

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	HW I 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 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	7'- 7 7/8"	-----	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 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	7'- 7 7/8"	-----	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'- 5 3/4"	0'- 6"	1'-10"	0'- 8"	0'- 5 1/4"	9'- 8"	-----	10'- 0"	40	12	37.636	0.885	93.913	11'- 6"	6	11'- 2"	1	4	1.636	80.004	1.635	67.089	B
4	4	4	12"	3'- 5 3/4"	0'- 6"	1'-10"	0'- 8"	0'- 5 1/4"	9'- 8"	-----	10'- 0"	40	18	39.754	0.958	100.177	11'- 6"	6	11'- 2"	1	5	1.735	83.455	1.728	67.089	D
4	5	4	12"	3'- 5 3/4"	0'- 6"	1'-10"	0'- 8"	0'- 5 1/4"	9'- 8"	-----	10'- 0"	40	24	41.872	1.032	106.441	11'- 6"	6	11'- 2"	1	6	1.834	86.907	1.821	67.089	F
4	6	4	12"	3'- 5 3/4"	0'- 5 3/4"	1'-10 1/4"	0'- 7 5/8"	0'- 5"	9'- 8"	-----	10'- 0"	40	30	43.990	1.090	119.125	11'- 6"	6	11'- 2"	1	7	1.936	90.358	1.916	67.089	H
5	3	4	12"	4'- 2 5/8"	0'- 7 1/2"	2'- 1 1/4"	0'-10 1/8"	0'- 6 3/4"	11'- 8"	-----	12'- 2"	48	12	44.316	1.112	108.497	13'- 6"	6	13'- 2"	1	4	1.803	92.020	1.809	79.105	B
5	4	4	12"	4'- 2 5/8"	0'- 7 1/2"	2'- 1 1/4"	0'-10 1/8"	0'- 6 3/4"	11'- 8"	-----	12'- 2"	48	18	46.434	1.186	114.761	13'- 6"	6	13'- 2"	1	5	1.902	95.471	1.902	79.105	D
5	5	4	12"	4'- 2 5/8"	0'- 7 1/2"	2'- 1 1/4"	0'-10 1/8"	0'- 6 3/4"	11'- 8"	-----	12'- 2"	48	24	48.552	1.259	121.025	13'- 6"	6	13'- 2"	1	6	2.001	98.923	1.994	79.105	F
5	6	4	12"	4'- 2 1/2"	0'- 7 3/4"	2'- 1"	0'-10 1/2"	0'- 7"	11'- 8"	-----	12'- 2"	48	30	50.670	1.351	134.559	13'- 6"	6	13'- 2"	1	7	2.096	102.374	2.083	79.105	H
5	7	4	12"	4'- 2 1/2"	0'- 7 3/4"	2'- 1"	0'-10 1/2"	0'- 7"	11'- 8"	-----	12'- 2"	48	36	52.788	1.424	148.517	13'- 6"	6	13'- 2"	1	8	2.195	105.825	2.175	79.105	J
6	4	4	10"	4'-11 1/4"	0'- 9 1/2"	2'- 4"	1'- 7/8"	0'- 8 3/4"	13'- 8"	-----	14'- 3"	56	18	53.114	1.492	143.396	15'- 6"	6	15'- 2"	1	5	2.039	107.487	2.045	91.121	D
6	5	4	10"	4'-11 1/4"	0'- 9 1/2"	2'- 4"	1'- 7/8"	0'- 8 3/4"	13'- 8"	-----	14'- 3"	56	24	55.232	1.566	149.927	15'- 6"	6	15'- 2"	1	6	2.138	110.939	2.137	91.121	F
