

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	HW1 SIZE	HW1 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'- 8/4"	0'- 5 3/4"	1'- 5 3/8"	0'- 7 5/8"	0'- 5"	7'- 7 7/8"	-----	8'- 0"	32	12	30.956	0.756	80.219	9'- 6"	6	9'- 2"	1	4	1.445	67.988	1.437	55.073	B
3	4	4	12"	2'- 8/4"	0'- 5 3/4"	1'- 5 3/8"	0'- 7 5/8"	0'- 5"	7'- 7 7/8"	-----	8'- 0"	32	18	33.074	0.830	86.483	9'- 6"	6	9'- 2"	1	5	1.544	71.439	1.530	55.073	D
4	3	4	12"	3'- 4 3/4"	0'- 8"	1'- 8"	0'- 10 3/4"	0'- 7 1/4"	9'- 8"	-----	10'- 2"	40	12	37.636	1.008	95.471	11'- 6"	6	11'- 2"	1	4	1.614	80.004	1.613	67.089	B
4	4	4	12"	3'- 4 3/8"	0'- 7 3/4"	1'- 8 1/4"	0'- 10 1/2"	0'- 7"	9'- 8"	-----	10'- 2"	40	18	39.754	1.066	101.513	11'- 6"	6	11'- 2"	1	5	1.716	83.455	1.708	67.089	D
4	5	4	12"	3'- 4 3/8"	0'- 7 3/4"	1'- 8 1/4"	0'- 10 1/2"	0'- 7"	9'- 8"	-----	10'- 2"	40	24	41.872	1.140	107.777	11'- 6"	6	11'- 2"	1	6	1.815	86.907	1.801	67.089	F
4	6	4	12"	3'- 4 3/8"	0'- 7 3/4"	1'- 8 1/4"	0'- 10 1/2"	0'- 7"	9'- 8"	-----	10'- 2"	40	30	43.990	1.212	128.959	11'- 6"	6	11'- 2"	1	7	1.913	90.358	1.894	67.089	H
5	3	4	10"	4'- 1 1/4"	0'- 10 1/4"	1'- 10 1/2"	1'- 2"	0'- 9 1/2"	11'- 8"	-----	12'- 4"	48	12	44.316	1.315	122.882	13'- 6"	6	13'- 2"	1	4	1.755	92.020	1.761	79.105	B
5	4	4	10"	4'- 1 1/4"	0'- 10 1/4"	1'- 10 1/2"	1'- 2"	0'- 9 1/2"	11'- 8"	-----	12'- 4"	48	18	46.434	1.388	129.413	13'- 6"	6	13'- 2"	1	5	1.854	95.471	1.853	79.105	D
5	5	4	10"	4'- 1 1/4"	0'- 10 1/4"	1'- 10 1/2"	1'- 2"	0'- 9 1/2"	11'- 8"	-----	12'- 4"	48	24	48.552	1.462	135.944	13'- 6"	6	13'- 2"	1	6	1.953	98.923	1.946	79.105	F
5	6	4	10"	4'- 1 1/4"	0'- 10 1/4"	1'- 10 1/2"	1'- 2"	0'- 9 1/2"	11'- 8"	-----	12'- 4"	48	30	50.670	1.535	146.038	13'- 6"	6	13'- 2"	1	7	2.052	102.374	2.039	79.105	H
5	7	4	10"	4'- 1 3/8"	0'- 10"	1'- 10 3/4"	1'- 1 5/8"	0'- 9 1/4"	11'- 8"	-----	12'- 4"	48	36	52.788	1.589	171.061	13'- 6"	6	13'- 2"	1	8	2.155	105.825	2.136	79.105	J
6	4	4	9"	4'- 9 5/8"	1'- 3/4"	2'- 3/4"	1'- 5 1/2"	1'- 0"	13'- 8"	-----	14'- 6"	56	18	53.114	1.771	169.303	15'- 6"	6	15'- 2"	1	5	1.980	107.487	1.986	91.121	E
6	5	4	9"	4'- 9 3/4"	1'- 1/2"	2'- 1"	1'- 5 1/8"	0'- 11 3/4"	13'- 8"	-----	14'- 6"	56	24	55.232	1.823	176.280	15'- 6"	6	15'- 2"	1	6	2.085	110.939	2.085	91.121	G
