

CORRUGATED STEEL PIPE - ARCH					
PIPE - ARCH DIMENNSIONS			MINIMUM SHEET THICKNESS INCHES (GAUGE)	FILL HEIGHT	
SPAN - RISE (INCHES)	EQUIVALENT PIPE DIAMETER (INCHES)	MINIMUM CORNER RADIUS (INCHES)		MINIMUM (INCHES)	MAXIMUM (FEET)
2 2⁄3" X 1⁄2" CORRUGATIONS					
17 X 13	15	3	0.079 - (14)	12	52
21 X 15	18	3	0.079 - (14)	12	42
24 X 18	21	3	0.079 - (14)	12	37
28 X 20	24	3	0.079 - (14)	12	32
35 X 24	30	3	0.079 - (14)	12	27
42 X 29	36	3.5	0.079 - (14)	12	22
49 X 33	42	4	0.109 - (12)	12	19
57 X 38	48	5	0.109 - (12)	12	18
64 X 43	54	6	0.109 - (12)	12	17
71 X 47	60	7	0.138 - (10)	12	16
77 X 52	66	8	0.168 - (8)	12	16
83 X 57	72	9	0.168 - (8)	12	15
3" X 1" AND 5" X 1" CORRUGATIONS					
40 X 31	36	5	0.079 - (14)	12	25
46 X 36	42	6	0.079 - (14)	12	23
53 X 41	48	7	0.079 - (14)	12	22
60 X 46	54	8	0.079 - (14)	12	20
66 X 51	60	9	0.079 - (14)	12	19
73 X 55	66	12	0.079 - (14)	12	20
81 X 59	72	14	0.079 - (14)	12	20
87 X 63	78	14	0.079 - (14)	12	18
95 X 67	84	16	0.079 - (14)	12	18
103 X 71	90	16	0.109 - (12)	12	17
112 X 75	96	18	0.109 - (12)	12	17
117 X 79	102	18	0.109 - (12)	12	16
128 X 83	108	18	0.138 - (10)	15	14
137 X 87	114	18	0.138 - (10)	18	13
142 X 91	120	18	0.168 - (8)	18	13

① 3" X 1" CORRUGATION ONLY

CORRUGATED ALUMINUM PIPE - ARCH					
PIPE - ARCH DIMENNSIONS			MINIMUM SHEET THICKNESS INCHES (GAUGE)	FILL HEIGHT	
SPAN - RISE (INCHES)	EQUIVALENT PIPE DIAMETER (INCHES)	MINIMUM CORNER RADIUS (INCHES)		MINIMUM (INCHES)	MAXIMUM (FEET)
2 2⁄3" X 1⁄2" CORRUGATIONS					
17 X 13	15	3	0.075 - (14)	12	52
21 X 15	18	3	0.075 - (14)	12	42
24 X 18	21	3	0.075 - (14)	12	37
28 X 20	24	3	0.075 - (14)	12	32
35 X 24	30	3	0.075 - (14)	12	25
42 X 29	36	3.5	0.075 - (14)	12	22
49 X 33	42	4	0.105 - (12)	12	19
57 X 38	48	5	0.105 - (12)	12	18
64 X 43	54	6	0.135 - (10)	12	17
71 X 47	60	7	0.164 - (8)	12	16
3" X 1" CORRUGATIONS					
60 X 46	54	8	0.075 - (14)	12	20
66 X 51	60	9	0.075 - (14)	12	19
73 X 55	66	12	0.075 - (14)	12	20
81 X 59	72	14	0.105 - (12)	12	20
87 X 63	78	14	0.105 - (12)	12	18
95 X 67	84	16	0.105 - (12)	12	18
103 X 71	90	16	0.135 - (10)	12	17
112 X 75	96	18	0.164 - (8)	12	16

