

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 7/8"	0'- 3 3/4"	7'- 7 7/8"	-----	7'- 11"	32	12	30.956	0.694	89.905	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 7/8"	0'- 3 3/4"	7'- 7 7/8"	-----	7'- 11"	32	18	33.074	0.768	91.719	9'- 6"	6	9'- 2"	1	5	1.531	71.439	1.517	55.073	C
4	3	4	12"	3'- 5 1/2"	0'- 6 1/2"	1'- 9 1/2"	0'- 8 5/8"	0'- 5 3/4"	9'- 8"	-----	10'- 1"	40	12	37.636	0.916	94.247	11'- 6"	6	11'- 2"	1	4	1.631	80.004	1.630	67.089	B
4	4	4	12"	3'- 5 1/2"	0'- 6 1/2"	1'- 9 1/2"	0'- 8 5/8"	0'- 5 3/4"	9'- 8"	-----	10'- 1"	40	18	39.754	0.989	100.511	11'- 6"	6	11'- 2"	1	5	1.730	83.455	1.722	67.089	D
4	5	4	12"	3'- 5 1/2"	0'- 6 1/2"	1'- 9 1/2"	0'- 8 5/8"	0'- 5 3/4"	9'- 8"	-----	10'- 1"	40	24	41.872	1.063	106.775	11'- 6"	6	11'- 2"	1	6	1.829	86.907	1.815	67.089	F
4	6	4	12"	3'- 5 1/2"	0'- 6 1/2"	1'- 9 1/2"	0'- 8 5/8"	0'- 5 3/4"	9'- 8"	-----	10'- 1"	40	30	43.990	1.136	119.681	11'- 6"	6	11'- 2"	1	7	1.928	90.358	1.908	67.089	H
5	3	4	11"	4'- 2 1/8"	0'- 8 1/2"	2'- 1/4"	0'- 11 1/2"	0'- 7 3/4"	11'- 8"	-----	12'- 2"	48	12	44.316	1.186	114.631	13'- 6"	6	13'- 2"	1	4	1.786	92.020	1.791	79.105	B
5	4	4	11"	4'- 2 1/8"	0'- 8 1/2"	2'- 1/4"	0'- 11 1/2"	0'- 7 3/4"	11'- 8"	-----	12'- 2"	48	18	46.434	1.259	121.016	13'- 6"	6	13'- 2"	1	5	1.885	95.471	1.884	79.105	D
5	5	4	11"	4'- 2 1/8"	0'- 8 1/2"	2'- 1/4"	0'- 11 1/2"	0'- 7 3/4"	11'- 8"	-----	12'- 2"	48	24	48.552	1.333	127.402	13'- 6"	6	13'- 2"	1	6	1.984	98.923	1.977	79.105	F
5	6	4	11"	4'- 2"	0'- 8 3/4"	2'- 0"	0'- 11 7/8"	0'- 8"	11'- 8"	-----	12'- 3"	48	30	50.670	1.424	142.061	13'- 6"	6	13'- 2"	1	7	2.078	102.374	2.065	79.105	H
5	7	4	11"	4'- 2"	0'- 8 3/4"	2'- 0"	0'- 11 7/8"	0'- 8"	11'- 8"	-----	12'- 3"	48	36	52.788	1.497	160.208	13'- 6"	6	13'- 2"	1	8	2.177	105.825	2.158	79.105	J
6	4	4	9"	4'- 10 5/8"	0'- 10 3/4"	2'- 2 3/4"	1'- 2 5/8"	0'- 10"	13'- 8"	-----	14'- 4"	56	18	53.114	1.600	153.580	15'- 6"	6	15'- 2"	1	5	2.009	107.487	2.015	91.121	D
6	5	4	9"	4'- 10 1/2"	0'- 11"	2'- 2 1/2"	1'- 3"	0'- 10 1/4"	13'- 8"	-----	14'- 4"	56	24	55.232	1.695	160.808	15'- 6"	6	15'- 2"	1	6	2.102	110.939	2.102	91.121	F
