


SPAN		HIGHT		REINFORCING STEEL											QUAN./LF		HEADWALLS							WINGWALL			
(FT.)	(FT.)	SIZE	SPACING C-C	BT I							LENGTH	NO. BL1 #4 BARS	NO. BL2 #3 BARS	REINFORCING STEEL (LBS./LONG. FT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS./LF)	G		HW I		NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)		INLET REINFORCING STEEL (LBS)	OUTLET CONCRETE CL. A4 (CY)	OUTLET REINFORCING STEEL (LBS)
				a	b	c	d	e	f	g							HEADWALL LENGTH	SIZE	LENGTH								
3	3	4	12"	2'- 6"	0'- 5/4"	1'- 10"	0'- 7"	0'- 4/2"	7'- 8"	-----	7'- 11"	32	12	30.956	0.756	79.640	9'- 6"	6	6	9'- 2"	I	4	1.445	67.988	1.437	55.073	B
3	4	4	12"	2'- 6"	0'- 5/4"	1'- 10"	0'- 7"	0'- 4/2"	7'- 8"	-----	7'- 11"	32	18	33.065	0.830	85.904	9'- 6"	6	6	9'- 2"	I	5	1.544	71.439	1.530	55.073	D
4	3	4	12"	3'- 1"	0'- 7/2"	2'- 3"	0'- 10/8"	0'- 6 3/4"	9'- 8"	-----	10'- 1"	40	12	37.636	1.008	94.710	11'- 6"	6	6	11'- 2"	I	4	1.614	80.004	1.613	67.089	B
4	4	4	12"	3'- 1"	0'- 7/2"	2'- 3"	0'- 10/8"	0'- 6 3/4"	9'- 8"	-----	10'- 1"	40	18	39.745	1.082	100.974	11'- 6"	6	6	11'- 2"	I	5	1.716	83.455	1.708	67.089	D
4	5	4	12"	3'- 1"	0'- 7/4"	2'- 3"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	24	41.860	1.140	111.954	11'- 6"	6	6	11'- 2"	I	6	1.815	86.907	1.801	67.089	F
4	6	4	12"	3'- 1"	0'- 7/4"	2'- 3"	0'- 9 3/4"	0'- 6 1/2"	9'- 8"	-----	10'- 1"	40	30	43.975	1.212	139.379	11'- 6"	6	6	11'- 2"	I	7	1.913	90.358	1.894	67.089	H
5	3	4	10"	3'- 8"	0'- 10/2"	2'- 8"	1'- 2 3/8"	0'- 9 3/4"	11'- 8"	-----	12'- 4"	48	12	44.310	1.372	102.348	13'- 6"	6	6	13'- 2"	I	4	1.755	92.020	1.761	79.105	B
5	4	4	10"	3'- 8"	0'- 10"	2'- 8"	1'- 1 5/8"	0'- 9/4"	11'- 8"	-----	12'- 3"	48	18	46.425	1.408	108.467	13'- 6"	6	6	13'- 2"	I	5	1.854	95.471	1.853	79.105	D
5	5	4	10"	3'- 8"	0'- 10"	2'- 8"	1'- 1 5/8"	0'- 9/4"	11'- 8"	-----	12'- 3"	48	24	48.540	1.482	120.249	13'- 6"	6	6	13'- 2"	I	6	1.953	98.923	1.946	79.105	F
5	6	4	10"	3'- 8"	0'- 9 3/4"	2'- 8"	1'- 1 1/4"	0'- 9"	11'- 8"	-----	12'- 3"	48	30	50.655	1.536	132.826	13'- 6"	6	6	13'- 2"	I	7	2.052	102.374	2.039	79.105	H
5	7	4	10"	3'- 9"	0'- 10"	2'- 8"	1'- 1 5/8"	0'- 9/4"	11'- 9"	-----	12'- 4"	48	36	52.770	1.656	161.030	13'- 6"	6	6	13'- 2"	I	8	2.155	105.825	2.136	79.105	J
