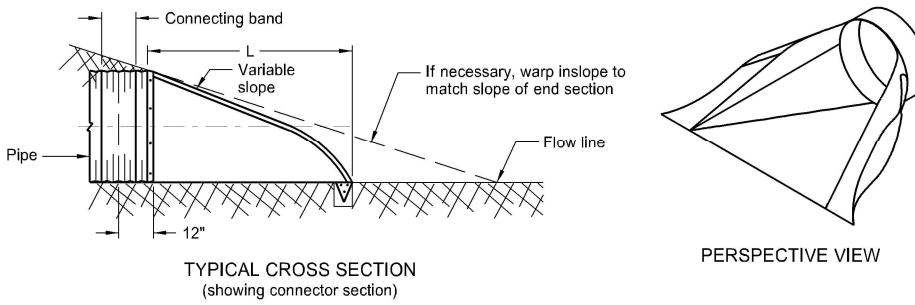
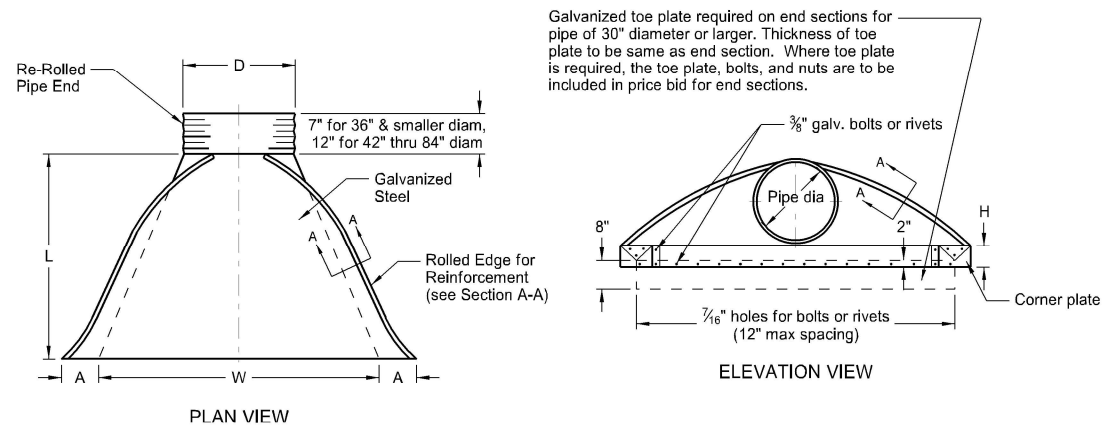


