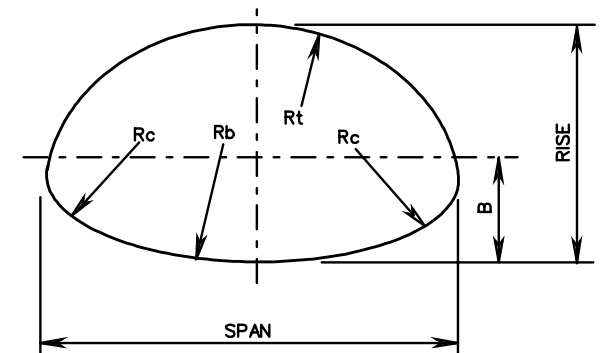


STRUCTURAL PLATE ALUMINUM ALLOY PIPE ARCHES
9' x 2 1/2" CORRUGATIONS

| SPAN | RISE | CORNER RADIUS | MAXIMUM COVER HEIGHT IN FEET | | | | | | | | AREA SQ.FT. |
|-------------------------|-------------------------|-------------------------|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------|-------|----------------|
| | | | MINIMUM SHEET THICKNESS IN INCHES | | | | | | | | |
| | | | MAXIMUM CORNER PRESSURE IN LBS./SQ. FT. | | | | | | | | |
| | | | 0.100" | | 0.125" | | 0.150" | | 0.175" | | |
| 4000 (SEE NOTE 4) | 4000 (SEE NOTE 4) | 6000 (SEE NOTE 6) | 4000 (SEE NOTE 4) | 6000 (SEE NOTE 6) | 4000 (SEE NOTE 6) | 6000 (SEE NOTE 6) | 4000 (SEE NOTE 6) | 6000 (SEE NOTE 6) | | | |
| 6'-2" | 5'-0" | 31.8 | 25 | 28 | 36 | 28 | 42 | 28 | 42 | 24.7 | |
| 6'-7" | 4'-11" | 31.8 | 23 | 26 | 34 | 26 | 40 | 26 | 40 | 26.6 | |
| 6'-7" | 5'-8" | 31.8 | 23 | 26 | 34 | 26 | 40 | 26 | 40 | 29.6 | |
| 6'-11" | 5'-9" | 31.8 | 22 | 25 | 32 | 25 | 38 | 25 | 38 | 31.9 | |
| 7'-3" | 5'-11" | 31.8 | 21 | 24 | 31 | 24 | 36 | 24 | 36 | 34.3 | |
| 7'-9" | 6'-0" | 31.8 | 20 | 22 | 29 | 22 | 34 | 22 | 34 | 36.8 | |
| 8'-1" | 6'-1" | 31.8 | 19 | 21 | 28 | 21 | 32 | 21 | 32 | 39.3 | |
| 8'-5" | 6'-3" | 31.8 | 18 | 20 | 27 | 20 | 31 | 20 | 31 | 41.9 | |
| 8'-10" | 6'-4" | 31.8 | 17 | 20 | 25 | 20 | 30 | 20 | 30 | 44.5 | |
| 9'-3" | 6'-5" | 31.8 | 16 | 19 | 24 | 19 | 28 | 19 | 28 | 45.1 | |
| 9'-7" | 6'-6" | 31.8 | 16 | 18 | 23 | 18 | 27 | 18 | 27 | 49.9 | |
| 9'-11" | 6'-8" | 31.8 | 15 | 17 | 22 | 17 | 26 | 17 | 26 | 52.7 | |
| 10'-3" | 6'-9" | 31.8 | 15 | 17 | 22 | 17 | 25 | 17 | 25 | 55.5 | |
| 10'-9" | 6'-10" | 31.8 | 14 | 16 | 21 | 16 | 24 | 16 | 24 | 58.4 | |
| 11'-1" | 7'-0" | 31.8 | 14 | 15 | 20 | 15 | 23 | 15 | 23 | 61.4 | |
| 11'-5" | 7'-1" | 31.8 | 13 | 15 | 19 | 15 | 23 | 15 | 23 | 64.4 | |
| 11'-9" | 7'-2" | 31.8 | 13 | 15 | 19 | 15 | 22 | 15 | 22 | 67.5 | |
| 12'-3" | 7'-3" | 31.8 | 12 | 14 | 18 | 14 | 21 | 14 | 21 | 70.5 | |
| 12'-7" | 7'-5" | 31.8 | 12 | 14 | 18 | 14 | 21 | 14 | 21 | 73.7 | |
| 12'-11" | 7'-6" | 31.8 | 12 | 13 | 17 | 13 | 20 | 13 | 20 | 77.0 | |
| 13'-1" | 8'-2" | 31.8 | 11 | 13 | 17 | 13 | 20 | 13 | 20 | 83.0 | |
| 13'-1" | 8'-4" | 31.8 | 11 | 13 | 17 | 13 | 20 | 13 | 20 | 86.8 | |
| 13'-11" | 8'-5" | 31.8 | 11 | 12 | 16 | 12 | 19 | 12 | 19 | 90.3 | |
| 14'-0" | 8'-7" | 31.8 | 11 | 12 | 16 | 12 | 18 | 12 | 18 | 94.2 | |
| 13'-11" | 9'-5" | 31.8 | 11 | 12 | 16 | 12 | 19 | 12 | 19 | 101.5 | |
| 14'-3" | 9'-7" | 31.8 | 10 | 12 | 15 | 12 | 18 | 12 | 18 | 105.7 | |
| 14'-8" | 9'-8" | 31.8 | | 12 | 14 | 12 | 17 | 12 | 18 | 109.9 | |
| 14'-11" | 9'-10" | 31.8 | | 11 | 13 | 11 | 16 | 11 | 17 | 114.2 | |
| 15'-4" | 10'-0" | 31.8 | | 11 | 12 | 11 | 14 | 11 | 17 | 118.6 | |
| 15'-7" | 10'-2" | 31.8 | | 11 | 11 | 11 | 14 | 11 | 16 | 123.1 | |
| 16'-1" | 10'-4" | 31.8 | | 10 | | 10 | 12 | 10 | 15 | 127.6 | |
| 16'-4" | 10'-6" | 31.8 | | | | 10 | 12 | 10 | 14 | 132.3 | |
| 16'-9" | 10'-8" | 31.8 | | | | 10 | 11 | 10 | 13 | 136.9 | |
| 17'-0" | 10'-10" | 31.8 | | | | 10 | | 10 | 12 | 141.8 | |
| 17'-3" | 11'-0" | 31.8 | | | | 10 | | 10 | 12 | | |
| 18'-0" | 11'-4" | 31.8 | | | | | | 9 | 10 | | |

