ESTIMATE OF QUANTITIES - FLUME BASIN

BILL OF REINFORCING STEEL			10' x 4'				10' x 5'				10' x 6'				10' x 7'				10' x 8'				10' x 9'				10' x 10'				10' x 11'				10' x 12'			
BAR	LOCATION	SHAPE	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT	SIZE	NO.	LENGTH	WEIGHT
5a1	WALLS - VERT. - F.F.		5	30	2'-7:6'-1	136	5	32	3'-4:7'-1	174	5	34	4'-2:8'-1	217	5	36	4'-11:9'-2	264	5	38	5'-8:10'-2	314	5	40	6'-5:11'-2	367	5	42	7'-3:12'-2	425	5	44	8'-0:13'-3	488	5	46	8'-9:14'-3	552
5b1	WALLS - LONGIT.- F.F. & B.F.		5	12	16'-2	202	5	16	17'-3	288	5	16	18'-4	306	5	20	19'-4	403	5	24	20'-5	511	5	28	21'-6	628	5	32	22'-6	751	5	32	23'-7	787	5	36	24'-8	926
5b2	WALLS - LONGIT.- F.F. & B.F.		5	4	15'-1	63	5	4	16'-1	67	5	8	17'-5	145	5	8	18'-5	154	5	8	19'-5	162	5	8	20'-6	171	5	8	21'-6	179	5	12	22'-7	283	5	12	23'-7	295
c1	WALLS - VERT. - B.F.		5	28	23'-1:23'-4	678	5	22	25'-1:25'-5	579	5	15	27'-3:27'-6	428	5	9	29'-3:29'-6	276	5	3	31'-5:31'-8	99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
c2	WALLS - VERT. - B.F.		5	1	17'-9	19	5	9	17'-9:19'-9	176	5	18	17'-9:22'-0	373	5	26	17'-9:24'-0	566	5	34	17'-11:26'-2	782	5	39	17'-11:27'-5	922	6	41	18'-9:28'-9	1463	7	43	20'-7:31'-1	2271	7	45	20'-9:31'-9	2414
c3	WALLS - VERT. - B.F.		5	2	5'-0	10	5	18	5'-0:6'-0	103	5	36	4'-11:7'-0	224	5	52	4'-11:8'-1	353	5	68	4'-11:9'-1	496	5	78	5'-4:10'-1	627	6	82	6'-2:11'-1	1062	7	86	6'-11:12'-2	1677	7	90	7'-8:13'-2	1916
6f1	FLOOR - LONGIT.- TOP		6	18	14'-8	397	6	19	15'-8	447	6	19	16'-11	483	6	20	17'-11	538	6	20	18'-11	568	6	21	19'-11	628	6	21	20'-11	660	6	22	21'-11	724	6	22	22'-11	757
5f2	FLOOR - LONGIT.- BOTT.		5	18	14'-8	275	5	19	15'-8	310	5	19	16'-11	335	5	20	17'-11	374	5	20	18'-11	395	5	21	19'-11	436	5	21	20'-11	458	5	22	21'-11	503	5	22	22'-11	526
5g1	CURTAIN BRACKET - VERT.		5	4	5'-6	23	5	4	5'-6	23	5	4	5'-9	24	5	4	6'-0	25	5	4	6'-3	26	5	4	6'-5	27	5	4	6'-8	28	5	4	6'-11	29	5	4	7'-2	30
5h1	BASIN BACKWALL - VERT.		5	12	7'-11	99	5	12	8'-5	105	5	12	9'-2	115	5	12	9'-8	121	5	12	10'-2	127	5	12	10'-8	134	5	12	11'-2	140	5	12	11'-8	146	5	13	12'-2	165
6m1	FLOOR TRANS. - TOP		6	15	11'-8:18'-5	339	6	16	11'-8:18'-11	367	6	17	11'-8:19'-5	397	6	18	11'-8:19'-11	427	6	19	11'-10:20'-7	463	6	20	11'-10:21'-1	494	6	21	11'-10:21'-7	527	6	22	12'-0:22'-3	566	6	23	12'-2:22'-11	606
6p1	CURTAIN - TRANS.		6	2	18'-4,18'-6	55	6	2	18'-10,19'-0	57	6	2	19'-3,19'-6	58	6	2	19'-9,20'-0	60	6	2	20'-5,20'-8	62	6	2	20'-11,21'-2	63	6	2	21'-5,21'-8	65	6	2	22'-1,22'-4	67	6	2	22'-9,23'-0	69
6s1	WALL - TOP SLOPE		6	4	16'-5	99	6	4	17'-6	105	6	4	18'-7	112	6	4	19'-7	118	6	4	20'-8	124	6	4	21'-9	131	6	4	22'-9	137	6	4	23'-10	143	6	4	24'-11	150
5t1	CURTAIN - VERT.		5	15	6'-4	99	5	15	6'-4	99	5	15	6'-7	103	5	16	6'-10	114	5	16	7'-1	118	5	17	7'-4	130	5	17	7'-7	134	5	18	7'-10	147	5	18	8'-1	152
TOTAL WEIGHT (LB)						2494				2900				3320				3793				4247				4758				6029				7831				8558
CONCRETE (CY)	FOOTING		11.9				12.7				14.2				15.4				16.8				18.0				19.3				20.8				22.4			
	WALLS		2.6				3.6				4.7				5.7				7.9				9.4				11.0				14.1				17.6			
	TOTAL		14.5				16.3				18.9				21.1				24.7				27.4				30.3				34.9				40.0			