# ROUND CORRUGATED STEEL PIPE CULVERTS AND END SECTIONS

D-714-4

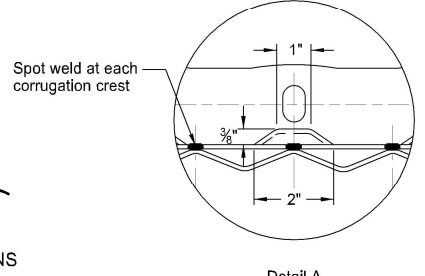
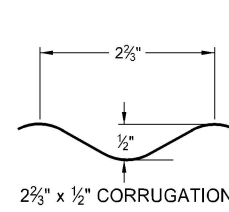
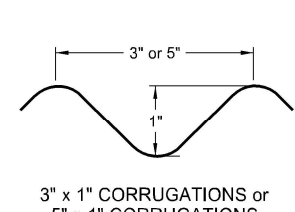
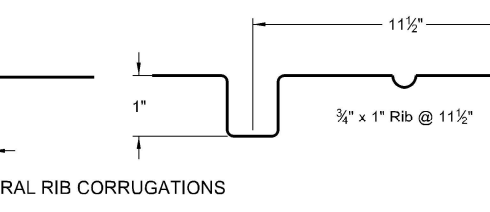
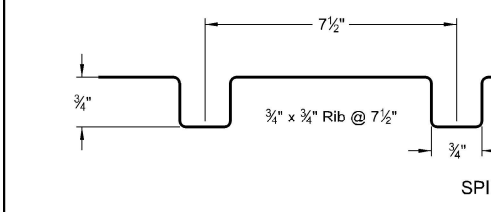
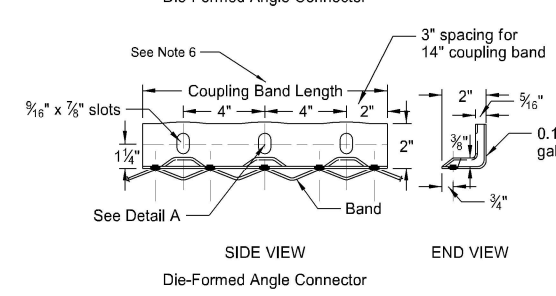
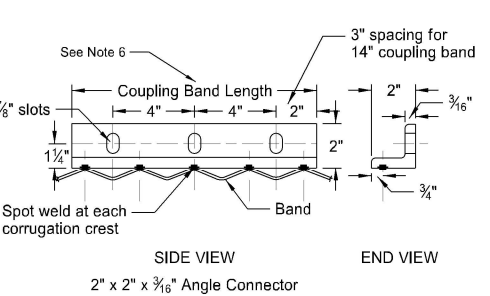
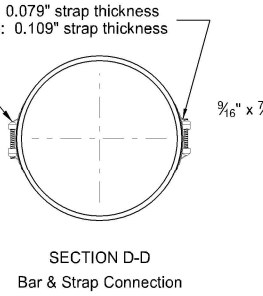
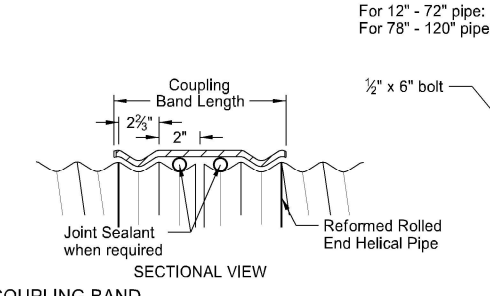
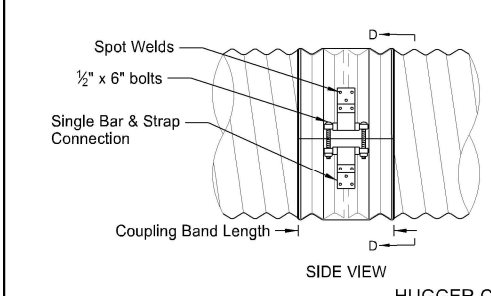
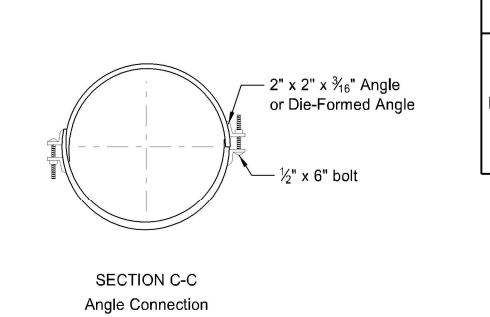
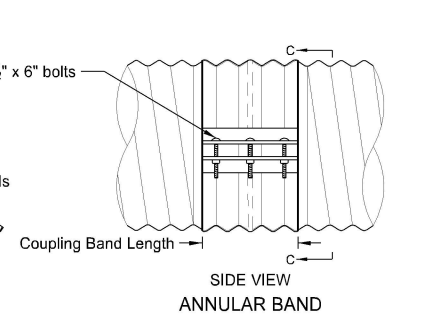
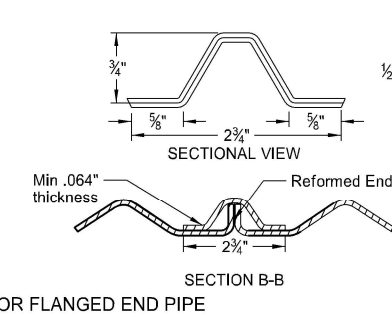
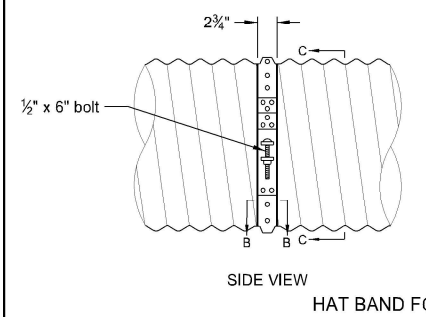
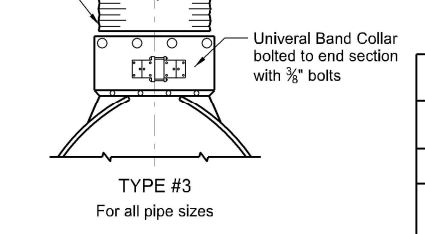
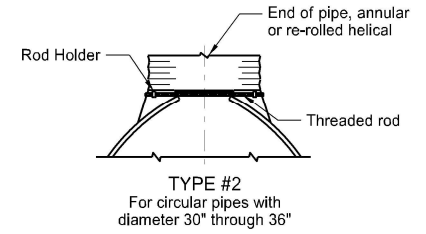
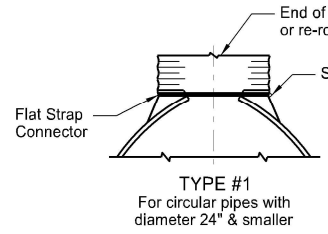
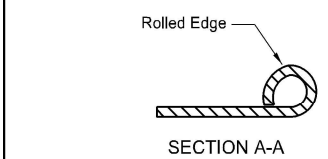


