FLUME BASIN NOTES:
SEE STANDARD SHEET RCF-01-04 FOR GENERAL INFORMATION.
c2 & c3 BARS ARE LAPPED.

ESTIMATE QUANTITIES - FLUME BASIN

BILL OF REINFORCING STEEL			3′ x 3′			4′ x 4′			5′ x 3′			5′ x 4′			5′ x 5′			5′ x 6′		
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
4a1	WALLS - VERT. - F.F.		28	1′-9:4′-11	62	30	2′-6:5′-11	84	28	1′-9:4′-11	62	30	2′-6:5′-11	84	32	3′-4:6′-11	110	34	4′-1:8′-0	137
5b1	WALLS - LONGIT.- F.F. & B.F.		12	15′-1	189	16	16′-2	270	12	15′-1	189	16	16′-2	270	16	17′-3	288	20	18′-4	382
5b2	WALLS - LONGIT.- F.F. & B.F.		4	13′-10	58	4	15′-2	63	4	13′-10	58	4	15′-2	63	8	16′-2	135	8	17′-5	145
5c1	WALLS - VERT. - B.F.		14	14′-1	206	15	17′-1	268	14	16′-1	235	15	18′-1	283	12	20′-3	254	8	22′-4	186
5c2	WALLS - VERT. - B.F.		---	-----	----	---	-----	----	---	-----	----	---	-----	----	4	12′-5:13′-11	55	9	12′-5:16′-5	135
5c3	WALLS - VERT. - B.F.		---	-----	----	---	-----	----	---	-----	----	---	-----	----	8	6′-3:6′-11	55	18	6′-0:8′-0	131
6f1	FLOOR - LONGIT.- TOP		11	13′-6	223	12	14′-9	266	13	13′-6	264	13	14′-9	288	14	15′-9	331	14	17′-0	357
5f2	FLOOR - LONGIT.- BOTT.		11	13′-6	155	12	14′-9	185	13	13′-6	183	13	14′-9	200	14	15′-9	230	14	17′-0	248
4g1	CURTAIN BRACKET - VERT.		4	4′-10	13	4	5′-4	14	4	4′-10	13	4	5′-4	14	4	5′-6	15	4	6′-3	17
5h1	BASIN BACKWALL - VERT.		5	6′-10	36	6	7′-7	47	7	6′-10	50	7	7′-7	55	7	8′-1	59	7	8′-10	64
5m1	FLOOR TRANS. - TOP		14	4′-8:11′-3	116	15	5′-8:12′-9	144	14	6′-8:13′-3	145	15	6′-8:13′-9	159	16	6′-8:14′-3	174	17	6′-8:14′-9	190
5p1	CURTAIN - TRANS.		2	10′-10,11′-3	23	2	12′-3,12′-9	26	2	12′-10,13′-3	27	2	13′-3,13′-9	28	2	13′-9,14′-3	29	2	14′-1,14′-9	30
5s1	WALL - TOP SLOPE		4	15′-1	63	4	16′-2	67	4	15′-1	63	4	16′-2	67	4	17′-3	72	4	18′-4	76
5t1	CURTAIN - VERT.		9	5′-7	52	10	6′-1	63	11	5′-7	64	11	6′-1	70	11	6′-4	73	12	7′-1	89
TOTAL REINFORCING STEEL			1196 LBS.			1497 LBS.			1353 LBS.			1581 LBS.			1880 LBS.			2187 LBS.		
TOTAL CONCRETE			6.9 CU. YDS.			9.3 CU. YDS.			8.0 CU. YDS.			9.9 CU. YDS.			11.6 CU. YDS.			14.1 CU. YDS.		

