

MINIMUM SHEET THICKNESS AND DESIGN DATA

| PIPE ARCH DIMENSION | | | | MINIMUM SHEET THICKNESS REQUIRED (INCHES) | MAXIMUM COVER HEIGHT (FEET) | |
|-----------------------------------|-----------------------------------|-----------------|-------------|---|-----------------------------|--------------------|
| NOMINAL SIZE SPAN - RISE (INCHES) | EQUIVALENT PIPE DIAMETER (INCHES) | AREA (SQ. FT.) | Rc (INCHES) | | MAXIMUM CORNER PRESSURE | |
| | | | | | 4000 LBS./SQ. FT. | *6000 LBS./SQ. FT. |
| 2 2/3" X 1/2" CORRUGATIONS | | | | | | |
| 17 X 13 | 15 | 1.1 | 3" | .060 (16) | 11 | 17 |
| 21 X 15 | 18 | 1.6 | 3" | .060 (16) | 9 | 14 |
| 24 X 18 | 21 | 2.2 | 3" | .060 (16) | 8 | 12 |
| 28 X 20 | 24 | 2.8 | 3" | .075 (14) | 7 | 10 |
| 35 X 24 | 30 | 4.4 | 3" | .075 (14) | 5 | 8 |
| 42 X 29 † | 36 | 6.4 | 3 1/2" | .105 (12) | 5 | 8 |
| 49 X 33 † | 42 | 8.7 | 4" | .105 (12) | 5 | 8 |
| 57 X 38 † | 48 | 11.4 | 5" | .135 (10) | 5 | 8 |
| 64 X 43 † | 54 | 14.3 | 6" | .135 (10) | 6 | 9 |
| 71 X 47 † | 60 | 17.6 | 7" | .164 (8) | 6 | 9 |
| 3" X 1" CORRUGATIONS | | | | | | |
| 40 X 31 † | 36 | 6.4 | 5" | .060 (16) | 8 | 12 |
| 46 X 36 † | 42 | 8.7 | 6" | .060 (16) | 8 | 12 |
| 53 X 41 † | 48 | 11.4 | 7" | .060 (16) | 8 | 13 |
| 60 X 46 † | 54 | 14.3 | 8" | .075 (14) | 8 | 13 |
| 66 X 51 † | 60 | 17.6 | 9" | .075 (14) | 9 | 13 |
| 73 X 55 | 66 | 22.0 | 12" | .105 (12) | 11 | 16 |
| 81 X 59 | 72 | 26.0 | 14" | .105 (12) | 11 | 17 |
| 87 X 63 | 78 | 31.0 | 14" | .135 (10) | 10 | 16 |
| 95 X 67 | 84 | 35.0 | 16" | .135 (10) | 11 | 16 |
| 103 X 71 | 90 | 40.0 | 16" | .164 (8) | 10 | 15 |
| 112 X 75 | 96 | 46.0 | 18" | .164 (8) | 10 | 13 |
| 117 X 79 | 102 | 52.0 | 18" | .164 (8) | 10 | 11 |

† Indicates pipe arches for which demensions for either corrugation may be used within fill height limitations.

Sheet 7 of 17

| |
|-------------------------|
| SPECIFICATION REFERENCE |
| 232 302 |

CORRUGATED ALUMINUM ALLOY PIPE ARCH HEIGHT OF COVER TABLE FOR H-20 LIVE LOAD

VIRGINIA DEPARTMENT OF TRANSPORTATION

Notes:

* Figures in parenthesis denote corresponding gage to sheet thickness.
Cover heights indicated in tables are for finished construction.

To protect pipe during construction, minimum height of cover to be as follows prior to allowing construction traffic to cross installation.

| Pipe Arch Span | Min. Cover Height During Construction |
|----------------|---------------------------------------|
| 17" to 35" | 1'-6" |
| 42" and above | Span 2 |

Minimum finished height of cover to be 1/8 Span or 1'-0", whichever is greater.

** The cover shall extend the full length of the pipe arch. The approach fill ramp is to extend a minimum of (10)(Height + 1/2 Span) on each side of the structure, or the intersection with a cut.

Lapped longitudinal seams shall be staggered so as to alternate on each side of the center of arch top by approximately 15 percent of the periphery.

A tolerance of plus, or minus, 1 inch is permissible for dimensions of span, rise, and corner radius.

x When design height of cover falls within this category, foundation and backfill must be approved by the engineer.

The allowable cover tables shown are based on a soil modulus of 700 PSI. All other design criteria are in accordance with the AASHTO Specifications and VDOT Modifications for Soil Corrugated Metal Structure Interaction Systems.