6	6	4	9"	4'- 9 3/4"	1'- 1/2"	2'- 1"	1'- 5 1/8"	0'- 11 3/4"	13'- 8"	-----	14'- 6"	56	30	57.350	1.896	186.331	15'- 6"	6	15'- 2"	1	7	2.184	114.390	2.178	91.121	I
6	7	4	9"	4'- 9 3/4"	1'- 1/2"	2'- 1"	1'- 5 1/8"	0'- 11 3/4"	13'- 8"	-----	14'- 6"	56	36	59.468	1.969	211.145	15'- 6"	6	15'- 2"	1	8	2.283	117.841	2.270	91.121	K
6	8	4	9"	4'- 9 3/8"	1'- 1/4"	2'- 1 1/4"	1'- 4 3/4"	0'- 11 1/2"	13'- 8"	-----	14'- 5"	56	42	61.586	2.020	230.506	15'- 6"	6	15'- 2"	1	9	2.388	121.293	2.369	91.121	M
7	4	5	9"	5'- 6 1/4"	1'- 2 3/8"	2'- 3 5/8"	1'- 8 3/8"	1'- 2"	15'- 8 1/8"	-----	16'- 7"	64	18	59.794	2.164	238.216	17'- 6"	6	17'- 2"	1	5	2.072	119.503	2.085	103.137	E
7	6	5	8"	5'- 6"	1'- 3 3/8"	2'- 3 1/8"	1'- 9 1/8"	1'- 2 1/2"	15'- 8 1/8"	-----	16'- 8"	64	30	64.030	2.360	258.830	17'- 6"	6	17'- 2"	1	7	2.255	126.406	2.255	103.137	I
7	8	4	8"	5'- 6"	1'- 3 3/4"	2'- 3 3/8"	1'- 9"	1'- 2 1/2"	15'- 8 1/8"	-----	16'- 8"	64	42	68.266	2.506	284.695	17'- 6"	6	17'- 2"	1	9	2.453	133.309	2.441	103.137	M
7	10	4	8"	5'- 8"	1'- 2 3/4"	2'- 3 3/8"	1'- 8 3/8"	1'- 2"	15'- 11 5/8"	-----	16'- 11"	64	54	72.502	2.742	335.917	17'- 6"	6	17'- 2"	1	11	2.526	140.211	2.500	103.137	Q
8	4	6	9"	6'- 2 1/2"	1'- 5 1/2"	2'- 5 1/8"	2'- 0"	1'- 4 1/2"	17'- 7 7/8"	-----	18'- 9"	72	18	66.474	2.663	287.238	19'- 6"	6	19'- 2"	1	5	2.121	131.519	2.141	115.153	E
8	6	6	9"	6'- 2 5/8"	1'- 5 1/4"	2'- 6 1/8"	1'- 11 3/4"	1'- 4 1/4"	17'- 7 7/8"	-----	18'- 9"	72	30	70.710	2.782	306.188	19'- 6"	6	19'- 2"	1	7	2.328	138.422	2.335	115.153	I
8	8	5	9"	6'- 2 5/8"	1'- 5 1/8"	2'- 6 1/8"	1'- 11 5/8"	1'- 4 1/4"	17'- 7 7/8"	-----	18'- 9"	72	42	74.946	2.929	332.082	19'- 6"	6	19'- 2"	1	9	2.526	145.325	2.520	115.153	M
8	10	5	9"	6'- 4 3/8"	1'- 5 1/8"	2'- 6 1/8"	1'- 11 5/8"	1'- 4 1/4"	17'- 11 3/8"	-----	19'- 1"	72	54	79.182	3.217	387.579	19'- 6"	6	19'- 2"	1	11	2.580	152.227	2.561	115.153	Q
9	4	6	9"	6'- 10 3/4"	1'- 8 1/4"	2'- 8"	2'- 4"	1'- 7 1/4"	19'- 8"	-----	21'- 0"	80	18	73.154	3.253	366.567	21'- 6"	6	21'- 2"	1	5	2.148	143.535	2.173	127.169	F
9	6	6	9"	6'- 10 7/8"	1'- 8"	2'- 8 1/4"	2'- 3 5/8"	1'- 7"	19'- 8"	-----	21'- 0"	80	30	77.390	3.371	362.271	21'- 6"	6	21'- 2"	1	7	2.356	150.438	2.369	127.169	J
