- REV. 11-1-95: CHANGED TO METRIC.
- REV. 1-19-97: GENERAL REVISION TO TABLES.

CORRUGATED STEEL PIPE - ARCH

PIPE - ARCH DIMENSIONS			MINIMUM SHEET THICKNESS (mm)	FILL HEIGHT	
SPAN - RISE (mm)	EQUIVALENT PIPE DIAMETER (mm)	MINIMUM CORNER RADIUS (mm)		MINIMUM (mm)	MAXIMUM (m)
68 mm X 13 mm CORRUGATIONS					
430 X 330	375	75	2.01	300	15.5
530 X 380	450	75	2.01	300	12.5
610 X 460	525	75	2.01	300	11.0
710 X 510	600	75	2.01	300	9.5
780 X 560	675	75	2.01	300	8.8
885 X 610	750	75	2.01	300	8.0
970 X 690	825	75	2.01	300	7.3
1060 X 740	900	89	2.01	300	6.5
1240 X 840	1050	100	2.77	300	5.5
1440 X 970	1200	127	2.77	300	5.0
1620 X 1100	1350	152	2.77	300	5.0
1800 X 1200	1500	178	3.51	300	4.5
1950 X 1320	1650	203	4.27	300	4.5
2100 X 1450	1800	229	4.27	300	4.5
75 mm X 25 mm AND 125 mm X 25 mm CORRUGATIONS					
(1) 1110 X 790	900	127	2.01	300	7.5
1160 X 920	1050	152	2.01	300	7.0
1340 X 1050	1200	178	2.01	300	6.5
1520 X 1170	1350	203	2.01	300	6.0
1670 X 1300	1500	229	2.01	300	5.5
1850 X 1400	1650	305	2.01	300	6.0
2050 X 1500	1800	355	2.01	300	6.0
2200 X 1620	1950	355	2.01	300	5.5
2400 X 1720	2100	406	2.01	300	5.5
2600 X 1820	2250	406	2.77	300	5.0
2840 X 1920	2400	457	2.77	300	5.0
2970 X 2020	2550	457	2.77	300	4.5
3240 X 2120	2700	457	3.51	380	4.0
3470 X 2220	2850	457	3.51	457	3.5
3600 X 2320	3000	457	4.27	457	3.5

(1) 75 mm X 25 mm CORRUGATION ONLY

CORRUGATED ALUMINUM PIPE - ARCH

PIPE - ARCH DIMENSIONS			MINIMUM SHEET THICKNESS (mm)	FILL HEIGHT	
SPAN - RISE (mm)	EQUIVALENT PIPE DIAMETER (mm)	MINIMUM CORNER RADIUS (mm)		MINIMUM (mm)	MAXIMUM (m)
68 mm X 13 mm CORRUGATIONS					
430 X 330	375	75	1.91	300	15.5
530 X 380	450	75	1.91	300	12.5
610 X 460	525	75	1.91	300	11.0
710 X 510	600	75	1.91	300	9.5
780 X 560	675	75	1.91	300	8.8
885 X 610	750	75	1.91	300	8.0
970 X 690	825	75	1.91	300	7.3
1060 X 740	900	89	1.91	300	6.5
1240 X 840	1050	100	2.67	300	5.5
1440 X 970	1200	127	2.67	300	5.0
1620 X 1100	1350	152	3.43	300	5.0
1800 X 1200	1500	178	4.17	300	4.5
75 mm X 25 mm CORRUGATIONS					
1520 X 1170	1350	203	1.91	300	6.0
1670 X 1300	1500	229	1.91	300	5.5
1850 X 1400	1650	305	1.91	300	6.0
2050 X 1500	1800	355	2.67	300	6.0
2200 X 1620	1950	355	2.67	300	5.5
2400 X 1720	2100	406	2.67	300	5.5
2600 X 1820	2250	406	3.43	300	5.0
2840 X 1920	2400	457	4.17	300	5.0

