

End Details

Estimate of Quantities - Flume Basin																											
Bill of Reinforcing Steel				6' x 3'				6' x 4'				6' x 5'				6' x 6'				6' x 7'				6' x 8'			
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	
5a1	Walls - Vert. - F.F.		5	28	1'-8";4'-10"	95	5	30	2'-5";5'-11"	130	5	32	3'-2";6'-11"	168	5	34	4'-0";7'-11"	211	5	36	4'-9";9'-0"	258	5	38	5'-6";10'-0"	307	
5b1	Walls - Longit.- F.F. & B.F.		5	8	15'-4"	128	5	12	16'-5"	205	5	16	17'-6"	292	5	16	18'-7"	310	5	20	19'-7"	409	5	24	20'-8"	517	
5b2	Walls - Longit.- F.F. & B.F.		5	4	13'-10"	58	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	
c1	Walls - Vert. - B.F.		5	27	16'-9";17'-0"	475	5	29	18'-9";19'-0"	571	5	23	20'-9";21'-1"	502	5	17	22'-11";23'-2"	409	5	11	24'-11";25'-2"	287	5	5	27'-1";27'-4"	142	
c2	Walls - Vert. - B.F.		--	--	--	--	--	--	--	--	5	16	13'-1";14'-10"	116	5	16	13'-1";16'-10"	250	5	24	13'-1";18'-10"	399	5	32	13'-3";21'-0"	572	
c3	Walls - Vert. - B.F.		--	--	--	--	--	--	--	--	5	32	5'-2";7'-0"	92	5	48	5'-2";8'-1"	203	5	48	5'-2";8'-1"	332	5	64	5'-2";9'-1"	476	
6f1	Floor - Longit.- Top		6	14	13'-5"	282	6	14	14'-8"	308	6	15	15'-8"	353	6	15	16'-11"	381	6	16	17'-11"	431	6	16	18'-11"	455	
5f2	Floor - Longit.- Bott.		5	14	13'-5"	196	5	14	14'-8"	214	5	15	15'-8"	245	5	15	16'-11"	265	5	16	17'-11"	299	5	16	18'-11"	316	
5g1	Curtain Bracket - Vert.		5	4	5'-3"	22	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	
5h1	Basin Backwall - Vert.		5	8	7'-4"	61	5	8	8'-1"	67	5	8	8'-7"	72	5	8	9'-4"	78	5	8	9'-10"	82	5	8	10'-4"	86	
6m1	Floor Trans. - Top		6	14	7'-8";13'-11"	227	6	15	7'-8";14'-5"	249	6	16	7'-8";14'-11"	271	6	17	7'-8";15'-5"	295	6	18	7'-8";15'-11"	319	6	19	7'-10";16'-7"	348	
6p1	Curtain - Trans.		6	2	14'-0"	42	6	2	14'-4";14'-6"	43	6	2	14'-10";15'-0"	45	6	2	15'-3";15'-6"	46	6	2	15'-9";16'-0"	48	6	2	16'-5";16'-8"	50	
6s1	Wall - Top Slope		6	4	15'-7"	94	6	4	16'-8"	100	6	4	17'-9"	107	6	4	18'-10"	113	6	4	19'-10"	119	6	4	20'-11"	126	
5t1	Curtain - Vert.		5	11	6'-1"	70	5	11	6'-4"	73	5	12	6'-4"	79	5	12	6'-7"	82	5	13	6'-10"	93	5	13	7'-1"	96	
Total Weight (LB)				1750				2046				2432				2812				3255				3679			
Concrete (CY)				Footings				Walls				Total				Footings				Walls				Total			
				7.0				8.1				8.7				9.8				10.7				12.4			
				1.8				2.6				3.6				4.7				5.8				7.9			
				8.8				10.7				12.3				14.5				16.5				20.3			

Variable Dimensions

Variable (1)	$K+2U-4"$ (K-S) (No. of c1 - 1) No. of c1 + c2 - 1
Variable (2)	$S+2U-4"$ (K-S) (No. of c2 - 1) No. of c1 + c2 - 1
Variable (3)	$O+T-4"$ (N+V-O) (No. of c1 - 1) No. of c1 + c2 - 1

