PROJECT MANAGER<Project Mgr_Name_(000) 000-0000 (District)>
SURVEYED BY <Surveyor_Name_(000) 000-0000 (District)>
DESIGN SUPERVISED BY <Supervisor_Name_(000) 000-0000 (District)>
DESIGNED BY <Designer_Name_(000) 000-0000 (District)>

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.			

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

BCQ-30

REINFORCING STEEL																QUAN./LF		HEADWALLS												
SPAN	HGHT	BT I																G	HW I											
(FT.)	(FT.)	SIZE	SPACING C-C	a	b	c	d	e	f	g	LENGTH	NO. BL1 BARS	NO. BL2 BARS	REINFORCING STEEL LBS/LINEAR FT	CONCRETE CLASS A4 (CY/LF)	REINFORCING STEEL LBS/LF	HEADWALL LENGTH	HEADWALL HEIGHT	SIZE	LENGTH	NO. HW1 BARS	NO. HW2 BARS	NO. HW3 BARS	INLET CONCRETE CL. A4 (CY)	INLET REINFORCING STEEL LBS	OUTLET CONCRETE CL. A4 (CY)	OUTLET REINFORCING STEEL LBS	BULKHEAD REINFORCING STEEL LBS	BULKHEAD	HWBULKH
3	3	4	12"	2'- 8⅜"	0'- 4½"	1'- 6⅝"	0'- 5⅜"	0'- 3½"	14'-11⅜"	1'- 5⅜"	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'- 8⅜"	0'- 4½"	1'- 6⅝"	0'- 5⅜"	0'- 3½"	14'-11⅜"	1'- 5⅜"	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'- 6¼"	0'- 5"	1'-11"	0'- 6½"	0'- 4¼"	19'- 0"	2'- ½"	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'- 6¼"	0'- 5"	1'-11"	0'- 6½"	0'- 4¼"	19'- 0"	2'- ½"	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'- 6¼"	0'- 5"	1'-11"	0'- 6½"	0'- 4¼"	19'- 0"	2'- ½"	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'- 6¼"	0'- 5"	1'-11"	0'- 6½"	0'- 4¼"	19'- 0"	2'- ½"	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'- 6¾"	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'- 3¼"	0'- 6½"	2'- 2¼"	0'- 8⅝"	0'- 5¾"	23'- 0"	2'- 6¼"	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'- 6¾"	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'- 3¼"	0'- 6½"	2'- 2¼"	0'- 8⅝"	0'- 5¾"	23'- 0"	2'- 6¼"	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'- 3¼"	0'- 6½"	2'- 2¼"	0'- 8⅝"	0'- 5¾"	23'- 0"	2'- 6¼"	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'-11⅞"	0'- 8½"	2'- 5"	0'-11½"	0'- 7¾"	27'- 0"	2'-11½"	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'-11⅞"	0'- 8½"	2'- 4⅞"	0'-11½"	0'- 8"	27'- 0"	2'-11½"	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'- 5½"	0'-10⅞"	0'- 7¾"	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'- 5½"	0'-10⅞"	0'- 7¾"	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'-11⅞"	0'- 8½"	2'- 5½"	0'-11½"	0'- 7½"	27'- 0"	2'-11½"	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'- 8⅞"	0'- 9⅞"	2'- 8⅝"	1'- 1½"	0'- 9"	31'- ⅛"	3'- 5⅜"	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'- 8⅞"	0'- 9⅞"	2'- 8⅝"	1'- 1½"	0'- 9"	31'- ⅛"	3'- 5⅜"	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'- 8⅞"	0'- 9⅞"	2'- 8⅝"	1'- 1½"	0'- 9"	31'- ⅛"	3'- 5⅜"	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'- 8⅞"	0'- 9⅞"	2'- 8⅝"	1'- 1½"	0'- 9"	31'- ⅛"	3'- 5⅜"	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'- 5⅜"	0'-11½"	2'-11⅜"	1'- 3⅜"	0'-10⅞"	34'-11⅜"	3'-10⅞"	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'- 5⅜"	0'-11½"	2'-11⅜"	1'- 3⅜"	0'-10⅞"	34'-11⅜"	3'-10⅞"	37'- 3"	140	50	134.550	4.146	438.001	36'-10"	6	36'- 6"	3	21	3.971	281.098	3.951	219.292	H
8	8	4	9"	6'- 5¼"	0'-11⅞"	2'-11⅝"	1'- 4½"	0'-11"	34'-11⅜"	3'-10⅞"	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'- 5⅜"	0'-11½"	2'-11⅜"	1'- 3⅜"	0'-10⅞"	34'-11⅜"	3'-10⅞"	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'- 1⅜"	3'- 2½"	1'- 6⅜"	1'- ⅜"	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'- 1⅜"	3'- 2½"	1'- 6⅜"	1'- ⅜"	39'- 0"	4'- 4"	41'- 7"	156	50	147.510	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'- 1⅜"	3'- 2½"	1'- 6⅜"	1'- ⅜"	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'- 1⅜"	3'- 2½"	1'- 6⅜"	1'- ⅜"	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
5	12	5	9"	7'- 2½"	1'- 1⅜"	3'- 2½"	1'- 6⅜"	1'- ⅜"	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'-10⅞"	1'- 3½"	3'- 5⅞"	1'- 8⅞"	1'- 2¼"	43'- 0"	4'- 9½"	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'-10⅞"	1'- 3⅞"	3'- 5⅞"	1'- 8⅞"	1'- 2¼"	43'- 0"	4'- 9½"	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'-10⅞"	1'- 3½"	3'- 5½"	1'- 9¼"	1'- 2½"	43'- 0"	4'- 9½"	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'-10⅞"	1'- 3½"	3'- 5½"	1'- 9¼"	1'- 2½"	43'- 0"	4'- 9½"	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'-11½"	1'- 3⅜"	3'- 5½"	1'- 9½"	1'- 2½"	43'- 1"	4'- 9½"	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'- 4½"	1'- 6½"	4'- ⅞"	2'- 1½"	1'- 5½"	51'- ⅛"	5'- 8⅜"	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'- 4½"	1'- 6½"	4'- ⅞"	2'- 1½"	1'- 5½"	51'- ⅛"	5'- 8⅜"	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'- 4½"	1'- 6½"	4'- ⅞"	2'- 1½"	1'- 5½"	51'- ⅛"	5'- 8⅜"	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'- 6½"	4'- ⅞"	2'- 1½"	1'- 5½"	51'- ⅛"	5'- 8⅜"	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

COMMONWEALTH OF VIRGINIA
LARRY G. HEDGEPETH
Lic. No. 012552
PROFESSIONAL ENGINEER

Larry G Hedgepeth
2009.10.08 14:48:03 -04'00'

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

NEW. 10/09
SPECIAL DESIGN SECTION
DRAWING NO. IIS10_01

	PROJECT	SHEET NO.