

SPAN		HC	REINFORCING STEEL											QUAN./LF		HEADWALLS								WINGWALL			
(FT.)	(FT.)	HT	BTI											REINFORCING STEEL (LBS./LONG. JT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS./LF)	C			HW I		NO. HW2 BARS	NO. HW3 BARS		INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL (LBS)	OUTLET CONCRETE CL. A4 (CY)
			SIZE	SPACING C-C	a	b	c	d	e	f	g	LENGTH	NO. BL1 BARS				NO. BL2 BARS	HEADWALL LENGTH	SIZE	LENGTH							
3	3	4	12"	2'- 8 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	11'- 3 7/8"	1'- 5 7/8"	11'- 10"	44	16	42.388	0.989	109.333	13'- 2"	6	12'- 10"	2	8	1.827	102.932	1.808	77.103	A	
3	4	4	12"	2'- 8 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	11'- 3 7/8"	1'- 5 7/8"	11'- 10"	44	24	45.212	1.087	117.685	13'- 2"	6	12'- 10"	2	10	1.932	109.835	1.901	77.103	C	
4	3	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 7/8"	0'- 3 3/4"	14'- 4"	2'- 1"	14'- 10"	56	16	52.408	1.136	129.262	16'- 2"	6	15'- 10"	2	8	2.131	120.956	2.121	95.127	A	
4	4	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 7/8"	0'- 3 3/4"	14'- 4"	2'- 1"	14'- 10"	56	24	55.232	1.234	137.614	16'- 2"	6	15'- 10"	2	10	2.236	127.859	2.214	95.127	C	
4	5	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 7/8"	0'- 3 3/4"	14'- 4"	2'- 1"	14'- 10"	56	32	58.056	1.332	145.966	16'- 2"	6	15'- 10"	2	12	2.341	134.761	2.307	95.127	E	
4	6	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 7/8"	0'- 3 3/4"	14'- 4"	2'- 1"	14'- 10"	56	40	60.880	1.430	154.318	16'- 2"	6	15'- 10"	2	14	2.446	141.664	2.399	95.127	G	
5	3	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 7/8"	0'- 3 3/4"	17'- 4"	2'- 8 1/4"	17'- 10"	68	16	62.428	1.282	149.413	19'- 2"	6	18'- 10"	2	8	2.434	138.980	2.435	113.151	A	
5	4	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 7/8"	0'- 3 3/4"	17'- 4"	2'- 8 1/4"	17'- 10"	68	24	65.252	1.381	157.765	19'- 2"	6	18'- 10"	2	10	2.539	145.883	2.527	113.151	C	
5	5	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 7/8"	0'- 3 3/4"	17'- 4"	2'- 8 1/4"	17'- 10"	68	32	68.076	1.479	166.117	19'- 2"	6	18'- 10"	2	12	2.644	152.785	2.620	113.151	E	
5	6	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 7/8"	0'- 3 3/4"	17'- 4"	2'- 8 1/4"	17'- 10"	68	40	70.900	1.577	174.469	19'- 2"	6	18'- 10"	2	14	2.750	159.688	2.713	113.151	G	
5	7	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 7/8"	0'- 3 3/4"	17'- 4"	2'- 8 1/4"	17'- 10"	68	48	73.724	1.675	182.821	19'- 2"	6	18'- 10"	2	16	2.855	166.591	2.806	113.151	I	
