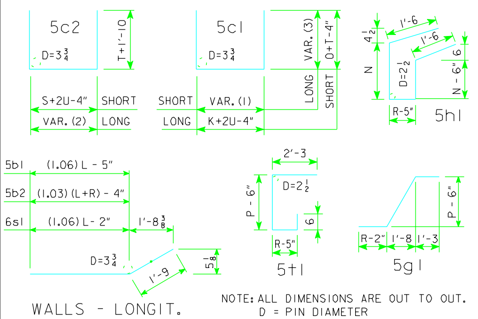
ESTIMATE QUANTITIES - FLUME BASIN

BILL OF REINFORCING STEEL			10′ x 4′			10′ x 5′			10′ x 6′			10′ x 8′		
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
5a1	WALLS - VERT. - F.F.		30	2′-8:6′-1	137	32	3′-6:7′-1	177	34	4′-3:8′-2	220	38	5′-7:9′-11	308
5b1	WALLS - LONGIT. - F.F.		16	16′-2	270	16	17′-3	288	20	18′-4	382	24	20′-5	511
5b2	WALLS - LONGIT. - F.F.		4	15′-2	63	8	16′-2	135	8	17′-5	145	8	19′-6	163
5c1	WALLS - VERT. - B.F.		28	23′-5	685	21	25′-7	561	15	27′-8	432	4	31′-6	132
5c2	WALLS - LONGIT. - B.F.		1	17′-9	19	10	17′-9:25′-6	226	18	17′-9:22′-0	373	33	17′-11:25′-11	755
5c3	WALLS - LONGIT. - B.F.		2	6′-1	13	20	6′-0:7′-1	137	36	6′-1:8′-2	267	66	6′-1:9′-11	551
6f1	FLOOR - LONGIT.-TOP		18	14′-9	399	19	9	449	19	17′-0	485	20	19′-0	571
5f2	FLOOR - LONGIT.-BOTT.		18	14′-9	277	19	9	312	19	17′-0	337	20	19′-0	396
5g1	CURTAIN BRACKET - VERT.		4	5′-4	22	4	6	23	4	6′-3	26	4	6′-5	27
5h1	BASIN BACKWALL - VERT.		12	7′-7	95	12	1	101	12	8′-10	111	12	9′-4	117
6m1	FLOOR TRANS. - TOP		29	11′-8:18′-9	662	31	11′-8:19′-3	719	33	11′-8:19′-9	778	37	11′-10:20′-11	909
6p1	CURTAIN - TRANS.		2	18′-3,18′-9	55	2	18′-9,19′-3	57	2	19′-1,19′-9	58	2	20′-3,20′-11	62
6s1	WALL - TOP SLOPE		4	16′-2	97	4	3	104	4	18′-4	110	4	20′-5	123
5t1	CURTAIN - VERT.		15	6′-1	95	15	4	99	16	7′-1	118	17	7′-4	130
TOTAL REINFORCING STEEL			2889 LBS.			3388 LBS.			3842 LBS.			4755 LBS.		
TOTAL CONCRETE			14.3 CU. YDS.			16.3 CU. YDS.			19.4 CU. YDS.			24.6 CU. YDS.		

