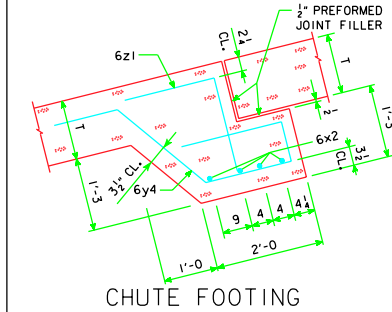


ESTIMATE OF QUANTITIES - FLUME BELL JOINTS

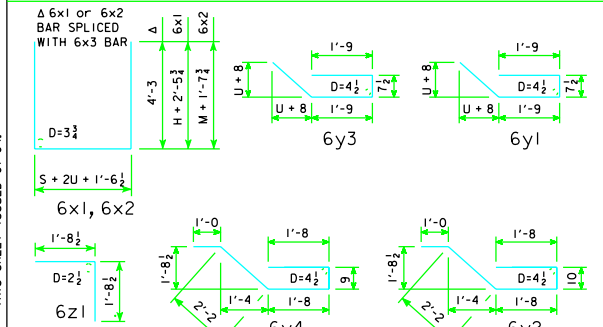
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	MARK		
JUNCTION BELL JOINT																							
6x1	WALLS & FLOOR	---	4	20'-0"	---	4	17'-7"	106	4	17'-7"	106	4	17'-9"	107	4	19'-7"	118	4	19'-7"	118	4	19'-9"	119
6x3	WALLS 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
6y1	WALLS HORIZ.	---	10	6'-1"	---	12	6'-1"	110	14	6'-1"	128	16	6'-1"	146	20	6'-1"	110	14	6'-1"	128	16	6'-1"	146
6y2	FLOOR VERT.	---	8	7'-4"	---	8	7'-4"	88	8	7'-4"	88	8	7'-4"	88	8	7'-4"	110	10	7'-4"	110	10	7'-4"	110
6z1	FLOOR VERT.	---	8	3'-5"	---	8	3'-5"	41	8	3'-5"	41	8	3'-5"	41	10	3'-5"	51	10	3'-5"	51	10	3'-5"	51
CHUTE BELL JOINT																							
6x2	WALLS & FLOOR	---	4	16'-10"	---	4	18'-4"	110	4	19'-10"	119	4	17'-7"	106	4	17'-9"	107	4	20'-4"	122	4	21'-10"	131
6x4	WALLS VERT.	---	---	---	---	8	4'-0"	48	8	5'-6"	66	---	---	---	---	---	---	---	---	---	---	---	---
6y3	WALLS HORIZ.	---	8	6'-1"	---	8	6'-1"	73	10	6'-1"	91	12	6'-1"	110	14	6'-3"	131	8	6'-1"	73	10	6'-1"	91
6y4	FLOOR VERT.	---	8	7'-3"	---	8	7'-3"	87	8	7'-3"	87	8	7'-3"	87	10	7'-3"	109	10	7'-3"	109	10	7'-3"	109
6z1	FLOOR VERT.	---	8	3'-5"	---	8	3'-5"	41	8	3'-5"	41	8	3'-5"	41	10	3'-5"	51	10	3'-5"	51	10	3'-5"	51
BARREL BELL JOINT																							
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 1.9 CU. YDS. 2.1 CU. YDS. 2.3 CU. YDS. 2.5 CU. YDS. 2.9 CU. YDS. 2.3 CU. YDS. 2.5 CU. YDS. 2.7 CU. YDS. 3.2 CU. YDS. 3.5 CU. YDS.																							
CHUTE BELL JOINT																							
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. 2.3 CU. YDS. 2.0 CU. YDS. 2.1 CU. YDS. 2.3 CU. YDS. 2.6 CU. YDS. 2.9 CU. YDS.																							

