



DESIGN NO.	Clear Span Feet	Clear Height Feet	BARREL OF CULVERT										TWO WINGS AND ONE APRON										TOTAL QUANTITIES			DESIGN NO.	Two CURBS REINF. STEEL SAME SIZE AS A BARS											
			DIMENSIONS			REINFORCING STEEL			QUANTITIES				DIMENSIONS			REINFORCING STEEL			QUANTITIES				Steel	Class A Concrete	Class A-A Concrete													
			T	T2	V	Size & Spacing	Length	Size & Spacing	Length	Size & Spacing	No.	Steel per Lin. Ft. Lbs.	Class A Concrete per Lin. Ft. Cu. Yds.	Class A-A Concrete per Lin. Ft. Cu. Yds.	H	K	M	N	Bars D	Bars E	Bars F	Bars G						Bars G1										
1	12.0	3.0	6.0	6.0	2.0	3.0	1/2" x 6"	21.0"	1/2" x 9"	3.0"	1/2" x 18"	8	18.43	.111	.068	21.0"	11.4"	21.0"	21.0"	4	21.0"	3	2	4.17"	2	4.17"	6	4.4	.62	.31	1.48	1.24	694	6.92	2.46	1	3.18"	2.8"
2	24.0	4.0	6.0	6.0	3.0	3.0	1/2" x 6"	21.0"	1/2" x 9"	3.0"	1/2" x 18"	8	19.34	.130	.068	21.0"	11.0"	21.0"	21.0"	4	21.0"	3	2	5.12"	2	5.12"	8	5.4	.87	.31	1.63	1.61	744	7.83	2.46	2	3.18"	2.8"
3	12.0	4.5	6.0	6.0	2.5	3.0	1/2" x 6"	31.2"	1/2" x 9"	3.0"	1/2" x 18"	8	22.97	.148	.091	21.0"	11.6"	31.2"	21.0"	5	21.0"	3	2	4.17"	2	4.17"	6	4.8	.69	.40	1.72	1.24	824	7.12	3.26	3	4.18"	3.18"
4	24.0	6.0	6.0	6.0	4.0	4.0	1/2" x 6"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	8	23.88	.167	.091	31.2"	11.7"	31.2"	31.2"	5	21.0"	3	2	5.12"	2	5.12"	8	5.9	.95	.40	1.88	1.61	874	8.62	3.26	4	4.18"	3.18"
5	36.0	7.5	6.0	6.0	3.0	4.0	1/2" x 6"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	8	26.54	.185	.091	31.2"	11.9"	41.6"	31.2"	5	21.0"	3	2	5.12"	2	5.12"	10	6.9	1.25	.40	2.04	1.98	925	10.23	3.26	5	4.18"	3.18"
6	36.0	9.0	6.0	6.0	4.0	4.0	1/2" x 6"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	10	29.50	.204	.091	31.2"	12.1"	41.6"	31.2"	5	21.0"	3	2	5.12"	2	5.12"	10	9.1	1.60	.40	2.21	2.35	1,041	11.91	3.26	6	4.18"	3.18"
7	12.0	6.0	7.0	6.0	2.5	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	10	30.40	.222	.129	21.0"	11.7"	31.2"	21.0"	6	21.0"	3	2	4.17"	2	4.17"	6	5.2	.77	.48	1.97	1.36	1,031	8.54	4.55	7	5.18"	4.18"
8	24.0	8.0	7.0	6.0	3.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	10	31.81	.200	.129	31.2"	11.7"	31.2"	21.0"	6	21.0"	3	2	5.12"	2	5.12"	8	6.3	1.04	.48	2.13	1.73	1,143	10.06	4.55	8	5.18"	4.18"
9	24.0	10.0	7.0	6.0	3.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	10	33.58	.219	.129	31.2"	11.0"	41.6"	31.2"	6	21.0"	3	2	5.12"	2	5.12"	10	7.4	1.37	.48	2.29	2.10	1,194	11.70	4.55	9	5.18"	4.18"
10	36.0	12.0	7.0	6.0	4.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	12	36.58	.219	.129	31.2"	11.0"	41.6"	31.2"	6	21.0"	3	2	5.12"	2	5.12"	10	9.7	1.73	.48	2.46	2.47	1,313	13.43	4.55	10	5.18"	4.18"
11	48.0	16.0	7.0	6.0	5.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	12	36.45	.213	.137	41.1"	21.0"	51.0"	50.0"	6	21.0"	3	2	4.17"	2	4.17"	14	14.4	2.51	.50	2.78	3.21	1,501	18.80	4.84	11	6.01"	5.01"
12	12.0	7.5	7.0	6.0	2.9	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	12	36.30	.194	.164	21.0"	11.6"	21.0"	21.0"	7	21.0"	3	2	4.17"	2	4.17"	6	5.6	.84	.56	2.22	1.42	1,322	9.75	5.75	12	6.18"	5.18"
13	24.0	10.0	7.0	6.0	3.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	12	37.20	.213	.164	21.0"	11.6"	21.0"	21.0"	7	21.0"	3	2	5.12"	2	5.12"	6	6.7	1.13	.56	2.37	1.79	1,376	11.30	5.75	13	6.18"	5.18"