6	4	4	9"	4'- 4"	1'- 0/2"	3'- 0"	1'- 5/8"	0'- 11 3/4"	13'- 8"	-----	14'- 5"	56	18	53.105	1.793	170.667	15'- 6"	6	6	15'- 2"	I	5	1.980	107.487	1.986	91.121	E
6	5	4	9"	4'- 4"	1'- 0/2"	3'- 0"	1'- 5/8"	0'- 11 3/4"	13'- 8"	-----	14'- 5"	56	24	55.220	1.866	183.206	15'- 6"	6	6	15'- 2"	I	6	2.085	110.939	2.085	91.121	G
6	6	4	9"	4'- 4"	1'- 0/2"	3'- 0"	1'- 5/8"	0'- 11 3/4"	13'- 8"	-----	14'- 5"	56	30	57.335	1.939	196.142	15'- 6"	6	6	15'- 2"	I	7	2.184	114.390	2.178	91.121	I
6	7	4	9"	4'- 4"	1'- 0/2"	3'- 0"	1'- 5/8"	0'- 11 3/4"	13'- 8"	-----	14'- 5"	56	36	59.450	2.010	229.353	15'- 6"	6	6	15'- 2"	I	8	2.283	117.841	2.270	91.121	K
6	8	4	9"	4'- 5"	1'- 0/2"	3'- 0"	1'- 5/8"	0'- 11 3/4"	13'- 11"	-----	14'- 8"	56	42	61.565	2.183	247.076	15'- 6"	6	6	15'- 2"	I	9	2.388	121.293	2.369	91.121	M
7	4	5	9"	4'- 11"	1'- 3"	3'- 5"	1'- 8 5/8"	1'- 2/8"	15'- 8"	-----	16'- 7"	64	18	59.785	2.238	242.577	17'- 6"	6	6	17'- 2"	I	5	2.072	119.503	2.085	103.137	E
7	6	5	8"	4'- 11"	1'- 2 3/4"	3'- 5"	1'- 8/4"	1'- 1 7/8"	15'- 8"	-----	16'- 7"	64	30	64.015	2.359	269.293	17'- 6"	6	6	17'- 2"	I	7	2.255	126.406	2.255	103.137	I
7	8	4	8"	5'- 0"	1'- 2 3/4"	3'- 5"	1'- 8 3/8"	1'- 2"	15'- 9"	-----	16'- 9"	64	42	68.245	2.573	308.734	17'- 6"	6	6	17'- 2"	I	9	2.453	133.309	2.441	103.137	M
7	10	4	8"	5'- 3"	1'- 3"	3'- 5"	1'- 8 3/4"	1'- 2 1/4"	16'- 3"	-----	17'- 3"	64	54	72.475	2.998	366.819	17'- 6"	6	6	17'- 2"	I	11	2.526	140.211	2.500	103.137	Q
8	4	6	9"	5'- 6"	1'- 5/2"	3'- 10"	2'- 0"	1'- 4 1/2"	17'- 8"	-----	18'- 9"	72	18	66.465	2.746	292.460	19'- 6"	6	6	19'- 2"	I	5	2.121	131.519	2.141	115.153	E
8	6	6	9"	5'- 7"	1'- 5"	3'- 10"	1'- 11 1/4"	1'- 4"	17'- 8"	-----	18'- 9"	72	30	70.695	2.837	320.630	19'- 6"	6	6	19'- 2"	I	7	2.328	138.422	2.335	115.153	I
8	8	5	9"	5'- 7"	1'- 5/2"	3'- 10"	2'- 0/8"	1'- 4 5/8"	17'- 9"	-----	18'- 11"	72	42	74.925	3.109	356.576	19'- 6"	6	6	19'- 2"	I	9	2.526	145.325	2.520	115.153	M
8	10	5	9"	5'- 10"	1'- 5/2"	3'- 10"	2'- 0/8"	1'- 4 5/8"	18'- 3"	-----	19'- 5"	72	54	79.155	3.518	399.907	19'- 6"	6	6	19'- 2"	I	11	2.580	152.227	2.561	115.153	Q
9	4	6	9"	6'- 1"	1'- 8"	4'- 3"	2'- 3/2"	1'- 7"	19'- 8"	-----	20'- 11"	80	18	73.145	3.314	376.717	21'- 6"	6	6	21'- 2"	I	5	2.148	143.535	2.173	127.169	F