6	4	4	12"	5'- 1 3/4"	0'- 4 1/2"	2'- 9"	0'- 5 7/8"	0'- 3 3/4"	20'- 4"	3'- 3 1/2"	20'- 10"	80	24	75.272	1.527	185.465	22'- 2"	6	21'- 10"	2	10	2.843	163.907	2.841	131.175	C	
6	5	4	12"	5'- 1 3/4"	0'- 4 1/2"	2'- 9"	0'- 5 7/8"	0'- 3 3/4"	20'- 4"	3'- 3 1/2"	20'- 10"	80	32	78.096	1.625	186.046	22'- 2"	6	21'- 10"	2	12	2.948	170.809	2.934	131.175	E	
6	6	4	12"	5'- 1 3/4"	0'- 4 1/2"	2'- 9"	0'- 5 7/8"	0'- 3 3/4"	20'- 4"	3'- 3 1/2"	20'- 10"	80	40	80.920	1.723	194.398	22'- 2"	6	21'- 10"	2	14	3.053	177.712	3.026	131.175	G	
6	7	4	12"	5'- 1 3/4"	0'- 4 1/2"	2'- 9"	0'- 5 7/8"	0'- 3 3/4"	20'- 4"	3'- 3 1/2"	20'- 10"	80	48	83.744	1.822	202.750	22'- 2"	6	21'- 10"	2	16	3.158	184.615	3.119	131.175	I	
6	8	4	12"	5'- 1 3/4"	0'- 4 1/2"	2'- 9"	0'- 5 7/8"	0'- 3 3/4"	20'- 4"	3'- 3 1/2"	20'- 10"	80	56	86.568	1.919	218.873	22'- 2"	6	21'- 10"	2	18	3.263	191.517	3.212	131.175	K	
7	4	4	12"	5'- 11 3/8"	0'- 4 1/2"	3'- 1 7/8"	0'- 5 7/8"	0'- 3 3/4"	23'- 4 1/8"	3'- 10 5/8"	23'- 10"	92	24	85.292	1.673	206.538	25'- 2"	6	24'- 10"	2	10	3.146	181.931	3.154	149.199	C	
7	6	4	12"	5'- 11 3/8"	0'- 4 1/2"	3'- 1 7/8"	0'- 5 7/8"	0'- 3 3/4"	23'- 4 1/8"	3'- 10 5/8"	23'- 10"	92	40	90.940	1.869	229.245	25'- 2"	6	24'- 10"	2	14	3.357	195.736	3.340	149.199	G	
7	8	4	12"	5'- 11 3/8"	0'- 4 1/2"	3'- 1 7/8"	0'- 5 7/8"	0'- 3 3/4"	23'- 4 1/8"	3'- 10 5/8"	23'- 10"	92	56	96.588	2.065	245.949	25'- 2"	6	24'- 10"	2	18	3.567	209.541	3.525	149.199	K	
7	10	4	11"	5'- 11 3/8"	0'- 4 1/2"	3'- 1 7/8"	0'- 5 7/8"	0'- 3 3/4"	23'- 4 1/8"	3'- 10 5/8"	23'- 10"	92	72	102.236	2.261	272.518	25'- 2"	6	24'- 10"	2	22	3.777	223.347	3.711	149.199	O	
8	4	4	10"	6'- 8 7/8"	0'- 4 1/2"	3'- 6 3/8"	0'- 5 7/8"	0'- 3 3/4"	26'- 3 7/8"	4'- 5 7/8"	26'- 10"	104	24	95.312	1.818	251.359	28'- 2"	6	27'- 10"	2	10	3.450	199.955	3.468	167.223	C	
8	6	4	10"	6'- 8 7/8"	0'- 4 1/2"	3'- 6 3/8"	0'- 5 7/8"	0'- 3 3/4"	26'- 3 7/8"	4'- 5 7/8"	26'- 10"	104	40	100.960	2.055	271.727	28'- 2"	6	27'- 10"	2	14	3.644	213.760	3.638	167.223	G	
8	8	4	10"	6'- 8 7/8"	0'- 5"	3'- 6 1/8"	0'- 6 1/2"	0'- 4 1/4"	26'- 3 7/8"	4'- 5 3/8"	26'- 11"	104	56	106.608	2.292	291.100	28'- 2"	6	27'- 10"	2	18	3.839	227.565	3.807	167.223	K	
8	10	4	9"	6'- 8 1/2"	0'- 5 1/4"	3'- 5 7/8"	0'- 6 7/8"	0'- 4 1/2"	26'- 3 7/8"	4'- 5 1/8"	26'- 11"	104	72	112.256	2.528	329.269	28'- 2"	6	27'- 10"	2	22	4.033	241.371	3.977	167.223	O	
