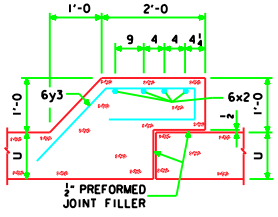
ESTIMATE OF QUANTITIES - FLUME BELL JOINTS

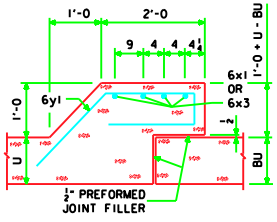
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	MARK
JUNCTION BELL JOINT			6' x 3'			6' x 4'			6' x 5'			6' x 6'			6' x 8'			8' x 4'			8' x 5'			8' x 6'			8' x 8'			8' x 10'			
6x1	WALLS & FLOOR		4	20'-0	120	4	17'-7	106	4	17'-7	106	4	17'-7	106	4	17'-9	107	4	19'-7	118	4	19'-7	118	4	19'-7	118	4	19'-9	119	4	19'-9	119	6x1
6x3	WALLS VERT.		---	-----	----	8	4'-4	52	8	5'-4	64	8	6'-4	76	8	8'-4	100	8	4'-4	52	8	5'-4	64	8	6'-4	76	8	8'-4	100	8	10'-4	124	6x3
6y1	WALLS HORIZ.		10	6'-1	91	12	6'-1	110	14	6'-1	128	16	6'-1	146	20	6'-3	188	12	6'-1	110	14	6'-1	128	16	6'-1	146	20	6'-3	188	24	6'-3	225	6y1
6y2	FLOOR VERT.		8	7'-4	88	8	7'-4	88	8	7'-4	88	8	7'-4	88	8	7'-4	88	10	7'-4	110	10	7'-4	110	10	7'-4	110	10	7'-4	110	10	7'-4	110	6y2
6z1	FLOOR VERT.		8	3'-5	41	8	3'-5	41	8	3'-5	41	8	3'-5	41	8	3'-5	41	10	3'-5	51	10	3'-5	51	10	3'-5	51	10	3'-5	51	10	3'-5	51	6z1
TOTAL REINFORCING STEEL				340 LBS.			397 LBS.			427 LBS.			457 LBS.			524 LBS.			441 LBS.			471 LBS.			501 LBS.			568 LBS.			629 LBS.		
TOTAL CONCRETE				2.0 CU. YDS.			2.1 CU. YDS.			2.3 CU. YDS.			2.5 CU. YDS.			2.9 CU. YDS.			2.4 CU. YDS.			2.6 CU. YDS.			2.8 CU. YDS.			3.1 CU. YDS.			3.5 CU. YDS.		
CHUTE BELL JOINT			6' x 3'			6' x 4'			6' x 5'			6' x 6'			6' x 8'			8' x 4'			8' x 5'			8' x 6'			8' x 8'			8' x 10'			
6x2	WALLS & FLOOR		4	16'-10	101	4	18'-4	110	4	19'-10	119	4	17'-7	106	4	17'-9	107	4	20'-4	122	4	21'-10	131	4	19'-7	118	4	19'-9	119	4	19'-9	119	6x2
6x4	WALLS VERT.		---	-----	----	---	-----	----	---	-----	----	8	4'-0	48	8	5'-6	66	---	-----	----	---	-----	----	8	4'-0	48	8	5'-6	66	8	7'-0	84	6x4
6y3	WALLS HORIZ.		8	6'-1	73	8	6'-1	73	10	6'-1	91	12	6'-1	110	14	6'-3	131	8	6'-1	73	10	6'-1	91	12	6'-1	110	14	6'-3	131	18	6'-3	169	6y3
6y4	FLOOR VERT.		8	7'-3	87	8	7'-3	87	8	7'-3	87	8	7'-3	87	8	7'-3	87	10	7'-3	109	10	7'-3	109	10	7'-3	109	10	7'-3	109	10	7'-3	109	6y4
6z1	FLOOR VERT.		8	3'-5	41	8	3'-5	41	8	3'-5	41	8	3'-5	41	8	3'-5	41	10	3'-5	51	10	3'-5	51	10	3'-5	51	10	3'-5	51	10	3'-5	51	6z1
TOTAL REINFORCING STEEL				302 LBS.			311 LBS.			338 LBS.			392 LBS.			432 LBS.			355 LBS.			382 LBS.			436 LBS.			476 LBS.			532 LBS.		
TOTAL CONCRETE				1.7 CU. YDS.			1.8 CU. YDS.			1.9 CU. YDS.			2.1 CU. YDS.			2.4 CU. YDS.			2.0 CU. YDS.			2.2 CU. YDS.			2.3 CU. YDS.			2.6 CU. YDS.			2.9 CU. YDS.		

