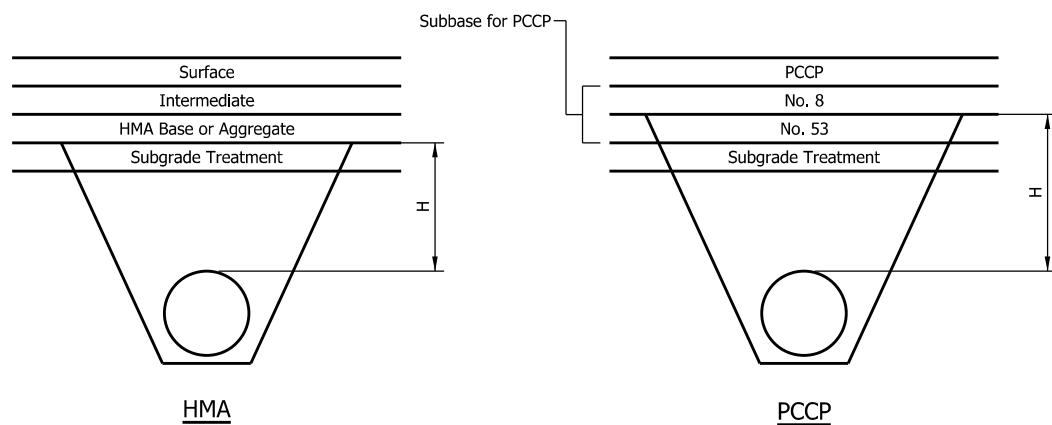


This sheet replaces Standard Drawing E 715-PHCL-01

| INDEX     |   |
|-----------|---|
| SHEET NO. | SUBJECT   |
| 01        | Pipe Height of Cover Drawing Index and General Notes                              |
| 02-04     | 2 2/3" x 1/2" Corrugated Aluminum Alloy Pipe and Pipe Arch Height of Cover Limits |
| 05-07     | 3" x 1" Corrugated Aluminum Alloy Pipe and Pipe Arch Height of Cover Limits       |
| 08-09     | 6" x 1" Corrugated Aluminum Alloy Pipe Height of Cover Limits                     |
| 10-12     | 2 2/3" x 1/2" Corrugated Steel Pipe and Pipe Arch Height of Cover Limits          |
| 13-15     | 3" x 1" Corrugated Steel Pipe and Pipe Arch Height of Cover Limits                |
| 16-17     | 5" x 1" Corrugated Steel Pipe and Pipe Arch Height of Cover Limits                |
| 18        | 3/4" x 3/4" x 7 1/2" Spiral Rib Steel Pipe Height of Cover Limits                 |
| 19        | Non-Reinforced Concrete Pipe Class 3 Height of Cover Limits                       |
| 20        | Corrugated Polyethylene Pipe Height of Cover Limits                               |
| 21        | Polyvinyl Chloride and Polypropylene Pipe Height of Cover Limits                  |
| 22        | Vitrified Clay Pipe Height of Cover Limits  |
| 23-24     | Reinforced Concrete Pipe Height of Cover Limits                                   |

**GENERAL NOTE:**

1. The tabulated cover depth  $H$  shall be measured from the top of the pipe to the bottom of the drainage No. 8 layer for PCCP and from the top of the pipe to the top of the subgrade treatment for HMA pavement.



|   |
|---|
| INDIANA DEPARTMENT OF TRANSPORTATION                              |
| PIPE HEIGHT OF COVER LIMITS<br>DRAWING INDEX AND<br>GENERAL NOTES |

This sheet replaces Standard Drawing E 715-PHCL-20

| CORRUGATED POLYETHYLENE PIPE TYPE S<br>HEIGHT OF COVER LIMITS (ft) |                              |                 |                 |
|--|------------------------------|-----------------|-----------------|
| PAY ITEM<br>DIAMETER<br>(in.)                                      | NOMINAL<br>DIAMETER<br>(in.) | MINIMUM<br>(ft) | MAXIMUM<br>(ft) |
| 12   | 12                           | 2.0             | 22.0            |
| 15   | 15                           | 2.0             | 22.0            |
| 18   | 18                           | 2.0             | 20.0            |
| 21   | 21                           | 2.0             | 19.0            |
| 24   | 24                           | 2.0             | 19.0            |
| 30   | 30                           | 2.0             | 17.0            |
| 36   | 36                           | 2.0             | 17.0            |
| 42   | 42                           | 2.0             | 17.0            |
| 48   | 48                           | 2.0             | 15.0            |

NOTE:

