


FOR TYPICAL SECTION, NOTES AND OTHER DETAILS, REFER TO STANDARD BCD-DT.

BCD-20

SPAN		HGHT		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. JT)	CONCRETE CLASS #4 (CY/LF)	REINFORCING STEEL (LBS./LF)	G		HW I		NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. #4 (CY)		INLET REINFORCING STEEL (LBS)	OUTLET CONCRETE CL. #4 (CY)	OUTLET REINFORCING STEEL (LBS)	
				a	b	c	d	e	f	g							HEADWALL LENGTH	SIZE	LENGTH									
3	3	4	12"	2'- 7"	0'- 4"	1'- 10"	0'- 5/8"	0'- 3/4"	7'- 8"	-----	7'-10"	32	12	30.956	0.695	78.691	9'- 6"	6	9'- 2"	6	9'- 2"	1	4	1.433	67.988	1.425	55.073	A
3	4	4	12"	2'- 7"	0'- 4"	1'- 10"	0'- 5/8"	0'- 3/4"	7'- 8"	-----	7'-10"	32	18	33.065	0.768	84.955	9'- 6"	6	9'- 2"	6	9'- 2"	1	5	1.531	71.439	1.517	55.073	C
4	3	4	12"	3'- 5"	0'- 4"	2'- 3"	0'- 5/8"	0'- 3/4"	9'- 8"	-----	9'-10"	40	12	37.636	0.792	92.051	11'- 6"	6	11'- 2"	6	11'- 2"	1	4	1.635	80.004	1.634	67.089	A
4	4	4	12"	3'- 5"	0'- 4"	2'- 3"	0'- 5/8"	0'- 3/4"	9'- 8"	-----	9'-10"	40	18	39.745	0.866	98.315	11'- 6"	6	11'- 2"	6	11'- 2"	1	5	1.734	83.455	1.726	67.089	C
4	5	4	12"	3'- 5"	0'- 4"	2'- 3"	0'- 5/8"	0'- 3/4"	9'- 8"	-----	9'-10"	40	24	41.860	0.940	104.579	11'- 6"	6	11'- 2"	6	11'- 2"	1	6	1.833	86.907	1.819	67.089	E
4	6	4	12"	3'- 5"	0'- 4"	2'- 3"	0'- 5/8"	0'- 3/4"	9'- 8"	-----	9'-10"	40	30	43.975	1.013	110.843	11'- 6"	6	11'- 2"	6	11'- 2"	1	7	1.932	90.358	1.912	67.089	G
5	3	4	12"	4'- 2"	0'- 4"	2'- 8"	0'- 5/8"	0'- 3/4"	11'- 8"	-----	11'-10"	48	12	44.310	0.891	98.023	13'- 6"	6	13'- 2"	6	13'- 2"	1	4	1.837	92.020	1.843	79.105	A
5	4	4	12"	4'- 2"	0'- 4"	2'- 8"	0'- 5/8"	0'- 3/4"	11'- 8"	-----	11'-10"	48	18	46.425	0.965	98.856	13'- 6"	6	13'- 2"	6	13'- 2"	1	5	1.936	95.471	1.935	79.105	C
5	5	4	12"	4'- 2"	0'- 4"	2'- 8"	0'- 5/8"	0'- 3/4"	11'- 8"	-----	11'-10"	48	24	48.540	1.038	105.120	13'- 6"	6	13'- 2"	6	13'- 2"	1	6	2.035	98.923	2.028	79.105	E
5	6	4	12"	4'- 2"	0'- 4"	2'- 8"	0'- 5/8"	0'- 3/4"	11'- 8"	-----	11'-10"	48	30	50.655	1.112	111.986	13'- 6"	6	13'- 2"	6	13'- 2"	1	7	2.134	102.374	2.121	79.105	G
5	7	4	12"	4'- 2"	0'- 4"	2'- 8"	0'- 5/8"	0'- 3/4"	11'- 8"	-----	11'-10"	48	36	52.770	1.185	131.216	13'- 6"	6	13'- 2"	6	13'- 2"	1	8	2.233	105.825	2.214	79.105	
6	4	4	12"	4'- 11"	0'- 5/4"	3'- 0"	0'- 7"	0'- 4/2"	13'- 8"	-----	13'-11"	56	18	53.105	1.168	139.704	15'- 6"	6	15'- 2"	6	15'- 2"	1	5	2.127	107.487	2.133	91.121	D