STRUCTURAL PLATE STEEL PIPE - ARCHES 152 mm X 51 mm CORRUGATIONS

PIPE - ARCH DIMENSIONS			MINIMUM THICKNESS REQUIRED	FILL HEIGHT	
SPAN	RISE	CORNER RADIUS (mm)		MINIMUM (mm)	MAXIMUM (m)
1850	1400	457	2.82	300	7.9
1930	1450	457	2.82	300	7.6
2060	1500	457	2.82	300	7.0
2135	1550	457	2.82	300	6.7
2210	1600	457	2.82	300	6.4
2335	1650	457	2.82	300	6.1
2410	1700	457	2.82	300	6.1
2490	1750	457	2.82	300	5.8
2615	1805	457	2.82	300	5.5
2690	1855	457	2.82	300	5.2
2845	1905	457	2.82	300	4.9
2895	1955	457	2.82	300	4.9
2970	2005	457	2.82	300	4.9
3125	2055	457	2.82	380	4.6
3250	2110	457	2.82	380	4.3
3325	2160	457	2.82	380	4.3
3480	2210	457	2.82	457	4.0
3530	2260	457	2.82	457	4.0
3605	2310	457	2.82	457	4.0
3760	2360	457	2.82	457	3.7
3810	2415	457	2.82	457	3.7
3860	2465	457	2.82	457	3.7
3910	2540	457	2.82	457	3.7
4090	2565	457	2.82	533	3.4
4240	2615	457	2.82	533	3.4
4040	2845	787	2.82	300	5.2
4115	2895	787	2.82	300	5.2
4265	2945	787	2.82	300	4.9
4320	3000	787	2.82	300	4.9
4395	3050	787	2.82	380	4.6
4545	3100	787	2.82	380	4.6
4675	3150	787	2.82	380	4.6
4750	3200	787	2.82	380	4.3
4825	3250	787	2.82	380	4.3
4955	3300	787	3.56	380	4.3
5030	3355	787	3.56	457	4.0
5180	3405	787	3.56	457	4.0
5230	3455	787	3.56	457	4.0
5310	3505	787	3.56	457	4.0
5460	3555	787	3.56	457	3.7
5510	3605	787	4.32	457	3.7
5665	3660	787	4.32	457	3.7
5715	3710	787	4.32	533	3.7
5865	3760	787	4.32	533	3.4
5945	3810	787	4.32	533	3.4
5995	3860	787	4.32	533	3.4
6070	3910	787	4.32	533	3.4
6225	3960	787	4.79	533	3.4
6275	4015	787	4.79	533	3.4

STRUCTURAL PLATE ALUMINUM PIPE - ARCHES 230 mm X 64 mm CORRUGATIONS

PIPE - ARCH DIMENNSIONS			MINIMUM THICKNESS REQUIRED (mm)	FILL HEIGHT	
SPAN	RISE	CORNER RADIUS (mm)		MINIMUM (mm)	(2) MAXIMUM (m)
1880	1525	808	2.82	300	7.0 / 7.9
2005	1500	808	2.82	300	6.7 / 7.0
2110	1755	808	2.82	300	6.4 / 6.7
2210	1805	808	2.82	300	6.1 / 6.4
2360	1830	808	2.82	300	5.5 / 6.1
2465	1855	808	2.82	300	5.5 / 5.8
2565	1905	808	2.82	300	5.2 / 5.5
2690	1930	808	2.82	300	4.9 / 5.2
2820	1955	808	2.82	380	4.6 / 4.9
2920	1975	808	2.82	380	4.6 / 4.9
3025	2030	808	2.82	380	4.3 / 4.6
3125	2055	808	2.82	380	4.3 / 4.6
3275	2085	808	2.82	457	4.0 / 4.3
3380	2135	808	2.82	457	4.0 / 4.3
3480	2160	808	2.82	457	3.7 / 4.0
3580	2185	808	2.82	457	3.7 / 4.0
3735	2210	808	3.56	380	4.6 / 5.5
3835	2260	808	3.56	380	4.6 / 5.5
3935	2285	808	3.56	380	4.3 / 5.2
3990	2490	808	3.56	380	4.3 / 5.2
4240	2565	808	3.56	457	4.0 / 4.9
4265	2615	808	3.56	457	4.0 / 4.9
4240	2870	808	4.32	300	4.9
4345	2920	808	4.32	300	4.9
4470	2945	808	4.32	300	4.9
4545	2995	808	4.32	380	4.6
4675	3050	808	4.32	380	4.6
4750	3100	808	4.32	380	4.6
4900	3150	808	4.79	380	4.3
4980	3200	808	4.79	380	4.3
5105	3250	808	4.79	457	4.3
5180	3300	808	4.79	457	4.0
5260	3355	808	4.79	457	4.0
5410	3405	808	4.79	457	4.0
5485	3455	808	5.54	457	4.0
5615	3505	808	5.54	457	3.7
5690	3555	808	5.54	457	3.7
5840	3580	808	5.54	533	3.7
5920	3630	808	5.54	533	3.7
6045	3685	808	6.32	533	3.4
6120	3735	808	6.32	533	3.4
6120	3810	808	6.32	533	3.4
6350	3835	808	7.11	533	3.4
6425	3885	808	7.11	533	3.4
6555	3935	808	7.11	533	3.0

(2) ALUMINUM BOLTS / STEEL BOLTS. WHERE A SINGLE NUMBER IS SHOWN IN THIS COLUMN, EITHER ALUMINUM OR STEEL BOLTS MAY BE USED.

GENERAL NOTES

(A) PIPE SHALL CONFORM TO SECTION 915 OF THE STANDARD SPECIFICATIONS.

(B) ALL CORRUGATED METAL PIPE - ARCHES SHALL BE INSTALLED ACCORDING TO BEDDING STANDARD NO. DM-PB-1. THE BEDDING MATERIAL UNDER ALL PIPE - ARCHES, SHALL BE LOOSE UNDER THE BOTTOM AND SHAPED TO FIT THE PIPE - ARCH.