S = CULVERT SPAN
H = CULVERT HEIGHT

TABLE OF FLUME BASIN DIMENSIONS

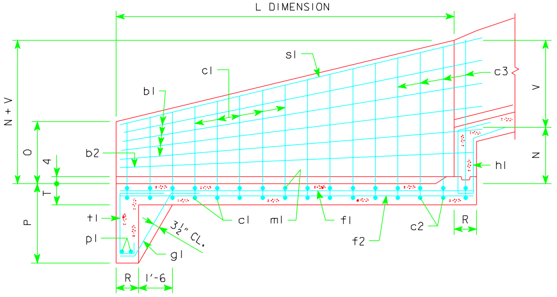
S x H	K	L	M	N	O	P	R	T	U	V
3′ x 3′	9′-6	13′-0	2′-3	2′-0	1′-2	3′-0	9	11	9	2′-3 7/8
4′ x 4′	11′-0	14′-0	3′-0	2′-3	1′-11	3′-3	1′-0	11	9	3′-1 1/8
5′ x 3′	11′-6	13′-0	2′-3	2′-0	1′-2	3′-0	9	11	9	2′-3 7/8
5′ x 4′	12′-0	14′-0	3′-0	2′-3	1′-11	3′-3	1′-0	11	9	3′-1 1/8
5′ x 5′	12′-6	15′-0	3′-9	2′-6	2′-9	3′-6	1′-0	11	9	3′-10 3/8
5′ x 6′	13′-0	16′-0	4′-6	2′-9	3′-6	4′-0	1′-3	11	9	4′-7 5/8

CONCRETE PLACEMENT

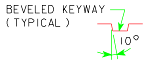
BASIN	FOOTING	WALLS
3′ x 3′	5.1	1.8
4′ x 4′	6.6	2.6
5′ x 3′	6.2	1.8
5′ x 4′	7.3	2.6
5′ x 5′	8.0	3.6
5′ x 6′	9.4	4.7

VARIABLE DIMENSIONS

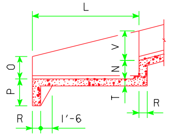
VARIABLE (1)	$K+2U-4'' - \frac{(K-S)(\text{No. of c1} - 1)}{\text{No. of c1} + c2 - 1}$
VARIABLE (2)	$S+2U-4'' + \frac{(K-S)(\text{No. of c2} - 1)}{\text{No. of c1} + c2 - 1}$
VARIABLE (3)	$O+T-4'' + \frac{(N+V-O)(\text{No. of c1} - 1)}{\text{No. of c1} + c2 - 1}$

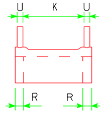


LONGITUDINAL SECTION

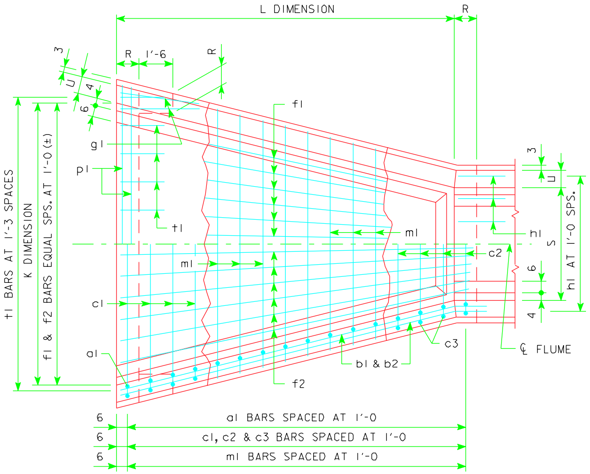


KEYWAY DETAIL

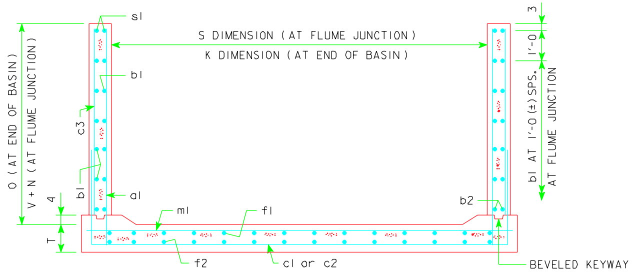




END VIEW

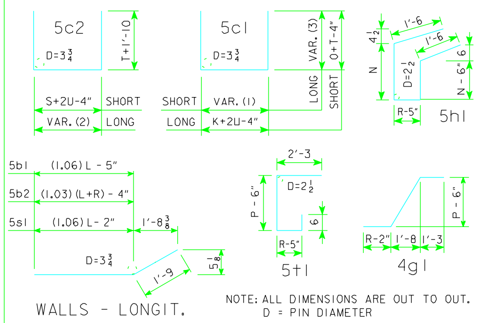


PLAN VIEW



5′x5′ FLUME BASIN EXAMPLE SHOWN

BENT BAR DETAILS



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

LATEST REVISION DATE :

APPROVED BY :

STANDARD DESIGN
REINFORCED CONCRETE FLUME BASINS
FOR
REINFORCED CONCRETE FLUMES

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
JANUARY, 2004

RCFB-01-04

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