CONCRETE PLACEMENT

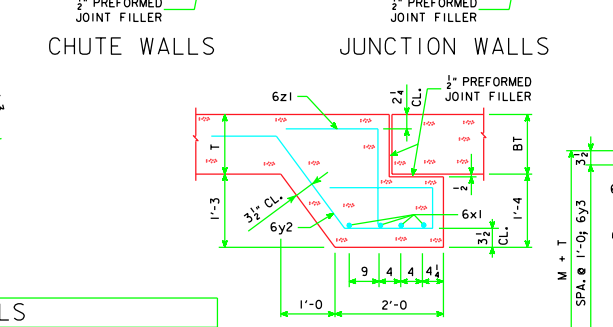
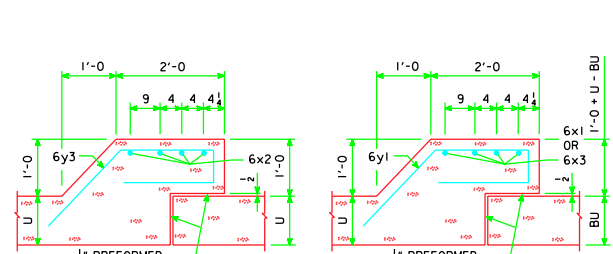
S x H	JUNCTION BELL		CHUTE BELL	
	FOOTING	WALLS	FOOTING	WALLS
6' x 3'	1.3	0.6	1.3	0.4
6' x 4'	1.3	0.8	1.3	0.5
6' x 5'	1.3	1.0	1.3	0.6
6' x 6'	1.3	1.2	1.3	0.8
6' x 8'	1.3	1.6	1.3	1.0
8' x 4'	1.5	0.8	1.5	0.5
8' x 5'	1.5	1.0	1.5	0.6
8' x 6'	1.5	1.2	1.5	0.8
8' x 8'	1.6	1.6	1.6	1.0
8' x 10'	1.6	1.9	1.6	1.3



BENT BAR DETAILS



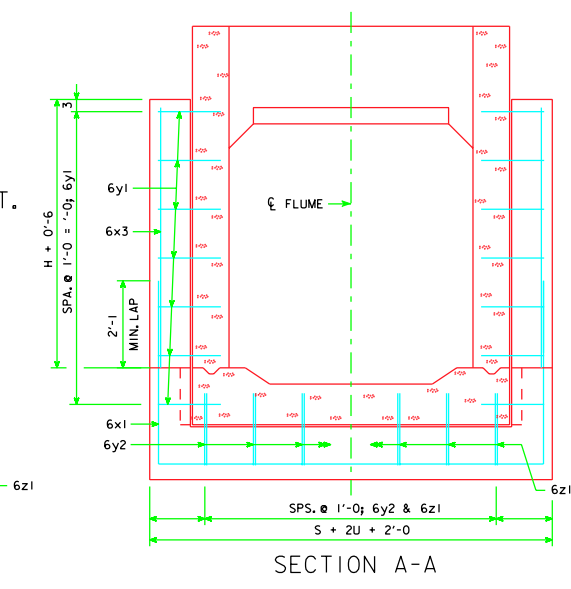
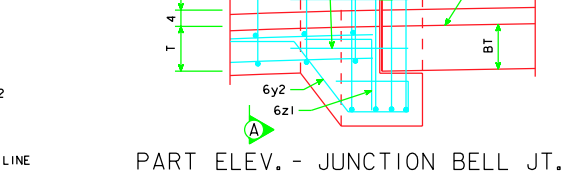
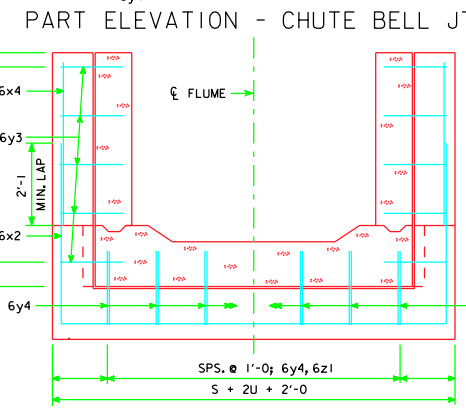
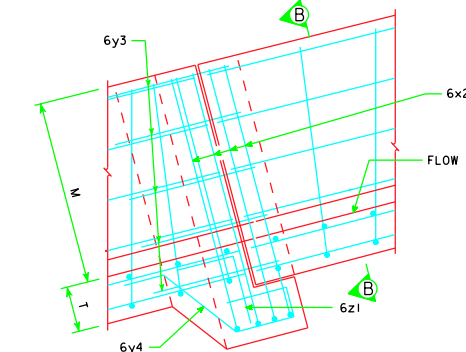
NOTE: ALL DIMENSIONS ARE OUT TO OUT.
D = PIN DIAMETER



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:

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

LATEST REVISION DATE :
05-09

STANDARD DESIGN
FLUME BELL JOINTS
FOR
REINFORCED CONCRETE FLUMES - 6' & 8' SPANS

APPROVED BY :
Norman E. McQuinn

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
JANUARY, 2004 **FBJ-02-04**

REVISED 05-09 - CHANGED THE TOTAL CONCRETE QUANTITIES TO AGREE WITH THE CONCRETE PLACEMENT QUANTITIES.
FBJ0204-001 - THIS SHEET ISSUED 01-04.