VARIABLE DIMENSIONS

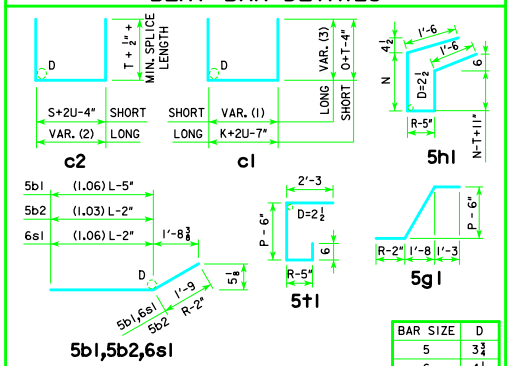
VARIABLE (1)	$K+2U-4''-\frac{(K-S)\,(\text{No. of c1}-1)}{\text{No. of c1}+\text{c2}-1}$
VARIABLE (2)	$S+2U-4''+\frac{(K-S)\,(\text{No. of c2}-1)}{\text{No. of c1}+\text{c2}-1}$
VARIABLE (3)	$O+T-4''+\frac{(N+V-O)\,(\text{No. of c1}-1)}{\text{No. of c1}+\text{c2}-1}$

TABLE OF FLUME BASIN DIMENSIONS

S x H	K	L	M	N	O	P	R	T	U	V
10' x 4'	17'-0	14'-0	3'-0	2'-3	1'-10	3'-6	1'-0	1'-1	0'-9	3'-1 1/8
10' x 5'	17'-6	15'-0	3'-9	2'-6	2'-7	3'-6	1'-0	1'-1	0'-9	3'-10 3/8
10' x 6'	18'-0	16'-0	4'-6	2'-9	3'-5	3'-6	1'-3	1'-1	0'-9	4'-7 5/8
10' x 7'	18'-6	17'-0	5'-3	3'-0	4'-2	3'-9	1'-3	1'-1	0'-9	5'-5
10' x 8'	19'-0	18'-0	6'-0	3'-3	4'-11	4'-0	1'-3	1'-1	0'-10	6'-2 1/4
10' x 9'	19'-6	19'-0	6'-9	3'-6	5'-8	4'-3	1'-3	1'-1	0'-10	6'-11 1/2
10' x 10'	20'-0	20'-0	7'-6	3'-9	6'-6	4'-6	1'-3	1'-1	0'-10	7'-8 3/4
10' x 11'	20'-6	21'-0	8'-3	4'-0	7'-3	4'-9	1'-3	1'-1	0'-11	8'-6
10' x 12'	21'-0	22'-0	9'-0	4'-3	8'-0	5'-0	1'-3	1'-1	1'-0	9'-3 3/8

S = CULVERT SPAN
H = CULVERT HEIGHT

BENT BAR DETAILS



BAR SIZE	D
5	3 3/4
6	4 1/2
7	5 1/4

NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER

NOTE:
SEE STANDARD SHEET RCF-05-12 FOR FLUME BASIN DETAILS AND NOTES.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN

REINFORCED CONCRETE BOX CULVERTS

APRIL, 2012

FLUME BASIN DETAILS

10' SPAN

RCFB-04-12

ENGLISHSIGNEDFLUMES.DGN - RCFB-04-12 - THIS SHEET ISSUED 04-12.