1. The pay item diameter reflects the minimum required inside diameter.

INDIANA DEPARTMENT OF TRANSPORTATION

PIPE HEIGHT OF COVER LIMITS

This sheet replaces Standard Drawing E 715-PHCL-21

| PROFILE WALL POLYVINYL CHLORIDE PIPE<br>HEIGHT OF COVER LIMITS (ft) |                 |                 |
|---|-----------------|-----------------|
| DIAMETER<br>(in.)   | MINIMUM<br>(ft) | MAXIMUM<br>(ft) |
| 12  | 2.0             | 20.0            |
| 15  | 2.0             | 20.0            |
| 18  | 2.0             | 20.0            |
| 21  | 2.0             | 20.0            |
| 24  | 2.0             | 20.0            |
| 30  | 2.0             | 18.0            |
| 36  | 2.0             | 18.0            |
| 42  | 2.0             | 17.0            |
| 48  | 2.0             | 15.0            |

| CORRUGATED POLYPROPYLENE PIPE<br>HEIGHT OF COVER LIMITS (ft) |                 |                 |
|--|-----------------|-----------------|
| DIAMETER<br>(in.)  | MINIMUM<br>(ft) | MAXIMUM<br>(ft) |
| 12   | 2.0             | 28.0            |
| 15   | 2.0             | 28.0            |
| 18   | 2.0             | 25.0            |
| 21   | 2.0             | 23.0            |
| 24   | 2.0             | 23.0            |
| 30   | 2.2             | 19.0            |
| 36   | 2.6             | 23.0            |
| 42   | 3.1             | 22.0            |
| 48   | 3.5             | 21.0            |

NOTE:

1. The pay item diameter reflects the minimum required inside diameter.

|                                      |
|--------------------------------------|
| INDIANA DEPARTMENT OF TRANSPORTATION |
| PIPE HEIGHT OF COVER LIMITS          |

This sheet replaces Standard Drawing E 715-PHCL-22

| VITRIFIED CLAY PIPE, EXTRA STRENGTH<br>HEIGHT OF COVER LIMITS (ft) |                 |                 |
|--|-----------------|-----------------|
| DIAMETER<br>(in.)  | MINIMUM<br>(ft) | MAXIMUM<br>(ft) |
| 12   | 1.2             | 16.0            |
| 15   | 1.4             | 14.0            |
| 18   | 1.4             | 13.0            |
| 21   | 1.4             | 14.0            |
| 24   | 1.4             | 15.0            |
| 27   | 1.5             | 14.0            |
| 30   | 1.6             | 13.0            |
| 33   | 1.5             | 13.0            |
| 36   | 1.5             | 14.0            |

|                                      |
|--------------------------------------|
| INDIANA DEPARTMENT OF TRANSPORTATION |
| PIPE HEIGHT OF COVER LIMITS          |

| REINFORCED CONCRETE CIRCULAR PIPE<br>HEIGHT OF COVER LIMITS (ft) |                                |      |                              |      |                             |      |                            |      |
|--|--------------------------------|------|------------------------------|------|-----------------------------|------|----------------------------|------|
| DIAMETER<br>(in.)  | STRENGTH CLASS / D-LOAD RATING |      |                              |      |                             |      |                            |      |
|  | CLASS II: $D_{0.01} = 1000$    |      | CLASS III: $D_{0.01} = 1350$ |      | CLASS IV: $D_{0.01} = 2000$ |      | CLASS V: $D_{0.01} = 3000$ |      |
|  | MIN.                           | MAX. | MIN.                         | MAX. | MIN.                        | MAX. | MIN.                       | MAX. |
| 12   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 25.0 | 1.0                        | 38.0 |
| 15   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 39.0 |
| 18   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 21   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 24   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 27   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 30   | 1.0                            | 13.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 33   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 36   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 42   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 48   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 54   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 60   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 40.0 |
| 66   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 26.0 | 1.0                        | 39.0 |
| 72   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 78   | 1.0                            | 12.0 | 1.0                          | 17.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 84   | 1.0                            | 12.0 | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 90   | 1.0                            | 12.0 | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 96   | 1.0                            | 11.0 | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 102  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 108  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 114  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 120  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 126  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 132  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 138  | 1.0                            | 9.0  | 1.0                          | 16.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |
| 144  | 1.0                            | 9.0  | 1.0                          | 15.0 | 1.0                         | 25.0 | 1.0                        | 39.0 |

This sheet replaces Standard Drawing E 715-PHCL-23

NOTES:

1. A special design in accordance with AASHTO LRFD Bridge Design Specifications, Section 12, is required for pipe diameters and heights of cover beyond those shown.