9	8	6	9"	6'- 11"	1'- 7 3/4"	2'- 8 1/2"	2'- 3 1/4"	1'- 6 3/4"	19'- 8"	-----	20'- 11"	80	42	81.626	3.484	417.774	21'- 6"	6	21'- 2"	1	9	2.564	157.341	2.565	127.169	N
9	10	6	9"	7'- 3/4"	1'- 7 3/4"	2'- 8 1/2"	2'- 3 1/4"	1'- 6 3/4"	19'- 11 1/2"	-----	21'- 3"	80	54	85.862	3.778	459.202	21'- 6"	6	21'- 2"	1	11	2.614	164.243	2.601	127.169	R
9	12	6	9"	7'- 2"	1'- 7 3/4"	2'- 8 1/2"	2'- 3 1/4"	1'- 6 3/4"	20'- 2"	-----	21'- 5"	80	66	90.098	4.063	560.121	21'- 6"	6	21'- 2"	1	13	2.669	171.146	2.643	127.169	V
10	4	6	8"	7'- 7 3/8"	1'- 10 1/4"	2'- 10 3/4"	2'- 6 3/4"	1'- 9 1/4"	21'- 8"	-----	23'- 1"	88	18	79.834	3.809	439.497	23'- 6"	6	23'- 2"	1	5	2.157	155.551	2.190	139.185	F
10	6	6	8"	7'- 7 3/8"	1'- 10 1/4"	2'- 10 3/4"	2'- 6 3/4"	1'- 9 1/4"	21'- 8"	-----	23'- 1"	88	30	84.070	3.958	431.783	23'- 6"	6	23'- 2"	1	7	2.355	162.454	2.375	139.185	J
10	8	6	8"	7'- 7 1/2"	1'- 10"	2'- 11"	2'- 6 3/8"	1'- 9"	21'- 8"	-----	23'- 1"	88	42	88.306	4.069	481.496	23'- 6"	6	23'- 2"	1	9	2.565	169.357	2.573	139.185	N
10	10	6	8"	7'- 9 1/4"	1'- 10"	2'- 11"	2'- 6 3/8"	1'- 9"	21'- 11 1/2"	-----	23'- 5"	88	54	92.542	4.366	539.022	23'- 6"	6	23'- 2"	1	11	2.611	176.259	2.605	139.185	R
10	12	7	9"	7'- 10 5/8"	1'- 10 1/8"	2'- 11 1/8"	2'- 6 3/8"	1'- 8 3/8"	22'- 2 1/8"	-----	23'- 7"	88	66	96.778	4.650	681.513	23'- 6"	6	23'- 2"	1	13	2.663	183.162	2.644	139.185	V
12	6	7	9"	9'- 1/8"	2'- 3 3/8"	3'- 3 1/2"	3'- 1 1/8"	2'- 2 1/8"	25'- 8"	-----	27'- 6"	104	30	97.430	5.379	574.597	27'- 6"	6	27'- 2"	1	7	2.259	186.486	2.292	163.217	K
12	8	7	9"	9'- 1/4"	2'- 3 3/8"	3'- 3 3/4"	3'- 1 1/2"	2'- 1 7/8"	25'- 8"	-----	27'- 5"	104	42	101.666	5.486	590.653	27'- 6"	6	27'- 2"	1	9	2.472	193.389	2.493	163.217	O
12	10	7	9"	9'- 2"	2'- 3 3/8"	3'- 3 3/4"	3'- 1 1/2"	2'- 1 7/8"	25'- 11 1/2"	-----	27'- 9"	104	54	105.902	5.793	646.797	27'- 6"	6	27'- 2"	1	11	2.509	200.291	2.516	163.217	S
12	12	7	9"	9'- 3 5/8"	2'- 2 7/8"	3'- 4"	3'- 1 1/8"	2'- 1 5/8"	26'- 2 1/2"	-----	28'- 0"	104	66	110.138	6.068	792.232	27'- 6"	6	27'- 2"	1	13	2.544	207.194	2.538	163.217	W

SPECIFICATION REFERENCE

**DOUBLE BOX CULVERTS**  
**45 TO 50 FT. FILL**  
 VIRGINIA DEPARTMENT OF TRANSPORTATION

**VDOT**  
 ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 2 OF 2
1003.25	