

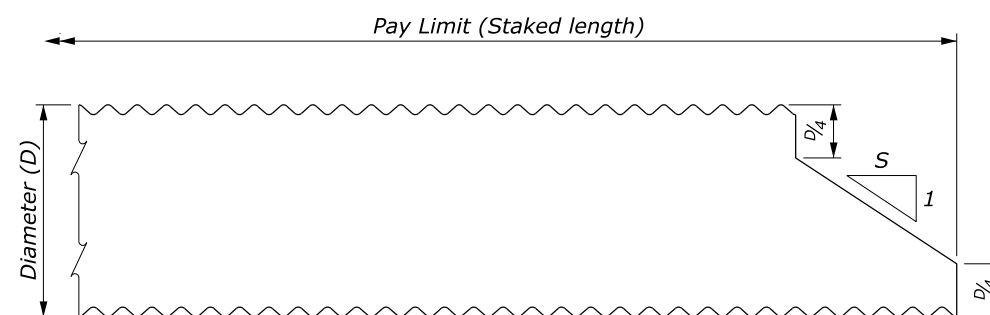
STRUCTURAL PLATE PIPE CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE

STEEL											ALUMINUM								
PIPE SIZE DIAMETER	MINIMUM COVER	152 x 51 CORRUGATIONS									PIPE SIZE DIAMETER	MINIMUM COVER	230 x 64 CORRUGATIONS						
		METAL THICKNESS/BOLTS PER CORRUGATION											METAL THICKNESS/BOLTS PER CORRUGATION						
		2.82/2	3.56/2	4.32/2	4.79/2	5.54/2	6.32/2	7.11/2	7.87/3	9.65/4			2.54/4	3.18/4	3.81/4	4.44/4	5.08/4	5.72/4	6.35/4
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (METERS)											MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (METERS)						
1500	300	14.0	20.7	27.4	30.0	30.0	30.0	30.0	30.0	30.0	1500	375	9.5	13.7	18.3	21.3	24.7	28.0	30.0
1655	300	12.8	18.9	24.7	28.4	30.0	30.0	30.0	30.0	30.0	1655	375	8.5	12.5	16.5	19.5	22.6	25.6	28.7
1810	300	11.6	17.4	22.9	26.2	30.0	30.0	30.0	30.0	30.0	1810	450	7.6	11.3	15.2	17.7	20.4	23.5	26.2
1965	300	10.7	15.9	21.0	24.1	29.0	30.0	30.0	30.0	30.0	1965	450	7.0	10.7	14.0	16.5	18.9	21.6	24.1
2120	300	10.1	14.9	19.5	22.3	28.8	30.0	30.0	30.0	30.0	2120	450	6.7	9.8	12.8	15.2	17.7	20.1	22.3
2275	300	9.6	13.7	18.3	25.0	28.6	30.0	30.0	30.0	30.0	2275	525	6.1	9.1	12.2	14.3	16.5	18.6	20.7
2430	300	8.8	13.1	17.1	19.6	23.5	27.7	30.0	30.0	30.0	2430	525	5.8	8.5	11.3	13.4	15.2	17.4	19.5
2585	450	8.2	12.2	15.9	18.3	22.3	26.2	28.7	30.0	30.0	2585	600	5.5	7.9	10.7	12.5	14.3	16.5	18.3
2740	450	7.6	11.6	15.2	17.4	21.0	24.7	26.8	30.0	30.0	2740	600	5.2	7.6	10.1	11.9	13.7	15.5	17.4
2895	450	7.3	11.0	14.3	16.5	19.8	23.5	25.6	30.0	30.0	2895	675	4.9	7.0	9.5	11.3	12.8	14.6	16.5
3050	450	7.0	10.4	13.7	15.5	18.9	22.3	24.4	30.0	30.0	3050	675	4.6	6.7	9.1	10.7	12.2	14.0	15.5
3205	450	6.7	9.8	12.8	14.9	18.0	21.0	23.2	29.0	30.0	3205	750	4.3	6.4	8.5	10.1	11.6	13.4	14.9
3360	450	6.4	9.5	12.2	14.0	17.1	20.1	22.0	27.7	29.6	3360	750	4.3	6.1	8.2	9.8	11.3	12.8	14.3
3515	450	6.1	8.8	11.9	13.4	16.5	19.2	21.0	26.5	28.4	3515	825	4.0	5.8	7.9	9.1	10.7	12.2	13.4
3670	450	5.8	8.5	11.3	13.1	15.5	18.6	20.1	25.3	27.1	3670	825	3.7	5.5	7.6	8.8	10.1	11.6	13.1
3825	600	5.5	8.2	11.0	12.5	14.9	17.7	19.5	24.4	26.2	3825	825		5.5	7.3	8.5	9.8	11.0	12.5
3980	600	5.2	7.9	10.4	11.9	14.3	17.1	18.6	23.2	25.0	3980	825		5.2	7.0	8.2	9.5	10.7	11.9