CONCRETE PLACEMENT

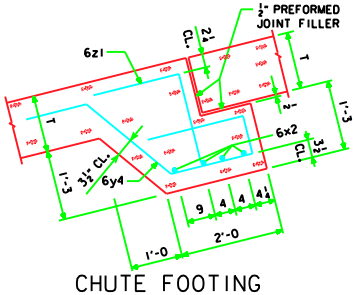
S x H	JUNCTION BELL		CHUTE BELL	
	FOOTING	WALLS	FOOTING	WALLS
6' x 3'	1.3	0.6	1.3	0.4
6' x 4'	1.3	0.8	1.3	0.5
6' x 5'	1.3	1.0	1.3	0.6
6' x 6'	1.3	1.2	1.3	0.8
6' x 8'	1.3	1.6	1.3	1.0
8' x 4'	1.5	0.8	1.5	0.5
8' x 5'	1.5	1.0	1.5	0.6
8' x 6'	1.5	1.2	1.5	0.8
8' x 8'	1.6	1.6	1.6	1.0
8' x 10'	1.6	1.9	1.6	1.3



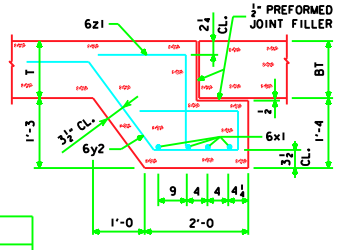
CHUTE WALLS



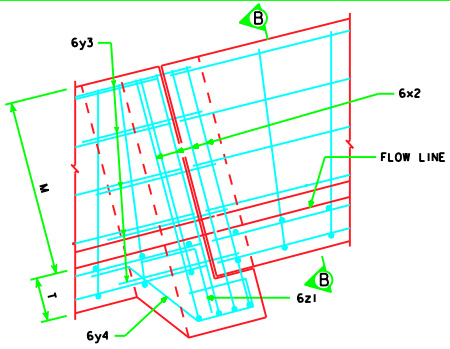
JUNCTION WALLS



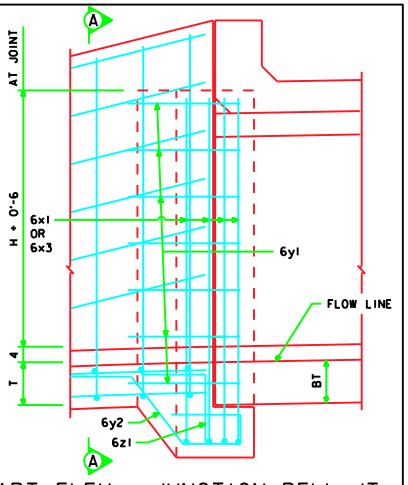
CHUTE FOOTING



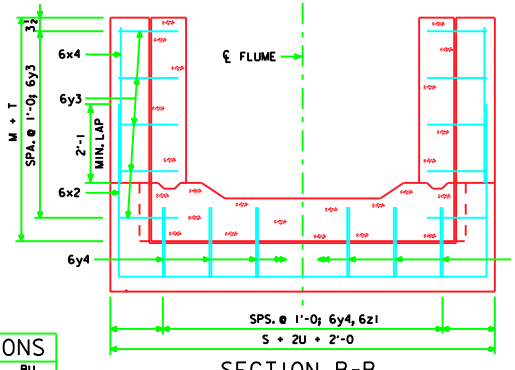
JUNCTION FOOTING



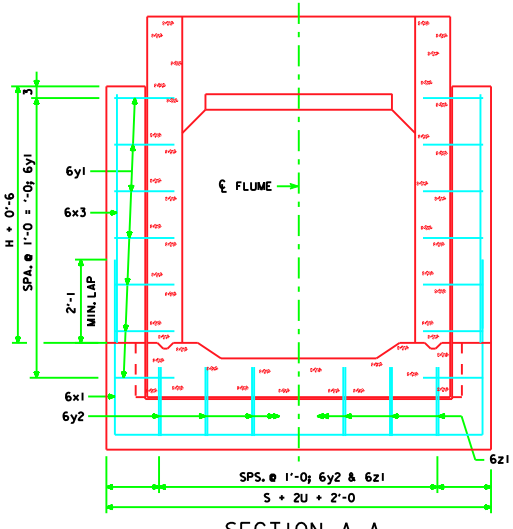
PART ELEVATION - CHUTE BELL JT.



PART ELEV. - JUNCTION BELL JT.

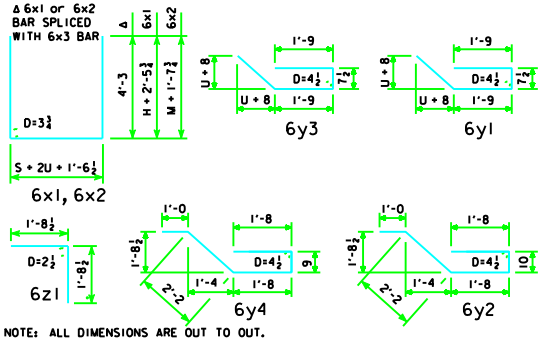


SECTION B-B



SECTION A-A

BENT BAR DETAILS



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

S = CULVERT SPAN
H = CULVERT HEIGHT

BARREL & CHUTE DIMENSIONS

S x H	M	T	U	BT	BU
