	7	8	6	6.5	36.1	106	118	130	7	6.5	59.5	5	12	5	8.5	0
30 FT	25	27	9	8	7	7	6	6	41.3	49.0	49.0	49.0	7	13	64.0	7	13	44.5	7	7.5	6	6.5	36.3	107	119	131	7	6	59.5	5	12	5	7.5	0
32 FT	26	29	10	8	7	7	6	7	42.3	50.0	50.0	50.0	7	13	63.5	7	13	44.0	7	8	6	6.5	36.9	109	121	133	8	7.5	65.5	5	12	5	8	0
34 FT	27	30	10	8	7	6.5	6	6.5	42.3	51.0	51.0	51.0	7	13	62.5	7	13	43.5	7	7.5	6	6.5	37.0	110	122	134	8	7.5	65.5	5	12	5	7.5	0
36 FT	28	31	11	8	7	6.5	6	7.5	43.1	52.0	52.0	52.0	7	12	62.0	7	12	42.5	7	7.5	6	7	37.5	111	123	135	8	7	65.5	5	12	5	7.5	0
38 FT	29	32	11	8	7	6	6	7	43.1	53.0	53.0	53.0	7	12	61.0	7	12	41.5	7	7.5	6	6.5	37.6	112	124	136	8	7	65.5	5	12	5	7.5	0
40 FT	30	33	11	8	7	6	6	7	43.1	54.0	54.0	54.0	7	12	60.0	7	12	41.0	7	7	6	6.5	37.9	113	125	137	8	6.5	65.5	5	12	5	7	0
42 FT	31	34	12	8	7	6	6	7.5	44.0	55.0	55.0	55.0	8	15	67.0	8	15	48.0	7	7	6	7	38.4	114	126	138	8	6.5	65.5	5	12	5	7	0
44 FT	32	35	12	8	7.5	6	7	44.0	56.0	56.0	56.0	8	14	66.5	8	14	47.0	7	7	6	6.5	38.5	115	127	139	8	6.5	65.5	5	12	5	7	0	
46 FT	33	36	12	8	8	7	6	7	44.0	57.0	57.0	57.0	8	14	66.0	8	14	46.0	7	7	6	6.5	38.8	116	128	140	8	6	65.5	5	12	5	6.5	0
48 FT	33	37	12	8	8	6.5	6	7	44.0	57.0	57.0	57.0	8	13	66.0	8	13	46.5	7	6.5	6	6.5	38.8	117	129	141	8	6	65.5	5	12	5	6.5	0
50 FT	34	38	12	8	8	7	6	6	44.0	58.0	58.0	58.0	8	14	65.0	8	14	46.0	7	6.5	6	6	39.0	118	130	142	8	6	65.5	5	12	5	6	0

SPAN (S) = 13 FT HEIGHT (HT) = 10 FT OR 11 FT OR 12 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS			B1 BARS		B2 BARS									
					SIZE	SPA.	SIZE	SPA.	C1	HT=10'	HT=11'	HT=12'	SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	HT=10'	HT=11'	HT=12'	SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	11	9	10	5	6	5	7.5	62.6	34.0	34.0	34.0	5	12	126.5	5	12	36.5	5	6.5	6	6.5	81.1	127	139	151	6	6.5	60.5	5	11.5	5	9.5	12
2 FT	15	12	9	10	6	8	5	7.5	66.6	35.0	35.0	35.0	6	16	130.5	6	16	43.5	5	6.5	6	6.5	75.6	128	140	152	6	6.5	60.0	5	12	5	9	12
2' - 4'	15	12	9	10	6	8	6	7	78.5	35.0	35.0	35.0	6	13	130.5	6	13	43.5	5	6.5	6	6	75.6	128	140	152	7	6.5	62.0	5	9	5	8.5	12
4 FT	11	11	9	10	6	8	6	7	78.5	35.0	35.0	35.0	6	13	84.0	6	13	38.0	5	6.5	6	6	66.3	127	139	151	7	6.5	62.0	5	9	5	8.5	12
6 FT	12	12	9	10	5	6.5	6	6.5	63.6	32.0	36.0	36.0	6	13	67.0	6	13	37.0	5	6	6	6	61.5	128	140	152	7	6.5	61.5	5	12	5	8.5	12
8 FT	12	14	9	10	5	6	6	6.5	58.3	32.0	32.0	36.0	6	12	61.5	6	12	36.0	6	8	6	6.5	59.1	130	142	154	7	7	61.0	5	12	5	8.5	0
10 FT	13	15	9	10	5	6	6	6	55.4	33.0	33.0	37.0	7	15	63.0	7	15	38.5	6	7.5	6	6.5	56.6	131	143	155	7	7	61.0	5	12	5	8.5	0
12 FT	14	16	10	10	5	6	6	6.5	53.6	34.0	34.0	38.0	7	15	61.5	7	15	38.5	6	7	6	7	54.6	132	144	156	7	6.5	60.5	5	12	5	8	0
14 FT	16	17	10	10	6	8	6	7	58.0	36.0	36.0	40.0	7	15	69.0	7	15	46.5	6	7	6	6.5	53.3	133	145	157	7	6.5	60.5	5	12	5	8	0
16 FT	17	19	11	10	6	7.5	6	7	57.5	37.0	37.0	41.0	7	15	68.5	7	15	46.0	6	6.5	6	8	52.4	135	147	159	7	7	60.5	5	12	5	7.5	0
18 FT	18	20	12	10	6	7	6	7.5	57.4	38.0	38.0	38.0	7	14	68.0	7	14	46.0	6	6.5	5	6	48.8	136	148	160	7	6.5	60.5	5	12	5	7	0
20 FT	19	21	12	10	6	6.5	6	7	56.6	39.0	39.0	43.0	7	14	67.5	7	14	46.0	6	6	6	8	51.1	137	149	161	7	6.5	60.5	5	12	5	7	0
22 FT	21	23	12	10	6	6	6	6.5	56.1	41.0	41.0	45.0	7	14	66.5	7	14	45.5	6	6	6	7.5	51.0	139	151	163	7	6.5	60.5	5	12	5	7	0
24 FT	22	24	13	10	6	6	6	7	56.5	42.0	42.0	46.0	7	14	66.0	7	14	45.5	6	6	6	8	51.1	140	152	164	7	6.5	60.5	5	12	5	6.5	0
26 FT	23	25	13	10	7	7.5	6	6.5	56.3	43.0	43.0	47.0	7	14	65.5	7	14	45.5	7	7.5	6	7.5	51.0	141	153	165	7	6.5	60.5	5	12	5	6.5	0
28 FT	24	26	13	10	7	7.5	6	6.5	54.4	44.0	44.0	48.0	7	14	64.5	7	14	45.0	7	7.5	6	8	49.1	142	154	166	7	6.5	60.0	5	12	5	6.5	0
30 FT	25	28	13	10	7	7	6	6	54.4	45.0	45.0	49.0	7	14	64.0	7	14	45.0	7	8	6	8	49.3	144	156	168	7	6	60.0	5	12	5	6.5	0