14	36.0	15.0	7.0	6.0	4.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	14	40.38	.250	.164	31.2"	11.0"	41.6"	31.2"	7	21.0"	3	2	5.12"	2	5.12"	8	10.3	1.85	.56	2.70	2.53	1,550	14.77	5.75	14	6.18"	5.18"
15	48.0	20.0	7.0	6.0	5.2	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	14	43.32	.243	.173	41.1"	21.0"	51.0"	50.0"	7	21.0"	3	2	4.17"	2	4.17"	14	15.1	2.67	.58	3.03	3.27	1,743	20.19	6.05	15	7.01"	6.01"
16	51.0	25.0	10.0	6.0	6.3	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	16	47.32	.263	.181	41.1"	21.0"	61.0"	61.0"	7	21.0"	3	2	4.17"	2	4.17"	18	20.7	3.65	.61	3.36	4.01	1,996	26.80	6.37	16	7.14"	6.14"
17	72.0	35.0	10.0	6.0	8.3	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	18	52.60	.287	.181	71.1"	21.0"	81.0"	81.0"	8	21.0"	3	2	4.17"	2	4.17"	20	24.4	4.51	.64	4.09	5.49	2,643	38.72	6.40	17	7.91"	6.91"
18	24.0	12.0	8.0	6.0	3.5	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	12	45.28	.257	.213	31.2"	11.8"	31.2"	21.0"	8	21.0"	3	2	5.12"	2	5.12"	8	7.2	1.22	.64	2.62	1.97	1,654	13.10	7.38	18	7.18"	6.18"
19	36.0	18.0	8.0	6.0	4.5	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	14	49.76	.247	.222	41.1"	11.1"	41.6"	31.2"	8	21.0"	3	2	5.12"	2	5.12"	10	10.9	1.92	.67	3.25	2.65	1,874	18.02	7.73	19	8.10"	7.10"
20	48.0	24.0	8.0	6.0	5.5	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	14	51.87	.290	.222	51.0"	21.1"	51.0"	50.0"	8	21.0"	3	2	4.17"	2	4.17"	14	15.9	2.83	.67	3.82	3.40	2,082	22.19	7.73	20	8.10"	7.10"
21	51.0	30.0	8.0	6.0	7.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	16	56.04	.270	.233	61.0"	21.5"	61.0"	61.0"	8	21.0"	3	2	4.17"	2	4.17"	18	21.7	3.86	.69	4.61	4.14	2,293	28.90	8.07	21	8.14"	7.14"
22	61.0	36.0	8.0	6.0	7.5	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	18	59.22	.277	.233	71.0"	21.8"	81.0"	81.0"	8	21.0"	3	2	4.17"	2	4.17"	22	23.1	3.65	.72	4.01	4.83	2,525	35.25	8.10	22	8.19"	7.19"
23	36.0	24.0	10.0	6.0	4.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	18	74.24	.436	.326	21.0"	21.1"	41.6"	31.2"	10	41.4"	4	4	5.12"	2	5.12"	14	12.2	2.20	.83	3.44	2.84	2,736	21.88	11.20	23	10.10"	9.10"
24	48.0	32.0	10.0	6.0	5.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	18	76.06	.485	.326	21.0"	21.1"	51.0"	50.0"	10	51.6"	5	4	5.12"	2	5.12"	14	17.5	3.16	.83	3.77	3.58	2,900	26.17	11.20	24	10.10"	9.10"
25	51.0	40.0	10.0	6.0	6.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	20	80.96	.607	.338	61.0"	21.6"	71.0"	61.0"	10	61.8"	6	4	6.18"	2	6.18"	18	23.6	4.25	.85	4.10	4.32	3,183	33.07	11.59	25	10.14"	9.14"
26	61.0	48.0	10.0	6.0	7.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	22	84.4	.669	.338	71.0"	21.9"	81.0"	81.0"	10	71.9"	7	4	6.18"	2	6.18"	22	30.4	6.13	.85	4.50	5.06	3,422	39.63	11.62	26	10.19"	9.19"
27	72.0	56.0	10.0	6.0	8.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	22	85.95	.730	.338	81.0"	21.9"	91.0"	81.0"	10	81.9"	7	4	6.18"	2	6.18"	26	34.6	6.13	.85	4.88	5.80	3,862	45.53	11.62	27	10.19"	9.19"
28	81.0	64.0	10.0	6.0	9.1	3.0	3/8" x 8"	31.2"	1/2" x 9"	4.0"	1/2" x 18"	24	89.99	.841	.343	91.0"	21.9"	91.0"	81.0"	10	91.9"	7	4	6.18"	2	6.18"	30	40.9	6.13	.85	5.16	6.54	4,196	53.46	11.62	28	10.11"	9.11"
29	36.0	30.0	11.0	8.0	4.1	3.0	3/8" x 8"	11.0"	1/2" x 9"	9.6"	1/2" x 18"	20	97.70	.533	.431	41.3"	21.2"	41.6"	31.2"	12	41.4"	4	4	5.12"	2	5.12"	14	13.4	2.44</									