6	6	4	10"	4'-11 1/4"	0'- 9 1/2"	2'- 4"	1'- 7/8"	0'- 8 3/4"	13'- 8"	-----	14'- 3"	56	30	57.350	1.639	156.459	15'- 6"	6	15'- 2"	1	7	2.237	114.390	2.230	91.121	H
6	7	4	10"	4'-11 1/4"	0'- 9 1/2"	2'- 4"	1'- 7/8"	0'- 8 3/4"	13'- 8"	-----	14'- 3"	56	36	59.468	1.712	174.001	15'- 6"	6	15'- 2"	1	8	2.336	117.841	2.323	91.121	J
6	8	4	10"	4'-11 1/4"	0'- 9 1/2"	2'- 4"	1'- 7/8"	0'- 8 3/4"	13'- 8"	-----	14'- 3"	56	42	61.586	1.785	193.809	15'- 6"	6	15'- 2"	1	9	2.434	121.293	2.416	91.121	L
7	4	4	9"	5'- 7 3/4"	0'-11 3/4"	2'- 6 5/8"	1'- 4 1/8"	0'-11"	15'- 8 1/8"	-----	16'- 5"	64	18	59.794	1.872	184.707	17'- 6"	6	17'- 2"	1	5	2.162	119.503	2.174	103.137	E
7	6	4	9"	5'- 7 5/8"	1'- 0"	2'- 6 3/8"	1'- 4 1/2"	0'-11 1/4"	15'- 8 1/8"	-----	16'- 6"	64	30	64.030	2.044	198.274	17'- 6"	6	17'- 2"	1	7	2.352	126.406	2.352	103.137	I
7	8	4	9"	5'- 7 5/8"	1'- 0"	2'- 6 3/8"	1'- 4 1/2"	0'-11 1/4"	15'- 8 1/8"	-----	16'- 6"	64	42	68.266	2.189	234.476	17'- 6"	6	17'- 2"	1	9	2.550	133.309	2.538	103.137	M
7	10	4	9"	5'- 7 5/8"	1'- 0"	2'- 6 3/8"	1'- 4 1/2"	0'-11 1/4"	15'- 8 1/8"	-----	16'- 6"	64	54	72.502	2.333	285.487	17'- 6"	6	17'- 2"	1	11	2.748	140.211	2.723	103.137	Q
8	4	5	9"	6'- 4 3/8"	1'- 1 5/8"	2'- 9 5/8"	1'- 6 5/8"	1'- 3 1/4"	17'- 7 7/8"	-----	18'- 6"	72	18	66.474	2.249	260.195	19'- 6"	6	19'- 2"	1	5	2.256	131.519	2.275	115.153	E
8	6	5	9"	6'- 4 1/4"	1'- 1 7/8"	2'- 9 3/8"	1'- 7"	1'- 1"	17'- 7 7/8"	-----	18'- 6"	72	30	70.710	2.424	273.995	19'- 6"	6	19'- 2"	1	7	2.445	138.422	2.452	115.153	I
8	8	5	9"	6'- 4 1/4"	1'- 1 7/8"	2'- 9 3/8"	1'- 7"	1'- 1"	17'- 7 7/8"	-----	18'- 6"	72	42	74.946	2.570	297.465	19'- 6"	6	19'- 2"	1	9	2.643	145.325	2.637	115.153	M
8	10	5	9"	6'- 4 3/8"	1'- 1 5/8"	2'- 9 5/8"	1'- 6 5/8"	1'- 3 1/4"	17'- 7 7/8"	-----	18'- 6"	72	54	79.182	2.686	355.228	19'- 6"	6	19'- 2"	1	11	2.850	152.227	2.832	115.153	Q
9	4	6	9"	7'- 1"	1'- 3 3/4"	3'- 1/2"	1'- 9 5/8"	1'- 2 3/4"	19'- 8"	-----	20'- 8"	80	18	73.154	2.702	311.429	21'- 6"	6	21'- 2"	1	5	2.319	143.535	2.345	127.169	E
9	6	6	9"	7'- 1"	1'- 3 3/4"	3'- 1/2"	1'- 9 5/8"	1'- 2 3/4"	19'- 8"	-----	20'- 8"	80	30	77.390	2.849	325.382	21'- 6"	6	21'- 2"	1	7	2.517	150.438	2.530	127.169	I