INDIANA DEPARTMENT OF TRANSPORTATION

PIPE HEIGHT OF COVER LIMITS

This sheet replaces Standard Drawing E 715-PHCL-24

Sheet E 715-PHCL-25 has been deleted

**REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE**  
**HEIGHT OF COVER LIMITS (ft)**

| SPAN<br>(in.) | RISE<br>(in.) | AREA<br>(sft) | STRENGTH CLASS / D-LOAD RATING |      |                              |      |                                |      |                                 |      |                                |       |
|---------------|---------------|---------------|--------------------------------|------|------------------------------|------|--------------------------------|------|---------------------------------|------|--------------------------------|-------|
|               |               |               | CLASS HE-A: $D_{0.01} = 600$   |      | CLASS HE-I: $D_{0.01} = 800$ |      | CLASS HE-II: $D_{0.01} = 1000$ |      | CLASS HE-III: $D_{0.01} = 1350$ |      | CLASS HE-IV: $D_{0.01} = 2000$ |       |
|               |               |               | MIN.                           | MAX. | MIN.                         | MAX. | MIN.                           | MAX. | MIN.                            | MAX. | MIN.                           | MAX.  |
| 23            | 14            | 1.8           | 1.3                            | 4.0  | 1.0                          | 8.0  | 1.0                            | 11.0 | 1.0                             | 20.0 | 1.0                            | 100.0 |
| 30            | 19            | 3.3           | 1.1                            | 5.0  | 1.0                          | 7.0  | 1.0                            | 10.0 | 1.0                             | 16.0 | 1.0                            | 47.0  |
| 34            | 22            | 4.1           | 1.0                            | 5.0  | 1.0                          | 8.0  | 1.0                            | 11.0 | 1.0                             | 17.0 | 1.0                            | 48.0  |
| 38            | 24            | 5.1           | 1.0                            | 5.0  | 1.0                          | 8.0  | 1.0                            | 11.0 | 1.0                             | 18.0 | 1.0                            | 49.0  |
| 42            | 27            | 6.3           | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 12.0 | 1.0                             | 19.0 | 1.0                            | 50.0  |
| 45            | 29            | 7.4           | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 12.0 | 1.0                             | 19.0 | 1.0                            | 45.0  |
| 49            | 32            | 8.8           | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 12.0 | 1.0                             | 19.0 | 1.0                            | 45.0  |
| 53            | 34            | 10.2          | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 12.0 | 1.0                             | 20.0 | 1.0                            | 44.0  |
| 60            | 38            | 12.9          | 1.0                            | 5.0  | 1.0                          | 8.0  | 1.0                            | 10.0 | 1.0                             | 15.0 | 1.0                            | 26.0  |
| 68            | 43            | 16.6          | 1.0                            | 6.0  | 1.0                          | 8.0  | 1.0                            | 10.0 | 1.0                             | 15.0 | 1.0                            | 27.0  |
| 76            | 48            | 20.5          | 1.0                            | 6.0  | 1.0                          | 8.0  | 1.0                            | 11.0 | 1.0                             | 16.0 | 1.0                            | 28.0  |
| 83            | 53            | 24.8          | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 11.0 | 1.0                             | 16.0 | 1.0                            | 29.0  |
| 91            | 58            | 29.5          | 1.0                            | 6.0  | 1.0                          | 9.0  | 1.0                            | 12.0 | 1.0                             | 17.0 | 1.0                            | 29.0  |
| 98            | 63            | 34.6          | 1.1                            | 6.0  | 1.1                          | 9.0  | 1.1                            | 12.0 | 1.1                             | 17.0 | 1.1                            | 29.0  |
| 106           | 68            | 40.1          | 1.2                            | 6.0  | 1.2                          | 9.0  | 1.2                            | 12.0 | 1.2                             | 17.0 | 1.2                            | 30.0  |
| 113           | 72            | 46.1          | 1.2                            | 7.0  | 1.2                          | 9.0  | 1.2                            | 12.0 | 1.2                             | 18.0 | 1.2                            | 30.0  |
| 121           | 77            | 52.4          | 1.3                            | 7.0  | 1.3                          | 9.0  | 1.3                            | 12.0 | 1.3                             | 18.0 | 1.3                            | 30.0  |
| 128           | 82            | 59.2          | 1.4                            | 7.0  | 1.4                          | 10.0 | 1.4                            | 13.0 | 1.4                             | 18.0 | 1.4                            | 30.0  |
| 136           | 87            | 66.4          | 1.5                            | 7.0  | 1.5                          | 10.0 | 1.5                            | 13.0 | 1.5                             | 18.0 | 1.5                            | 31.0  |
| 143           | 92            | 74.0          | 1.5                            | 7.0  | 1.5                          | 10.0 | 1.5                            | 13.0 | 1.5                             | 18.0 | 1.5                            | 31.0  |
| 151           | 97            | 82.0          | 1.6                            | 7.0  | 1.6                          | 10.0 | 1.6                            | 13.0 | 1.6                             | 19.0 | 1.6                            | 31.0  |
| 166           | 106           | 99.2          | 1.7                            | 7.0  | 1.8                          | 10.0 | 1.8                            | 13.0 | 1.8                             | 19.0 | 1.8                            | 31.0  |
| 180           | 116           | 118.6         | 1.8                            | 7.0  | 1.9                          | 10.0 | 1.9                            | 13.0 | 1.9                             | 19.0 | 1.9                            | 31.0  |

INDIANA DEPARTMENT OF TRANSPORTATION

PIPE HEIGHT OF COVER LIMITS