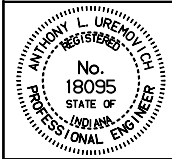


**3" x 1" CORRUGATED ALUMINUM ALLOY PIPE-ARCH (RIVETED OR LOCK SEAM)  
HEIGHT OF COVER LIMITS (ft.)**

CORNER RADIUS (in.)	SPAN (in.)	RISE (in.)	AREA (sft)	THICKNESS (in.)									
				0.060		0.075		0.105		0.135		0.164	
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
8/18 $\frac{3}{4}$	60	46	15.6			1.1	20.8	1.1	20.8	1.1	20.8	1.1	20.8
9/20 $\frac{3}{4}$	66	51	19.3			1.1	20.9	1.1	20.9	1.1	20.9	1.1	20.9
12/22 $\frac{7}{8}$	73	55	23.2			1.1	20.8	1.1	20.8	1.1	20.8	1.1	20.8
14/20 $\frac{7}{8}$	81	59	27.4					1.2	17.1	1.2	17.1	1.2	17.1
14/22 $\frac{7}{8}$	87	63	32.1					1.2	17.3	1.2	17.3	1.2	17.3
16/24 $\frac{7}{8}$	95	67	37.0							1.2	17.1	1.2	17.1
16/26 $\frac{7}{8}$	103	71	42.4							1.2	16.9	1.2	16.9
18/27 $\frac{3}{4}$	112	75	48.0									1.3	16.5

**NOTE:**

- The tabulated cover depths shall be measured from the bottom of the asphalt or concrete pavement to the top of the pipe.
- Dual entries in the "Corner Radius" column, such as 8/18 $\frac{3}{4}$  represent the following:  
 8 - minimum corner radius allowed by AASHTO M 196.  
 18 $\frac{3}{4}$  - corner radius typically available.
- The tabulated cover heights reflect pipe-arches with typically available corner radii. If a pipe-arch with corner radii other than what is typically available is to be used, a specific design shall be performed to verify structural adequacy.

INDIANA DEPARTMENT OF TRANSPORTATION	
<b>PIPE HEIGHT OF COVER LIMITS</b>	
JANUARY 1998	
<b>STANDARD DRAWING NO. E 715-PHCL-06</b>	
	DETAILS PLACED IN THIS FORMAT 11-15-99  /s/ Anthony L. Uremovich 11-15-99 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Firooz Zandi 11-15-99 CHIEF HIGHWAY ENGINEER DATE ORIGINALLY APPROVED 1-02-98