6' x 3'	2'-3	11	9	10	9
6' x 4'	3'-0	11	9	10	9
6' x 5'	3'-9	11	9	10	9
6' x 6'	4'-6	11	9	10	9
6' x 8'	6'-0	11	10	10	9
8' x 4'	3'-0	11	9	10	9
8' x 5'	3'-9	11	9	10	9
8' x 6'	4'-6	11	9	10	9
8' x 8'	6'-0	11	10	10	9
8' x 10'	7'-6	11	10	10	9

NOTES:

1. DIMENSIONS AND QUANTITIES SHOWN BASED ON 'U' FLUME WALLS, 'BU' BARREL WALLS, 'T' FLUME FLOOR AND 'BT' BARREL FLOOR THICKNESSES.
2. CHANGE LENGTHS OF BARS 6x1 AND ADJUST REINFORCING STEEL AND CONCRETE QUANTITIES ACCORDINGLY OTHER THAN WALL AND FLOOR THICKNESSES SHOWN.
3. FLOOR BARS m1 ARE TO BE SHORTENED 6" AT BELL JOINTS.
4. SEE STANDARD SHEET RCF-01-04 FOR GENERAL INFORMATION.

LATEST REVISION DATE : 04-07

APPROVED BY :

STANDARD DESIGN

FLUME BELL JOINTS

FOR

REINFORCED CONCRETE FLUMES - 6' & 8' SPANS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

JANUARY, 2004

FBJ-02-04

REVISED 04-07 - 6x & 6y BAR LENGTHS CHANGED. BAR SIZES ADDED TO BAR LABELS.
FBJ0204.S01 - THIS SHEET ISSUED 01-04.