

SPAN		HIGHT		REINFORCING STEEL											QUAN./LF		HEADWALLS							WINGWALL		
(FT.)	(FT.)	SIZE	SPACING C-C	a	b	c	d	e	f	g	LENGTH	NO. BL1 BARS	NO. BL2 BARS	REINFORCING STEEL (LBS./LONG. JT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS./LF)	HEADWALL LENGTH	SIZE	LENGTH	NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL (LBS)		OUTLET CONCRETE CL. A4 (CY)	OUTLET REINFORCING STEEL (LBS)
3	3	4	12"	2'- 8 3/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 3/8"	0'- 3 3/4"	7'- 7 1/8"	-----	7'- 11"	32	12	30.956	0.695	79.439	9'- 6"	6	9'- 2"	1	4	1.433	67.988	1.425	55.073	A
3	4	4	12"	2'- 8 3/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 3/8"	0'- 3 3/4"	7'- 7 1/8"	-----	7'- 11"	32	18	33.074	0.768	85.703	9'- 6"	6	9'- 2"	1	5	1.531	71.439	1.517	55.073	C
4	3	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 3/8"	0'- 3 3/4"	9'- 8"	-----	9'- 11"	40	12	37.636	0.792	92.688	11'- 6"	6	11'- 2"	1	4	1.635	80.004	1.634	67.089	A
4	4	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 3/8"	0'- 3 3/4"	9'- 8"	-----	9'- 11"	40	18	39.754	0.866	98.952	11'- 6"	6	11'- 2"	1	5	1.734	83.455	1.726	67.089	C
4	5	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 3/8"	0'- 3 3/4"	9'- 8"	-----	9'- 11"	40	24	41.872	0.940	105.216	11'- 6"	6	11'- 2"	1	6	1.833	86.907	1.819	67.089	E
4	6	4	12"	3'- 6 1/2"	0'- 4 1/2"	1'- 11 1/2"	0'- 5 3/8"	0'- 3 3/4"	9'- 8"	-----	9'- 11"	40	30	43.990	1.013	111.480	11'- 6"	6	11'- 2"	1	7	1.932	90.358	1.912	67.089	G
5	3	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 3/8"	0'- 3 3/4"	11'- 8"	-----	11'- 11"	48	12	44.316	0.889	118.851	13'- 6"	6	13'- 2"	1	4	1.837	92.020	1.843	79.105	A
5	4	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 3/8"	0'- 3 3/4"	11'- 8"	-----	11'- 11"	48	18	46.434	0.963	119.693	13'- 6"	6	13'- 2"	1	5	1.936	95.471	1.935	79.105	C
5	5	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 3/8"	0'- 3 3/4"	11'- 8"	-----	11'- 11"	48	24	48.552	1.037	125.957	13'- 6"	6	13'- 2"	1	6	2.035	98.923	2.028	79.105	E
5	6	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 3/8"	0'- 3 3/4"	11'- 8"	-----	11'- 11"	48	30	50.670	1.110	132.221	13'- 6"	6	13'- 2"	1	7	2.134	102.374	2.121	79.105	G
5	7	4	12"	4'- 4 1/8"	0'- 4 1/2"	2'- 4 1/4"	0'- 5 3/8"	0'- 3 3/4"	11'- 8"	-----	11'- 11"	48	36	52.788	1.184	143.907	13'- 6"	6	13'- 2"	1	8	2.233	105.825	2.214	79.105	I