9	4	4	9"	7'- 6 1/8"	0'- 5 1/4"	3'- 10 3/4"	0'- 6 7/8"	0'- 4 1/2"	29'- 4"	5'- 1/4"	29'- 11"	116	24	105.332	2.099	311.727	31'- 2"	6	30'- 10"	2	10	3.699	217.979	3.727	185.247	C	
9	6	4	9"	7'- 6"	0'- 5 1/2"	3'- 10 1/2"	0'- 7 1/4"	0'- 4 3/4"	29'- 4"	5'- 0"	30'- 0"	116	40	110.980	2.342	314.924	31'- 2"	6	30'- 10"	2	14	3.892	231.784	3.895	185.247	G	
9	8	4	9"	7'- 5 7/8"	0'- 5 3/4"	3'- 10 1/4"	0'- 7 5/8"	0'- 5"	29'- 4"	4'- 11 3/4"	30'- 0"	116	56	116.628	2.582	363.852	31'- 2"	6	30'- 10"	2	18	4.102	245.589	4.081	185.247	L	
9	10	4	9"	7'- 5 3/4"	0'- 6"	3'- 10"	0'- 8"	0'- 5 1/4"	29'- 4"	4'- 11 1/2"	30'- 1"	116	72	122.276	2.823	383.930	31'- 2"	6	30'- 10"	2	22	4.295	259.395	4.248	185.247	P	
9	12	4	8"	7'- 5 3/4"	0'- 6"	3'- 10"	0'- 8"	0'- 5 1/4"	29'- 4"	4'- 11 1/2"	30'- 1"	116	88	127.924	3.018	422.270	31'- 2"	6	30'- 10"	2	26	4.505	273.200	4.434	185.247	T	
10	4	4	8"	8'- 3 1/4"	0'- 6 1/4"	4'- 2 1/2"	0'- 8 3/8"	0'- 5 1/2"	32'- 4"	5'- 6 1/2"	33'- 1"	128	24	115.352	2.457	384.136	34'- 2"	6	33'- 10"	2	10	3.933	236.003	3.971	203.271	D	
10	6	4	9"	8'- 3 1/8"	0'- 6 1/2"	4'- 2 1/4"	0'- 8 5/8"	0'- 5 3/4"	32'- 4"	5'- 6 1/4"	33'- 1"	128	40	121.000	2.704	402.995	34'- 2"	6	33'- 10"	2	14	4.123	249.808	4.136	203.271	H	
10	8	4	8"	8'- 3 1/8"	0'- 6 1/2"	4'- 2 1/4"	0'- 8 5/8"	0'- 5 3/4"	32'- 4"	5'- 6 1/4"	33'- 1"	128	56	126.648	2.897	453.040	34'- 2"	6	33'- 10"	2	18	4.333	263.613	4.322	203.271	L	
10	10	4	8"	8'- 3"	0'- 6 3/4"	4'- 2"	0'- 9"	0'- 6"	32'- 4"	5'- 6"	33'- 2"	128	72	132.296	3.143	483.219	34'- 2"	6	33'- 10"	2	22	4.523	277.419	4.487	203.271	P	
10	12	5	11"	8'- 2 7/8"	0'- 7 1/8"	4'- 1 3/4"	0'- 9 1/2"	0'- 6 1/4"	32'- 4"	5'- 5 3/4"	33'- 2"	128	88	137.944	3.392	524.178	34'- 2"	6	33'- 10"	2	26	4.713	291.224	4.652	203.271	T	
12	6	5	9"	9'- 9 5/8"	0'- 8 7/8"	4'- 10 3/8"	0'- 10 7/8"	0'- 7 1/4"	38'- 4 1/8"	6'- 7 7/8"	39'- 4"	152	40	141.040	3.423	522.028	40'- 2"	6	39'- 10"	2	14	4.543	285.856	4.576	239.319	H	
12	8	5	9"	9'- 9 1/2"	0'- 8 3/8"	4'- 10 1/8"	0'- 11 1/4"	0'- 7 1/2"	38'- 4 1/8"	6'- 6 7/8"	39'- 4"	152	56	146.688	3.679	539.044	40'- 2"	6	39'- 10"	2	18	4.729	299.661	4.737	239.319	L	
12	10	5	9"	9'- 9 1/2"	0'- 8 3/8"	4'- 10 1/8"	0'- 11 1/4"	0'- 7 1/2"	38'- 4 1/8"	6'- 6 7/8"	39'- 4"	152	72	152.336	3.872	600.866	40'- 2"	6	39'- 10"	2	22	4.939	313.467	4.922	239.319	P	
12	12	5	9"	9'- 9 3/8"	0'- 8 5/8"	4'- 9 7/8"	0'- 11 5/8"	0'- 7 3/4"	38'- 4 1/8"	6'- 6 5/8"	39'- 5"	152	88	157.984	4.127	632.744	40'- 2"	6	39'- 10"	2	26	5.124	327.272	5.083	239.319	T	