PIPE DIA.	GALVANIZED THICKNESS	END SECTION DIMENSIONS					APPROX. SLOPE RATE	BODY PIECE
		A	B	H	L	W		
15	0.064 - 0.079	7	8	6	26	30	2½:1	1
18	0.064 - 0.109	8	10	6	31	36	2½:1	1
24	0.064 - 0.109	10	13	6	41	48	2½:1	1
30	0.064 - 0.109	12	16	8	51	60	2½:1	1 or 2
36	0.064 - 0.109	14	19	9	60	72	2½:1	2
42	0.064 - 0.138	16	22	11	69	84	2½:1	2
48	0.064 - 0.168	18	27	12	78	90	2½:1	2
54	0.064 - 0.168	18	30	12	84	102	2:1	2
*60	0.064 - 0.168	18	33	12	87	114	1½:1	3
*66	0.064 - 0.168	18	36	12	87	120	1½:1	3
*72	0.064 - 0.168	18	39	12	87	126	1½:1	3
*78	0.064 - 0.168	18	42	12	87	132	1½:1	3
*84	0.064 - 0.168	18	45	12	87	138	1½:1	3

- \* These sizes have 0.109" sides and 0.138" center panels.
  - \*\* Pipe diameter is equal to dimension "D" of end section.
- Manufacturers tolerances of above dimensions will be allowed.
- Splices to be the lap riveted type.
- Multiple panel bodies shall have lap seams which are to be tightly joined with ¾" dia. galv. bolts or rivets. Nuts to be torqued to 25 foot-lbs ±.

COUPLING BAND DIMENSIONS				
COUPLING TYPE	CORRUGATION PITCH x DEPTH	PIPE SIZE	COUPLING BAND LENGTH	MIN. BAND THICKNESS
Hat Band	2½" x ½"	12" - 48"	2¾"	.064"
		12" - 72"	12"	.052"
Annular Band	2½" x ½"	78" - 84"	12"	.079"
		48" - 120"	14"	.052"
Hugger Band	2½" x ½"	12" - 72"	10½"	.052"
		78" - 84"	10½"	.079"
	3" x 1"	48" - 120"	10½"	.052"
		48" - 120"	12"	.064"

- NOTES:
- Pipes and connecting bands shall conform to applicable sections of NDDOT Standard Specifications and to AASHTO M-36.
  - Top edge of all end sections to have rolled edges for reinforcement (see Section A-A). The reinforced edges are to be supplemented with 2" x 2" x ¼" galv. angle for 60" through 72" dia. and 2½" x 2½" x ¼" galv. angle for 78" and 84" dia.. Angles to be attached by galv. ¾" dia. bolts and nuts. Angles are to extend from pipe to the corner wing bend.
  - Elongated pipes shall be factory preformed so that the vertical diameter shall be 5% greater and the horizontal diameter 5% less than a circular pipe.
  - Coupling bands shall be two-piece for pipes larger than 36" as shown in Section C-C & D-D details. For pipes 36" and smaller, a one-piece band is acceptable.
  - ½" x 8" bolts may be used as a substitute for the ½" x 6" bolts shown in the details.
  - Coupling bands wider than 14" may be used if a minimum of four ½" bolts with maximum spacing of 5½" are used for the connection.
  - Length of spot welds shall be minimum ½".



NORTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
08-16-13

DATE	CHANGE
01-07-14	End Section Plan View
02-27-14	3" x 1" Corrugation Detail
09-18-19	Added Perspective View Detail
09-23-22	Galvanized Thickness Table



09/23/22