

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 3/8"	0'- 5 1/2"	1'- 5 5/8"	0'- 7 1/4"	0'- 4 3/4"	14'- 11 7/8"	1'- 4 7/8"	16'- 0"	60	20	57.160	1.378	143.347	16'- 10"	6	16'- 6"	3	12	2.194	137.876	2.163	99.132	A
3	4	4	12"	2'- 8 3/8"	0'- 5 1/2"	1'- 5 5/8"	0'- 7 1/4"	0'- 4 3/4"	14'- 11 7/8"	1'- 4 7/8"	16'- 0"	60	30	60.690	1.501	153.787	16'- 10"	6	16'- 6"	3	15	2.305	148.230	2.256	99.132	C
4	3	4	12"	3'- 5"	0'- 7 1/2"	1'- 8 1/2"	0'- 10 1/8"	0'- 6 3/4"	19'- 0"	1'- 10"	20'- 5"	76	20	70.520	1.837	172.739	20'- 10"	6	20'- 6"	3	12	2.525	161.908	2.507	123.164	B
4	4	4	12"	3'- 4 3/8"	0'- 7 3/4"	1'- 8 1/4"	0'- 10 1/2"	0'- 7"	19'- 0"	1'- 9 3/4"	20'- 6"	76	30	74.050	1.989	183.513	20'- 10"	6	20'- 6"	3	15	2.626	172.262	2.590	123.164	D
4	5	4	12"	3'- 5"	0'- 7 1/2"	1'- 8 1/2"	0'- 10 1/8"	0'- 6 3/4"	19'- 0"	1'- 10"	20'- 5"	76	40	77.580	2.082	193.619	20'- 10"	6	20'- 6"	3	18	2.747	182.616	2.693	123.164	F
4	6	4	12"	3'- 4 3/8"	0'- 7 3/4"	1'- 8 1/4"	0'- 10 1/2"	0'- 7"	19'- 0"	1'- 9 3/4"	20'- 6"	76	50	81.110	2.233	219.311	20'- 10"	6	20'- 6"	3	21	2.849	192.970	2.775	123.164	H
5	3	4	10"	4'- 1 1/2"	0'- 9 3/4"	1'- 11"	1'- 1 1/4"	0'- 9"	23'- 0"	2'- 3"	24'- 10"	92	20	83.880	2.429	223.863	24'- 10"	6	24'- 6"	3	12	2.774	185.940	2.770	147.196	B
5	4	4	9"	4'- 1 1/2"	0'- 9 3/4"	1'- 11"	1'- 1 1/4"	0'- 9"	23'- 0"	2'- 3"	24'- 10"	92	30	87.410	2.550	249.088	24'- 10"	6	24'- 6"	3	15	2.886	196.294	2.863	147.196	D
5	5	4	9"	4'- 1 1/2"	0'- 9 3/4"	1'- 11"	1'- 1 1/4"	0'- 9"	23'- 0"	2'- 3"	24'- 10"	92	40	90.940	2.673	259.973	24'- 10"	6	24'- 6"	3	18	2.997	206.648	2.955	147.196	F
5	6	4	10"	4'- 1 1/2"	0'- 9 3/4"	1'- 11"	1'- 1 1/4"	0'- 9"	23'- 0"	2'- 3"	24'- 10"	92	50	94.470	2.796	266.801	24'- 10"	6	24'- 6"	3	21	3.108	217.002	3.048	147.196	H
5	7	4	10"	4'- 1 1/2"	0'- 9 3/4"	1'- 11"	1'- 1 1/4"	0'- 9"	23'- 0"	2'- 3"	24'- 10"	92	60	98.000	2.917	288.732	24'- 10"	6	24'- 6"	3	24	3.220	227.356	3.141	147.196	J
6	4	4	9"	4'- 9 3/8"	1'- 1/4"	2'- 1/4"	1'- 4 3/4"	0'- 11 1/2"	27'- 0"	2'- 7 3/4"	29'- 4"	108	30	100.770	3.294	314.289	28'- 10"	6	28'- 6"	3	15	3.082	220.326	3.072	171.228	E
6	5	4	9"	4'- 9 3/8"	1'- 1/4"	2'- 1/4"	1'- 4 3/4"	0'- 11 1/2"	27'- 0"	2'- 7 3/4"	29'- 4"	108	40	104.300	3.417	325.539	28'- 10"	6	28'- 6"	3	18	3.193	230.680	3.165	171.228	G