MARK	10′ x 10′			10′ x 12′			12′ x 6′			12′ x 8′			12′ x 10′			12′ x 12′			MARK
	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	
5a1	42	7′-2:12′-0	419	46	8′9:14′-0	546	34	4′-4:8′-3	223	38	5′-8:10′-0	311	42	7′-3:12′-1	423	46	8′-10:14′-1	550	5a1
5b1	32	22′-7	754	40	24′-8	1029	20	18′-4	382	24	20′-5	511	32	22′-7	754	40	24′-8	1029	5b1
5b2	8	21′-7	180	12	23′-8	296	8	17′-5	145	8	19′-6	163	8	21′-7	180	12	23′-8	296	5b2
5c1	---	-----	----	---	-----	----	14	29′-10	435	3	33′-8	105	---	-----	----	---	-----	----	5c1
5c2	41	17′-11:28′-0	981	45	18′-3:29′-4	1116	19	19′-11:24′-5	439	34	20′-1:28′-4	859	41	20′-1:30′-1	1073	45	20′-5:31′-6	1218	5c2
5c3	82	7′-2:12′-0	819	90	8′-9:14′-0	1069	38	6′-0:8′-3	282	68	6′-0:10′-0	569	82	7′-3:12′-1	826	90	8′-10:14′-1	1077	5c3
6f1	21	21′-0	662	22	23′-0	760	21	17′-0	536	22	19′-0	628	23	21′-0	725	24	23′-0	829	6f1
5f2	21	21′-0	460	22	23′-0	528	21	17′-0	372	22	19′-0	436	23	21′-0	504	24	23′-0	576	5f2
5g1	4	6′-8	28	4	6′-11	29	4	6′-3	26	4	6′-5	27	4	6′-8	28	4	6′-11	29	5g1
5h1	12	10′-4	129	12	11′-4	142	14	8′-10	129	14	9′-4	136	14	10′-4	151	14	11′-4	165	5h1
6m1	41	11′-10:21′-11	1038	45	12′-2:23′-3	1196	33	13′-8:21′-9	877	37	13′-10:22′-11	1020	41	13′-10:23′-11	1161	45	14′-2:25′-3	1331	6m1
6p1	2	21′-3,21′-11	65	2	22′-7,23′-3	69	2	21′-1,21′-9	64	2	22′-3,22′-11	68	2	23′-3,23′-11	71	2	24′-7,25′-3	75	6p1
6s1	4	22′-7	136	4	24′-8	148	4	18′-4	110	4	20′-5	123	4	22′-7	136	4	24′-8	148	6s1
5t1	17	7′-7	134	18	7′-10	147	17	7′-1	126	18	7′-4	138	19	7′-7	150	20	7′-10	163	5t1
TOTAL REINFORCING STEEL	5805 LBS.			7075 LBS.			4146 LBS.			5094 LBS.			6182 LBS.			7486 LBS.			
TOTAL CONCRETE	30.1 CU. YDS.			39.4 CU. YDS.			21.9 CU. YDS.			27.5 CU. YDS.			33.3 CU. YDS.			42.9 CU. YDS.			

BENT BAR DETAILS



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

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′-11	3′-3	1′-0	1′-1	9	3′-1⅛
10′ x 5′	17′-6	15′-0	3′-9	2′-6	2′-9	3′-6	1′-0	1′-1	9	3′-10⅜
10′ x 6′	18′-0	16′-0	4′-6	2′-9	3′-6	4′-0	1′-3	1′-1	9	4′-7⅝
10′ x 8′	19′-0	18′-0	6′-0	3′-0	4′-10	4′-3	1′-3	1′-1	10	6′-2¼
10′ x 10′	20′-0	20′-0	7′-6	3′-6	6′-5	4′-6	1′-3	1′-1	10	7′-8¾
10′ x 12′	21′-0	22′-0	9′-0	4′-0	8′-0	4′-9	1′-3	1′-1	1′-0	9′-3⅜
12′ x 6′	20′-0	16′-0	4′-6	2′-9	3′-6	4′-0	1′-3	1′-2	9	4′-7⅝
12′ x 8′	21′-0	18′-0	6′-0	3′-0	4′-10	4′-3	1′-3	1′-2	10	6′-2¼
12′ x 10′	22′-0	20′-0	7′-6	3′-6	6′-5	4′-6	1′-3	1′-2	10	7′-8¾
12′ x 12′	23′-0	22′-0	9′-0	4′-0	8′-0	4′-9	1′-3	1′-2	1′-0	9′-3⅜

