

**150 mm x 50 mm STRUCTURAL PLATE STEEL PIPE (BOLTED)  
HEIGHT OF COVER LIMITS (m)**

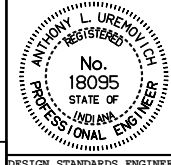
| AREA<br>(m <sup>2</sup> ) | DIAMETER<br>(mm) | THICKNESS (mm) |      |      |      |      |      |      |      |  |  |
|---------------------------|------------------|----------------|------|------|------|------|------|------|------|--|--|
|                           |                  | 4.78           |      | 5.54 |      | 6.32 |      | 7.11 |      |  |  |
|                           |                  | MIN.           | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. |  |  |
| 1.77                      | 1500             | 0.30           | 30.5 | 0.30 | 30.5 | 0.30 | 30.5 | 0.30 | 30.5 |  |  |
| 2.15                      | 1655             | 0.30           | 28.3 | 0.30 | 30.5 | 0.30 | 30.5 | 0.30 | 30.5 |  |  |
| 2.57                      | 1810             | 0.30           | 26.2 | 0.30 | 30.5 | 0.30 | 30.5 | 0.30 | 30.5 |  |  |
| 3.03                      | 1965             | 0.30           | 24.1 | 0.30 | 29.0 | 0.30 | 30.5 | 0.30 | 30.5 |  |  |
| 3.53                      | 2120             | 0.30           | 22.3 | 0.30 | 26.8 | 0.30 | 30.5 | 0.30 | 30.5 |  |  |
| 4.06                      | 2275             | 0.30           | 20.7 | 0.30 | 25.0 | 0.30 | 29.6 | 0.30 | 30.5 |  |  |
| 4.64                      | 2430             | 0.30           | 19.5 | 0.30 | 23.5 | 0.30 | 27.7 | 0.30 | 30.5 |  |  |
| 5.25                      | 2585             | 0.34           | 18.3 | 0.34 | 22.3 | 0.34 | 26.2 | 0.34 | 28.7 |  |  |
| 5.90                      | 2740             | 0.37           | 17.4 | 0.37 | 21.0 | 0.37 | 24.7 | 0.37 | 26.8 |  |  |
| 6.58                      | 2895             | 0.37           | 16.5 | 0.37 | 19.8 | 0.37 | 23.5 | 0.37 | 25.6 |  |  |
| 7.31                      | 3050             | 0.40           | 15.5 | 0.40 | 18.9 | 0.40 | 22.3 | 0.40 | 24.4 |  |  |
| 8.07                      | 3205             | 0.43           | 14.9 | 0.43 | 18.0 | 0.43 | 21.0 | 0.43 | 23.2 |  |  |
| 8.87                      | 3360             | 0.43           | 14.0 | 0.43 | 17.1 | 0.43 | 20.1 | 0.43 | 21.9 |  |  |
| 9.70                      | 3515             | 0.46           | 13.4 | 0.46 | 16.5 | 0.46 | 19.2 | 0.46 | 21.0 |  |  |
| 10.58                     | 3670             | 0.46           | 13.1 | 0.46 | 15.5 | 0.46 | 18.6 | 0.46 | 20.1 |  |  |
| 11.49                     | 3825             | 0.49           | 12.5 | 0.49 | 14.9 | 0.49 | 17.7 | 0.49 | 19.5 |  |  |
| 12.44                     | 3980             | 0.52           | 11.9 | 0.52 | 14.3 | 0.52 | 17.1 | 0.52 | 18.6 |  |  |
| 13.43                     | 4135             | 0.52           | 11.6 | 0.52 | 14.0 | 0.52 | 16.5 | 0.52 | 18.0 |  |  |
| 14.45                     | 4290             | 0.55           | 11.0 | 0.55 | 13.4 | 0.55 | 15.8 | 0.55 | 17.4 |  |  |
| 15.52                     | 4445             | 0.58           | 10.7 | 0.58 | 12.8 | 0.58 | 15.2 | 0.58 | 16.8 |  |  |
| 16.62                     | 4600             | 0.58           | 10.4 | 0.58 | 12.5 | 0.58 | 14.6 | 0.58 | 16.2 |  |  |
| 17.76                     | 4755             | 0.61           | 10.1 | 0.61 | 12.2 | 0.61 | 14.3 | 0.61 | 15.5 |  |  |
| 18.93                     | 4910             | 0.61           | 9.8  | 0.61 | 11.6 | 0.61 | 13.7 | 0.61 | 15.2 |  |  |
| 20.15                     | 5065             | 0.64           | 9.4  | 0.64 | 11.3 | 0.64 | 13.4 | 0.64 | 14.6 |  |  |
| 21.40                     | 5220             | 0.67           | 9.1  | 0.67 | 11.0 | 0.67 | 13.1 | 0.67 | 14.3 |  |  |
| 22.69                     | 5375             | 0.67           | 8.8  | 0.67 | 10.7 | 0.67 | 12.5 | 0.67 | 13.7 |  |  |
| 24.02                     | 5530             | 0.70           | 8.5  | 0.70 | 10.4 | 0.70 | 12.2 | 0.70 | 13.4 |  |  |
| 25.38                     | 5685             | 0.73           | 8.2  | 0.73 | 10.1 | 0.73 | 11.9 | 0.73 | 13.1 |  |  |
| 26.79                     | 5840             | 0.73           | 8.2  | 0.73 | 9.8  | 0.73 | 11.6 | 0.73 | 12.8 |  |  |
| 28.23                     | 5995             | 0.76           | 7.9  | 0.76 | 9.4  | 0.76 | 11.3 | 0.76 | 12.5 |  |  |
| 29.71                     | 6150             | 0.76           | 7.6  | 0.76 | 9.4  | 0.76 | 11.0 | 0.76 | 12.2 |  |  |
| 31.22                     | 6305             | 0.79           | 7.6  | 0.79 | 9.1  | 0.79 | 10.7 | 0.79 | 11.9 |  |  |
| 32.78                     | 6460             |                |      | 0.82 | 8.8  | 0.82 | 10.4 | 0.82 | 11.6 |  |  |

All dimensions are in mm unless otherwise specified.

**NOTE:**

1. The tabulated cover depths shall be measured from the bottom of the bituminous or concrete pavement to the top of the pipe.
2. The tabulated thickness reflects the required thickness for top and side plates. Refer to 908.08 (a) for the required bottom plate thickness.

INDIANA DEPARTMENT OF TRANSPORTATION  
**PIPE HEIGHT OF COVER LIMITS**  
JANUARY 1998  
STANDARD DRAWING NO. **717-PHCL-08**

|   |  |
|---|--|
|  | /s/ Anthony L. Uremovich 1-02-98<br>DESIGN STANDARDS ENGINEER DATE |
|   | /s/ Donald W. Lucas 1-02-98<br>CHIEF HIGHWAY ENGINEER DATE         |

Source Sheet: NONE