6	6	4	9"	4'- 9 3/8"	1'- 1/4"	2'- 1/4"	1'- 4 3/4"	0'- 11 1/2"	27'- 0"	2'- 7 3/4"	29'- 4"	108	50	107.830	3.539	339.689	28'- 10"	6	28'- 6"	3	21	3.305	241.034	3.258	171.228	I
6	7	4	9"	4'- 9 3/8"	1'- 1/2"	2'- 1"	1'- 5 1/8"	0'- 11 3/4"	27'- 0"	2'- 7 1/2"	29'- 5"	108	60	111.360	3.703	369.574	28'- 10"	6	28'- 6"	3	24	3.400	251.388	3.334	171.228	K
6	8	4	9"	4'- 10"	1'- 0"	2'- 1 1/2"	1'- 4 1/2"	0'- 11 1/4"	27'- 0"	2'- 8"	29'- 4"	108	70	114.890	3.740	394.496	28'- 10"	6	28'- 6"	3	27	3.544	261.742	3.460	171.228	M
7	4	4	8"	5'- 6 3/8"	1'- 2 1/2"	2'- 3 3/8"	1'- 8"	1'- 1 3/4"	31'- 1/8"	3'- 5/8"	33'- 10"	124	30	114.130	4.110	417.866	32'- 10"	6	32'- 6"	3	15	3.217	244.358	3.221	195.260	E
7	6	4	8"	5'- 6 1/2"	1'- 2 1/4"	2'- 4 1/8"	1'- 7 5/8"	1'- 1 1/2"	31'- 1/8"	3'- 1/8"	33'- 10"	124	50	121.190	4.307	443.857	32'- 10"	6	32'- 6"	3	21	3.459	265.066	3.426	195.260	I
7	8	5	9"	5'- 6 1/2"	1'- 2 3/8"	2'- 4 1/8"	1'- 7 3/4"	1'- 1 1/2"	31'- 1/8"	3'- 3/8"	33'- 9"	124	70	128.250	4.549	504.336	32'- 10"	6	32'- 6"	3	27	3.682	285.774	3.611	195.260	M
7	10	5	9"	5'- 8 1/8"	1'- 2 5/8"	2'- 3 3/8"	1'- 8 1/8"	1'- 1 3/4"	31'- 3 5/8"	3'- 5/8"	34'- 2"	124	90	135.310	4.980	566.414	32'- 10"	6	32'- 6"	3	33	3.746	306.482	3.637	195.260	Q
8	4	5	9"	6'- 2 5/8"	1'- 5 1/8"	2'- 6 1/8"	1'- 11 5/8"	1'- 4 1/4"	34'- 11 7/8"	3'- 5 3/8"	38'- 4"	140	30	127.490	5.093	509.040	36'- 10"	6	36'- 6"	3	15	3.275	268.390	3.292	219.292	E
8	6	5	9"	6'- 2 5/8"	1'- 5 1/8"	2'- 6 1/8"	1'- 11 5/8"	1'- 4 1/4"	34'- 11 7/8"	3'- 5 3/8"	38'- 4"	140	50	134.550	5.338	536.459	36'- 10"	6	36'- 6"	3	21	3.498	289.098	3.477	219.292	I
8	8	5	9"	6'- 2 3/4"	1'- 4 7/8"	2'- 6 3/8"	1'- 11 1/4"	1'- 4"	34'- 11 7/8"	3'- 5 5/8"	38'- 3"	140	70	141.610	5.526	597.240	36'- 10"	6	36'- 6"	3	27	3.743	309.806	3.685	219.292	M
8	10	5	9"	6'- 4 1/2"	1'- 4 7/8"	2'- 6 3/8"	1'- 11 1/4"	1'- 4"	35'- 3 3/8"	3'- 5 5/8"	38'- 7"	140	90	148.670	5.913	658.924	36'- 10"	6	36'- 6"	3	33	3.822	330.514	3.726	219.292	Q
9	4	6	9"	6'- 11"	1'- 7 3/4"	2'- 8 1/2"	2'- 3 1/4"	1'- 6 3/4"	39'- 0"	3'- 10"	42'- 10"	156	30	140.850	6.195	661.634	40'- 10"	6	40'- 6"	3	15	3.289	292.422	3.319	243.324	F
9	6	6	9"	6'- 11"	1'- 7 3/4"	2'- 8 1/2"	2'- 3 1/4"	1'- 6 3/4"	39'- 0"	3'- 10"	42'- 10"	156	50	147.910	6.440	691.354	40'- 10"	6	40'- 6"	3	21	3.512	313.130	3.505	243.324	J