				SPAN (S) = 13 FT										HEIGHT (HT) = 13 FT OR 14 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2	HT=13	HT=14	SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3	HT=13	HT=14	SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	11	11	11	5	6	5	7	64.1	34.0	34.0	5	12	127.5	5	12	36.5	5	6.5	5	6	85.3	163	175	6	6	60.5	5	12	5	8	12
2 FT	15	12	11	11	6	8	5	7	68.1	35.0	35.0	6	16	131.5	6	16	43.5	5	6.5	5	6	80.9	164	176	6	6.5	60.0	5	12	5	7.5	12
2'- 4'	15	12	11	11	6	8	5	6	92.9	35.0	35.0	6	13	131.5	6	13	43.5	5	6	5	6	80.9	164	176	7	7	62.5	5	11.5	5	7.5	12
4 FT	11	12	11	11	5	6	5	6	92.9	31.0	31.0	6	13	82.5	6	13	38.0	5	6	5	6	75.5	164	176	7	7	62.5	5	11.5	5	7.5	12
6 FT	11	12	11	11	5	6	6	7.5	74.6	31.0	35.0	6	12	64.5	6	12	37.0	5	6	6	6.5	72.1	164	176	7	6.5	61.5	5	12	5	7.5	12
8 FT	12	14	11	11	5	6.5	6	7.5	68.5	32.0	36.0	6	12	61.5	6	12	36.5	6	8	6	7	70.1	166	178	7	7	61.5	5	12	5	7.5	0
10 FT	13	15	11	11	5	6.5	6	7	65.9	37.0	37.0	6	12	59.5	6	12	36.0	6	7.5	6	6.5	67.4	167	179	7	6.5	61.0	5	12	5	7.5	0
12 FT	14	16	12	11	5	6	6	7	64.0	38.0	38.0	7	15	61.5	7	15	38.5	6	7	6	7	65.5	168	180	7	6.5	60.5	5	12	5	7	0
14 FT	15	17	12	11	6	7.5	6	6.5	68.5	39.0	39.0	7	15	69.0	7	15	46.5	6	6.5	6	6	64.1	169	181	7	6.5	60.5	5	12	5	7	0
16 FT	17	19	13	11	6	7.5	6	6.5	68.0	41.0	41.0	7	15	68.0	7	15	46.5	6	6.5	6	7	63.4	171	183	7	6.5	60.5	5	12	5	6.5	0
18 FT	18	20	13	11	6	7	6	6	66.9	42.0	42.0	7	15	67.5	7	15	46.5	6	6	6	6	62.4	172	184	7	6.5	60.5	5	12	5	6.5	0
20 FT	19	22	14	11	6	6.5	6	6	66.5	43.0	43.0	7	14	67.0	7	14	46.0	6	6	6	7	62.0	174	186	7	7	60.5	5	12	5	6	0
22 FT	20	23	14	11	6	6	7	8	70.6	44.0	44.0	7	14	66.5	7	14	46.0	6	6	6	6	61.3	175	187	7	6.5	60.5	5	12	5	6	0
24 FT	22	25	15	11	6	6	6	6	66.1	46.0	46.0	7	15	65.5	7	15	45.5	6	6	6	7	61.5	177	189	7	6.5	60.5	5	12	6	8	0
26 FT	23	25	15	11	7	7.5	7	7.5	70.6	47.0	47.0	7	14	65.0	7	14	45.5	7	7	6	6	60.9	177	189	7	6.5	60.5	5	12	6	8	0
28 FT	24	27	16	11	7	7.5	7	8	71.0	48.0	48.0	7	14	64.5	7	14	45.0	7	8	6	7	61.3	179	191	7	6	60.5	5	12	6	8	0
30 FT	25	28	16	11	7	7	7	8	68.5	49.0	49.0	7	14	63.5	7	14	44.0	7	7.5	6	7	58.9	180	192	7	6	60.5	5	12	6	8	0
32 FT	26	29	16	11	7	7	7	7.5	68.4	50.0	50.0	7	13	62.5	7	13	43.5	7	7.5	6	6.5	58.9	181	193	8	7.5	66.5	5	12	6	8	0
34 FT	27	30	17	11	7	6.5	7	7.5	69.0	51.0	51.0	7	13	61.5	7	13	42.5	7	7.5	6	7	59.1	182	194	8	7.5	66.5	5	12	6	7.5	0
36 FT	27	31	17	11	7	6	7	6.5	68.9	51.0	51.0	7	12	61.5	7	12	43.5	7	7	6	7	59.1	183	195	8	7	66.5	5	12	6	7.5	0
38 FT	28	33	18	11	7	6	7	7	69.8	52.0	52.0	7	12	60.0	7	12	42.5	7	7	6	6.5	59.6	185	197	8	6.5	66.5	5	12	6	7	0
40 FT	29	34	19	11	7	6	7	7	70.4	53.0	53.0	7	12	59.5	7	12	41.5	7	7	6	6.5	60.0	186	198	8	6.5	66.5	5	12	6	6.5	0
42 FT	30	35	19	11	7	6	7	6.5	70.4	54.0	54.0	7	12	59.0	7	12	40.5	7	7	6	6.5	60.1	187	199	8	6.5	66.5	5	12	6	6.5	0
44 FT	31	36	20	11	7	6	7	7	71.0	55.0	55.0	8	15	66.5	8	15	47.5	7	7	6	6	60.5	188	200	8	6	66.5	5	12	6	6.5	0
46 FT	32	37	21	11	8	7.5	7	7	71.8	56.0	56.0	8	15	66.0	8	15	47.0	7	6.5	6	6	60.8	189	201	8	6	66.5	5	12	6	6	0
48 FT	32	38	21	11	8	7	7	6	71.8	56.0	56.0	8	14	66.0	8	14	47.0	7	6.5	6	6	60.9	190	202	8	6	66.5	5	12	6	6	0
50 FT	33	39	22	11	8	7	7	6.5	72.5	57.0	57.0	8	15	65.5	8	15	47.0	7	6.5	6	6	61.3	191	203	8	6	66.5	5	12	6	6	0

				SPAN (S) = 13 FT										HEIGHT (HT) = 15 FT OR 16 FT																		
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS										BOTTOM SLAB BARS										WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS								
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2	HT=15	HT=16	SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3	HT=15	HT=16	SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	14	12	12	13	5	6	5	6	65.0	34.0	34.0	5	12	128.5	5	12	36.0	5	6.5	6	7	99.8	188	200	6	6.5	61.0	5	12	5	7	12
2 FT	15	13	12	13	6	8	6	8.5	72.0	35.0	39.0	6	16	135.5	6	16	43.5	5	6.5	6	7	96.4	189	201	6	6.5	60.5	5	12	5	7	12
2'- 4'	15	13	12	13	6	8	6	7	115.0	35.0	39.0	6	14	135.5	6	14	43.5	5	6	6	6.5	96.4	189	201	6	6	60.5	5	12	5	7	12
4 FT	11	13	12	13	5	6	6	7	115.0	35.0	35.0	6	14	81.0	6	14	38.5	5	6	6	6.5	91.6	189	201	6	6	60.5	5	12	5	7	12
6 FT	11	13	12	13	5	6.5	6	6.5	84.8	35.0	35.0	6	13	63.5	6	13	37.5	5	6	6	6	84.8	189	201	7	7	62.0	5	12	5	6.5	12
8 FT	12	14	13	13	5	6.5	6	7	78.8	36.0	36.0	6	13	61.0	6	13	37.0	6	8	6	6.5	80.6	190	202	7	7	61.5	5	12	5	6.5	0
10 FT	13	15	13	13	5	6.5	6	7	75.9	37.0	37.0	6	12	59.5	6	12	36.5	6	7.5	6	6.5	78.4	191	203	7	6.5	61.0	5	12	5	6.5	0
12 FT	14	16	14	13	5	6	6	6	72.9	38.0	38.0	6	12	58.5	6	12	36.5	6	6.5	6	6.5	75.6	192	204	7	6.5	61.0	5	12	5	6	0
14 FT	15	18	14	13	6	8	6	6	77.1	39.0	39.0	7	16	69.0	7	16	47.0	6	6.5	6	6	75.3	194	206	7	7	61.0	5	12	5	6	0
16 FT	16	19	15	13	6	7.5	6	6	76.0	40.0	40.0	7	15	68.0	7	15	47.0	6	6.5	6	6	73.3	195	207	7	6.5	61.0	5	12	6	8	0
18 FT	18	20	16	13	6	7	6	6	76.0	42.0	42.0	7	15	67.5	7	15	47.0	6	6	6	6	71.6	196	208	7	6.5	61.0	5	12	6	8	0
20 FT	19	22	16	13	6	6.5	7	8	80.4	43.0	49.0	7	15	67.5	7	15	47.0	6	6	7	7.5	74.5	198	210	7	7	61.0	5	12	6	8	0
22 FT	20	23	17	13	6	6.5	7	8	79.9	44.0	50.0	7	14	67.0	7	14	46.5	6	6	7	7.5	73.9	199	211	7	6.5	61.0	5	12	6	7.5	0
24 FT	21	24	17	13	6	6	7	7.5	79.6	45.0	51.0	7	14	66.5	7	14	46.5	7	7	7	7	73.6	200	212	7	6.5	61.0	5	12	6	7.5	0
26 FT	23	26	18	13	7	7.5	7	7.5	80.1	47.0	53.0	7	15	65.5	7	15	46.0	7	8	7	8	73.9	202	214	7	6.5	61.0	5	12	6	7	0
28 FT	23	27	19	13	7	7.5	7	7.5	80.0	47.0	47.0	7	14	65.0	7	14	46.0	7	7.5	6	6	70.9	203	215	7	6	61.0	5	12	6	6.5	0
30 FT	24	28	19	13	7	7.5	7	7.5	77.8	48.0	48.0	7	14	64.5	7	14	46.0	7	7.5	6	6	68.5	204	216	7	6	61.0	5	12	6	6.5	0
32 FT	25	29	19	13	7	7	7	7	77.8	49.0	49.0	7	14	63.5	7	14	45.5	7	6.5	6	6	68.6	205	217	8	7.5	67.0	5	12	6	6.5	0
34 FT	26	30	20	13	7	7	7	7	78.3	50.0	50.0	7	13	63.0	7	13	44.5	7	6.5	6	6	68.9	206	218	8	7.5	67.0	5	12	6	6.5	0
36 FT	27	32	21	13	7	6.5	7	7	78.9	51.0	51.0	7	13	62.																		

