

SPAN		HGHT		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 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 3/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 3/8"	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'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	9'- 8"	-----	9'-11"	40	12	37.636	0.823	93.133	11'- 6"	6	11'- 2"	1	4	1.629	80.004	1.628	67.089	A
4	4	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	9'- 8"	-----	9'-11"	40	18	39.754	0.897	99.397	11'- 6"	6	11'- 2"	1	5	1.728	83.455	1.721	67.089	C
4	5	4	12"	3'- 6 1/8"	0'- 5 1/4"	1'-10 3/4"	0'- 6 3/8"	0'- 4 1/2"	9'- 8"	-----	10'- 0"	40	24	41.872	0.986	105.995	11'- 6"	6	11'- 2"	1	6	1.824	86.907	1.811	67.089	E
4	6	4	12"	3'- 6 1/8"	0'- 5 1/4"	1'-10 3/4"	0'- 6 3/8"	0'- 4 1/2"	9'- 8"	-----	10'- 0"	40	30	43.990	1.059	112.259	11'- 6"	6	11'- 2"	1	7	1.923	90.358	1.903	67.089	G
5	3	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	11'- 8"	-----	12'- 1"	48	12	44.316	1.057	107.941	13'- 6"	6	13'- 2"	1	4	1.816	92.020	1.822	79.105	B
5	4	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	11'- 8"	-----	12'- 1"	48	18	46.434	1.130	114.205	13'- 6"	6	13'- 2"	1	5	1.915	95.471	1.915	79.105	D
5	5	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	11'- 8"	-----	12'- 1"	48	24	48.552	1.204	120.469	13'- 6"	6	13'- 2"	1	6	2.014	98.923	2.007	79.105	F
5	6	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	11'- 8"	-----	12'- 1"	48	30	50.670	1.277	134.002	13'- 6"	6	13'- 2"	1	7	2.113	102.374	2.100	79.105	H
5	7	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	11'- 8"	-----	12'- 1"	48	36	52.788	1.350	145.689	13'- 6"	6	13'- 2"	1	8	2.212	105.825	2.193	79.105	J
6	4	4	11"	4'-11 5/8"	0'- 8 3/4"	2'- 4 3/4"	0'-11 1/8"	0'- 8"	13'- 8"	-----	14'- 3"	56	18	53.114	1.428	135.328	15'- 6"	6	15'- 2"	1	5	2.056	107.487	2.062	91.121	D
6	5	4	11"	4'-11 5/8"	0'- 8 3/4"	2'- 4 3/4"	0'-11 1/8"	0'- 8"	13'- 8"	-----	14'- 3"	56	24	55.232	1.502	141.713	15'- 6"	6	15'- 2"	1	6	2.155	110.939	2.155	91.121	F
6	6	4	11"	4'-11 3/4"	0'- 8 1/2"	2'- 5"	0'-11 1/2"	0'- 7 3/4"	13'- 8"	-----	14'- 2"	56	30	57.350	1.553	156.232	15'- 6"	6	15'- 2"	1	7	2.260	114.390	2.254	91.121	H
6	7	4	10"	4'-11 3/4"	0'- 8 1/2"	2'- 5"	0'-11 1/2"	0'- 7 3/4"	13'- 8"	-----	14'- 2"	56	36	59.468	1.626	171.469	15'- 6"	6	15'- 2"	1	8	2.359	117.841	2.347	91.121	J
6	8	4	10"	4'-11 3/4"	0'- 8 1/2"	2'- 5"	0'-11 1/2"	0'- 7 3/4"	13'- 8"	-----	14'- 2"	56	42	61.586	1.699	188.965	15'- 6"	6	15'- 2"	1	9	2.458	121.293	2.439	91.121	L
7	4	4	9"	5'- 8 1/2"	0'-10 1/4"	2'- 8 1/8"	1'- 2"	0'- 9 1/2"	15'- 8 1/8"	-----	16'- 4"	64	18	59.794	1.724	183.296	17'- 6"	6	17'- 2"	1	5	2.188	119.503	2.200	103.137	D
7	6	4	9"	5'- 8 1/2"	0'-10 1/4"	2'- 8 1/8"	1'- 2"	0'- 9 1/2"	15'- 8 1/8"	-----	16'- 4"	64	30	64.030	1.871	196.715	17'- 6"	6	17'- 2"	1	7	2.386	126.406	2.386	103.137	H
7	8	4	9"	5'- 8 1/2"	0'-10 1/4"	2'- 8 1/8"	1'- 2"	0'- 9 1/2"	15'- 8 1/8"	-----	16'- 4"	64	42	68.266	2.017	226.831	17'- 6"	6	17'- 2"	1	9	2.584	133.309	2.571	103.137	L
7	10	4	9"	5'- 8 1/2"	0'-10 1/4"	2'- 8 1/8"	1'- 2"	0'- 9 1/2"	15'- 8 1/8"	-----	16'- 4"	64	54	72.502	2.161	275.694	17'- 6"	6	17'- 2"	1	11	2.781	140.211	2.757	103.137	P
