

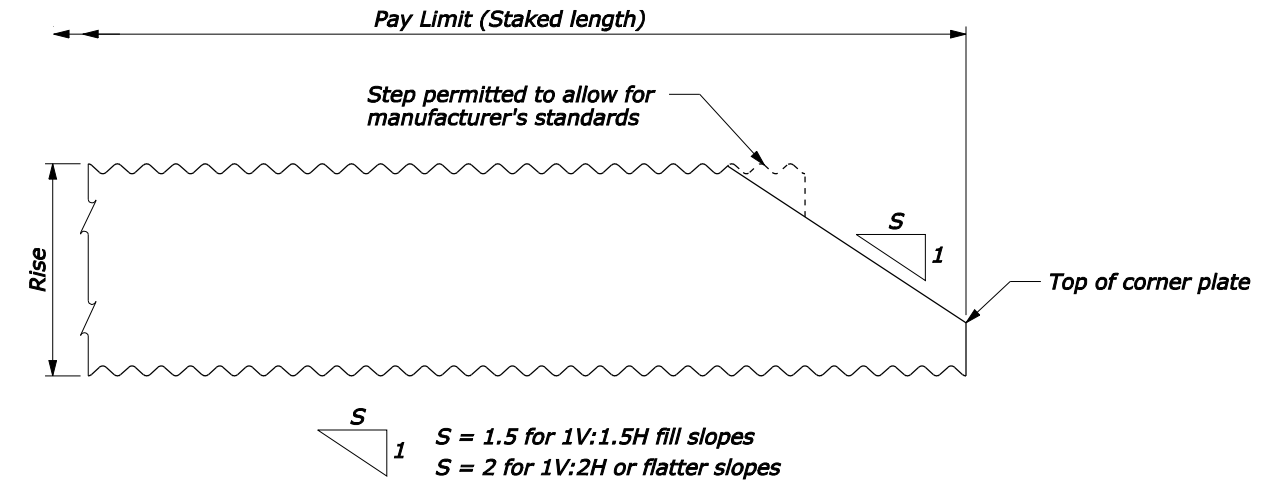
### STRUCTURAL PLATE PIPE ARCH CULVERT

#### FILL HEIGHT AND METAL THICKNESS TABLE

STEEL						ALUMINUM					
6" x 2" CORRUGATIONS						9" x 2½" CORRUGATIONS					
2 BOLTS PER CORRUGATION						4 BOLTS PER CORRUGATION					
PIPE ARCH SIZE	CORNER RADIUS	MIN. COVER	METAL THICKNESS		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE FEET	PIPE ARCH SIZE	CORNER RADIUS	MIN. COVER	METAL THICKNESS		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE FEET
SPAN X RISE	INCH	INCH	INCH	GAGE		SPAN X RISE	INCH	INCH	INCH	GAGE	
6' - 1" x 4' - 7"	18	12	0.111	12	16	6' - 7" x 5' - 8"	32	18	0.100	12	23
6' - 4" x 4' - 9"	18	12	0.111	12	15	6' - 11" x 5' - 9"	32	18	0.100	12	22
6' - 9" x 4' - 11"	18	12	0.111	12	14	7' - 3" x 5' - 11"	32	18	0.100	12	21
7' - 0" x 5' - 1"	18	12	0.111	12	14	7' - 9" x 6' - 0"	32	18	0.100	12	20
7' - 3" x 5' - 3"	18	12	0.111	12	13	8' - 1" x 6' - 1"	32	21	0.100	12	19
7' - 8" x 5' - 5"	18	12	0.111	12	13	8' - 5" x 6' - 3"	32	21	0.100	12	18
7' - 11" x 5' - 7"	18	12	0.111	12	12	8' - 10" x 6' - 4"	32	21	0.100	12	17
8' - 2" x 5' - 9"	18	18	0.111	12	12	9' - 3" x 6' - 5"	32	24	0.100	12	16
8' - 7" x 5' - 11"	18	18	0.111	12	11	9' - 7" x 6' - 6"	32	24	0.100	12	16
8' - 10" x 6' - 1"	18	18	0.111	12	11	9' - 11" x 6' - 8"	32	27	0.100	12	15
9' - 4" x 6' - 3"	18	18	0.111	12	10	10' - 3" x 6' - 9"	32	27	0.100	12	15
9' - 6" x 6' - 5"	18	18	0.111	12	10	10' - 9" x 6' - 10"	32	27	0.100	12	14
9' - 9" x 6' - 7"	18	18	0.111	12	10	11' - 1" x 7' - 0"	32	30	0.100	12	14
10' - 3" x 6' - 9"	18	18	0.111	12	9	11' - 5" x 7' - 1"	32	30	0.100	12	13
10' - 8" x 6' - 11"	18	18	0.111	12	9	11' - 9" x 7' - 2"	32	30	0.100	12	13
10' - 11" x 7' - 1"	18	18	0.111	12	9	12' - 3" x 7' - 3"	32	33	0.100	12	12
11' - 5" x 7' - 3"	18	18	0.111	12	8	12' - 7" x 7' - 5"	32	33	0.100	12	12
11' - 7" x 7' - 5"	18	18	0.111	12	8	12' - 11" x 7' - 6"	32	36	0.100	12	12
11' - 10" x 7' - 7"	18	18	0.111	12	8	13' - 1" x 8' - 2"	32	36	0.100	12	11
12' - 4" x 7' - 9"	18	24	0.111	12	7	13' - 1" x 8' - 4"	32	36	0.100	12	11
12' - 6" x 7' - 11"	18	24	0.111	12	7	13' - 11" x 8' - 5"	32	36	0.100	12	11
12' - 8" x 8' - 1"	18	24	0.111	12	7	13' - 11" x 9' - 5"	32	36	0.100	12	11
12' - 10" x 8' - 4"	18	24	0.111	12	6	14' - 0" x 8' - 7"	32	36	0.100	12	11
13' - 5" x 8' - 5"	18	24	0.111	12	6	14' - 3" x 9' - 7"	32	36	0.100	12	10
13' - 11" x 8' - 7"	18	24	0.111	12	6	14' - 8" x 9' - 8"	32	36	0.125	11	12