		SPAN (S) = 14 FT											HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT																					
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS									BOTTOM SLAB BARS									WALL BARS											
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS	B2 BARS												
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	15	11	8	8	6	8	5	8	69.3	31.0	35.0	35.0	6	16	137.5	6	16	46.5	5	6.5	5	6	57.8	91	103	115	6	6	63.0	5	12	5	12	12
2 FT	15	12	8	8	6	8	5	8	69.3	35.0	35.0	35.0	6	16	137.5	6	16	48.0	5	6	5	6.5	52.5	92	104	116	6	6	62.5	5	12	5	12	12
2'- 4'	15	12	8	8	6	7.5	5	6	69.3	35.0	35.0	35.0	6	12	137.5	6	12	48.0	5	6	6	7	52.5	92	104	116	7	6	64.5	5	12	5	12	12
4 FT	12	11	8	8	6	7.5	5	6	48.0	32.0	32.0	32.0	6	12	86.0	6	12	39.5	5	6.5	6	7	49.3	91	103	115	7	6	64.5	5	12	5	12	12
6 FT	12	13	8	8	6	8	6	7.5	47.6	32.0	32.0	32.0	7	15	74.0	7	15	41.0	5	6	5	7	41.9	93	105	117	7	6.5	64.5	5	12	5	12	12
8 FT	13	14	8	8	5	6	5	6.5	41.1	33.0	33.0	33.0	7	15	68.5	7	15	40.0	6	8	5	7.5	39.1	94	106	118	7	6.5	64.0	5	12	5	12	0
10 FT	14	15	8	8	6	8	5	6.5	38.6	34.0	34.0	34.0	7	14	66.5	7	14	39.5	6	7.5	5	7.5	37.4	95	107	119	7	6	63.5	5	12	5	12	0
12 FT	16	17	8	8	6	8	5	6.5	41.5	36.0	36.0	36.0	7	14	73.0	7	14	47.5	6	7	5	7	36.1	97	109	121	7	6.5	63.5	5	12	5	11	0
14 FT	17	18	8	8	6	7.5	5	6	40.3	37.0	37.0	37.0	7	14	72.5	7	14	47.0	6	6.5	5	6.5	35.1	98	110	122	7	6.5	63.0	5	12	5	10	0
16 FT	18	20	8	8	6	7	6	8	43.4	38.0	38.0	38.0	7	13	71.5	7	13	47.0	6	6	5	6	34.4	100	112	124	7	6.5	63.0	5	12	5	9.5	0
18 FT	20	21	8	8	6	6.5	6	7.5	42.4	44.0	44.0	44.0	7	13	71.0	7	13	46.5	6	6	6	7.5	37.0	101	113	125	7	6.5	63.0	5	12	5	9.5	0
20 FT	21	22	8	8	6	6	6	7	41.8	45.0	45.0	45.0	7	13	70.5	7	13	46.5	7	7.5	6	7	36.5	102	114	126	7	6	63.0	5	12	5	9	0
22 FT	23	24	8	8	7	7.5	6	6	41.3	47.0	47.0	47.0	7	13	69.5	7	13	46.5	7	7.5	6	6	36.4	104	116	128	7	6	63.0	5	12	5	8	0
24 FT	24	26	9	8	7	7.5	6	7	42.1	48.0	48.0	48.0	7	13	69.0	7	13	46.0	7	7.5	6	6.5	36.8	106	118	130	7	6.5	63.0	5	12	5	8.5	0
26 FT	25	27	9	8	7	7	6	6.5	41.9	49.0	49.0	49.0	7	12	68.5	7	12	46.0	7	7.5	6	6.5	36.6	107	119	131	7	6	63.0	5	12	5	8	0
28 FT	26	28	9	8	7	7	6	6	41.8	50.0	50.0	50.0	7	12	68.0	7	12	46.0	7	7.5	6	6	36.6	108	120	132	7	6	63.0	5	12	5	7.5	0
30 FT	27	29	9	8	7	6.5	6	6	41.1	51.0	51.0	51.0	7	12	67.0	7	12	45.5	7	7	6	6	35.4	109	121	133	8	7.5	68.5	5	12	5	7.5	0
32 FT	28	31	10	8	7	6.5	6	6.5	41.8	52.0	52.0	52.0	7	12	66.0	7	12	45.0	7	7	6	6	35.9	111	123	135	8	7	68.5	5	12	5	8	0
34 FT	29	32	10	8	7	6	6	6.5	41.8	53.0	53.0	53.0	7	12	65.5	7	12	44.5	7	7	6	6	36.0	112	124	136	8	7	68.5	5	12	5	7.5	0
36 FT	31	33	10	8	7	6	6	6	41.8	55.0	55.0	55.0	8	15	71.5	8	15	50.5	7	7	7	6.5	39.4	113	125	137	8	6.5	68.5	5	12	5	6.5	0
38 FT	31	34	11	8	8	7	6	6.5	42.3	55.0	55.0	55.0	8	14	71.5	8	14	51.0	7	6.5	6	6	36.8	114	126	138	8	6.5	68.5	5	12	5	7.5	0
40 FT	33	35	11	8	8	7.5	6	6	42.3	57.0	57.0	57.0	8	14	69.5	8	14	49.0	7	6	6	6	37.0	115	127	139	8	6.5	68.5	5	12	5	7	0
42 FT	33	37	11	8	8	7	6	6	42.3	57.0	57.0	57.0	8	14	69.5	8	14	49.5	7	6.5	7	6.5	40.1	117	129	141	8	6	68.5	5	12	5	6.5	0
44 FT	34	38	12	8	8	7	6	6.5	43.3	58.0	58.0	58.0	8	14	69.0	8	14	48.5	7	6.5	6	6	37.6	118	130	142	8	6	68.5	5	12	5	7	0
46 FT	35	39	12	8	8	6.5	6	6.5	43.1	59.0	59.0	59.0	8	13	68.5	8	13	47.5	7	6.5	6	6	37.9	119	131	143	8	6	68.5	5	12	5	6.5	0
48 FT	36	40	12	8	8	6.5	6	6.5	43.1	60.0	60.0	60.0	8	13	67.5	8	13	46.5	7	6.5	6	6	38.1	120	132	144	9	7	74.5	5	11.5	5	6	0
50 FT	37	41	12	8	8	6.5	6	6	43.3	61.0	61.0	61.0	8	13	67.0	8	13	46.5	7	6	7	6.5	41.3	121	133	145	9	7	74.5	5	8.5	6	8	0

		SPAN (S) = 14 FT											HEIGHT (HT) = 10 FT OR 11 FT OR 12 FT																					
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS									BOTTOM SLAB BARS									WALL BARS											
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS	B2 BARS												
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
1 FT	15	12	8	10	6	8	5	7	69.6	35.0	35.0	35.0	6	16	138.5	6	16	47.0	5	6.5	6	6	83.9	128	140	152	6	6.5	63.5	5	12	5	9.5	12
2 FT	15	13	8	10	6	8	5	6.5	69.6	35.0	35.0	35.0	6	16	138.5	6	16	48.0	5	6	6	6	77.4	129	141	153	6	6.5	63.0	5	12	5	9.5	12
2'- 4'	15	13	10	10	6	8	5	6	70.1	35.0	35.0	35.0	6	13	138.5	6	13	48.0	5	6	6	6	77.4	129	141	153	7	6.5	65.5	5	10	5	9.5	12
4 FT	12	12	10	10	6	8	5	6	70.1	32.0	32.0	32.0	6	13	85.5	6	13	40.0	5	6	6	7	65.5	128	140	152	7	6.5	65.5	5	10	5	9.5	12
6 FT	12	13	10	10	6	8.5	5	6	58.6	32.0	32.0	32.0	6	12	69.0	6	12	38.0	5	6	6	7	60.8	129	141	153	7	6.5	64.5	5	12	5	9.5	12
8 FT	13	14	10	10	5	6	6	7	57.1	33.0	33.0	37.0	7	15	68.0	7	15	40.5	6	8	6	7	57.4	130	142	154	7	6.5	64.0	5	12	5	9	0
10 FT	14	16	10	10	5	6	6	7	54.4	34.0	34.0	34.0	7	15	66.5	7	15	40.0	6	7	5	6	52.0	132	144	156	7	6.5	64.0	5	12	5	8	0
12 FT	15	17	10	10	6	8	6	7	58.6	35.0	35.0	39.0	7	14	73.0	7	14	48.0	6	7	6	7.5	53.1	133	145	157	7	6.5	63.5	5	12	5	8	0
14 FT	17	18	10	10	6	7.5	6	7	57.1	37.0	37.0	41.0	7	14	72.5	7	14	47.5	6	6.5	6	6.5	52.0	134	146	158	7	6.5	63.5	5	12	5	8	0
16 FT	18	20	11	10	6	7	6	7	57.0	38.0	38.0	42.0	7	14	71.5	7	14	47.5	6	6	6	8	51.5	136	148	160	7	6.5	63.5	5	12	5	7.5	0
18 FT	19	21	12	10	6	6.5	6	7	56.9	39.0	39.0	43.0	7	13	71.0	7	13	47.5	6	6	6	8.5	51.1	137	149	161	7	6.5	63.5	5	12	5	7	0
20 FT	21	23	12	10	6	6	6	7	56.1	41.0	41.0	45.0	7	13	70.5	7	13	47.0	7	8	6	8	50.8	139	151	163	7	6.5	63.5	5	12	5	7	0
22 FT	22	24	12	10	6	6	6	6.5	55.5	42.0	42.0	46.0	7	13	70.0	7	13	47.0	7	7.5	6	7.5	50.1	140	152	164	7	6.5	63.5	5	12	5	7	0
24 FT	23	26	13	10	7	7	6	6.5	55.9	43.0	43.0	47.0	7	12	69.5	7	12	47.0	7	7.5	6	8.5	50.3	142	154	166	7	6.5	63.5	5	12	5	6.5	0
26 FT	25	27	13	10	7	7	6	6.5	55.5	45.0	45.0	49.0	7	13	68.5	7	13	46.5	7	7.5	6	8	50.3	143	155	167	7	6	63.5	5	12	5	6.5	0
28 FT	26	29	14	10	7	7	6	6.5	56.3	46.0	50.0	50.0	7	13	67.5	7	13	46.5	7	7.5	6	8.5	50.5	145	157	169	8	7.5	69.5	5	12	5	6	0
30 FT	27	30	14	10	7	6.5	6	6.5	56.0	47.0	51.0	51.0	7	13	67.0	7	13	46.0	7	7	6	8	50.5	146	158	170	8	7.5	69.5					