9	8	6	9"	6'- 11 1/8"	1'- 7 1/2"	2'- 8 3/4"	2'- 2 7/8"	1'- 6 1/2"	39'- 0"	3'- 10 1/4"	42'- 9"	156	70	154.970	6.621	749.436	40'- 10"	6	40'- 6"	3	27	3.760	333.838	3.716	243.324	N
9	10	6	9"	7'- 7/8"	1'- 7 1/2"	2'- 8 3/4"	2'- 2 7/8"	1'- 6 1/2"	39'- 3 1/2"	3'- 10 1/4"	43'- 1"	156	90	162.030	7.012	818.377	40'- 10"	6	40'- 6"	3	33	3.835	354.546	3.752	243.324	R
9	12	6	9"	7'- 2 1/4"	1'- 7 1/4"	2'- 9"	2'- 2 1/2"	1'- 6 1/4"	39'- 6"	3'- 10 1/2"	43'- 2"	156	110	169.090	7.334	915.311	40'- 10"	6	40'- 6"	3	39	3.941	375.254	3.820	243.324	V
10	4	6	9"	7'- 7 3/4"	1'- 9 3/4"	2'- 11 1/4"	2'- 6"	1'- 8 3/4"	43'- 0"	4'- 3 1/4"	47'- 2"	172	30	154.210	7.288	785.584	44'- 10"	6	44'- 6"	3	15	3.280	316.454	3.324	267.356	F
10	6	6	9"	7'- 7 3/4"	1'- 9 1/2"	2'- 11 1/2"	2'- 5 3/4"	1'- 8 1/2"	43'- 0"	4'- 3 1/2"	47'- 2"	172	50	161.270	7.470	758.170	44'- 10"	6	44'- 6"	3	21	3.532	337.162	3.538	267.356	J
10	8	6	9"	7'- 7 3/4"	1'- 9 1/2"	2'- 11 1/2"	2'- 5 3/4"	1'- 8 1/2"	43'- 0"	4'- 3 1/2"	47'- 2"	172	70	168.330	7.713	815.966	44'- 10"	6	44'- 6"	3	27	3.754	357.870	3.723	267.356	N
10	10	6	9"	7'- 9 1/2"	1'- 9 1/2"	2'- 11 1/2"	2'- 5 3/4"	1'- 8 1/2"	43'- 3 1/2"	4'- 3 1/2"	47'- 6"	172	90	175.390	8.108	878.209	44'- 10"	6	44'- 6"	3	33	3.826	378.578	3.756	267.356	R
10	12	6	9"	7'- 10 3/4"	1'- 9 1/2"	2'- 11 1/2"	2'- 5 3/4"	1'- 8 1/2"	43'- 6"	4'- 3 1/2"	47'- 8"	172	110	182.450	8.495	957.286	44'- 10"	6	44'- 6"	3	39	3.903	399.286	3.796	267.356	V
12	6	7	9"	9'- 5/8"	2'- 2 3/8"	3'- 4 1/2"	3'- 3/8"	2'- 1 1/8"	51'- 0"	5'- 1 1/4"	56'- 2"	204	50	187.990	10.170	1,122.541	52'- 10"	6	52'- 6"	3	21	3.286	385.226	3.319	315.420	K
12	8	7	9"	9'- 5/8"	2'- 2 3/8"	3'- 4 1/2"	3'- 3/8"	2'- 1 1/8"	51'- 0"	5'- 1 1/4"	56'- 2"	204	70	195.050	10.412	1,185.877	52'- 10"	6	52'- 6"	3	27	3.509	405.934	3.504	315.420	O
12	10	7	9"	9'- 2 3/8"	2'- 2 3/8"	3'- 4 1/2"	3'- 3/8"	2'- 1 1/8"	51'- 3 1/2"	5'- 1 1/4"	56'- 5"	204	90	202.110	10.814	1,266.080	52'- 10"	6	52'- 6"	3	33	3.572	426.642	3.529	315.420	S
12	12	6	8"	9'- 3 3/4"	2'- 2 1/2"	3'- 4 1/8"	3'- 3/4"	2'- 1 1/2"	51'- 6 3/8"	5'- 7/8"	56'- 9"	204	110	209.170	11.312	1,367.579	52'- 10"	6	52'- 6"	3	39	3.582	447.350	3.500	315.420	W

SPECIFICATION REFERENCE

QUADRUPLE BOX CULVERTS
 45 TO 50 FT. FILLS
 VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT
 ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 2 OF 2
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