6	6	4	9"	4'- 10 5/8"	0'- 10 3/4"	2'- 2 3/4"	1'- 2 5/8"	0'- 10"	13'- 8"	-----	14'- 4"	56	30	57.350	1.747	166.998	15'- 6"	6	15'- 2"	1	7	2.207	114.390	2.201	91.121	H
6	7	4	9"	4'- 10 5/8"	0'- 10 3/4"	2'- 2 3/4"	1'- 2 5/8"	0'- 10"	13'- 8"	-----	14'- 4"	56	36	59.468	1.819	190.080	15'- 6"	6	15'- 2"	1	8	2.306	117.841	2.293	91.121	J
6	8	4	9"	4'- 10 5/8"	0'- 10 3/4"	2'- 2 3/4"	1'- 2 5/8"	0'- 10"	13'- 8"	-----	14'- 4"	56	42	61.586	1.892	209.944	15'- 6"	6	15'- 2"	1	9	2.405	121.293	2.386	91.121	L
7	4	4	8"	5'- 7 1/4"	1'- 3/4"	2'- 5 5/8"	1'- 5 1/2"	1'- 0"	15'- 8 1/8"	-----	16'- 6"	64	18	59.794	1.969	201.010	17'- 6"	6	17'- 2"	1	5	2.132	119.503	2.144	103.137	E
7	6	5	9"	5'- 7 1/4"	1'- 1/8"	2'- 5 5/8"	1'- 5 5/8"	1'- 0"	15'- 8 1/8"	-----	16'- 6"	64	30	64.030	2.116	216.305	17'- 6"	6	17'- 2"	1	7	2.330	126.406	2.330	103.137	I
7	8	5	9"	5'- 7 1/4"	1'- 1/8"	2'- 5 5/8"	1'- 5 5/8"	1'- 0"	15'- 8 1/8"	-----	16'- 6"	64	42	68.266	2.260	270.635	17'- 6"	6	17'- 2"	1	9	2.528	133.309	2.515	103.137	M
7	10	4	9"	5'- 7 3/4"	1'- 3/4"	2'- 5 5/8"	1'- 5 1/2"	1'- 0"	15'- 9 1/8"	-----	16'- 7"	64	54	72.502	2.445	306.461	17'- 6"	6	17'- 2"	1	11	2.687	140.211	2.662	103.137	Q
8	4	5	9"	6'- 3 3/8"	1'- 2 1/8"	2'- 8 3/8"	1'- 8 3/8"	1'- 2"	17'- 7 7/8"	-----	18'- 7"	72	18	66.474	2.388	261.954	19'- 6"	6	19'- 2"	1	5	2.211	131.519	2.230	115.153	E
8	6	5	9"	6'- 3 3/8"	1'- 3 1/8"	2'- 8 1/8"	1'- 8 3/4"	1'- 2 1/4"	17'- 7 7/8"	-----	18'- 7"	72	30	70.710	2.562	276.204	19'- 6"	6	19'- 2"	1	7	2.400	138.422	2.407	115.153	I
8	8	5	9"	6'- 3 1/2"	1'- 3 3/8"	2'- 7 7/8"	1'- 9 1/8"	1'- 2 1/2"	17'- 7 7/8"	-----	18'- 8"	72	42	74.946	2.735	322.121	19'- 6"	6	19'- 2"	1	9	2.589	145.325	2.583	115.153	M
8	10	5	9"	6'- 4 1/8"	1'- 3 1/8"	2'- 8 1/8"	1'- 8 3/4"	1'- 2 1/4"	17'- 8 7/8"	-----	18'- 8"	72	54	79.182	2.891	381.416	19'- 6"	6	19'- 2"	1	11	2.756	152.227	2.737	115.153	Q
9	4	6	9"	7'- 3/8"	1'- 5"	2'- 11 1/4"	1'- 11 3/8"	1'- 4"	19'- 8"	-----	20'- 9"	80	18	73.154	2.856	312.846	21'- 6"	6	21'- 2"	1	5	2.266	143.535	2.292	127.169	E
9	6	6	9"	7'- 3/8"	1'- 5"	2'- 11 1/4"	1'- 11 3/8"	1'- 4"	19'- 8"	-----	20'- 9"	80	30	77.390	3.003	326.799	21'- 6"	6	21'- 2"	1	7	2.464	150.438	2.477	127.169	I