NOTES:

- COVER HEIGHTS INDICATED IN TABLE ARE FOR FINISHED CONSTRUCTION.
- TO PROTECT PIPE DURING CONSTRUCTION, MINIMUM HEIGHT OF COVER PRIOR TO ALLOWING CONSTRUCTION TRAFFIC TO CROSS INSTALLATION TO BE 1/2 SPAN. THE COVER SHALL EXTEND THE FULL LENGTH OF THE PIPE ARCH. THE APPROACH FILL RAMP IS TO EXTEND A MINIMUM OF 10(RISE + 1/2 SPAN) ON EACH SIDE OF THE PIPE, OR TO THE INTERSECTION WITH A CUT.
- STANDARD MINIMUM FINISHED HEIGHT OF COVER FOR ALL PIPES SHALL BE 2.0' OR 1/4 SPAN, WHICHEVER IS GREATER. IN CASES IN WHICH THESE COVER HEIGHTS CANNOT BE ACHIEVED, AN ABSOLUTE MINIMUM FINISHED COVER HEIGHT OF 1.0' OR 1/8 SPAN, WHICHEVER IS GREATER, WILL BE ALLOWED ONLY IF ALL POSSIBLE MEANS TO OBTAIN THE STANDARD VALUE HAVE BEEN EXHAUSTED.
- SEE STANDARD PB-1 FOR BEDDING AND BACKFILL REQUIREMENTS.
- THE MAXIMUM HEIGHT OF COVER SHOWN IN THE TABLES IS 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.
- WHEN DESIGN HEIGHT OF COVER REQUIRES THE USE OF THIS CATEGORY OF PIPE, BEDDING AND BACKFILL MUST BE APPROVED BY THE ENGINEER.
- BOLTS ARE 3/4" DIAMETER, HIGH STRENGTH TO MEET CURRENT A.S.T.M. DESIGNATION M-164 AND GALVANIZED TO MEET CURRENT A.S.T.M. DESIGNATION A-394. BOLTS ARE TO BE LOCATED IN THE VALLEY AND CREST OF EACH CORRUGATION IN DOUBLE ROWS SPACED 1 3/4" APART.
- STRUCTURAL PLATE PIPE-ARCH DIMENSIONS ARE TO INSIDE CREST AND ARE SUBJECT TO MANUFACTURING TOLERANCES.



SPECIFICATION REFERENCE

232
302

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 12 OF 18

107.16