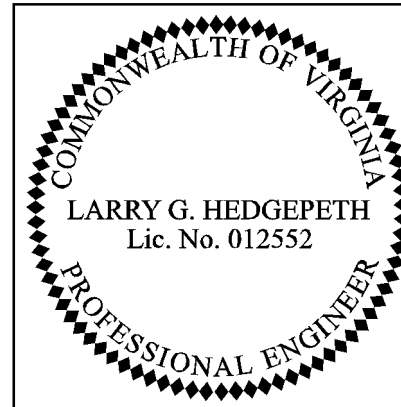


SPAN		HGHT		REINFORCING STEEL											QUAN./LF		HEADWALLS								WINGWALL	
(FT.)	(FT.)	SIZE	SPACING C-C	a	b	c	d	e	f	g	LENGTH	NO. BL.1 BARS	NO. BL.2 BARS	REINFORCING STEEL (LBS./LONG. JT)	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL (LBS./LF)	HEADWALL LENGTH	G	HW1	NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL (LBS)	OUTLET CONCRETE CL. A4 (CY)		OUTLET REINFORCING STEEL (LBS)
3	3	4	12"	2'- 8 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	14'-11 1/8"	1'- 5 3/8"	15'- 9"	60	20	57.160	1.284	141.899	16'-10"	6	16'- 6"	3	12	2.222	137.876	2.191	99.132	A
3	4	4	12"	2'- 8 7/8"	0'- 4 1/2"	1'- 6 5/8"	0'- 5 7/8"	0'- 3 3/4"	14'-11 1/8"	1'- 5 3/8"	15'- 9"	60	30	60.690	1.406	152.339	16'-10"	6	16'- 6"	3	15	2.333	148.230	2.284	99.132	C
4	3	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	19'- 0"	2'- 1/2"	19'-10"	76	20	70.520	1.539	169.287	20'-10"	6	20'- 6"	3	12	2.606	161.908	2.589	123.164	A
4	4	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	19'- 0"	2'- 1/2"	19'-10"	76	30	74.050	1.661	179.727	20'-10"	6	20'- 6"	3	15	2.718	172.262	2.682	123.164	C
4	5	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	19'- 0"	2'- 1/2"	19'-10"	76	40	77.580	1.784	190.167	20'-10"	6	20'- 6"	3	18	2.829	182.616	2.774	123.164	E
4	6	4	12"	3'- 6 1/4"	0'- 5"	1'-11"	0'- 6 1/2"	0'- 4 1/4"	19'- 0"	2'- 1/2"	19'-10"	76	50	81.110	1.907	200.607	20'-10"	6	20'- 6"	3	21	2.940	192.970	2.867	123.164	G
5	3	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	23'- 0"	2'- 6"	24'- 3"	92	20	83.880	1.998	205.949	24'-10"	6	24'- 6"	3	12	2.932	185.940	2.927	147.196	B
5	4	4	12"	4'- 3 1/8"	0'- 6 1/2"	2'- 2 1/4"	0'- 8 5/8"	0'- 5 3/4"	23'- 0"	2'- 6 1/4"	24'- 2"	92	30	87.410	2.085	215.832	24'-10"	6	24'- 6"	3	15	3.056	196.294	3.033	147.196	D
5	5	4	12"	4'- 3"	0'- 6 3/4"	2'- 2"	0'- 9"	0'- 6"	23'- 0"	2'- 6"	24'- 3"	92	40	90.940	2.243	226.829	24'-10"	6	24'- 6"	3	18	3.154	206.648	3.113	147.196	F
5	6	4	12"	4'- 3 1/8"	0'- 6 1/2"	2'- 2 1/4"	0'- 8 5/8"	0'- 5 3/4"	23'- 0"	2'- 6 1/4"	24'- 2"	92	50	94.470	2.329	242.135	24'-10"	6	24'- 6"	3	21	3.279	217.002	3.219	147.196	H
5	7	4	12"	4'- 3 1/8"	0'- 6 1/2"	2'- 2 1/4"	0'- 8 5/8"	0'- 5 3/4"	23'- 0"	2'- 6 1/4"	24'- 2"	92	60	98.000	2.452	252.575	24'-10"	6	24'- 6"	3	24	3.390	227.356	3.311	147.196	J
6	4	4	10"	4'-11 3/4"	0'- 8 1/2"	2'- 5"	0'-11 1/2"	0'- 7 3/4"	27'- 0"	2'-11 1/2"	28'- 7"	108	30	100.770	2.665	262.804	28'-10"	6	28'- 6"	3	15	3.307	220.326	3.297	171.228	D