9	8	6	9"	7'- 3/8"	1'- 5"	2'- 11 1/4"	1'- 11 3/8"	1'- 4"	19'- 8"	-----	20'- 9"	80	42	81.626	3.148	368.316	21'- 6"	6	21'- 2"	1	9	2.662	157.341	2.663	127.169	M
9	10	6	9"	7'- 1"	1'- 4 3/4"	2'- 11 1/2"	1'- 11"	1'- 3 3/4"	19'- 9"	-----	20'- 10"	80	54	85.862	3.302	423.078	21'- 6"	6	21'- 2"	1	11	2.829	164.243	2.818	127.169	Q
9	12	6	9"	7'- 2 1/4"	1'- 5 1/4"	2'- 11"	1'- 11 3/4"	1'- 4 1/4"	20'- 0"	-----	21'- 1"	80	66	90.098	3.657	487.087	21'- 6"	6	21'- 2"	1	13	2.858	171.146	2.833	127.169	U
10	4	6	8"	7'- 8 3/4"	1'- 7 1/2"	3'- 1 1/2"	2'- 2 1/8"	1'- 6 1/2"	21'- 8"	-----	22'- 11"	88	18	79.834	3.441	373.494	23'- 6"	6	23'- 2"	1	5	2.290	155.551	2.323	139.185	F
10	6	6	8"	7'- 8 3/4"	1'- 7 1/2"	3'- 1 1/2"	2'- 2 1/8"	1'- 6 1/2"	21'- 8"	-----	22'- 11"	88	30	84.070	3.588	388.444	23'- 6"	6	23'- 2"	1	7	2.488	162.454	2.508	139.185	J
10	8	6	8"	7'- 8 3/8"	1'- 7 1/4"	3'- 1 3/4"	2'- 2 1/2"	1'- 6 1/4"	21'- 8"	-----	22'- 11"	88	42	88.306	3.699	433.628	23'- 6"	6	23'- 2"	1	9	2.698	169.357	2.706	139.185	N
10	10	6	8"	7'- 9 1/2"	1'- 7"	3'- 2"	2'- 2 1/8"	1'- 6"	21'- 9"	-----	23'- 0"	88	54	92.542	3.851	493.731	23'- 6"	6	23'- 2"	1	11	2.866	176.259	2.861	139.185	R
10	12	6	9"	7'- 11"	1'- 7"	3'- 2"	2'- 2 1/8"	1'- 6"	22'- 0"	-----	23'- 3"	88	66	96.778	4.145	572.029	23'- 6"	6	23'- 2"	1	13	2.914	183.162	2.895	139.185	V
12	6	7	9"	9'- 2"	1'- 11 5/8"	3'- 7 1/4"	2'- 8 1/2"	1'- 10 3/8"	25'- 8"	-----	27'- 2"	104	30	97.430	4.782	519.365	27'- 6"	6	27'- 2"	1	7	2.468	186.486	2.501	163.217	J
12	8	7	9"	9'- 2 1/8"	1'- 11 3/8"	3'- 7 1/2"	2'- 8 1/8"	1'- 10 1/8"	25'- 8"	-----	27'- 2"	104	42	101.666	4.886	565.184	27'- 6"	6	27'- 2"	1	9	2.681	193.389	2.702	163.217	N
12	10	7	9"	9'- 2 5/8"	1'- 11 3/8"	3'- 7 1/2"	2'- 8 1/8"	1'- 10 1/8"	25'- 9"	-----	27'- 3"	104	54	105.902	5.074	628.890	27'- 6"	6	27'- 2"	1	11	2.835	200.291	2.843	163.217	R
12	12	7	9"	9'- 4"	1'- 11 5/8"	3'- 7 1/4"	2'- 8 1/2"	1'- 10 3/8"	26'- 0"	-----	27'- 6"	104	66	110.138	5.416	694.097	27'- 6"	6	27'- 2"	1	13	2.860	207.194	2.855	163.217	V

STRUCTURE AND BRIDGE DIVISION

DOUBLE BOX CULVERTS
35 TO 40 FT. FILLS
VIRGINIA DEPARTMENT OF TRANSPORTATION

1003.21