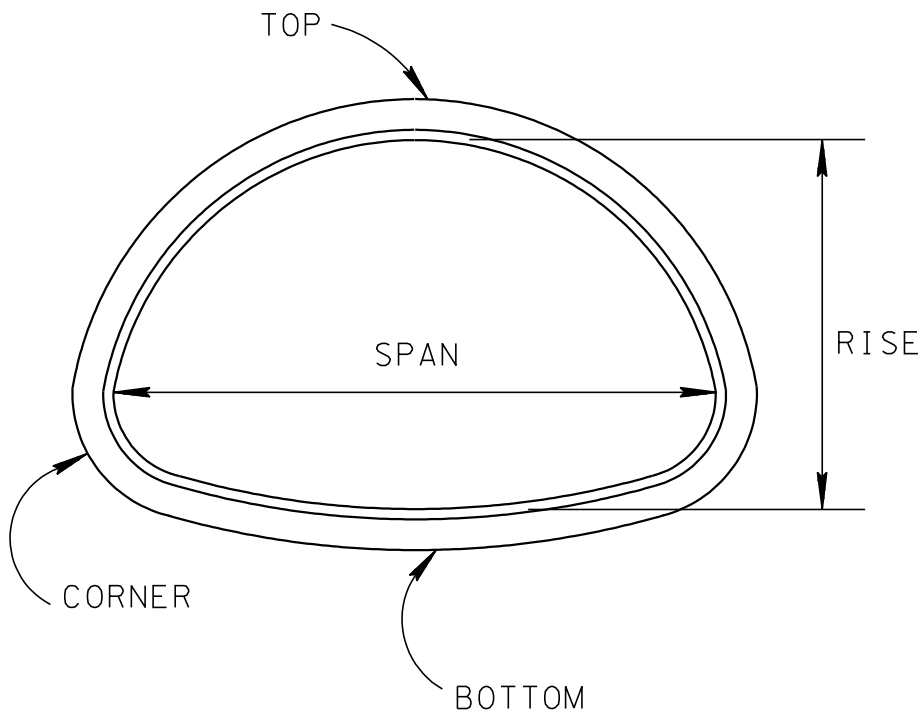
STRUCTURAL PLATE STEEL PIPE - ARCHES 6" X 2" CORRUGATIONS					
PIPE - ARCH DIMENNSSIONS			MINIMUM GAUGE REQUIRED	FILL HEIGHT	
SPAN	RISE	CORNER RADIUS (INCHES)		MINIMUM (INCHES)	MAXIMUM (FEET)
6' - 1"	4' - 7"	18	12	12	26
6' - 4"	4' - 9"	18	12	12	25
6' - 9"	4' - 11"	18	12	12	23
7' - 0"	5' - 1"	18	12	12	22
7' - 3"	5' - 3"	18	12	12	21
7' - 8"	5' - 5"	18	12	12	20
7' - 11"	5' - 7"	18	12	12	20
8' - 2"	5' - 9"	18	12	12	19
8' - 7"	5' - 11"	18	12	12	18
8' - 10"	6' - 1"	18	12	12	17
9' - 4"	6' - 3"	18	12	12	16
9' - 6"	6' - 5"	18	12	12	16
9' - 9"	6' - 7"	18	12	12	16
10' - 3"	6' - 9"	18	12	15	15
10' - 8"	6' - 11"	18	12	15	14
10' - 11"	7' - 1"	18	12	15	14
11' - 5"	7' - 3"	18	12	18	13
11' - 7"	7' - 5"	18	12	18	13
11' - 10"	7' - 7"	18	12	18	13
12' - 4"	7' - 9"	18	12	18	12
12' - 6"	7' - 11"	18	12	18	12
12' - 8"	8' - 1"	18	12	18	12
12' - 10"	8' - 4"	18	12	18	12
13' - 5"	8' - 5"	18	12	21	11
13' - 11"	8' - 7"	18	12	21	11
13' - 3"	9' - 4"	31	12	12	17
13' - 6"	9' - 6"	31	12	12	17
14' - 0"	9' - 8"	31	12	12	16
14' - 2"	9' - 10"	31	12	12	16
14' - 5"	10' - 0"	31	12	15	15
14' - 11"	10' - 2"	31	12	15	15
15' - 4"	10' - 4"	31	12	15	15
15' - 7"	10' - 6"	31	12	15	14
15' - 10"	10' - 8"	31	12	15	14
16' - 3"	10' - 10"	31	10	15	14
16' - 6"	11' - 0"	31	10	18	13
17' - 0"	11' - 2"	31	10	18	13
17' - 2"	11' - 4"	31	10	18	13
17' - 5"	11' - 6"	31	10	18	13
17' - 11"	11' - 8"	31	10	18	12
18' - 1"	11' - 10"	31	8	18	12
18' - 7"	12' - 0"	31	8	18	12
18' - 9"	12' - 2"	31	8	21	12
19' - 3"	12' - 4"	31	8	21	11
19' - 6"	12' - 6"	31	8	21	11
19' - 8"	12' - 8"	31	8	21	11
19' - 11"	12' - 10"	31	8	21	11
20' - 5"	13' - 0"	31	7	21	11
20' - 7"	13' - 2"	31	7	21	11