6	5	4	12"	4'- 11"	0'- 5/2"	3'- 0"	0'- 7/4"	0'- 4 3/4"	13'- 8"	-----	13'-11"	56	24	55.220	1.264	146.158	15'- 6"	6	15'- 2"	6	15'- 2"	1	6	2.220	110.939	2.220	91.121	F
6	6	4	12"	4'- 11"	0'- 5/2"	3'- 0"	0'- 7/4"	0'- 4 3/4"	13'- 8"	-----	13'-11"	56	30	57.335	1.337	153.090	15'- 6"	6	15'- 2"	6	15'- 2"	1	7	2.319	114.390	2.313	91.121	H
6	7	4	12"	4'- 11"	0'- 5/2"	3'- 0"	0'- 7/4"	0'- 4 3/4"	13'- 8"	-----	13'-11"	56	36	59.450	1.410	166.611	15'- 6"	6	15'- 2"	6	15'- 2"	1	8	2.418	117.841	2.406	91.121	J
6	8	4	12"	4'- 10"	0'- 5 3/4"	3'- 0"	0'- 7 5/8"	0'- 5"	13'- 8"	-----	14'- 0"	56	42	61.586	1.505	175.026	15'- 6"	6	15'- 2"	6	15'- 2"	1	9	2.511	121.293	2.492	91.121	L
7	4	4	10"	5'- 7"	0'- 6/2"	3'- 5"	0'- 8 3/4"	0'- 5 3/4"	15'- 8"	-----	16'- 0"	64	18	59.785	1.404	165.663	17'- 6"	6	17'- 2"	6	17'- 2"	1	5	2.285	119.503	2.297	103.137	D
7	6	4	10"	5'- 7"	0'- 6 3/4"	3'- 5"	0'- 9"	0'- 6"	15'- 8"	-----	16'- 0"	64	30	64.015	1.577	168.822	17'- 6"	6	17'- 2"	6	17'- 2"	1	7	2.475	126.406	2.475	103.137	H
7	8	4	10"	5'- 7"	0'- 7"	3'- 5"	0'- 9 3/8"	0'- 6 1/4"	15'- 8"	-----	16'- 1"	64	42	68.245	1.747	200.948	17'- 6"	6	17'- 2"	6	17'- 2"	1	9	2.666	133.309	2.653	103.137	L
7	10	4	10"	5'- 6"	0'- 7/4"	3'- 5"	0'- 9 3/4"	0'- 6 1/2"	15'- 8"	-----	16'- 1"	64	54	72.475	1.916	248.796	17'- 6"	6	17'- 2"	6	17'- 2"	1	11	2.856	140.211	2.831	103.137	P
8	4	4	9"	6'- 3"	0'- 7 3/4"	3'- 10"	0'- 10 1/2"	0'- 7"	17'- 8"	-----	18'- 1"	72	18	66.465	1.669	212.942	19'- 6"	6	19'- 2"	6	19'- 2"	1	5	2.427	131.519	2.446	115.153	D
8	6	4	9"	6'- 3"	0'- 8"	3'- 10"	0'- 10 7/8"	0'- 7 1/4"	17'- 8"	-----	18'- 1"	72	30	70.695	1.845	214.543	19'- 6"	6	19'- 2"	6	19'- 2"	1	7	2.616	138.422	2.622	115.153	H
8	8	4	9"	6'- 3"	0'- 8 1/4"	3'- 10"	0'- 11 1/8"	0'- 7 1/2"	17'- 8"	-----	18'- 2"	72	42	74.925	2.018	248.913	19'- 6"	6	19'- 2"	6	19'- 2"	1	9	2.804	145.325	2.799	115.153	L
8	10	4	9"	6'- 3"	0'- 8 1/2"	3'- 10"	0'- 11 1/2"	0'- 7 3/4"	17'- 8"	-----	18'- 2"	72	54	79.155	2.191	294.798	19'- 6"	6	19'- 2"	6	19'- 2"	1	11	2.993	152.227	2.975	115.153	P
9	4	5	9"	7'- 0"	0'- 9"	4'- 3"	1'- 1/8"	0'- 8 1/8"	19'- 8"	-----	20'- 2"	80	18	73.145	1.964	273.054	21'- 6"	6	21'- 2"	6	21'- 2"	1	5	2.553	143.535	2.579	127.169	D
9	6	5	9"	7'- 0"	0'- 9 1/4"	4'- 3"	1'- 1/2"	0'- 8 3/8"	19'- 8"	-----	20'- 2"	80	30	77.375	2.143	273.531	21'- 6"	6	21'- 2"	6	21'- 2"	1	7	2.740	150.438	2.754	127.169	H