14' - 1" x 8' - 9"	18	24	0.111	12	5	14' - 11" x 9' - 10"	32	36	0.125	11	11
14' - 3" x 8' - 11"	18	24	0.111	12	5	15' - 4" x 10' - 0"	32	36	0.125	11	11
13' - 3" x 9' - 4"	31	30	0.111	12	12	15' - 7" x 10' - 2"	32	36	0.125	11	11
13' - 6" x 9' - 6"	31	30	0.111	12	12	16' - 1" x 10' - 4"	32	36	0.125	11	10
14' - 0" x 9' - 8"	31	30	0.111	12	12	16' - 4" x 10' - 6"	32	36	0.150	9	10
14' - 2" x 9' - 10"	31	30	0.111	12	12	16' - 9" x 10' - 8"	32	36	0.150	9	10
14' - 5" x 10' - 0"	31	30	0.111	12	11	17' - 0" x 10' - 10"	32	36	0.150	9	10
14' - 11" x 10' - 2"	31	30	0.111	12	11	17' - 3" x 11' - 0"	32	36	0.150	9	10
15' - 4" x 10' - 4"	31	30	0.111	12	11	17' - 9" x 11' - 2"	32	36	0.175	7	9
15' - 7" x 10' - 6"	31	30	0.111	12	11	18' - 0" x 11' - 4"	32	36	0.175	7	9
15' - 10" x 10' - 8"	31	30	0.111	12	10	18' - 5" x 11' - 6"	32	36	0.175	7	9
16' - 3" x 10' - 10"	31	30	0.111	12	10	18' - 8" x 11' - 8"	32	36	0.200	6	9
16' - 6" x 11' - 0"	31	30	0.111	12	10	19' - 2" x 11' - 9"	32	36	0.200	6	9
17' - 0" x 11' - 2"	31	30	0.111	12	10	19' - 5" x 11' - 11"	32	36	0.200	6	9
17' - 2" x 11' - 4"	31	30	0.111	12	10	19' - 10" x 12' - 1"	32	36	0.200	6	8
17' - 5" x 11' - 6"	31	30	0.111	12	9	20' - 1" x 12' - 3"	32	36	0.200	6	8
17' - 11" x 11' - 8"	31	30	0.111	12	9	20' - 1" x 12' - 6"	32	36	0.200	6	8
18' - 1" x 11' - 10"	31	30	0.111	12	9	20' - 10" x 12' - 7"	32	36	0.225	4	7
18' - 7" x 12' - 0"	31	30	0.111	12	9	21' - 1" x 12' - 9"	32	36	0.225	4	7
18' - 9" x 12' - 2"	31	30	0.111	12	9	21' - 6" x 12' - 11"	32	36	0.225	4	7
19' - 3" x 12' - 4"	31	30	0.140	10	8						
19' - 6" x 12' - 6"	31	30	0.140	10	8						
19' - 8" x 12' - 8"	31	30	0.140	10	8						
19' - 11" x 12' - 10"	31	30	0.140	10	8						
20' - 5" x 13' - 0"	31	30	0.140	10	7						
20' - 7" x 13' - 2"	31	30	0.140	10	7						

**NOTE:**

1. Fabricate the bottom plates one (1) thickness heavier than the side plates but not heavier than 0.170 inch for steel or 0.175 inch for aluminum.
2. Fasten plates with galvanized steel ¾" bolts and nuts conforming to AASHTO M167.
3. When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
4. Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavement.



**END TREATMENT DIAGRAM**

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
<b>STRUCTURAL PLATE PIPE ARCH CULVERT</b>	
STANDARD APPROVED FOR USE 12/1993 REVISED: 4/1994 6/2005	STANDARD <b>603-2</b>