SPAN (S) = 14 FT HEIGHT (HT) = 13 FT OR 14 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS			
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS					
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=13 HT=14		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=13 HT=14		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	15	12	9	11	6	8	5	6	70.4	35.0	35.0	6	16	139.0	6	16	47.0	5	6	6	6	96.1	164	176	6	6	64.0	5	12	5	8.5	12
2 FT	15	13	10	11	6	8	5	6	71.0	35.0	35.0	6	16	139.5	6	16	47.5	5	6	6	6.5	87.6	165	177	6	6.5	63.5	5	12	5	8	12
2'- 4'	15	13	10	11	6	7.5	6	7.5	100.0	36.0	36.0	6	13	139.5	6	13	47.5	5	6	6	6	87.6	165	177	7	6.5	65.5	5	12	5	8	12
4 FT	12	12	10	11	6	7.5	6	7.5	100.0	36.0	36.0	6	13	94.5	6	13	40.0	5	6	6	6	77.9	164	176	7	6.5	65.5	5	12	5	8	12
6 FT	12	13	10	11	6	8	6	7	74.8	36.0	36.0	6	12	69.0	6	12	38.5	5	6	6	6	72.4	165	177	7	6.5	65.0	5	12	5	8	12
8 FT	13	14	11	11	5	6	6	7	68.4	37.0	37.0	7	16	68.0	7	16	41.0	6	8	6	7	68.4	166	178	7	6	64.0	5	12	5	7.5	0
10 FT	14	16	11	11	5	6	6	6.5	65.4	38.0	38.0	7	15	66.5	7	15	40.5	6	7	6	6.5	66.8	168	180	7	6.5	64.0	5	12	5	7.5	0
12 FT	15	17	12	11	6	8	6	6.5	69.4	39.0	39.0	7	14	73.0	7	14	48.0	6	7	6	7	64.6	169	181	7	6.5	64.0	5	12	5	7	0
14 FT	17	18	12	11	6	7.5	6	6.5	67.9	41.0	41.0	7	15	72.0	7	15	48.0	6	6	6	6	63.0	170	182	7	6	63.5	5	12	5	7	0
16 FT	18	20	13	11	6	7	6	6.5	66.9	42.0	42.0	7	14	71.5	7	14	47.5	6	6	6	7	62.1	172	184	7	6.5	63.5	5	12	5	6.5	0
18 FT	19	21	13	11	6	6.5	6	6	65.6	43.0	43.0	7	13	71.0	7	13	47.5	7	8	6	6	61.0	173	185	7	6.5	63.5	5	12	5	6.5	0
20 FT	21	23	14	11	6	6	6	6	65.4	45.0	45.0	7	14	70.0	7	14	47.5	7	8	6	7	60.6	175	187	7	6.5	63.5	5	12	5	6	0
22 FT	22	24	14	11	6	6	7	8	69.4	46.0	46.0	7	13	69.5	7	13	47.0	7	7	6	6	59.8	176	188	7	6.5	63.5	5	12	5	6	0
24 FT	23	26	15	11	7	7.5	7	8	69.5	47.0	47.0	7	13	69.0	7	13	47.0	7	7.5	6	7	59.5	178	190	7	6.5	63.5	5	12	6	8	0
26 FT	24	27	15	11	7	7	7	7.5	69.0	48.0	48.0	7	13	68.5	7	13	47.0	7	7	6	6.5	59.3	179	191	7	6	63.5	5	12	6	8	0
28 FT	25	29	16	11	7	6.5	7	7.5	69.5	49.0	49.0	7	13	67.5	7	13	46.5	7	7	6	7	59.5	181	193	8	7.5	69.5	5	12	6	8	0
30 FT	27	30	16	11	7	6.5	7	7	69.3	51.0	51.0	7	13	66.0	7	13	45.5	7	7	6	6.5	59.5	182	194	8	7.5	69.5	5	12	6	8	0
32 FT	28	31	16	11	7	6.5	7	7.5	67.1	52.0	52.0	7	12	65.0	7	12	44.5	7	7	6	7	57.1	183	195	8	7	69.5	5	12	6	8	0
34 FT	29	32	17	11	7	6	7	7.5	67.8	53.0	53.0	7	12	64.0	7	12	44.0	7	6.5	6	7	57.5	184	196	8	7	69.5	5	12	6	7.5	0
36 FT	30	34	17	11	7	6	7	6.5	67.8	54.0	54.0	7	12	63.0	7	12	43.0	7	7	6	7	57.6	186	198	8	6.5	69.5	5	12	6	7.5	0
38 FT	31	35	18	11	7	6	7	7	68.5	55.0	55.0	8	15	70.0	8	15	50.5	7	6.5	6	6.5	58.0	187	199	8	6.5	69.5	5	12	6	7	0
40 FT	32	36	18	11	8	7.5	7	6.5	68.4	56.0	56.0	8	14	69.5	8	14	49.5	7	6.5	6	6.5	58.1	188	200	8	6	69.5	5	12	6	7	0
42 FT	33	37	19	11	8	7	7	7	69.1	57.0	57.0	8	14	69.0	8	14	48.5	7	6.5	6	6.5	58.5	189	201	8	6	69.5	5	12	6	6.5	0
44 FT	33	38	20	11	8	7	7	7	69.9	57.0	57.0	8	14	69.0	8	14	49.0	7	6	6	6	58.9	190	202	8	6	69.5	5	12	6	6.5	0
46 FT	34	39	20	11	8	7	7	6	69.8	58.0	58.0	8	14	68.5	8	14	48.5	7	6	6	6	59.0	191	203	8	6	69.5	5	12	6	6.5	0
48 FT	35	41	21	11	8	6.5	7	6.5	70.6	65.0	65.0	8	13	68.0	8	13	47.5	7	6	7	8	62.5	193	205	9	7	75.5	5	12	6	6	0
50 FT	36	42	22	11	8	6.5	7	6.5	71.4	66.0	66.0	8	14	67.0	8	14	47.5	7	6	7	7.5	63.0	194	206	9	7	75.5	5	12	6	6	0

SPAN (S) = 14 FT HEIGHT (HT) = 15 FT OR 16 FT

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS			
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS					
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=15 HT=16		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3 HT=15 HT=16		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1
1 FT	15	13	12	13	6	8	5	6	72.6	35.0	35.0	6	16	141.0	6	16	46.0	5	6.5	6	7.5	102.5	189	201	6	6.5	64.5	5	12	5	7	12
2 FT	15	13	12	13	6	8	6	8	75.6	35.0	39.0	6	16	144.0	6	16	47.5	5	6	6	7	95.8	189	201	6	6	63.5	5	12	5	7	12
2'- 4'	15	13	12	13	6	8	6	7.5	118.3	36.0	39.0	6	13	144.0	6	13	47.5	5	6	6	6	95.8	189	201	7	6.5	65.5	5	12	5	7	12
4 FT	12	12	12	13	6	8	6	7.5	118.3	36.0	36.0	6	13	86.5	6	13	40.0	5	6	6	6	86.6	188	200	7	6.5	65.5	5	12	5	7	12
6 FT	12	13	12	13	5	6	6	7	86.4	36.0	36.0	6	12	68.0	6	12	39.0	5	6	6	6	83.0	189	201	7	6	65.0	5	12	5	7	12
8 FT	13	15	13	13	5	6	6	7	78.9	37.0	37.0	6	12	64.5	6	12	38.0	6	7.5	6	6.5	80.3	191	203	7	6.5	64.5	5	12	5	6.5	0
10 FT	14	16	13	13	5	6	6	6.5	75.0	38.0	38.0	7	15	66.0	7	15	41.0	6	7	6	6.5	77.3	192	204	7	6.5	64.5	5	12	5	6.5	0
12 FT	15	17	14	13	6	8	6	6.5	78.5	39.0	39.0	7	15	73.0	7	15	48.5	6	6.5	6	6.5	74.1	193	205	7	6.5	64.0	5	12	5	6	0
14 FT	16	19	14	13	6	8	6	6	77.0	40.0	40.0	7	14	72.0	7	14	48.5	6	6	6	6	73.6	195	207	7	6.5	64.0	5	12	5	6	0
16 FT	18	20	15	13	6	7	6	6	76.5	42.0	42.0	7	14	71.5	7	14	48.5	6	6	6	6	72.1	196	208	7	6.5	64.0	5	12	6	8	0
18 FT	19	21	15	13	6	6.5	7	7.5	80.5	43.0	49.0	7	14	71.0	7	14	48.5	7	8	7	7	74.1	197	209	7	6.5	64.0	5	12	6	8	0
20 FT	20	23	16	13	6	6.5	7	7.5	79.9	44.0	50.0	7	13	70.5	7	13	48.0	7	7.5	7	8	73.8	199	211	7	6.5	64.0	5	12	6	8	0
22 FT	22	25	17	13	6	6	7	7.5	79.8	46.0	46.0	7	14	69.5	7	14	48.0	7	7.5	6	6	70.5	201	213	7	6.5	64.0	5	12	6	7.5	0
24 FT	23	26	18	13	7	7.5	7	7.5	79.5	47.0	47.0	7	13	69.0	7	13	47.5	7	7.5	6	6	69.9	202	214	7	6.5	64.0	5	12	6	7	0
26 FT	24	27	18	13	7	7.5	7	7	79.1	48.0	48.0	7	13	68.5	7	13	47.5	7	6.5	6	6	69.6	203	215	7	6	64.0	5	12	6	7	0
28 FT	25	29	19	13	7	7	7	7	79.5	49.0	49.0	7	13	68.0	7	13	47.5	7	7	6	6	70.0	205	217	8	7.5	70.0	5	12	6	6.5	0
30 FT	26	30	20	13	7	6.5	7	7	79.8	50.0	50.0	7	13	67.0	7	13	47.0	7	6.5	6	6	69.9	206	218	8	7.5	70.0	5	12	6	6.5	0
32 FT	27	31	20	13	7	6.5	7	7	77.4	51.0	51.0	7	13	66.5	7	13	47.0	7	6.5	6	6	67.5	207	219	8	7	70.0	5	12	6	6.5	0
34 FT	28	32	20	13	7	6	7	7	77.4	52.0	52.0	7	12	65.5	7	12	46.0	7	6	6	6	67.6	208	220	8	7	70.0	5	12	6	6.5	0
36 FT	29	34	21	13	7	6	7	7	78.0	53.0	53.0	7	12	64.5	7	12	45.0	7	6.5	6	6	68.1	210	222	8							