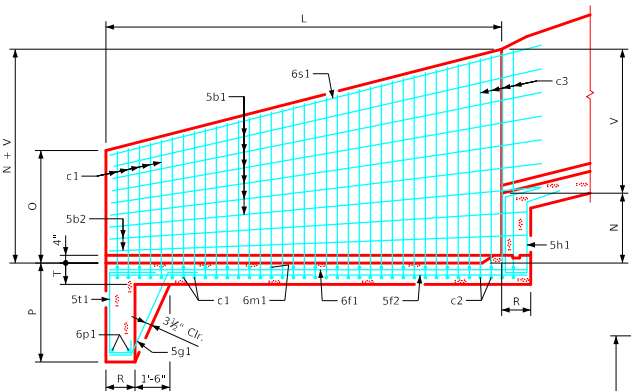
Table of Flume Basin Dimensions

S x H	K	L	M	N	O	P	R	T	U	V
6' x 3'	12'-6"	13'-0"	2'-3"	2'-0"	1'-1"	3'-6"	9"	11"	9"	2'-3 1/2"
6' x 4'	13'-0"	14'-0"	3'-0"	2'-3"	1'-10"	3'-6"	1'-0"	11"	9"	3'-1 1/2"
6' x 5'	13'-6"	15'-0"	3'-9"	2'-6"	2'-7"	3'-6"	1'-0"	11"	9"	3'-10 1/2"
6' x 6'	14'-0"	16'-0"	4'-6"	2'-9"	3'-6"	3'-6"	1'-3"	11"	9"	4'-7 1/2"
6' x 7'	14'-6"	17'-0"	5'-3"	3'-0"	4'-2"	3'-6"	1'-3"	11"	9"	5'-5"
6' x 8'	15'-0"	18'-0"	6'-0"	3'-3"	4'-11"	4'-0"	1'-3"	11"	10"	6'-2 1/2"

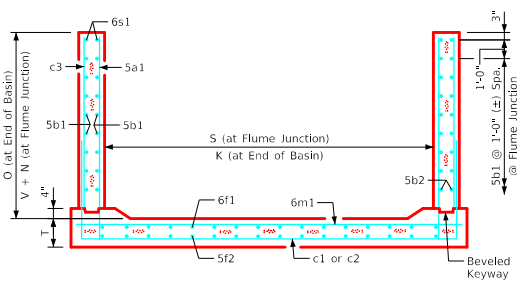
S = Culvert Span
H = Culvert Height

Flume Basin Notes:

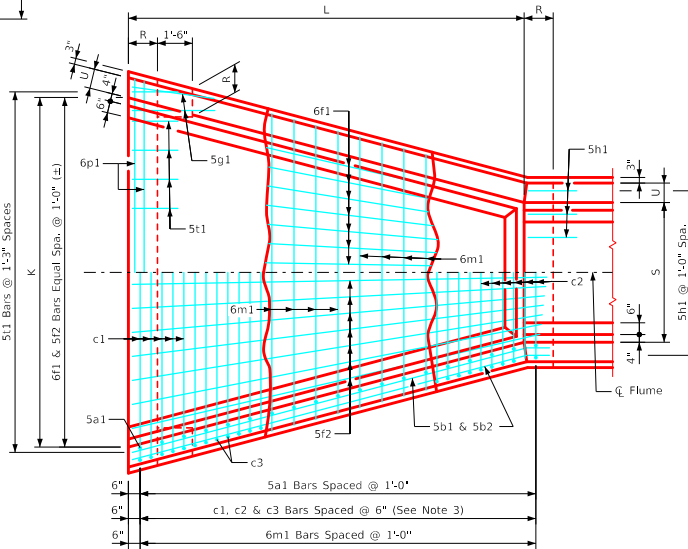
- See Sheet RCF 01-20 for general information.
- c2 & c3 bars are lapped.
- c1 bars are omitted if both "S" and "H" are equal to or larger than 8' and 9' respectively.



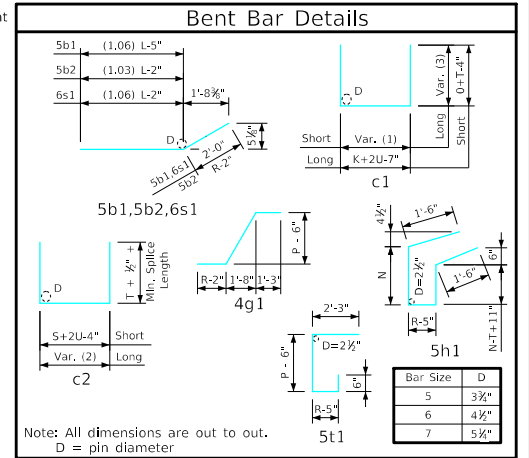
Longitudinal Section



6'-0" x 8'-0" Flume Basin Example Shown



Plan View



Note: All dimensions are out to out.
D = pin diameter

Bar Size	D
5	3 1/2"
6	4 1/2"
7	5 1/2"

IOWADOT Highway Division
Standard Design
Single Reinforced Concrete Box Culverts
December, 2020

Flume Basin Details
6'-0" SPAN

RCFB 02-20