9	8	6	9"	7'- 1"	1'- 3 3/4"	3'- 1/2"	1'- 9 5/8"	1'- 2 3/4"	19'- 8"	-----	20'- 8"	80	42	81.626	2.994	364.449	21'- 6"	6	21'- 2"	1	9	2.714	157.341	2.715	127.169	M
9	10	6	9"	7'- 1"	1'- 3 3/4"	3'- 1/2"	1'- 9 5/8"	1'- 2 3/4"	19'- 8"	-----	20'- 8"	80	54	85.862	3.138	420.579	21'- 6"	6	21'- 2"	1	11	2.912	164.243	2.901	127.169	Q
9	12	6	9"	7'- 2 1/4"	1'- 3 3/4"	3'- 1/2"	1'- 9 5/8"	1'- 2 3/4"	19'-10 1/2"	-----	20'-11"	80	66	90.098	3.399	480.691	21'- 6"	6	21'- 2"	1	13	2.994	171.146	2.969	127.169	U
10	4	6	8"	7'- 9 3/4"	1'- 5 1/2"	3'- 3 1/2"	2'- 0"	1'- 4 1/2"	21'- 8"	-----	22'- 9"	88	18	79.834	3.171	346.475	23'- 6"	6	23'- 2"	1	5	2.369	155.551	2.401	139.185	E
10	6	6	8"	7'- 9 3/4"	1'- 5 1/2"	3'- 3 1/2"	2'- 0"	1'- 4 1/2"	21'- 8"	-----	22'- 9"	88	30	84.070	3.318	360.873	23'- 6"	6	23'- 2"	1	7	2.566	162.454	2.586	139.185	I
10	8	6	9"	7'- 9 3/4"	1'- 5 1/2"	3'- 3 1/2"	2'- 0"	1'- 4 1/2"	21'- 8"	-----	22'- 9"	88	42	88.306	3.462	420.359	23'- 6"	6	23'- 2"	1	9	2.764	169.357	2.772	139.185	M
10	10	6	9"	7'- 9 3/8"	1'- 5 1/4"	3'- 3 3/4"	1'-11 3/4"	1'- 4 1/4"	21'- 8"	-----	22'- 9"	88	54	92.542	3.569	514.893	23'- 6"	6	23'- 2"	1	11	2.974	176.259	2.969	139.185	Q
10	12	6	9"	7'-11 1/8"	1'- 5 1/4"	3'- 3 3/4"	1'-11 3/4"	1'- 4 1/4"	21'-10 1/2"	-----	23'- 0"	88	66	96.778	3.834	538.338	23'- 6"	6	23'- 2"	1	13	3.054	183.162	3.036	139.185	U
12	6	7	9"	9'- 3"	1'- 9 5/8"	3'- 9 1/4"	2'- 5 3/4"	1'- 8 3/8"	25'- 8"	-----	27'- 1"	104	30	97.430	4.461	512.322	27'- 6"	6	27'- 2"	1	7	2.589	186.486	2.623	163.217	J
12	8	7	9"	9'- 3"	1'- 9 5/8"	3'- 9 1/4"	2'- 5 3/4"	1'- 8 3/8"	25'- 8"	-----	27'- 1"	104	42	101.666	4.606	557.349	27'- 6"	6	27'- 2"	1	9	2.787	193.389	2.808	163.217	N
12	10	7	9"	9'- 3"	1'- 9 5/8"	3'- 9 1/4"	2'- 5 3/4"	1'- 8 3/8"	25'- 8"	-----	27'- 1"	104	54	105.902	4.750	617.101	27'- 6"	6	27'- 2"	1	11	2.985	200.291	2.994	163.217	R
12	12	7	9"	9'- 4 1/8"	1'- 9 7/8"	3'- 9"	2'- 6 1/8"	1'- 8 5/8"	25'-10 1/2"	-----	27'- 4"	104	66	110.138	5.058	684.910	27'- 6"	6	27'- 2"	1	13	3.044	207.194	3.039	163.217	V

STRUCTURE AND BRIDGE DIVISION

DOUBLE BOX CULVERTS
30 TO 35 FT. FILLS
VIRGINIA DEPARTMENT OF TRANSPORTATION