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS										
	TS	BS	TX	TI	SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1		
										HT=8'	HT=9'	HT=10'							HT=8'	HT=9'	HT=10'													
1 FT	15	12	8	8	6	8	5	8	72.9	35.0	35.0	35.0	6	16	146.0	6	16	51.0	5	6	5	6	64.9	104	116	128	6	6	66.5	5	12	5	12	12
2 FT	17	13	8	8	6	7.5	5	6.5	72.9	37.0	37.0	37.0	6	14	146.0	6	14	45.5	5	6	5	6	57.8	105	117	129	6	6	65.5	5	12	5	12	12
2'- 4'	17	13	8	8	6	7	5	6	72.9	37.0	37.0	37.0	6	12	146.0	6	12	45.5	5	6	6	6.5	57.8	105	117	129	7	6	68.0	5	12	5	12	12
4 FT	13	12	8	8	6	7	5	6	53.1	33.0	33.0	33.0	6	12	92.5	6	12	41.5	5	6	6	6.5	53.3	104	116	128	7	6	68.0	5	12	5	12	12
6 FT	13	13	8	8	6	7.5	6	7.5	50.4	33.0	33.0	37.0	7	15	78.5	7	15	42.5	5	6	6	7	48.9	105	117	129	7	6	67.0	5	12	5	12	12
8 FT	14	15	8	8	6	8	5	6	44.0	34.0	34.0	34.0	7	14	72.5	7	14	41.5	6	7.5	5	6.5	42.8	107	119	131	7	6	67.0	5	12	5	11	0
10 FT	15	16	8	8	6	7.5	6	8	50.5	35.0	35.0	35.0	7	13	78.0	7	13	49.0	6	7	5	6.5	40.9	108	120	132	7	6	66.5	5	12	5	10	0
12 FT	17	18	8	8	6	7.5	6	8	48.4	37.0	37.0	37.0	7	13	76.5	7	13	48.5	6	6.5	5	6	39.6	110	122	134	7	6	66.5	5	12	5	9.5	0
14 FT	18	19	8	8	6	7	6	7.5	47.0	38.0	38.0	42.0	7	13	75.5	7	13	48.5	6	6	6	8	41.5	111	123	135	7	6	66.5	5	12	5	9.5	0
16 FT	19	21	8	8	6	6	6	6.5	46.1	39.0	43.0	43.0	7	12	75.0	7	12	48.0	6	6	6	7	40.8	113	125	137	7	6	66.5	5	12	5	9	0
18 FT	21	22	9	8	6	6	6	7.5	46.0	41.0	41.0	41.0	7	12	74.0	7	12	48.0	7	7.5	5	6	37.8	114	126	138	7	6	66.0	5	12	5	8.5	0
20 FT	22	24	9	8	6	6	6	6.5	45.5	42.0	42.0	46.0	7	12	73.5	7	12	47.5	7	7.5	6	7	40.3	116	128	140	7	6	66.0	5	12	5	8.5	0
22 FT	24	26	10	8	7	7.5	6	7.5	46.0	44.0	44.0	44.0	7	12	72.5	7	12	47.5	7	7.5	5	6	37.5	118	130	142	7	6	66.0	5	12	5	8	0
24 FT	25	27	11	8	7	7	6	8	46.5	45.0	45.0	45.0	7	12	71.5	7	12	47.0	7	6.5	5	6	37.5	119	131	143	8	7	72.0	5	12	5	7.5	0
26 FT	27	29	11	8	7	6.5	6	8	46.1	47.0	47.0	51.0	7	12	70.5	7	12	47.0	7	7	6	7.5	40.6	121	133	145	8	7	72.0	5	12	5	7.5	0
28 FT	28	30	11	8	7	6.5	6	7	45.9	52.0	52.0	52.0	7	12	69.5	7	12	46.5	7	6.5	6	7	40.5	122	134	146	8	7	72.0	5	12	5	7.5	0
30 FT	29	32	12	8	7	6	6	7.5	46.9	53.0	53.0	53.0	7	12	69.0	7	12	46.5	7	7	6	7.5	41.0	124	136	148	8	7	72.0	5	12	5	7	0
32 FT	30	33	12	8	7	6	6	7.5	45.4	54.0	54.0	54.0	7	12	67.5	7	12	46.0	7	6.5	6	7	39.5	125	137	149	8	6.5	72.0	5	12	5	7	0
34 FT	31	34	12	8	8	7.5	6	7.5	45.3	55.0	55.0	55.0	8	15	75.0	8	15	53.0	7	6.5	6	7	39.6	126	138	150	8	6.5	72.0	5	12	5	7	0
36 FT	32	36	12	8	8	7	6	7	45.4	56.0	56.0	56.0	8	14	73.5	8	14	52.5	7	6.5	6	6.5	39.9	128	140	152	8	6	72.0	5	12	5	7	0
38 FT	33	37	12	8	8	6.5	6	6.5	45.4	57.0	57.0	57.0	8	13	72.5	8	13	51.5	7	6.5	6	6.5	40.0	129	141	153	8	6	72.0	5	12	5	6.5	0
40 FT	35	38	12	8	8	6.5	6	6.5	45.1	59.0	59.0	59.0	8	13	71.0	8	13	49.5	7	6	6	6	40.3	130	142	154	8	6	71.5	5	12	5	6	0
42 FT	35	39	13	8	8	6	6	6.5	46.1	59.0	59.0	59.0	8	12	71.0	8	12	50.0	7	6	6	6	40.6	131	143	155	8	6	72.0	5	12	5	6.5	0
44 FT	36	41	13	8	8	6	6	6.5	46.3	60.0	60.0	60.0	8	12	70.5	8	12	49.0	7	6	7	7	43.9	133	145	157	9	7	77.5	5	9	5	6	0
46 FT	37	42	13	8	8	6	6	6	46.3	61.0	61.0	61.0	8	12	70.0	8	12	48.0	7	6	7	7	44.1	134	146	158	9	7	77.5	5	6.5	6	8.5	0
48 FT	38	43	13	9	8	6	6	6	46.3	62.0	62.0	62.0	8	12	70.5	8	12	48.5	7	6	7	6.5	44.3	135	147	159	9	7	77.5	5	12	6	8	0
50 FT	39	44	14	9	8	6	6	6	47.1	63.0	63.0	63.0	8	12	70.0	8	12	47.5	8	7.5	7	7	44.8	136	148	160	9	6.5	77.5	5	12	6	8	0

DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS		H2 BARS			A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS										
	TS	BS	TX	TI	SIZE	SPA.	SIZE	SPA.	C1	K2		SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3		SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	SIZE	SPA.	G1		
										HT=11'	HT=12'	HT=13'							HT=11'	HT=12'	HT=13'													
1 FT	15	12	9	10	6	8	5	6.5	73.9	35.0	35.0	35.0	6	16	147.0	6	16	51.0	5	6	6	6	88.3	140	152	164	6	6	67.0	5	12	5	8.5	12
2 FT	17	13	9	10	6	7.5	5	6.5	73.9	37.0	37.0	37.0	6	14	147.0	6	14	46.0	5	6	6	6	80.4	141	153	165	6	6	66.0	5	12	5	8.5	12
2'- 4'	17	13	9	10	6	7	6	6	85.5	37.0	37.0	37.0	6	12	147.0	6	12	46.0	5	6	6	6	80.4	141	153	165	7	6	68.5	5	12	5	8.5	12
4 FT	13	12	9	10	6	7	6	6	85.5	33.0	37.0	37.0	6	12	96.0	6	12	42.0	5	6	6	6	70.6	140	152	164	7	6	68.5	5	12	5	8.5	12
6 FT	13	14	10	10	6	8	6	7	67.4	33.0	33.0	37.0	7	15	76.5	7	15	43.0	6	8	6	6.5	60.0	142	154	166	7	6.5	68.0	5	12	5	8	12
8 FT	14	15	10	10	6	8	6	6.5	62.0	34.0	34.0	38.0	7	14	72.0	7	14	42.0	6	7.5	6	6.5	62.1	143	155	167	7	6	67.0	5	12	5	8	0
10 FT	15	17	10	10	6	8	6	6.5	64.6	35.0	35.0	39.0	7	14	78.0	7	14	49.5	6	7	6	6.5	59.6	145	157	169	7	6.5	67.0	5	12	5	8	0
12 FT	16	18	11	10	6	7.5	6	6.5	62.6	36.0	36.0	40.0	7	13	76.5	7	13	49.0	6	6.5	6	7.5	57.4	146	158	170	7	6	67.0	5	12	5	7.5	0
14 FT	18	20	12	10	6	7	6	7	62.0	38.0	38.0	42.0	7	13	75.5	7	13	49.0	6	6	6	8	56.4	148	160	172	7	6.5	67.0	5	12	5	7	0
16 FT	19	21	12	10	6	6.5	6	6.5	60.9	39.0	39.0	43.0	7	13	74.5	7	13	48.5	7	8	6	7.5	55.4	149	161	173	7	6	66.5	5	12	5	7	0
18 FT	21	22	12	10	6	6	6	6.5	59.8	41.0	45.0	45.0	7	13	74.0	7	13	48.5	7	7	6	6	54.6	150	162	174	7	6	66.5	5	12	5	7	0
20 FT	22	24	13	10	6	6	6	6.5	59.9	42.0	42.0	46.0	7	12	73.5	7	12	48.5	7	7	6	7.5	54.4	152	164	176	7	6	66.5	5	12	5	6.5	0
22 FT	23	26	13	10	7	7	6	6	59.3	43.0	43.0	47.0	7	12	72.5	7	12	48.0	7	7	6	7	53.9	154	166	178	7	6	66.5	5	12	5	6.5	0
24 FT	25	28	14	10	7	7	6	6	59.5	45.0	45.0	49.0	7	12	71.5	7	12	48.0	7	7	6	7.5	54.0	156	168	180	7	6	66.5	5	12	5	6	0
26 FT	26	29	14	10	7	6.5	6	6	59.0	50.0	50.0	50.0	7	12	71.0	7	12	47.5	7	7	6	7.5	53.6	157	169	181	8	7	72.5	5	12	5	6	0
28 FT	27	31	15	10	7	6	6	6	59.6	51.0	51.0	51.0	7	12	70.5	7	12	47.5	7	7	6	7.5	53.9	159	171	183	8	7						