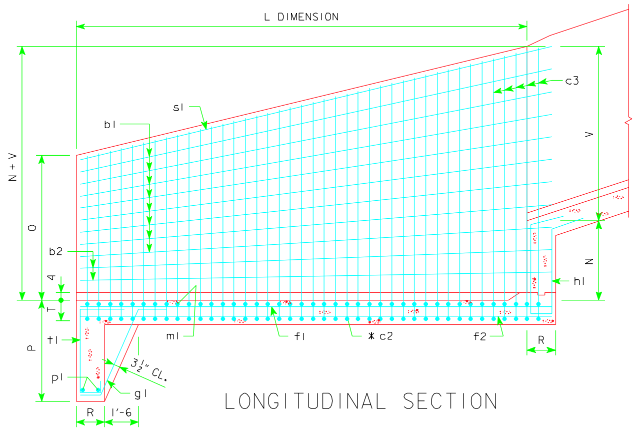
VARIABLE DIMENSIONS

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)	$O+T-4'' + \frac{(N+V-O)(\text{No. of c1} - 1)}{\text{No. of c1} + \text{c2} - 1}$

CONCRETE PLACEMENT

BASIN	FOOTING	WALLS
10′ x 4′	11.6	2.6
10′ x 5′	12.7	3.6
10′ x 6′	14.7	4.7
10′ x 8′	17.0	7.6
10′ x 10′	19.2	10.8
10′ x 12′	22.1	17.3
12′ x 6′	17.2	4.7
12′ x 8′	19.9	7.6
12′ x 10′	22.5	10.8
12′ x 12′	25.6	17.3

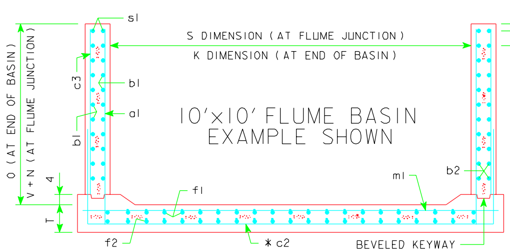
S = CULVERT SPAN
H = CULVERT HEIGHT



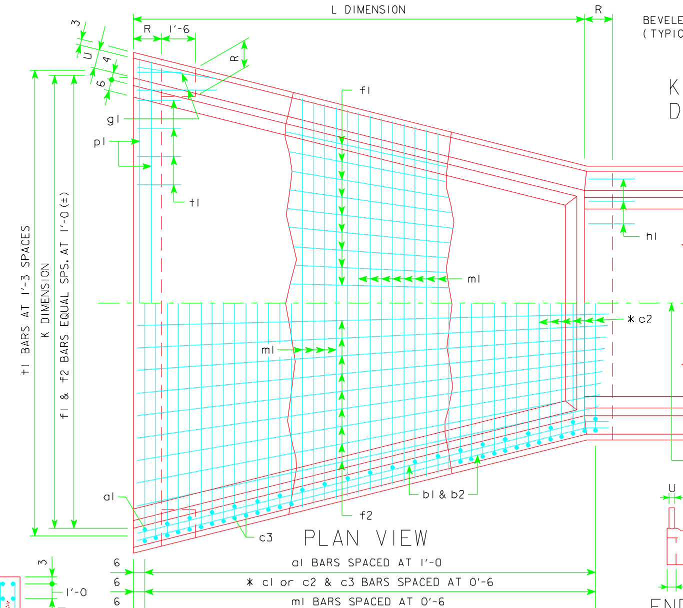
LONGITUDINAL SECTION

FLUME BASIN NOTES:

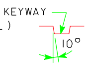
SEE STANDARD SHEET RCF-01-03 FOR GENERAL INFORMATION.
c2 & c3 BARS ARE LAPPED.
∗ c1 BARS ARE OMITTED IF BOTH S AND H ARE EQUAL TO OR LARGER THAN 8′ AND 10′ RESPECTIVELY.



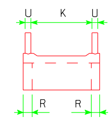
10′x10′ FLUME BASIN EXAMPLE SHOWN



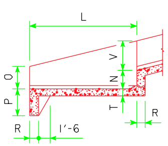
PLAN VIEW



KEYWAY DETAIL



END VIEW



LATEST REVISION DATE :	APPROVED BY :	STANDARD DESIGN
		REINFORCED CONCRETE FLUME BASINS FOR REINFORCED CONCRETE FLUMES IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION JANUARY, 2004 RCFB-03-04

RCFB-03-04 - THIS SHEET ISSUED 01-04.

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC