

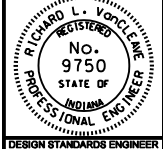
**REQUIREMENTS FOR CORRUGATED STEEL PIPE THICKNESS  
AND PROTECTION AT NON-ABRASIVE SITES**

| pH                                                                         | ≤ 4.0  | 4.5    | 5.0    | 5.5   | 6.0   | 6.5   | ≥ 7.0 | Steel Conduit Type                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------|--------|--------|--------|-------|-------|-------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thickness<br>(in.)<br>required<br>for 50 year<br>Design<br>Service<br>Life |        |        |        | 0.168 | 0.168 | 0.138 | 0.109 | Zinc Coated Corrugated Steel Pipe<br>Zinc Coated Corrugated Steel Pipe-Arch                                                                                                                                                          |
|                                                                            |        |        | 0.138  | 0.109 | 0.109 | 0.079 | 0.064 | Zinc Coated Corrugated Steel Pipe w/Paved Invert<br>Zinc Coated Corrugated Steel Pipe-Arch w/Paved Invert<br>Fully Bituminous Coated and Lined Corrugated Steel Pipe<br>Fully Bituminous Coated and Lined Corrugated Steel Pipe-Arch |
|                                                                            |        |        | 0.138  | 0.109 | 0.109 | 0.079 | 0.064 | Aluminum Coated Type 2 Corrugated Steel Pipe<br>Aluminum Coated Type 2 Corrugated Steel Pipe-Arch                                                                                                                                    |
|                                                                            | 0.109  | 0.109  | 0.079  | 0.064 | 0.064 | 0.064 | 0.064 | Polymer Precoated Galvanized Corrugated Steel Pipe<br>Polymer Precoated Galvanized Corrugated Steel Pipe-Arch<br>Fiber Bonded Bituminous Coated Corrugated Steel Pipe<br>Fiber Bonded Bituminous Coated Corrugated Steel Pipe-Arch   |
|                                                                            | 0.111* | 0.111* | 0.111* | 0.170 | 0.111 | 0.111 | 0.111 | Structural Plate Steel Pipe<br>Structural Plate Steel Pipe-Arch                                                                                                                                                                      |

\* -- Concrete field paving required

| pH                                                                         | ≤ 4.0  | 4.5    | 5.0    | 5.5   | 6.0   | 6.5   | ≥ 7.0 | Steel Conduit Type                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------|--------|--------|--------|-------|-------|-------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thickness<br>(in.)<br>required<br>for 75 year<br>Design<br>Service<br>Life |        |        |        |       |       | 0.168 | 0.138 | Zinc Coated Corrugated Steel Pipe<br>Zinc Coated Corrugated Steel Pipe-Arch                                                                                                                                                          |
|                                                                            |        |        |        | 0.168 | 0.168 | 0.138 | 0.109 | Zinc Coated Corrugated Steel Pipe w/Paved Invert<br>Zinc Coated Corrugated Steel Pipe-Arch w/Paved Invert<br>Fully Bituminous Coated and Lined Corrugated Steel Pipe<br>Fully Bituminous Coated and Lined Corrugated Steel Pipe-Arch |
|                                                                            |        |        |        | 0.168 | 0.168 | 0.138 | 0.109 | Aluminum Coated Type 2 Corrugated Steel Pipe<br>Aluminum Coated Type 2 Corrugated Steel Pipe-Arch                                                                                                                                    |
|                                                                            | 0.168  | 0.168  | 0.168  | 0.138 | 0.138 | 0.109 | 0.109 | Polymer Precoated Galvanized Corrugated Steel Pipe<br>Polymer Precoated Galvanized Corrugated Steel Pipe-Arch<br>Fiber Bonded Bituminous Coated Corrugated Steel Pipe<br>Fiber Bonded Bituminous Coated Corrugated Steel Pipe-Arch   |
|                                                                            | 0.111* | 0.111* | 0.111* | 0.218 | 0.111 | 0.111 | 0.111 | Structural Plate Steel Pipe<br>Structural Plate Steel Pipe-Arch                                                                                                                                                                      |

\* -- Concrete field paving required  
Refer to Standard Drawing E 715-PSLC-03 for General Notes.

|                                                                                       |                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| INDIANA DEPARTMENT OF TRANSPORTATION                                                  |                                                                          |
| PIPE SERVICE<br>LIFE CRITERIA                                                         |                                                                          |
| SEPTEMBER 2002                                                                        |                                                                          |
| STANDARD DRAWING NO. E 715-PSLC-01                                                    |                                                                          |
|  | /s/ Richard L. VanCleave    9-03-02<br>DESIGN STANDARDS ENGINEER    DATE |
| DESIGN STANDARDS ENGINEER                                                             | /s/ Richard K. Smutzer    9-03-02<br>CHIEF HIGHWAY ENGINEER    DATE      |