4135	600	5.2	7.6	10.1	11.6	14.0	16.6	18.0	22.3	24.1	4135	825			6.7	7.9	9.1	10.4	11.6
4290	600	4.9	7.3	9.8	11.0	13.4	15.9	17.4	21.6	23.2	4290	825			6.4	7.6	8.8	10.1	11.0
4445	600	4.9	7.0	9.5	10.7	12.8	15.2	16.8	20.7	22.6	4445	825			6.1	7.3	8.5	9.5	10.7
4600	600	4.6	6.7	9.1	10.4	12.5	14.6	16.2	20.1	21.6	4600	825				7.0	8.2	9.1	10.4
4755	600	4.6	6.7	8.8	10.1	12.2	14.3	15.5	19.5	21.0	4755	825				6.7	7.9	8.8	10.1
4910	600		6.4	8.5	9.8	11.6	13.7	15.2	18.9	20.4	4910	900					7.6	8.5	9.8
5065	750		6.1	8.2	9.5	11.3	13.4	14.6	18.3	19.8	5030	900					7.3	8.5	9.5
5220	750		6.1	7.9	9.1	11.0	13.1	14.3	17.7	19.2	5220	900					7.0	8.2	9.1
5375	750		5.8	7.5	8.8	10.7	12.5	13.7	17.1	18.6	5385	900						7.9	8.8
5530	750			7.5	8.5	10.4	12.2	13.4	16.5	18.0	5530	900						7.6	8.5
5685	750			7.3	8.2	10.0	11.9	13.1	16.2	17.7	5685	900							8.2
5840	750			7.0	7.9	9.8	11.6	12.8	15.5	17.1	5840	900							8.2
5995	750			7.0	7.6	9.5	11.3	12.5	15.2	16.8									
6150	750				7.6	9.5	11.0	12.2	14.9	16.2									
6305	900					9.1	10.7	11.9	14.6	15.9									
6460	900					8.8	10.4	11.6	14.0	15.5									
6615	900					8.5	10.4	11.3	13.7	14.9									
6770	900					8.5	10.1	11.0	13.4	11.6									
6925	900					8.2	9.8	10.7	13.1	14.3									
7080	900						9.5	13.4	12.8	14.0									
7235	900						9.5	13.4	12.5	13.7									
7390	1050						9.1	10.1	12.2	13.4									
7545	1050							9.8	12.2	13.1									
7700	1050							9.8	11.9	12.8									
7855	1050							9.5	11.6	12.5									

NOTE:

1. Fabricate the bottom plates one (1) thickness heavier than the side plates but not heavier than 9.53 mm for steel or 6.35 mm for aluminum.
2. Fasten plates with galvanized steel M20 bolts and nuts conforming to AASHTO M 167M.
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.
5. Furnish hardware in the metric sizes shown. Equivalent US Customary sizes may be used when metric sizes are unavailable.
6. Dimensions without units are millimeters.



$S = 1.5$ for 1V:1.5H fill slopes
 $S = 2$ for 1V:2H or flatter slopes

END TREATMENT DIAGRAM

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
METRIC STANDARD	
STRUCTURAL PLATE PIPE CULVERT	
STANDARD APPROVED FOR USE 3/1996 REVISED: 6/2005	STANDARD M603-1