6	5	4	10"	4'-11 3/8"	0'- 8 3/4"	2'- 4 3/4"	0'-11 1/8"	0'- 8"	27'- 0"	2'-11 1/4"	28'- 8"	108	40	104.300	2.830	274.090	28'-10"	6	28'- 6"	3	18	3.402	230.680	3.373	171.228	F
6	6	4	10"	5'- 0"	0'- 8"	2'- 5 1/2"	0'-10 3/4"	0'- 7 1/4"	27'- 0"	3'- 0"	28'- 6"	108	50	107.830	2.826	283.640	28'-10"	6	28'- 6"	3	21	3.562	241.034	3.515	171.228	H
6	7	4	10"	5'- 0"	0'- 8"	2'- 5 1/2"	0'-10 3/4"	0'- 7 1/4"	27'- 0"	3'- 0"	28'- 6"	108	60	111.360	2.948	303.672	28'-10"	6	28'- 6"	3	24	3.673	251.388	3.607	171.228	J
6	8	4	10"	4'-11 3/8"	0'- 8 1/4"	2'- 5 1/4"	0'-11 1/8"	0'- 7 1/2"	27'- 0"	2'-11 3/4"	28'- 6"	108	70	114.890	3.112	324.650	28'-10"	6	28'- 6"	3	27	3.768	261.742	3.684	171.228	L
7	4	4	9"	5'- 8 3/4"	0'- 9 3/4"	2'- 8 5/8"	1'- 1 1/4"	0'- 9"	31'- 1/8"	3'- 5 3/8"	32'-10"	124	30	114.130	3.200	313.216	32'-10"	6	32'- 6"	3	15	3.565	244.358	3.569	195.260	D
7	6	4	9"	5'- 8 3/4"	0'- 9 3/4"	2'- 8 5/8"	1'- 1 1/4"	0'- 9"	31'- 1/8"	3'- 5 3/8"	32'-10"	124	50	121.190	3.443	365.987	32'-10"	6	32'- 6"	3	21	3.788	265.066	3.754	195.260	H
7	8	4	9"	5'- 8 3/4"	0'- 9 3/4"	2'- 8 5/8"	1'- 1 1/4"	0'- 9"	31'- 1/8"	3'- 5 3/8"	32'-10"	124	70	128.250	3.687	403.333	32'-10"	6	32'- 6"	3	27	4.011	285.774	3.940	195.260	L
7	10	4	9"	5'- 8 3/4"	0'- 9 3/4"	2'- 8 5/8"	1'- 1 1/4"	0'- 9"	31'- 1/8"	3'- 5 3/8"	32'-10"	124	90	135.310	3.929	459.978	32'-10"	6	32'- 6"	3	33	4.233	306.482	4.125	195.260	P
8	4	4	9"	6'- 5 3/8"	0'-11 1/2"	2'-11 5/8"	1'- 3 3/4"	0'-10 3/4"	34'-11 3/8"	3'-10 3/8"	37'- 3"	140	30	127.490	3.901	416.231	36'-10"	6	36'- 6"	3	15	3.749	268.390	3.765	219.292	D
8	6	4	9"	6'- 5 3/8"	0'-11 1/2"	2'-11 5/8"	1'- 3 3/4"	0'-10 3/4"	34'-11 3/8"	3'-10 3/8"	37'- 3"	140	50	134.550	4.146	438.001	36'-10"	6	36'- 6"	3	21	3.971	289.098	3.951	219.292	H
8	8	4	9"	6'- 5 1/4"	0'-11 3/4"	2'-11 3/8"	1'- 4 1/8"	0'-11"	34'-11 3/8"	3'-10 5/8"	37'- 3"	140	70	141.610	4.444	476.814	36'-10"	6	36'- 6"	3	27	4.190	309.806	4.133	219.292	M
8	10	4	9"	6'- 5 3/8"	0'-11 1/2"	2'-11 5/8"	1'- 3 3/4"	0'-10 3/4"	34'-11 3/8"	3'-10 3/8"	37'- 3"	140	90	148.670	4.632	534.161	36'-10"	6	36'- 6"	3	33	4.417	330.514	4.322	219.292	P
9	4	5	9"	7'- 2"	1'- 1 3/8"	3'- 2 1/2"	1'- 6 5/8"	1'- 3/4"	39'- 0"	4'- 4"	41'- 7"	156	30	140.850	4.747	544.856	40'-10"	6	40'- 6"	3	15	3.882	292.422	3.912	243.324	E
9	6	5	9"	7'- 2"	1'- 1 3/8"	3'- 2 1/2"	1'- 6 5/8"	1'- 3/4"	39'- 0"	4'- 4"	41'- 7"	156	50	147.910	4.992	566.626	40'-10"	6	40'- 6"	3	21	4.104	313.130	4.097	243.324	I
