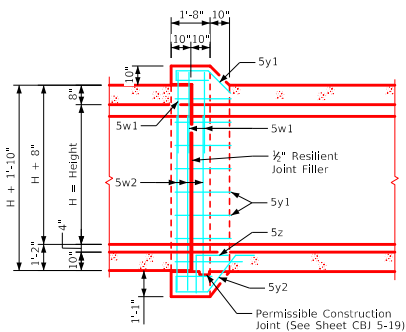
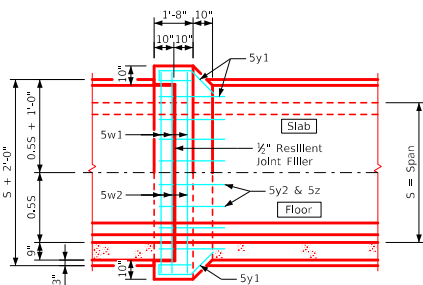


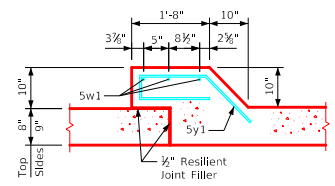
Joint Detail Section thru Barrel



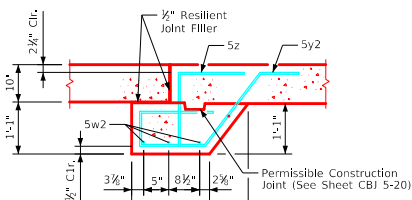
Longitudinal Section



Plan View



Top & Sides - Bars 5y1

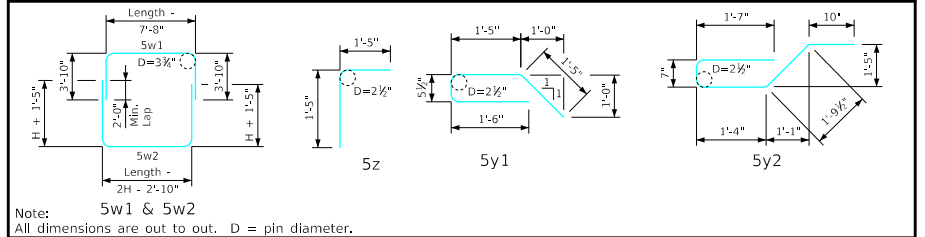


Bottom - Bars 5y2 & 5z

Estimate of Quantities - One Joint - 3', 4', & 5' Spans

Bill of Reinforcing Steel		3' x 3'		4' x 4'		5' x 3'		5' x 4'		5' x 5'		5' x 6'						
Bar	Location	Shape	No.	Length	Weight	No.	Length	Weight	No.	Length	Weight	No.	Length	Weight	No.	Length	Weight	
5w1	Slab & Walls		3	13'-4"	42	3	14'-4"	45	3	15'-4"	48	3	15'-4"	48	3	15'-4"	48	
5w2	Floor & Walls		3	14'-6"	45	3	17'-6"	55	3	16'-6"	52	3	18'-6"	58	3	20'-6"	64	
5y1	Top & Sides		15	4'-10"	76	18	4'-10"	91	17	4'-10"	86	19	4'-10"	96	21	4'-10"	106	
5y2	Bottom		5	6'-2"	32	6	6'-2"	39	7	6'-2"	45	7	6'-2"	45	7	6'-2"	45	
5z	Bottom & Floor		5	2'-10"	15	6	2'-10"	18	7	2'-10"	21	7	2'-10"	21	7	2'-10"	21	
Total Weight (LB)					210			248			252			268			284	300
Total Concrete (CY)				1.5		1.8		1.8		1.9		2.0		2.2				

Bent Bar Details



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

Concrete Placement

Barrel Size	Barrel Dimension			Bell Joint Quantities (CY)		
	A	B	C	Footings	Walls	Slab
3' x 3'	8	10	9	0.647	0.336	0.510
4' x 4'	8	10	9	0.730	0.462	0.573
5' x 3'	8	10	9	0.812	0.336	0.636
5' x 4'	8	10	9	0.812	0.462	0.636
5' x 5'	8	10	9	0.812	0.588	0.636
5' x 6'	8	10	9	0.812	0.714	0.636

Notes:

- Dimensions and quantities shown are based on slab, floor, and wall thicknesses (A, B, and C, respectively). Values for these dimensions, under varying fill conditions, can be found on the RCB culvert barrel detail sheets.
- Change lengths of bars 5w1, 5w2, 5z, and adjust reinforcing steel and concrete quantities accordingly for slab, wall, and floor thicknesses other than shown.
- All bar lengths are estimated with a 2" clearance from concrete edge to outside of bar, except as noted.
- Material and construction to be in accordance with the current Standard Specifications of I.D.O.T.
- See Sheet RCB G2-20 for General Notes, Specifications, and Design Stresses.
- Barrel floor bars m1 & m9 are to be shortened 6" in length at bell joints.
- Dimensions "A", "B" and "C" are in inches. "Length" dimensions in bar lists are in feet and inches.

LATEST REVISION DATE	APPROVED BY BRIDGE ENGINEER	IOWADOT Highway Division	
		Standard Design Single Reinforced Concrete Box Culverts	
		July, 2020	
		Culvert Bell Joints	CBJ 1-20
		3', 4', & 5' Spans	