STRUCTURAL PLATE ALUMINUM PIPE - ARCHES 9" X 2 1⁄2" CORRUGATIONS					
PIPE - ARCH DIMENNSSIONS			MINIMUM GAUGE REQUIRED	FILL HEIGHT	
SPAN	RISE	CORNER RADIUS (INCHES)		MINIMUM (INCHES)	② MAXIMUM (FEET)
6' - 2"	5' - 0"	31.8	12	12	23 / 26
6' - 7"	4' - 11"	31.8	12	12	22 / 23
6' - 11"	5' - 9"	31.8	12	12	21 / 22
7' - 3"	5' - 11"	31.8	12	12	20 / 21
7' - 9"	6' - 0"	31.8	12	12	18 / 20
8' - 1"	6' - 1"	31.8	12	12	18 / 19
8' - 5"	6' - 3"	31.8	12	12	17 / 18
8' - 10"	6' - 4"	31.8	12	12	16 / 17
9' - 3"	6' - 5"	31.8	12	15	15 / 16
9' - 7"	6' - 6"	31.8	12	15	15 / 16
9' - 11"	6' - 8"	31.8	12	15	14 / 15
10' - 3"	6' - 9"	31.8	12	15	14 / 15
10' - 9"	6' - 10"	31.8	12	18	13 / 14
11' - 1"	7' - 0"	31.8	12	18	13 / 14
11' - 5"	7' - 1"	31.8	12	18	12 / 13
11' - 9"	7' - 2"	31.8	12	18	12 / 13
12' - 3"	7' - 3"	31.8	10	15	15 / 18
12' - 7"	7' - 5"	31.8	10	15	15 / 18
12' - 11"	7' - 6"	31.8	10	15	14 / 17
13' - 1"	8' - 2"	31.8	10	15	14 / 17
13' - 11"	8' - 5"	31.8	10	18	13 / 16
14' - 0"	8' - 7"	31.8	10	18	13 / 16
13' - 11"	9' - 5"	31.8	8	12	16
14' - 3"	9' - 7"	31.8	8	12	16
14' - 8"	9' - 8"	31.8	8	12	16
14' - 11"	9' - 10"	31.8	8	15	15
15' - 4"	10' - 0"	31.8	8	15	15
15' - 7"	10' - 2"	31.8	8	15	15
16' - 1"	10' - 4"	31.8	7	15	14
16' - 4"	10' - 6"	31.8	7	15	14
16' - 9"	10' - 8"	31.8	7	18	14
17' - 0"	10' - 10"	31.8	7	18	13
17' - 3"	11' - 0"	31.8	7	18	13
17' - 9"	11' - 2"	31.8	7	18	13
18' - 0"	11' - 4"	31.8	5	18	13
18' - 5"	11' - 6"	31.8	5	18	12
18' - 8"	11' - 8"	31.8	5	18	12
19' - 2"	11' - 9"	31.8	5	21	12
19' - 5"	11' - 11"	31.8	5	21	12
19' - 10"	12' - 1"	31.8	3	21	11
20' - 1"	12' - 3"	31.8	3	21	11
20' - 1"	12' - 6"	31.8	3	21	11
20' - 10"	12' - 7"	31.8	1	21	11
21' - 1"	12' - 9"	31.8	1	21	11
21' - 6"	12' - 11"	31.8	1	21	10