9	8	5	9"	7'- 2"	1'- 1 3/8"	3'- 2 1/2"	1'- 6 5/8"	1'- 3/4"	39'- 0"	4'- 4"	41'- 7"	156	70	154.970	5.236	610.906	40'-10"	6	40'- 6"	3	27	4.327	333.838	4.283	243.324	M
9	10	5	9"	7'- 2"	1'- 1 3/8"	3'- 2 1/2"	1'- 6 5/8"	1'- 3/4"	39'- 0"	4'- 4"	41'- 7"	156	90	162.030	5.481	631.448	40'-10"	6	40'- 6"	3	33	4.550	354.546	4.468	243.324	Q
9	12	5	9"	7'- 2 1/2"	1'- 1 3/8"	3'- 2 1/2"	1'- 6 5/8"	1'- 3/4"	39'- 1"	4'- 4"	41'- 8"	156	110	169.090	5.768	713.655	40'-10"	6	40'- 6"	3	39	4.727	375.254	4.608	243.324	U
10	4	6	9"	7'-10 3/8"	1'- 3 1/4"	3'- 5 3/4"	1'- 8 7/8"	1'- 2 1/4"	43'- 0"	4'- 9 3/4"	45'-11"	172	30	154.210	5.559	655.664	44'-10"	6	44'- 6"	3	15	4.004	316.454	4.047	267.356	E
10	6	5	9"	7'-10 3/8"	1'- 3 1/8"	3'- 5 3/4"	1'- 8 3/4"	1'- 2 1/4"	43'- 0"	4'- 9 3/4"	45'-11"	172	50	161.270	5.805	675.010	44'-10"	6	44'- 6"	3	21	4.227	337.162	4.233	267.356	I
10	8	6	9"	7'-10 3/4"	1'- 3 1/2"	3'- 5 1/2"	1'- 9 1/4"	1'- 2 1/2"	43'- 0"	4'- 9 1/2"	45'-11"	172	70	168.330	6.115	718.045	44'-10"	6	44'- 6"	3	27	4.421	357.870	4.390	267.356	M
10	10	6	9"	7'-10 3/4"	1'- 3 1/2"	3'- 5 1/2"	1'- 9 1/4"	1'- 2 1/2"	43'- 0"	4'- 9 1/2"	45'-11"	172	90	175.390	6.358	779.808	44'-10"	6	44'- 6"	3	33	4.643	378.578	4.575	267.356	Q
10	12	5	9"	7'-11 1/4"	1'- 3 3/8"	3'- 5 1/2"	1'- 9 1/8"	1'- 2 1/2"	43'- 1"	4'- 9 1/2"	46'- 1"	172	110	182.450	6.645	862.627	44'-10"	6	44'- 6"	3	39	4.820	399.286	4.714	267.356	U
12	6	6	8"	9'- 4 1/2"	1'- 6 1/2"	4'- 1/8"	2'- 1 1/2"	1'- 5 1/2"	51'- 1/8"	5'- 8 3/8"	54'- 7"	204	50	187.990	7.729	935.948	52'-10"	6	52'- 6"	3	21	4.344	385.226	4.377	315.420	J
12	8	6	8"	9'- 4 1/2"	1'- 6 1/2"	4'- 1/8"	2'- 1 1/2"	1'- 5 1/2"	51'- 1/8"	5'- 8 3/8"	54'- 7"	204	70	195.050	7.972	983.064	52'-10"	6	52'- 6"	3	27	4.567	405.934	4.562	315.420	N
12	10	6	8"	9'- 4 1/2"	1'- 6 1/2"	4'- 1/8"	2'- 1 1/2"	1'- 5 1/2"	51'- 1/8"	5'- 8 3/8"	54'- 7"	204	90	202.110	8.214	1,050.040	52'-10"	6	52'- 6"	3	33	4.789	426.642	4.748	315.420	R
12	12	6	8"	9'- 5"	1'- 6 1/2"	4'- 1/8"	2'- 1 1/2"	1'- 5 1/2"	51'- 1/8"	5'- 8 3/8"	54'- 8"	204	110	209.170	8.504	1,114.396	52'-10"	6	52'- 6"	3	39	4.964	447.350	4.885	315.420	V



VDOT S&B Division
Richmond, Virginia
Structural Engineer

VDOT ROAD AND BRIDGE STANDARDS
 VIRGINIA DEPARTMENT OF TRANSPORTATION

QUADRUPLE BOX CULVERTS
 25 TO 30 FT. FILLS

STANDARD	REVISION DATE	SPECIFICATION REFERENCE	SHEET 2 OF 2
BCQ-30	10/09		1005.17