(C) THE HEIGHTS OF COVER SHOWN IN THE TABLES ARE FOR FINISHED CONSTRUCTION. A MINIMUM COVER OF 1.2 m SHALL BE PLACED OVER CULVERTS PRIOR TO DRIVING HEAVY CONSTRUCTION VEHICLES OVER THEM. THE WIDTH OF THIS EXTRA COVER SHALL BE WIDE ENOUGH TO FULLY ACCOMMODATE THE HEAVY CONSTRUCTION VEHICLES AND SHALL BE THE ONLY ACCESS ACROSS THESE CULVERTS DURING CONSTRUCTION.

(D) LENGTH OF PIPE SHALL BE IN INCREMENTS OF EVEN 600 mm FOR THE PURPOSE OF ESTIMATING PLANS QUANTITIES. SEE STANDARD DRAWING NO. DM-PE-8 FOR METHOD OF MEASUREMENT OF PAYMENT, DETAILS OF BEVELED ENDS AND RIP-RAP PROTECTION.

(E) POLYMERIC COATED PIPE - ARCH, WHEN REQUIRED, SHALL CONFORM TO SECTION 915.03 OF THE STANDARD SPECIFICATIONS.

(F) VARIATION OF MATERIALS OR CORRUGATION WILL NOT BE PERMITTED IN ANY LINE OF PIPE.

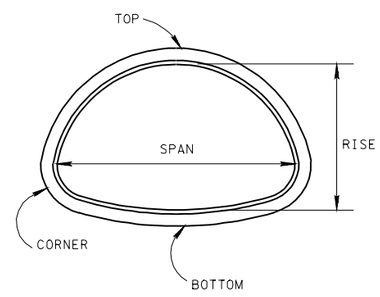
(G) PLATES FOR STEEL STRUCTURAL PLATE STRUCTURES ARE STANDARD 152 mm X 51 mm CORRUGATION WITH THIRTEEN (13) BOLTS PER METER IN EACH LONGITUDINAL SEAM (UNLESS OTHERWISE SHOWN).

(H) PLATES FOR ALUMINUM STRUCTURAL PLATE STRUCTURES ARE STANDARD 230 mm X 64 mm CORRUGATION WITH EIGHTEEN AND ONE HALF (18 1/2) BOLTS PER METER IN EACH LONGITUDINAL SEAM (UNLESS OTHERWISE SHOWN).

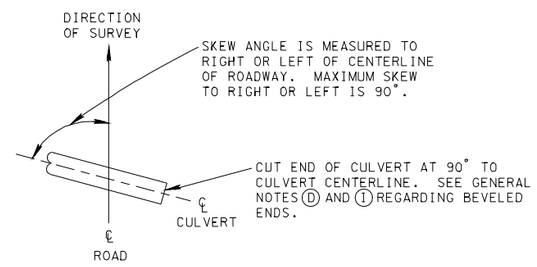
(I) PIPE - ARCH CULVERTS WITH SPAN LESS THAN 1.45 m ARE NOT TO HAVE THEIR ENDS BEVELED. DO NOT BEVEL PIPE ON FLATTER SLOPE THAN 2 : 1.

(J) ANY EVIDENCE OF WRINKLING OR BUCKLING IN THE CORRUGATED METAL PIPE - ARCHES SHALL BECAUSE FOR REJECTION OF THE PIPE ESPECIALLY IF IT IS IN THE CORNER RADII.

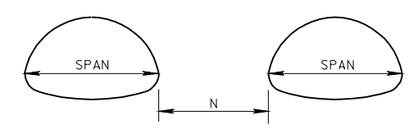
(K) TYPE I AND TYPE II PIPE WITH HELICAL CORRUGATIONS SHALL BE REROLLED TO FORM ANNULAR (CIRCUMFERENTIAL) ENDS WHERE THE CULVERT IS TO BE JOINED. SEE CURRENT AASHTO SPECIFICATIONS M36 AND M196, SECTIONS ON END FINISH AND COUPLING BANDS. ONLY COUPLING BANDS WITH ANNULAR CORRUGATIONS SHALL BE ALLOWED. WHEN EXTENDING AN EXISTING CULVERT, A CONCRETE COLLAR SHALL BE USED IF A COUPLING BAND WITH ANNULAR CORRUGATIONS WILL NOT FIT.



PIPE - ARCH CULVERT DETAIL



SKEW DETAIL FOR PIPE - ARCH CULVERTS



SPAN	MINIMUM SPACE (N) BETWEEN PIPE - ARCHES WITH CLASS "B" OR "C" BEDDING
UP TO 875	300 mm
1050 TO 3550	1/3 SPAN OF PIPE - ARCH
3625 TO 4975	1.2 m

WHEN CLASS "A" BEDDING IS USED, A DETAIL SHALL BE SHOWN ON PLANS FOR MINIMUM SPACE BETWEEN PIPE - ARCHES.

TENNESSEE METRIC D.O.T.

ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FERROUS AND ALUMINUM CORR. METAL PIPE - ARCHES

11-1-95 | DM-PG-4