9	8	5	9"	7'- 0"	0'- 9 1/4"	4'- 3"	1'- 1/2"	0'- 8 3/8"	19'- 8"	-----	20'- 2"	80	42	81.605	2.288	308.145	21'- 6"	6	21'- 2"	6	21'- 2"	1	9	2.938	157.341	2.939	127.169	L
9	10	5	9"	6'- 11"	0'- 9 1/2"	4'- 3"	1'- 7/8"	0'- 8 5/8"	19'- 8"	-----	20'- 3"	80	54	85.835	2.464	358.625	21'- 6"	6	21'- 2"	6	21'- 2"	1	11	3.126	164.243	3.114	127.169	P
9	12	5	9"	7'- 1"	0'- 9 3/4"	4'- 3"	1'- 1 1/8"	0'- 8 7/8"	19'- 11"	-----	20'- 6"	80	66	90.065	2.769	439.648	21'- 6"	6	21'- 2"	6	21'- 2"	1	13	3.313	171.146	3.289	127.169	T
10	4	5	9"	7'- 8"	0'- 10 1/2"	4'- 8"	1'- 2 1/4"	0'- 9 5/8"	21'- 8"	-----	22'- 3"	88	18	79.825	2.324	323.981	23'- 6"	6	23'- 2"	6	23'- 2"	1	5	2.652	155.551	2.685	139.185	D
10	6	5	9"	7'- 7"	0'- 11"	4'- 8"	1'- 3"	0'- 10 1/8"	21'- 8"	-----	22'- 4"	88	30	84.055	2.539	337.513	23'- 6"	6	23'- 2"	6	23'- 2"	1	7	2.850	162.454	2.870	139.185	H
10	8	5	9"	7'- 8"	0'- 10 3/4"	4'- 8"	1'- 2 5/8"	0'- 9 7/8"	21'- 8"	-----	22'- 4"	88	42	88.285	2.652	358.944	23'- 6"	6	23'- 2"	6	23'- 2"	1	9	3.036	169.357	3.043	139.185	L
10	10	5	9"	7'- 7"	0'- 11"	4'- 8"	1'- 3"	0'- 10 1/8"	21'- 8"	-----	22'- 4"	88	54	92.515	2.830	410.490	23'- 6"	6	23'- 2"	6	23'- 2"	1	11	3.221	176.259	3.217	139.185	P
10	12	5	9"	7'- 9"	0'- 11"	4'- 8"	1'- 3"	0'- 10 1/8"	21'- 11"	-----	22'- 7"	88	66	96.745	3.106	492.783	23'- 6"	6	23'- 2"	6	23'- 2"	1	13	3.419	183.162	3.402	139.185	T
12	6	6	8"	9'- 0"	1'- 1 3/4"	5'- 5"	1'- 6 3/4"	1'- 3/4"	25'- 8"	-----	26'- 6"	104	30	97.415	3.343	445.840	27'- 6"	6	27'- 2"	6	27'- 2"	1	7	2.996	186.486	3.029	163.217	
12	8	6	8"	9'- 0"	1'- 1 3/4"	5'- 5"	1'- 6 3/4"	1'- 3/4"	25'- 8"	-----	26'- 6"	104	42	101.645	3.489	467.673	27'- 6"	6	27'- 2"	6	27'- 2"	1	9	3.194	193.389	3.215	163.217	M
12	10	6	8"	9'- 0"	1'- 2"	5'- 5"	1'- 7 1/8"	1'- 1"	25'- 8"	-----	26'- 6"	104	54	105.875	3.672	535.887	27'- 6"	6	27'- 2"	6	27'- 2"	1	11	3.376	200.291	3.385	163.217	Q
12	12	6	8"	9'- 2"	1'- 2"	5'- 5"	1'- 7 1/8"	1'- 1"	25'- 11"	-----	26'- 9"	104	66	110.105	3.954	615.152	27'- 6"	6	27'- 2"	6	27'- 2"	1	13	3.574	207.194	3.570	163.217	U

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

SPECIFICATION REFERENCE	<h2>DOUBLE BOX CULVERTS</h2> <h3>10 TO 20 FT. FILLS</h3> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	 ROAD AND BRIDGE STANDARDS	REVISION DATE	SHEET 2 OF 2
			07/11	1003.12