STATE	PROJECT	SHEET NUMBER

STRUCTURAL PLATE PIPE CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE

STEEL

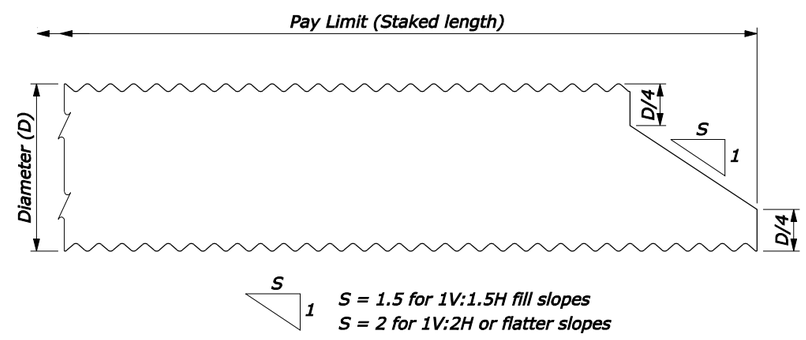
PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	6" x 2" CORRUGATIONS METAL THICKNESS (INCH/GAGE)/BOLTS PER CORRUGATION								
		0.111/12/2	0.140/10/2	0.170/8/2	0.188/7/2	0.218/5/2	0.249/3/2	0.280/1/2	0.280/1/3	0.280/1/4
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)								
60	12	46	68	90	100	100	100	100	100	100
66	12	42	62	81	93	100	100	100	100	100
72	12	38	57	75	86	100	100	100	100	100
78	12	35	52	69	79	95	100	100	100	100
84	12	33	49	64	73	88	100	100	100	100
90	12	31	45	60	68	82	97	100	100	100
96	12	29	43	56	64	77	91	100	100	100
102	18	27	40	52	60	73	86	94	100	100
108	18	25	38	50	57	69	81	88	100	100
114	18	24	36	47	54	65	77	84	100	100
120	18	23	34	45	51	62	73	80	100	100
126	18	22	32	42	49	59	69	76	95	100
132	18	21	31	40	46	56	66	72	91	97
138	18	20	29	39	44	54	63	69	87	93
144	18	19	28	37	43	51	61	66	83	89
150	24	18	27	36	41	49	58	64	80	86
156	24	17	26	34	39	47	56	61	76	82
162	24	17	25	33	38	46	54	59	73	79
168	24	16	24	32	36	44	52	57	71	76
174	24	16	23	31	35	42	50	55	68	74
180	24	15	22	30	34	41	48	53	66	71
186	24	15	22	29	33	40	47	51	64	69
192	24		21	28	32	38	45	50	62	67
198	30		20	27	31	37	44	48	60	65
204	30		20	26	30	36	43	47	58	63
210	30		19	25	29	35	41	45	56	61
216	30			25	28	34	40	44	54	59
222	30			24	27	33	39	43	53	58
228	30			23	27	32	38	42	51	56
234	30			23	26	31	37	41	50	55
240	30				25	31	36	40	49	53
246	36				25	30	35	39	48	52
252	36					29	34	38	46	51
258	36					28	34	37	45	49
264	36					28	33	36	44	48
270	36					27	32	35	43	47
276	36						31	34	42	46
282	36						31	34	41	45
288	42						30	33	40	44
294	42							32	40	43
300	42							32	39	42
306	42							31	38	41

ALUMINUM

PIPE SIZE DIAMETER INCHES	MINIMUM COVER INCHES	9" x 2½" CORRUGATIONS METAL THICKNESS (INCH/GAGE)/BOLTS PER CORRUGATION						
		0.100/12/4	0.125/11/4	0.150/9/4	0.175/7/4	0.200/6/4	0.225/4/4	0.250/2/4
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (FEET)						
60	15	31	45	60	70	81	92	100
66	15	28	41	54	64	74	84	94
72	18	25	37	50	58	67	77	86
78	18	23	35	46	54	62	71	79
84	18	22	32	42	50	58	66	73
90	21	20	30	40	47	54	61	68
96	21	19	28	37	44	50	57	64
102	24	18	26	35	41	47	54	60
108	24	17	25	33	39	45	51	57
114	27	16	23	31	37	42	48	54
120	27	15	22	30	35	40	46	51
126	30	14	21	28	33	38	44	49
132	30	14	20	27	32	37	42	47
138	33	13	19	26	30	35	40	44
144	33	12	18	25	29	33	38	43
150	33		18	24	28	32	36	41
156	33		17	23	27	31	35	39
162	33			22	26	30	34	38
168	33			21	25	29	33	36
174	33			20	24	28	31	35
180	33				23	27	30	34
186	33				22	26	29	33
192	36					25	28	32
198	36					24	28	31
204	36					23	27	30
210	36						26	29
216	36						25	28
222	36							27
228	36							27

NOTE:

1. Fabricate the bottom plates one (1) thickness heavier than the side plates but not heavier than 0.380 inch for steel or 0.250 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

STRUCTURAL PLATE PIPE CULVERT

STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD 603-1

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