6	4	4	12"	5'- 1 1/8"	0'- 5 3/4"	2'- 7 3/4"	0'- 7 5/8"	0'- 5"	13'- 8"	-----	14'- 0"	56	18	53.114	1.168	140.257	15'- 6"	6	15'- 2"	1	5	2.127	107.487	2.133	91.121	D
6	5	4	12"	5'- 1"	0'- 6"	2'- 7 1/2"	0'- 8"	0'- 5 1/4"	13'- 8"	-----	14'- 0"	56	24	55.232	1.264	146.966	15'- 6"	6	15'- 2"	1	6	2.220	110.939	2.220	91.121	F
6	6	4	12"	5'- 1"	0'- 6"	2'- 7 1/2"	0'- 8"	0'- 5 1/4"	13'- 8"	-----	14'- 0"	56	30	57.350	1.337	153.230	15'- 6"	6	15'- 2"	1	7	2.319	114.390	2.313	91.121	H
6	7	4	12"	5'- 1"	0'- 6"	2'- 7 1/2"	0'- 8"	0'- 5 1/4"	13'- 8"	-----	14'- 0"	56	36	59.468	1.411	159.494	15'- 6"	6	15'- 2"	1	8	2.418	117.841	2.406	91.121	J
6	8	4	12"	5'- 3/8"	0'- 6 1/4"	2'- 7 1/4"	0'- 8 3/8"	0'- 5 1/2"	13'- 8"	-----	14'- 1"	56	42	61.586	1.506	165.869	15'- 6"	6	15'- 2"	1	9	2.511	121.293	2.492	91.121	L
7	4	4	10"	5'- 10 5/8"	0'- 7"	2'- 11 3/8"	0'- 9 3/8"	0'- 6 1/4"	15'- 8 1/8"	-----	16'- 1"	64	18	59.794	1.404	166.388	17'- 6"	6	17'- 2"	1	5	2.285	119.503	2.297	103.137	D
7	6	4	10"	5'- 10"	0'- 7 1/4"	2'- 11 1/8"	0'- 9 3/4"	0'- 6 1/2"	15'- 8 1/8"	-----	16'- 2"	64	30	64.030	1.577	169.507	17'- 6"	6	17'- 2"	1	7	2.475	126.406	2.475	103.137	H
7	8	4	10"	5'- 9 3/8"	0'- 7 1/2"	2'- 10 3/8"	0'- 10 1/8"	0'- 6 3/4"	15'- 8 1/8"	-----	16'- 2"	64	42	68.266	1.748	193.136	17'- 6"	6	17'- 2"	1	9	2.666	133.309	2.653	103.137	L
7	10	4	10"	5'- 9 3/4"	0'- 7 3/4"	2'- 10 5/8"	0'- 10 1/2"	0'- 7"	15'- 8 1/8"	-----	16'- 2"	64	54	72.502	1.917	234.183	17'- 6"	6	17'- 2"	1	11	2.856	140.211	2.831	103.137	P
8	4	4	9"	6'- 7"	0'- 8 1/4"	3'- 2 3/8"	0'- 11 1/8"	0'- 7 1/2"	17'- 7 3/8"	-----	18'- 2"	72	18	66.474	1.669	211.543	19'- 6"	6	19'- 2"	1	5	2.427	131.519	2.446	115.153	D
8	6	4	9"	6'- 6 3/8"	0'- 8 1/2"	3'- 2 3/8"	0'- 11 1/2"	0'- 7 3/4"	17'- 7 3/8"	-----	18'- 2"	72	30	70.710	1.845	212.929	19'- 6"	6	19'- 2"	1	7	2.616	138.422	2.622	115.153	H
8	8	4	9"	6'- 6 3/4"	0'- 8 3/4"	3'- 2 3/8"	0'- 11 3/8"	0'- 8"	17'- 7 3/8"	-----	18'- 3"	72	42	74.946	2.019	238.751	19'- 6"	6	19'- 2"	1	9	2.804	145.325	2.799	115.153	L
8	10	4	9"	6'- 6 5/8"	0'- 9"	3'- 2 1/8"	1'- 1/4"	0'- 8 1/4"	17'- 7 3/8"	-----	18'- 3"	72	54	79.182	2.192	272.727	19'- 6"	6	19'- 2"	1	11	2.993	152.227	2.975	115.153	P
9	4	5	9"	7'- 4"	0'- 9 5/8"	3'- 6 1/2"	1'- 1"	0'- 8 3/4"	19'- 8"	-----	20'- 3"	80	18	73.154	1.964	270.991	21'- 6"	6	21'- 2"	1	5	2.553	143.535	2.579	127.169	D
