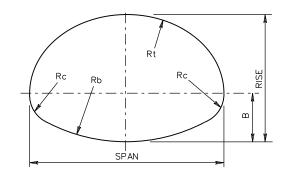
## MINIMUM THICKNESS-STRUCTURAL PLATE STEEL PIPE ARCHES 6" x 2" CORRUGATIONS

PIPE ARCH DIMENSION				MINIMUM	MAXIMUM ALLLOWABLE COVER HEIGHT IN FEET	
NOMINAL SIZE		AREA	Rc	SHEET THICKNESS	MAXIMUM CORNER PRESSURE	
SPAN	RISE	SQ. FT.	INCHES	REQUIRED GAUGE	4000 LBS./SQ.FT. (SEE NOTE 4)	6000 LBS./SQ.FT. (SEE NOTE 6)
6'-1''	4'-7''	22	18	12	16	24
6'-4''	4'-9''	24	18	12	15	23
6'-9"	4'-11''	26	18	12	14	22
7'-0''	5'-1''	28	18	12	14	21
7'-3''	5'-3'	31	18	12	13	20
7'-8''	5'-5''	33	18	12	12	19
7'-11''	5'-7''	35	18	12	12	18
8'-2"	5'-9''	38	18	12	12	18
8'-7"	5'-11''	40	18	12	11	17
8'-10''	6'-1''	43	18	12	11	16
9'-4"	6'-3''	46	18	12	10	16
9'-6''	6'-5''	49	18	12	10	15
9'-9''	6'-7''	52	18	12	10	15
10'-3''	6'-9''	55	18	12	9	14
10'-8''	6'-11''	58	18	12	9	14
10'-11''	7'-1''	61	18	12	9	13
11'-5''	7'-3''	64	18	12	8	13
11-7"	7'-5''	67	18	12	8	12
11'-10''	7'-7''	71	18	12	8	12
12'-4''	7'-9''	74	18	12	8	12
12'-6''	7'-11''	78	18	12	8	12
12'-8''	8'-1''	81	18	12	7	11
12'-10''	8'-4''	85	18	12	7	11
13'-5''	8'-5''	89	18	12	7	11
13-11''	8'-7''	93	18	12	7	10
14'-1''	8'-9''	97	18	12	7	10
14'-3''	8'-11''	101	18	12	6	10
14'-10''	9'-1''	105	18	12	6	10
15'-4''	9'-3''	109	18	12	6	9
15'-6''	9'-5''	113	18	12	6	9
15'-8''	9'-7''	118	18	12	6	9
15'-10''	9'-10''	122	18	12	6	9
16'-5''	9'-11''	126	18	12	6	9
16'-7''	10'-1"	131	18	12	6	9

## NOTES:

- COVER HEIGHTS INDICATED IN TABLES ARE FOR FINISHED CONSTRUCTION WHICH MATCH FORMER VDOT ALLOWABLE STRESS DESIGN TABLES. COVER HEIGHTS WERE NOT RE-CALCULATED USING LRFD.
- 2. TO PROTECT PIPE DURING CONSTRUCTION, MINIMUM HEIGHT OF COVER PRIOR TO ALLOWING CONSTRUCTION TRAFFIC TO CROSS INSTALLATION SHALL BE  $\frac{1}{2}$  SPAN. THE COVER SHALL EXTEND THE FULL LENGTH OF THE PIPE ARCH. THE APPROACH FILL RAMP IS TO EXTEND A MINIMUM OF 10(HEIGHT +  $\frac{1}{2}$  SPAN) ON EACH SIDE OF THE STRUCTURE, OR TO THE INTERSECTION WITH A CUT.
- 3. STANDARD MINIMUM FINISHED HEIGHT OF COVER FOR ALL PIPES SHALL BE 2.0' OR 1/2 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.
- 4. SEE STANDARD PB-1 FOR PIPE BEDDING AND BACKFILL REQUIREMENTS.
- 5. 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.
- 6. WHEN DESIGN HEIGHT OF COVER REQUIRES THE USE OF THIS CATEGORY OF PIPE, BEDDING AND BACKFILL MUST BE APPROVED BY THE ENGINEER.
- 7. STRUCTURAL PLATE PIPE-ARCH DIMENSIONS ARE TO INSIDE OF CREST AND ARE SUBJECT TO MANUFACTURING TOLFRANCES.



**\**VDOT

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

ROAD AND BRIDGE STANDARDS

SHEET 9 OF 18 REVISION DATE 107.13 11/15 STRUCTURAL PLATE STEEL PIPE ARCH HEIGHT OF COVER TABLE FOR HL-93 LIVE LOAD

SPECIFICATION REFERENCE

232302

VIRGINIA DEPARTMENT OF TRANSPORTATION