		SPAN (S) = 15 FT												HEIGHT (HT) = 14 FT OR 15 FT OR 16 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS						H1 BARS		H2 BARS		A2 BARS		J4 BARS						H3 BARS		B1 BARS		B2 BARS					
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1
									HT=14'	HT=15'	HT=16'													HT=14'	HT=15'	HT=16'								
1 FT	15	13	12	13	6	8	6	8.5	79.3	35.0	35.0	39.0	6	16	152.5	6	16	50.0	5	6	6	7	102.4	177	189	201	6	6	67.5	5	11	5	7	12
2 FT	16	14	12	13	6	7.5	5	6	76.3	36.0	36.0	36.0	6	15	149.5	6	15	48.5	6	8	6	7.5	96.3	178	190	202	6	6	67.0	5	12	5	7	12
2'- 4'	16	14	12	13	6	7	6	7	101.4	36.0	36.0	36.0	6	12	149.5	6	12	48.5	6	8	6	6.5	96.3	178	190	202	7	6.5	69.0	5	10.5	5	7	12
4 FT	12	13	12	13	6	7	6	7	101.4	36.0	36.0	36.0	6	12	86.5	6	12	41.5	5	6	6	6.5	88.5	177	189	201	7	6.5	69.0	5	10.5	5	7	12
6 FT	13	14	12	13	6	8	6	6.5	86.3	37.0	37.0	37.0	7	16	74.5	7	16	43.5	6	8	6	6.5	82.9	178	190	202	7	6	68.0	5	12	5	7	12
8 FT	13	15	13	13	6	8	6	6.5	76.4	37.0	37.0	37.0	7	14	70.5	7	14	42.5	6	7.5	6	6.5	77.9	179	191	203	7	6	68.0	5	12	5	6.5	0
10 FT	15	17	13	13	6	8	6	6	80.6	39.0	39.0	39.0	7	14	77.5	7	14	50.5	6	7	6	6.5	76.0	181	193	205	7	6.5	67.5	5	12	5	6.5	0
12 FT	16	18	14	13	6	8	6	6	78.4	40.0	40.0	40.0	7	14	76.5	7	14	50.0	6	6.5	6	6.5	73.8	182	194	206	7	6	67.5	5	12	5	6	0
14 FT	17	20	14	13	6	7.5	7	7.5	81.6	41.0	41.0	41.0	7	13	75.5	7	13	50.0	6	6	6	6	72.9	184	196	208	7	6	67.5	5	12	5	6	0
16 FT	19	21	15	13	6	6.5	7	8	80.9	43.0	43.0	49.0	7	13	75.0	7	13	49.5	7	8	7	8	74.4	185	197	209	7	6	67.0	5	12	6	8	0
18 FT	20	23	16	13	6	6.5	7	8	80.1	44.0	44.0	44.0	7	13	74.0	7	13	49.5	7	7.5	6	6	70.8	187	199	211	7	6	67.0	5	12	6	8	0
20 FT	21	24	17	13	6	6	7	7.5	79.5	45.0	45.0	45.0	7	12	73.5	7	12	49.5	7	7	6	6	69.8	188	200	212	7	6	67.0	5	12	6	7.5	0
22 FT	23	26	17	13	7	7.5	7	7.5	78.9	47.0	47.0	47.0	7	12	73.0	7	12	49.0	7	7	6	6	69.4	190	202	214	7	6	67.0	5	12	6	7.5	0
24 FT	24	28	18	13	7	7	7	7.5	78.6	48.0	48.0	48.0	7	12	72.5	7	12	49.0	7	7	6	6.5	69.0	192	204	216	7	6	67.0	5	12	6	7	0
26 FT	26	29	18	13	7	7	7	7	78.1	50.0	50.0	50.0	7	12	71.5	7	12	49.0	7	6	6	6	68.5	193	205	217	8	7	73.0	5	12	6	7	0
28 FT	27	31	19	13	7	6.5	7	7	78.5	51.0	51.0	51.0	7	12	71.0	7	12	48.5	7	6.5	6	6	68.6	195	207	219	8	7	73.0	5	12	6	6.5	0
30 FT	28	32	19	13	7	6	7	6	78.1	52.0	52.0	52.0	7	12	70.5	7	12	48.5	7	6.5	6	6	68.5	196	208	220	8	7	73.0	5	12	6	6.5	0
32 FT	30	34	20	13	7	6	7	6.5	78.8	54.0	54.0	54.0	7	12	69.0	7	12	47.0	7	6.5	6	6	68.9	198	210	222	8	6.5	73.0	5	12	6	6.5	0
34 FT	31	35	20	13	7	6	7	6.5	76.3	55.0	55.0	55.0	8	15	76.0	8	15	54.0	7	6.5	6	6	66.4	199	211	223	8	6.5	73.0	5	12	6	6.5	0
36 FT	32	36	21	13	8	7.5	7	6.5	76.8	56.0	56.0	56.0	8	14	75.0	8	14	53.5	7	6	6	6	66.6	200	212	224	8	6	73.0	5	12	6	6	0
38 FT	33	37	21	13	8	7	7	6	76.8	57.0	57.0	57.0	8	14	74.0	8	14	53.0	7	6	6	6	66.6	201	213	225	8	6	73.0	5	12	6	6	0
40 FT	34	39	22	13	8	7	7	6	77.5	58.0	58.0	64.0	8	14	73.0	8	14	52.0	7	6	7	7.5	70.1	203	215	227	8	6	73.0	5	12	6	6	0
42 FT	35	40	23	13	8	7	7	6.5	78.1	59.0	59.0	65.0	8	13	72.5	8	13	51.0	7	6	7	7.5	70.4	204	216	228	9	7	79.0	5	12	7	7.5	0
44 FT	35	41	24	13	8	6	7	6	78.9	65.0	65.0	65.0	8	12	72.5	8	12	52.0	8	7.5	7	7	70.6	205	217	229	9	7	79.5	5	12	7	8	0
46 FT	36	42	25	13	8	6	7	6	79.5	66.0	66.0	66.0	8	12	72.0	8	12	51.0	8	7	7	7.5	70.9	206	218	230	9	7	79.5	5	12	7	8	0
48 FT	37	43	26	13	8	6.5	7	6	80.3	67.0	67.0	67.0	8	12	71.5	8	12	50.0	8	6.5	7	7.5	71.3	207	219	231	9	7	79.5	5	12	7	8	0
50 FT	38	45	27	13	8	6	7	6	81.1	68.0	68.0	68.0	8	12	71.0	8	12	49.0	8	7	7	7	71.8	209	221	233	9	6.5	79.5	5	12	7	8	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.

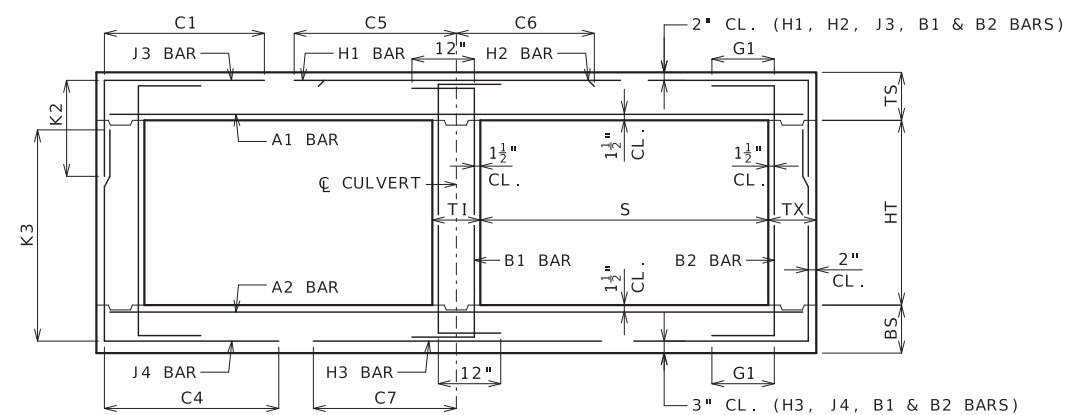
SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.



DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM  
SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b>	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>CONCRETE DOUBLE BOX CULVERT</b>	
	MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS	
SPAN (S): 15 FEET HEIGHT (HT): 14 THRU 16 FEET		SHEET NO. <b>25 OF 27</b>
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	

		SPAN (S) = 16 FT												HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	15	12	8	8	6	7.5	5	8	76.5	35.0	35.0	35.0	6	15	154.5	6	15	54.0	5	6	6	7	66.9	104	116	128	7	7	72.5	5	12	5	12	12
2 FT	17	13	8	8	6	7	5	6.5	76.5	37.0	37.0	37.0	6	14	154.5	6	14	50.0	5	6	5	6	56.4	105	117	129	7	7	71.5	5	12	5	12	12
2' - 4'	17	13	8	8	6	6.5	6	7	76.5	37.0	37.0	37.0	7	14	154.5	7	14	50.0	5	6	5	6	56.4	105	117	129	7	6	71.5	5	12	5	12	12
4 FT	13	13	8	8	6	6.5	6	7	55.6	33.0	33.0	33.0	7	14	97.0	7	14	45.5	5	6	5	6	49.6	105	117	129	7	6	71.0	5	12	5	12	12
6 FT	14	14	8	8	6	7	5	6	47.1	34.0	34.0	34.0	7	14	82.0	7	14	44.0	6	8	5	6	45.1	106	118	130	7	6	70.5	5	12	5	12	12
8 FT	15	16	8	8	6	7.5	5	6	48.4	35.0	35.0	35.0	7	13	84.0	7	13	51.0	6	7	5	7	41.9	108	120	132	7	6	70.0	5	12	5	11	0
10 FT	16	17	8	8	6	7	6	8	49.6	36.0	36.0	36.0	7	12	81.5	7	12	50.5	6	7	5	6.5	39.9	109	121	133	7	6	69.5	5	12	5	10	0
12 FT	18	19	8	8	6	7	6	7.5	47.5	38.0	38.0	38.0	7	12	80.0	7	12	50.0	6	6	5	6	38.6	111	123	135	7	6	69.5	5	12	5	9.5	0
14 FT	19	20	8	8	6	6.5	6	7	46.0	39.0	39.0	43.0	7	12	79.0	7	12	49.5	6	6	6	7.5	40.5	112	124	136	7	6	69.5	5	12	5	9.5	0
16 FT	21	22	8	8	6	6	6	7	44.9	45.0	45.0	45.0	7	12	78.0	7	12	49.5	7	7.5	6	7	39.9	114	126	138	7	6	69.5	5	12	5	8.5	0
18 FT	22	23	9	8	6	6	6	7.5	45.1	42.0	42.0	42.0	8	15	85.0	8	15	57.0	7	6.5	5	6	36.8	115	127	139	8	6.5	75.5	5	12	5	8.5	0
20 FT	24	25	9	8	7	7.5	6	7	44.4	48.0	48.0	48.0	8	15	84.0	8	15	57.0	7	7	6	7	39.4	117	129	141	8	7	75.5	5	12	5	8.5	0
22 FT	25	27	10	8	7	7	6	7.5	45.0	45.0	45.0	49.0	8	14	83.5	8	14	56.5	7	6.5	6	7	39.5	119	131	143	8	7	75.5	5	12	5	8	0
24 FT	27	29	10	8	7	6.5	6	6.5	44.5	51.0	51.0	51.0	8	14	82.5	8	14	56.5	7	6.5	6	6.5	39.3	121	133	145	8	7	75.0	5	12	5	8	0
26 FT	28	31	11	8	7	6	6	7.5	45.3	52.0	52.0	52.0	8	14	81.5	8	14	56.0	7	6.5	6	7	39.5	123	135	147	8	7	75.0	5	12	5	7.5	0
28 FT	30	32	11	8	7	6	6	7	44.9	54.0	54.0	54.0	8	14	80.5	8	14	56.0	7	6.5	6	6.5	39.6	124	136	148	8	7	75.0	5	12	5	7.5	0
30 FT	31	34	11	8	8	7.5	6	6	44.9	55.0	55.0	55.0	8	14	79.5	8	14	55.5	7	6.5	6	6	39.6	126	138	150	8	6.5	75.0	5	12	5	7	0
32 FT	32	35	12	8	8	7	6	7	45.8	56.0	56.0	56.0	8	14	78.5	8	14	55.0	7	6	6	6.5	40.0	127	139	151	8	6.5	75.0	5	12	5	7	0
34 FT	33	36	12	8	8	7	6	7	45.3	57.0	57.0	57.0	8	14	77.5	8	14	54.5	7	6	6	6.5	39.3	128	140	152	8	6	75.0	5	12	5	7	0
36 FT	35	38	12	8	8	6.5	6	6.5	45.3	59.0	59.0	59.0	8	13	75.0	8	13	52.0	7	6	6	6	39.3	130	142	154	8	6	75.0	5	12	5	7	0
38 FT	36	39	12	8	8	6.5	6	6.5	45.3	60.0	60.0	60.0	8	13	74.0	8	13	51.5	7	6	6	6	39.3	131	143	155	8	6	75.0	5	12	5	6.5	0
40 FT	37	41	12	8	8	6.5	6	6	45.3	61.0	61.0	61.0	8	12	73.5	8	12	50.5	7	6	7	6.5	42.5	133	145	157	9	7	80.5	5	11	5	6	0
42 FT	38	42	12	8	8	6	6	6	45.3	62.0	62.0	62.0	8	12	73.0	8	12	50.0	7	6	7	6	42.6	134	146	158	9	7	80.5	5	7	6	8	0
44 FT	39	43	13	9	8	6	6	6	45.8	63.0	63.0	63.0	8	12	73.5	8	12	50.5	8	7.5	7	6.5	43.1	135	147	159	9	7	81.0	5	12	5	6	0
46 FT	40	44	13	9	8	6	7	7	50.8	70.0	70.0	70.0	8	12	73.0	8	12	49.5	8	7.5	7	6.5	43.4	136	148	160	9	6.5	80.5	5	12	6	8	0
48 FT	41	45	13	9	9	7.5	7	7	50.8	71.0	71.0	71.0	9	15	80.5	9	15	56.5	8	7	7	6.5	43.5	137	149	161	9	6.5	80.5	5	12	6	7.5	0
50 FT	42	46	13	9	9	7	7	6.5	50.8	72.0	72.0	72.0	9	14	80.0	9	14	56.0	8	7	7	6	43.8	138	150	162	9	6.5	80.5	5	9.5	6	7	0

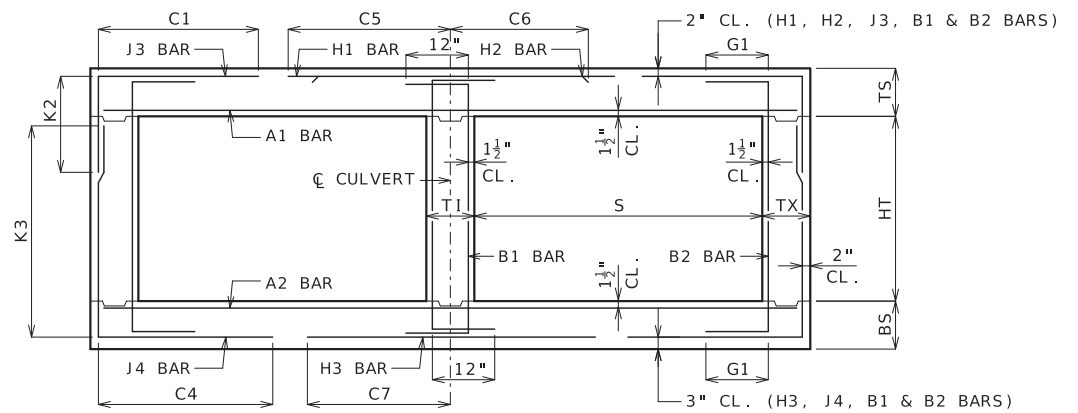
		SPAN (S) = 16 FT												HEIGHT (HT) = 11 FT OR 12 FT OR 13 FT																				
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS												BOTTOM SLAB BARS												WALL BARS					
					A1 BARS		J3 BARS			H1 BARS			H2 BARS			A2 BARS		J4 BARS				H3 BARS			B1 BARS		B2 BARS							
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	SIZE	SPA.	G1		
1 FT	15	13	9	10	6	7.5	5	6	77.5	35.0	35.0	35.0	6	15	155.5	6	15	53.5	5	6	6	6	89.5	141	153	165	6	6	70.0	5	11.5	5	8.5	12
2 FT	17	14	9	10	6	7.5	5	6.5	77.5	37.0	37.0	37.0	6	14	155.5	6	14	50.0	6	8	6	6.5	79.8	142	154	166	6	6	69.5	5	12	5	8.5	12
2' - 4'	17	14	10	10	6	6.5	6	7	77.5	37.0	37.0	37.0	7	15	155.5	7	15	50.0	6	8	6	6.5	79.8	142	154	166	7	6	71.5	5	11	5	8.5	12
4 FT	13	13	10	10	6	6.5	6	7	76.9	33.0	37.0	37.0	7	15	96.5	7	15	46.0	5	6	6	6.5	70.0	141	153	165	7	6	71.5	5	11	5	8.5	12
6 FT	13	14	10	10	6	7	6	7	65.3	33.0	37.0	37.0	7	13	79.5	7	13	44.0	6	8	6	6.5	64.5	142	154	166	7	6	71.0	5	12	5	8	12
8 FT	14	16	10	10	6	7	6	6.5	60.3	34.0	34.0	38.0	7	13	75.0	7	13	43.0	6	7	6	7	60.6	144	156	168	7	6	70.5	5	12	5	8	0
10 FT	16	17	10	10	6	7	6	6.5	63.1	36.0	40.0	40.0	7	13	81.5	7	13	51.0	6	7	6	6.5	57.8	145	157	169	7	6	70.0	5	12	5	8	0
12 FT	17	19	11	10	6	7	6	6.5	62.3	37.0	37.0	41.0	7	12	80.0	7	12	50.5	6	6	6	7.5	56.5	147	159	171	7	6	70.0	5	12	5	7.5	0
14 FT	19	21	12	10	6	6.5	6	7	61.5	39.0	39.0	43.0	7	12	78.5	7	12	50.5	7	8	6	8	55.8	149	161	173	7	6	70.0	5	12	5	7	0
16 FT	20	22	12	10	6	6.5	6	6.5	60.3	40.0	40.0	44.0	7	12	78.0	7	12	50.0	7	7.5	6	7	54.6	150	162	174	7	6	70.0	5	12	5	7	0
18 FT	22	24	12	10	6	6	6	6	59.3	42.0	46.0	46.0	7	12	77.0	7	12	50.0	7	7	6	6.5	54.0	152	164	176	7	6	69.5	5	12	5	7	0
20 FT	23	25	13	10	7	7.5	6	6	59.1	43.0	43.0	47.0	8	15	84.5	8	15	57.5	7	6.5	6	7	53.6	153	165	177	8	7	75.5	5	12	5	6.5	0
22 FT	25	27	13	10	7	7	6	6	58.4	45.0	45.0	49.0	8	15	83.5	8	15	57.5	7	6.5	6	7	53.1	155	167	179	8	7	75.5	5	12	5	6.5	0
24 FT	27	29	14	10	7	6.5	6	6	58.6	51.0	51.0	51.0	8	15	82.5	8	15	57.0	7	6.5	6	7.5	53.3	157	169	181	8	7	75.5	5	12	5	6	0
26 FT	28	31	14	10	7	6.5	6	6	58.3	52.0	52.0	52.0	8	14	82.0	8	14	57.0	7	6.5	6	7.5	52.9	159	171	183	8	7	75.5	5	12	5	6	0
28 FT	30	33	15	10	7	6	6	6	58.8	54.0	54.0	54.0	8	15	80.5	8	15	56.5	7	6.5	6	7	53.3	161	173	185	8	6.5	75.5	5	12	6	8	0
30 FT	31	34	15	10	8	7.5	7	8	63.5	55.0	55.0	55.0	8	15	79.5	8	15	56.0	7	6	6	7	53.1	162	174	186	8	6.5	75.5	5	12	6		