8	4	4	8"	6'- 5 1/8"	1'- 0"	2'-11 1/8"	1'- 4 1/2"	0'-11 1/4"	17'- 7 7/8"	-----	18'- 5"	72	18	66.474	2.085	219.095	19'- 6"	6	19'- 2"	1	5	2.310	131.519	2.329	115.153	E
8	6	4	8"	6'- 5 1/8"	1'- 0"	2'-11 1/8"	1'- 4 1/2"	0'-11 1/4"	17'- 7 7/8"	-----	18'- 5"	72	30	70.710	2.232	232.958	19'- 6"	6	19'- 2"	1	7	2.508	138.422	2.515	115.153	I
8	8	4	8"	6'- 5 1/8"	1'- 0"	2'-11 1/8"	1'- 4 1/2"	0'-11 1/4"	17'- 7 7/8"	-----	18'- 5"	72	42	74.946	2.378	265.997	19'- 6"	6	19'- 2"	1	9	2.706	145.325	2.700	115.153	M
8	10	4	8"	6'- 5 1/8"	1'- 0"	2'-11 1/8"	1'- 4 1/2"	0'-11 1/4"	17'- 7 7/8"	-----	18'- 5"	72	54	79.182	2.522	318.363	19'- 6"	6	19'- 2"	1	11	2.904	152.227	2.886	115.153	Q
9	4	5	9"	7'- 1 7/8"	1'- 1 3/8"	3'- 2 1/4"	1'- 7"	1'- 1"	19'- 8"	-----	20'- 7"	80	18	73.154	2.488	283.677	21'- 6"	6	21'- 2"	1	5	2.393	143.535	2.418	127.169	E
9	6	5	9"	7'- 1 7/8"	1'- 1 3/8"	3'- 2 1/4"	1'- 7"	1'- 1"	19'- 8"	-----	20'- 7"	80	30	77.390	2.635	297.339	21'- 6"	6	21'- 2"	1	7	2.590	150.438	2.604	127.169	I
9	8	5	9"	7'- 1 3/4"	1'- 2 1/8"	3'- 2"	1'- 7 3/8"	1'- 1 1/4"	19'- 8"	-----	20'- 7"	80	42	81.626	2.811	331.170	21'- 6"	6	21'- 2"	1	9	2.778	157.341	2.779	127.169	M
9	10	5	9"	7'- 1 3/4"	1'- 2 1/8"	3'- 2"	1'- 7 3/8"	1'- 1 1/4"	19'- 8"	-----	20'- 7"	80	54	85.862	2.956	372.645	21'- 6"	6	21'- 2"	1	11	2.976	164.243	2.964	127.169	Q
9	12	5	9"	7'- 2 1/4"	1'- 2 1/8"	3'- 2"	1'- 7 3/8"	1'- 1 1/4"	19'- 9"	-----	20'- 8"	80	66	90.098	3.145	447.204	21'- 6"	6	21'- 2"	1	13	3.128	171.146	3.104	127.169	U
10	4	5	8"	7'-10 3/8"	1'- 3 1/8"	3'- 5 3/4"	1'- 8 3/4"	1'- 2 1/4"	21'- 8"	-----	22'- 8"	88	18	79.834	2.868	312.906	23'- 6"	6	23'- 2"	1	5	2.477	155.551	2.510	139.185	E
10	6	6	9"	7'-10 3/4"	1'- 3 1/2"	3'- 5 1/2"	1'- 9 1/4"	1'- 2 1/2"	21'- 8"	-----	22'- 8"	88	30	84.070	3.048	351.287	23'- 6"	6	23'- 2"	1	7	2.663	162.454	2.683	139.185	I
10	8	6	9"	7'-10 3/4"	1'- 3 1/2"	3'- 5 1/2"	1'- 9 1/4"	1'- 2 1/2"	21'- 8"	-----	22'- 8"	88	42	88.306	3.193	384.857	23'- 6"	6	23'- 2"	1	9	2.861	169.357	2.869	139.185	M
10	10	6	9"	7'-10 3/8"	1'- 3 3/4"	3'- 5 1/4"	1'- 9 5/8"	1'- 2 3/4"	21'- 8"	-----	22'- 8"	88	54	92.542	3.371	439.031	23'- 6"	6	23'- 2"	1	11	3.047	176.259	3.042	139.185	Q
10	12	6	9"	7'-11"	1'- 4"	3'- 5"	1'- 9 3/8"	1'- 3"	21'- 9"	-----	22'- 9"	88	66	96.778	3.595	507.054	23'- 6"	6	23'- 2"	1	13	3.186	183.162	3.168	139.185	U
12	6	7	9"	9'- 4 1/4"	1'- 7 1/8"	3'-11 3/4"	2'- 2 1/8"	1'- 5 1/8"	25'- 8"	-----	26'-11"	104	30	97.430	4.060	508.772	27'- 6"	6	27'- 2"	1	7	2.741	186.486	2.765	163.217	J
12	8	7	9"	9'- 4 1/4"	1'- 7 1/8"	3'-11 3/4"	2'- 2 1/8"	1'- 5 1/8"	25'- 8"	-----	26'-11"	104	42	101.666	4.206	545.503	27'- 6"	6	27'- 2"	1	9	2.939	193.389	2.960	163.217	N
12	10	7	9"	9'- 4 1/4"	1'- 7 1/8"	3'-11 3/4"	2'- 2 1/8"	1'- 5 1/8"	25'- 8"	-----	26'-11"	104	54	105.902	4.350	600.110	27'- 6"	6	27'- 2"	1	11	3.137	200.291	3.145	163.217	R
12	12	7	9"	9'- 4 5/8"	1'- 7 3/8"	3'-11 1/2"	2'- 2 1/2"	1'- 6 1/8"	25'- 9"	-----	27'- 0"	104	66	110.138	4.581	673.249	27'- 6"	6	27'- 2"	1	13	3.271	207.194	3.267	163.217	V

STRUCTURE AND BRIDGE DIVISION

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