9	6	6	9"	6'- 1"	1'- 8"	4'- 3"	2'- 3/2"	1'- 7"	19'- 8"	-----	20'- 11"	80	30	77.375	3.462	379.124	21'- 6"	6	6	21'- 2"	I	7	2.356	150.438	2.369	127.169	J
9	8	6	9"	6'- 1"	1'- 8"	4'- 3"	2'- 3/2"	1'- 7"	19'- 8"	-----	20'- 11"	80	42	81.605	3.604	456.056	21'- 6"	6	6	21'- 2"	I	9	2.564	157.341	2.565	127.169	N
9	10	6	9"	6'- 5"	1'- 8"	4'- 3"	2'- 3/2"	1'- 7"	20'- 3"	-----	21'- 6"	80	54	85.835	4.052	501.203	21'- 6"	6	6	21'- 2"	I	11	2.614	164.243	2.601	127.169	R
9	12	6	9"	6'- 7"	1'- 8"	4'- 3"	2'- 3/2"	1'- 7"	20'- 8"	-----	21'- 11"	80	66	90.065	4.483	586.026	21'- 6"	6	6	21'- 2"	I	13	2.669	171.146	2.643	127.169	V
10	4	6	8"	6'- 8"	1'- 10/2"	4'- 8"	2'- 7/8"	1'- 9/2"	21'- 8"	-----	23'- 1"	88	18	79.825	3.944	453.636	23'- 6"	6	6	23'- 2"	I	5	2.157	155.551	2.190	139.185	F
10	6	6	8"	6'- 8"	1'- 10/2"	4'- 8"	2'- 7/8"	1'- 9/2"	21'- 8"	-----	23'- 1"	88	30	84.055	4.093	449.514	23'- 6"	6	6	23'- 2"	I	7	2.355	162.454	2.375	139.185	J
10	8	6	8"	6'- 8"	1'- 10/2"	4'- 8"	2'- 7/8"	1'- 9/2"	21'- 8"	-----	23'- 1"	88	42	88.285	4.235	519.462	23'- 6"	6	6	23'- 2"	I	9	2.565	169.357	2.573	139.185	N
10	10	6	8"	6'- 11"	1'- 10/2"	4'- 8"	2'- 7/8"	1'- 9/2"	22'- 2"	-----	23'- 7"	88	54	92.515	4.646	575.846	23'- 6"	6	6	23'- 2"	I	11	2.611	176.259	2.605	139.185	R
10	12	7	9"	7'- 3"	1'- 10"	4'- 8"	2'- 6 1/4"	1'- 8 3/4"	22'- 8"	-----	24'- 0"	88	66	96.745	5.054	710.678	23'- 6"	6	6	23'- 2"	I	13	2.663	183.162	2.644	139.185	V
12	6	7	9"	7'- 11"	2'- 3/2"	5'- 5"	3'- 2"	2'- 2 1/4"	25'- 8"	-----	27'- 5"	104	30	97.415	5.537	609.729	27'- 6"	6	6	27'- 2"	I	7	2.259	186.486	2.292	163.217	K
12	8	7	9"	7'- 11"	2'- 3/2"	5'- 5"	3'- 2"	2'- 2 1/4"	25'- 8"	-----	27'- 5"	104	42	101.645	5.682	652.348	27'- 6"	6	6	27'- 2"	I	9	2.472	193.389	2.493	163.217	O
12	10	7	9"	8'- 0"	2'- 3/2"	5'- 5"	3'- 2"	2'- 2 1/4"	25'- 11"	-----	27'- 9"	104	54	105.875	5.991	700.081	27'- 6"	6	6	27'- 2"	I	11	2.509	200.291	2.516	163.217	S
12	12	7	9"	8'- 5"	2'- 3"	5'- 5"	3'- 1 3/8"	2'- 1 3/4"	26'- 6"	-----	28'- 4"	104	66	110.105	6.467	837.137	27'- 6"	6	6	27'- 2"	I	13	2.544	207.194	2.538	163.217	W

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

SPECIFICATION REFERENCE	<h1>DOUBLE BOX CULVERTS</h1> <h2>40 TO 50 FT. FILL</h2> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	 ROAD AND BRIDGE STANDARDS
		REVISION DATE: 07/11 SHEET 2 OF 2 1003.18