9	6	5	9"	7'- 3 3/8"	0'- 9 3/8"	3'- 6 1/4"	1'- 1 3/8"	0'- 9"	19'- 8"	-----	20'- 3"	80	30	77.390	2.143	271.500	21'- 6"	6	21'- 2"	1	7	2.740	150.438	2.754	127.169	H
9	8	5	9"	7'- 3 3/8"	0'- 9 3/8"	3'- 6 1/4"	1'- 1 3/8"	0'- 9"	19'- 8"	-----	20'- 3"	80	42	81.626	2.289	297.787	21'- 6"	6	21'- 2"	1	9	2.938	157.341	2.939	127.169	L
9	10	5	9"	7'- 3 3/4"	0'- 10 1/8"	3'- 6"	1'- 1 3/4"	0'- 9 1/4"	19'- 8"	-----	20'- 4"	80	54	85.862	2.465	340.082	21'- 6"	6	21'- 2"	1	11	3.126	164.243	3.114	127.169	P
9	12	5	9"	7'- 3 3/8"	0'- 10 3/8"	3'- 5 3/4"	1'- 2 1/8"	0'- 9 1/2"	19'- 8"	-----	20'- 4"	80	66	90.098	2.639	403.252	21'- 6"	6	21'- 2"	1	13	3.313	171.146	3.289	127.169	T
10	4	5	9"	8'- 3/8"	0'- 11 1/8"	3'- 9 3/4"	1'- 3 1/8"	0'- 10 1/4"	21'- 8"	-----	22'- 4"	88	18	79.834	2.325	317.650	23'- 6"	6	23'- 2"	1	5	2.652	155.551	2.685	139.185	D
10	6	5	9"	8'- 3/8"	0'- 11 1/8"	3'- 9 3/4"	1'- 3 1/8"	0'- 10 1/4"	21'- 8"	-----	22'- 4"	88	30	84.070	2.472	330.715	23'- 6"	6	23'- 2"	1	7	2.850	162.454	2.870	139.185	H
10	8	5	9"	8'- 3/4"	0'- 11 3/8"	3'- 9 1/2"	1'- 3 1/2"	0'- 10 1/2"	21'- 8"	-----	22'- 5"	88	42	88.306	2.653	344.662	23'- 6"	6	23'- 2"	1	9	3.036	169.357	3.043	139.185	L
10	10	5	9"	8'- 5/8"	0'- 11 5/8"	3'- 9 1/4"	1'- 3 3/8"	0'- 10 3/4"	21'- 8"	-----	22'- 5"	88	54	92.542	2.832	387.593	23'- 6"	6	23'- 2"	1	11	3.221	176.259	3.217	139.185	P
10	12	5	9"	8'- 5/8"	0'- 11 5/8"	3'- 9 1/4"	1'- 3 3/8"	0'- 10 3/4"	21'- 8"	-----	22'- 5"	88	66	96.778	2.975	450.860	23'- 6"	6	23'- 2"	1	13	3.419	183.162	3.402	139.185	T
12	6	6	8"	9'- 6 1/2"	1'- 2 1/2"	4'- 4 1/8"	1'- 7 3/4"	1'- 1 1/2"	25'- 8 1/8"	-----	26'- 7"	104	30	97.430	3.344	436.565	27'- 6"	6	27'- 2"	1	7	2.996	186.486	3.029	163.217	I
12	8	6	8"	9'- 6 1/2"	1'- 2 1/2"	4'- 4 1/8"	1'- 7 3/4"	1'- 1 1/2"	25'- 8 1/8"	-----	26'- 7"	104	42	101.666	3.491	450.429	27'- 6"	6	27'- 2"	1	9	3.194	193.389	3.215	163.217	M
12	10	6	8"	9'- 6 3/8"	1'- 2 3/4"	4'- 3 3/8"	1'- 8 1/8"	1'- 1 3/4"	25'- 8 1/8"	-----	26'- 7"	104	54	105.902	3.675	506.997	27'- 6"	6	27'- 2"	1	11	3.376	200.291	3.385	163.217	Q
12	12	6	8"	9'- 6 3/8"	1'- 2 3/4"	4'- 3 3/8"	1'- 8 1/8"	1'- 1 3/4"	25'- 8 1/8"	-----	26'- 7"	104	66	110.138	3.818	568.012	27'- 6"	6	27'- 2"	1	13	3.574	207.194	3.570	163.217	U

STRUCTURE AND BRIDGE DIVISION

DOUBLE BOX CULVERTS
15 TO 20 FT. FILLS
VIRGINIA DEPARTMENT OF TRANSPORTATION