		SPAN (S) = 16 FT											HEIGHT (HT) = 14 FT OR 15 FT OR 16 FT																					
DESIGN FILL	MEMBER THICKNESS				TOP SLAB BARS											BOTTOM SLAB BARS											WALL BARS							
					A1 BARS		J3 BARS			H1 BARS		H2 BARS		A2 BARS		J4 BARS			H3 BARS		B1 BARS		B2 BARS											
	TS	BS	TX	T1	SIZE	SPA.	SIZE	SPA.	C1	K2			SIZE	SPA.	C5	SIZE	SPA.	C6	SIZE	SPA.	C4	K3			SIZE	SPA.	C7	SIZE	SPA.	G1				
									HT=14'	HT=15'	HT=16'											HT=14'	HT=15'	HT=16'										
1 FT	15	13	12	13	6	7.5	6	8	82.9	35.0	35.0	39.0	6	15	160.5	6	15	53.0	5	6	6	7	101.1	177	189	201	6	6	70.5	5	10	5	7	12
2 FT	17	14	12	13	6	7.5	6	8.5	82.9	37.0	37.0	41.0	6	14	160.5	6	14	50.0	6	8	6	7	95.1	178	190	202	7	7	73.0	5	12	5	7	12
2'- 4'	17	14	12	13	6	7	6	7	99.8	37.0	37.0	41.0	7	15	160.5	7	15	50.0	6	8	6	6	95.1	178	190	202	7	6	73.0	5	11	5	7	12
4 FT	13	13	12	13	6	7	6	7	99.8	37.0	37.0	37.0	7	15	94.0	7	15	46.0	6	8.5	6	6	86.1	177	189	201	7	6	72.0	5	11	5	7	12
6 FT	13	15	12	13	6	7	6	6.5	82.6	37.0	37.0	37.0	7	14	77.5	7	14	44.5	6	7.5	6	6.5	82.5	179	191	203	7	6	71.5	5	12	5	7	12
8 FT	14	16	13	13	6	7.5	6	6.5	76.6	38.0	38.0	38.0	7	13	74.5	7	13	44.0	6	7	6	6.5	77.6	180	192	204	7	6	71.0	5	12	5	6.5	0
10 FT	15	18	13	13	6	6.5	6	6	79.5	39.0	39.0	39.0	7	13	80.5	7	13	51.5	6	6.5	6	6	75.6	182	194	206	7	6	71.0	5	12	5	6.5	0
12 FT	17	19	14	13	6	7	6	6	77.8	41.0	41.0	41.0	7	13	79.5	7	13	51.5	6	6	6	6	73.1	183	195	207	7	6	70.5	5	12	5	6	0
14 FT	18	21	15	13	6	7	6	6	76.3	42.0	42.0	42.0	7	12	78.5	7	12	51.0	7	8	6	6	71.8	185	197	209	7	6	70.5	5	12	6	8	0
16 FT	20	22	15	13	6	6.5	7	7.5	79.9	44.0	44.0	44.0	7	12	78.0	7	12	51.0	7	7.5	6	6	70.3	186	198	210	7	6	70.0	5	12	6	8	0
18 FT	22	24	15	13	6	6	7	7	78.8	46.0	46.0	52.0	7	12	77.5	7	12	51.0	7	7	7	7	72.4	188	200	212	7	6	70.0	5	12	6	8	0
20 FT	23	25	16	13	7	7.5	7	7	78.0	47.0	47.0	53.0	8	15	85.0	8	15	58.5	7	6	7	7.5	71.4	189	201	213	8	7	76.0	5	12	6	8	0
22 FT	25	27	17	13	7	7	7	7.5	77.8	49.0	49.0	49.0	7	12	76.0	7	12	50.5	7	6	6	6	68.0	191	203	215	8	7	76.0	5	12	6	7.5	0
24 FT	26	29	17	13	7	7	7	7	76.9	50.0	50.0	56.0	8	15	83.5	8	15	58.5	7	6.5	7	7.5	70.4	193	205	217	8	7	76.0	5	12	6	7.5	0
26 FT	28	31	18	13	7	6.5	7	7	76.9	52.0	52.0	52.0	8	15	82.5	8	15	58.0	7	6.5	6	6	67.1	195	207	219	8	7	76.5	5	12	6	7	0
28 FT	29	33	19	13	7	6	7	7	77.1	53.0	53.0	53.0	8	15	82.0	8	15	58.0	7	6	6	6	67.1	197	209	221	8	6.5	76.5	5	12	6	6.5	0
30 FT	31	34	19	13	8	7.5	7	6.5	76.8	55.0	55.0	55.0	8	15	80.5	8	15	57.0	7	6	6	6	67.0	198	210	222	8	6.5	76.0	5	12	6	6.5	0
32 FT	32	36	20	13	8	7.5	7	6.5	77.3	56.0	56.0	56.0	8	14	79.5	8	14	56.5	7	6	6	6	67.3	200	212	224	8	6	76.5	5	12	6	6.5	0
34 FT	33	37	21	13	8	7	7	6.5	77.6	57.0	57.0	57.0	8	14	78.5	8	14	55.5	7	6	6	6	67.3	201	213	225	8	6	76.5	5	12	6	6	0
36 FT	34	38	21	13	8	7	7	6.5	75.5	58.0	58.0	58.0	8	14	77.5	8	14	55.0	8	7	6	6	64.9	202	214	226	8	6	76.5	5	12	6	6	0
38 FT	35	40	21	13	8	6.5	7	6	75.5	59.0	59.0	59.0	8	13	76.5	8	13	54.0	8	7.5	6	6	65.1	204	216	228	9	7	82.0	5	12	6	6	0
40 FT	36	41	22	13	8	6.5	7	6	76.1	66.0	66.0	66.0	8	13	75.5	8	13	53.5	8	7.5	7	7.5	68.5	205	217	229	9	7	82.0	5	12	6	6	0
42 FT	37	42	23	13	8	6.5	7	6.5	76.9	67.0	67.0	67.0	8	12	75.0	8	12	52.5	8	6.5	7	7.5	68.8	206	218	230	9	7	82.5	5	12	7	7.5	0
44 FT	38	44	24	13	8	6	7	6	77.6	68.0	68.0	68.0	8	12	74.5	8	12	52.0	8	7	7	7	69.4	208	220	232	9	6.5	82.5	5	12	7	7.5	0
46 FT	39	45	25	13	8	6	7	6	78.4	69.0	69.0	69.0	8	12	74.0	8	12	51.0	8	7	7	7	69.8	209	221	233	9	6.5	82.5	5	12	7	7.5	0
48 FT	40	46	26	13	8	6	7	6	79.1	70.0	70.0	70.0	8	12	73.5	8	12	50.0	8	6.5	7	7	70.1	210	222	234	9	6.5	82.5	5	12	7	8	0
50 FT	41	47	27	13	9	7.5	7	6	79.9	71.0	71.0	71.0	8	12	73.0	8	12	49.5	8	6	7	6.5	70.5	211	223	235	9	6	82.5	5	12	7	8	0

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

**GENERAL NOTES:**  
 IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2'- 4' TABULATED DESIGN FILL.  
 SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.  
 DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.  
 DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.  
 CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

BAR DIMENSIONS DIAGRAM  
 SYMMETRICAL ABOUT CULVERT.



	<b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		<b>CONCRETE DOUBLE BOX CULVERT</b> MEMBER THICKNESS BAR SIZE, SPACING & DIMENSIONS SPAN (S): 16 FEET HEIGHT (HT): 14 THRU 16 FEET
DATE EFFECTIVE: 7/1/2023 DATE PREPARED: 3/22/2023	<b>703.47A</b>	SHEET NO. <b>27 OF 27</b>