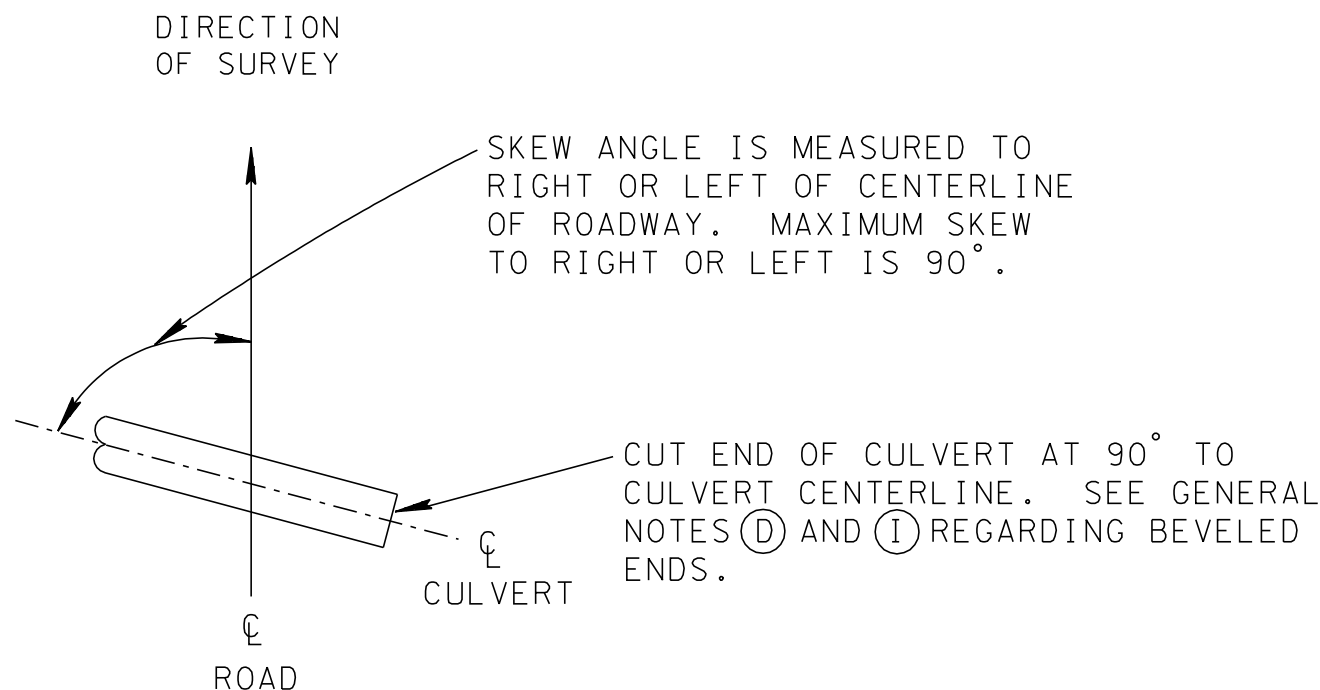
② ALUMINUM BOLTS / STEEL BOLTS. WHERE A SINGLE NUMBER IS SHOWN IN THIS COLUMN, EITHER ALUMINUM OR STEEL BOLTS MAY BE USED.

GENERAL NOTES

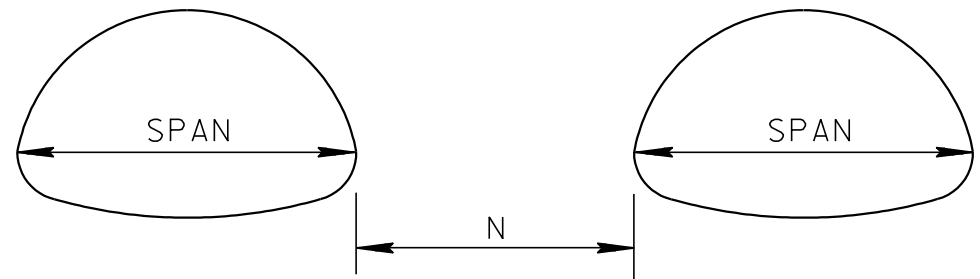
- (A) PIPE SHALL CONFORM TO SECTION 915 OF THE STANDARD SPECIFICATIONS.
- (B) ALL CORRUGATED METAL PIPE - ARCHES SHALL BE INSTALLED ACCORDING TO BEDDING STANDARD NO. D-PB-1. THE BEDDING MATERIAL UNDER ALL PIPE - ARCHES, SHALL BE LOOSE UNDER THE BOTTOM AND SHAPED TO FIT THE PIPE - ARCH.
- (C) THE HEIGHTS OF COVER SHOWN IN THE TABLES ARE FOR FINISHED CONSTRUCTION. A MINIMUM COVER OF FOUR (4) FEET 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 ACCCOMMODATE 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 TWO (2) FEET FOR THE PURPOSE OF ESTIMATING PLANS QUANTITIES. SEE STANDARD DRAWING NO. D-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 6" X 2" CORRUGATION WITH FOUR (4) BOLTS PER FOOT IN EACH LONGITUDINAL SEAM (UNLESS OTHERWISE SHOWN).
- (H) PLATES FOR ALUMINUM STRUCTURAL PLATE STRUCTURES ARE STANDARD 9" X 2 1⁄2" CORRUGATION WITH FIVE AND ONE - THIRD (5 1⁄3) BOLTS PER FOOT IN EACH LONGITUDINAL SEAM (UNLESS OTHERWISE SHOWN).
- (I) PIPE - ARCH CULVERTS WITH SPAN LESS THAN 57" 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 BE CAUSE 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 AN 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 35"	12"
42" TO 142"	1⁄3 SPAN OF PIPE - ARCH
145" TO 199"	48"

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

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FERROUS AND
ALUMINUM
CORR. METAL
PIPE - ARCHES
D-PG-4