REG	STATE	PROJECT	SHEET NO.

METAL ROUND PIPE CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE

HELICAL LOCKSEAM AND WELDED SEAM PIPE CULVERT

PIPE SIZE	MINIMUM COVER	STEEL														
		2 2/3"x 1/2" CORRUGATIONS					3"x 1" CORRUGATIONS					5"x 1" CORRUGATIONS				
		METAL THICKNESS IN INCH/GAGE														
DIAMETER INCHES	INCHES	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET														
12	12	100	100													
15	12	100	100													
18	12	100	100	100												
24	12	100	100	100												
30	12	85	100	100												
36	12	71	88	100	100		81	100	100							
42	12	60	76	100	100	100	69	87	100							
48	12	53	66	93	100	100	61	76	100			54	68	95		
54	18		59	82	100	100	54	67	95	100	100	48	60	84	100	100
60	18			74	95	100	48	61	85	100	100	43	54	76	98	100
66	18				87	100	44	55	78	100	100	39	49	69	89	100
72	18				79	97	40	50	71	92	100	36	45	63	81	100
78	18					86	37	47	66	85	100	33	41	58	75	92
84	18					75	34	43	61	78	96	31	38	54	70	85
90	18						32	40	57	73	90	29	36	50	65	80
96	18							38	53	69	84		34	47	61	75
102	18							35	50	65	79		32	44	57	70
108	18								47	61	75			42	54	66
114	18								45	58	71			40	51	63
120	18								42	55	67			38	49	60
126	18									52	64				46	57
132	18									50	61				44	50
138	18									48	58				42	50
144	18										56					50

MINIMUM COVER	ALUMINUM							
	2 2/3"x 1/2" CORRUGATIONS				3"x 1" CORRUGATIONS			
	METAL THICKNESS IN INCH/GAGE							
INCHES	0.060/16	0.075/14	0.105/12	0.135/10	0.060/16	0.075/14	0.105/12	0.135/10
	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	100	100						
12	100	100						
12	100	100						
12	77	96	100					
12		77	100		71	89	100	
12		64	90	100	59	74	100	100
12			77	99	50	63	89	100
12			66	86	44	55	78	100
18			54	70	39	49	69	92
18				59		44	62	83
18						40	56	75
18						37	52	69
24						34	48	64
24							44	59
24							41	55
24							38	51
24								46	
24								41
24								
24								

METAL PIPE ARCH CULVERT

FILL HEIGHT AND METAL THICKNESS TABLE

HELICAL LOCKSEAM AND WELDED SEAM PIPE ARCH CULVERT

PIPE ARCH SIZE	CORNER RADIUS	MINIMUM COVER	STEEL												
			2 2/3"x 1/2" CORRUGATIONS					3"x 1" CORRUGATIONS				5"x 1" CORRUGATIONS			
			METAL THICKNESS IN INCH/GAGE												
SPAN X RISE INCHES	INCHES	INCHES	0.064/16	0.079/14	0.109/12	0.138/10	0.168/8	0.079/14	0.109/12	0.138/10	0.168/8	0.079/14	0.109/12	0.138/10	0.168/8
			MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET												
17 x 13	3 1/2	12	13												
21 x 15	4 1/8	12	12												
24 x 18	4 7/8	12	13												
28 x 20	5 1/2	12	13												
35 x 24	6 7/8	12	12												
42 x 29	8 1/4	12	12												
49 x 33	9 5/8	12		12											
57 x 38	11	12			12										
64 x 43	12 3/8	12			12										
71 x 47	13 3/4	12				12									
77 x 52	15 1/8	12					12								
83 x 57	16 1/2	12					12								

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60 x 46	18 3/4	12							21				21		
66 x 51	20 3/4	12							21				21		
73 x 55	22 7/8	12							20				20		
81 x 59	20 7/8	12						17	--			17	--		
87 x 63	22 5/8	12						17	--			17	--		
95 x 67	24 3/8	12						17	--			17	--		
103 x 71	26 1/8	18							17			17	--		
112 x 75	27 3/4	18							16				16		
117 x 79	29 1/2	18							16				16		
128 x 83	31 1/4	24								16				16	
137 x 87	33	24								16				16	
142 x 91	34 3/4	24									16				16

MINIMUM COVER	ALUMINUM							
	2 2/3"x 1/2" CORRUGATIONS				3"x 1" CORRUGATIONS			
	METAL THICKNESS IN INCH/GAGE							
INCHES	0.060/16	0.075/14	0.105/12	0.135/10	0.060/16	0.075/14	0.105/12	0.135/10
	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	13							
12	12							
12	13							
12		13						
12		12						
15			12					
15			12					
15				12				
18				12				
18								
--								
--								
--								
--								
15					21			
18					21			
18						20		
21							17	
21							17	
24							17	
24								17
27								
27								

NOTES:

1. 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.

2. Fill heights exceeding 100 feet require special analysis by the Government.

3. The fill heights in the table are for helical lockseam and welded seam pipe only. Fill heights for culvert pipe with annular corrugations are more restrictive than those of helical lockseam and welded seam pipe. Obtain approval before furnishing annular corrugated pipe.

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.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

STANDARD

METAL PIPE CULVERT

STANDARD APPROVED FOR USE --/----

REVISED:

STANDARD
602-1

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