| MATERIAL | PIPE TYPE | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Non-Reinforced Concrete Pipe | | | | X | |
| Non-Reinforced Concrete Pipe, Class 3 (S) | X | X | X | | |
| Reinforced Concrete Pipe (S) | X | X | X | | |
| Reinforced Concrete Horizontal Elliptical Pipe (S) | X | X | X | | |
| Corrugated Steel Pipe (C) | X | | X | | X |
| Corrugated Steel Pipe-Arch (C) | X | | X | | X |
| Polymer Precoated Galvanized Corrugated Steel Pipe (C) | X | | X | | X |
| Fiber Bonded Bituminous Coated Corrugated Steel Pipe (C) | X | | X | | X |
| Fully Bituminous Coated and Lined Corrugated Steel Pipe (S) | | X | | | X |
| Fiber Bonded Bituminous Coated Corrugated Steel Pipe-Arch (C) | X | | X | | X |
| Fully Bituminous Coated and Lined Corrugated Steel Pipe-Arch (S) | | X | | | X |
| Corrugated Aluminum Alloy Pipe (C) | X | | X | | X |
| Corrugated Aluminum Alloy Pipe-Arch (C) | X | | X | | X |
| Structural Plate Steel Pipe (C) | X | | X | | |
| Polymer Precoated Galvanized Corrugated Steel Pipe-Arch (C) | X | | X | | X |

| MATERIAL | PIPE TYPE | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Structural Plate Steel Pipe-Arch (C) | X | | X | | |
| Structural Plate Aluminum Alloy Pipe (C) | X | | X | | |
| Structural Plate Aluminum Alloy Pipe-Arch (C) | X | | X | | |
| Clay Pipe, Extra Strength (S) | X | X | X | | |
| Clay Pipe | | | | X | |
| Perforated Clay Pipe | | | | X | |
| Corrugated Polyethylene Pipe, Type SP | | | | X | |
| Corrugated Polyethylene Pipe, Type (S) | X | X | X | X | X |
| Ribbed Polyethylene Pipe (S) | X | X | X | | X |
| Smooth Wall Polyethylene Pipe (S) | X | X | X | | X |
| Corrugated Polyethylene Tubing | | | | X | |
| Perforated PVC Semicircular Pipe | | | | X | |
| Profile Wall PVC Pipe (S) | X | X | X | X | X |
| Smooth Wall PVC Pipe (S) | X | X | X | | X |
| Concrete Drain Tile | | | | X | |
| Clay Drain Tile | | | | X | |

## LEGEND

(C)- Corrugated Interior Culvert Pipe.

(S)- Smooth Interior Culvert or Storm Sewer Pipe.

## GENERAL NOTES

1. The prescribed uses for the pipe types are as follows:
   a. Type 1 Pipe - Culverts under mainline pavement and public road approaches.
   b. Type 2 Pipe - Storm sewer pipe.
   c. Type 3 Pipe - Culverts under driveways and field entrances.
   d. Type 4 Pipe - Drain tile and longitudinal underdrains.
   e. Type 5 Pipe - Broken back and other installations requiring coupled pipe.
2. Refer to Standard Drawings E 715-PHCL-01 through E 715-PHCL-23 and E 717-PHCL-01 through E 717-PHCL-10 for allowable heights of cover for various pipe materials (except Type 4 pipes).
3. Refer to Standard Drawings E 715-PSLC-01 through E 715-PSLC-03 for required pipe service life criteria.
4. Any pipe material which is in accordance with the designated pipe type, acceptable for cover conditions, and conforms to service life criteria may be installed.

INDIANA DEPARTMENT OF TRANSPORTATION

**PIPE CLASSIFICATION TABLES**

JANUARY 1998

STANDARD DRAWING NO. **E 715-PIPE-01**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

DETAILS PLACED IN THIS FORMAT 7-27-99

/s/ Anthony L. Urenovich 7-27-99
DESIGN STANDARDS ENGINEER DATE

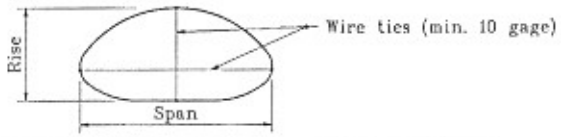
/s/ Firoze Bandi 7-27-99
CHIEF HIGHWAY ENGINEER DATE

ORIGINALLY APPROVED 1-02-98

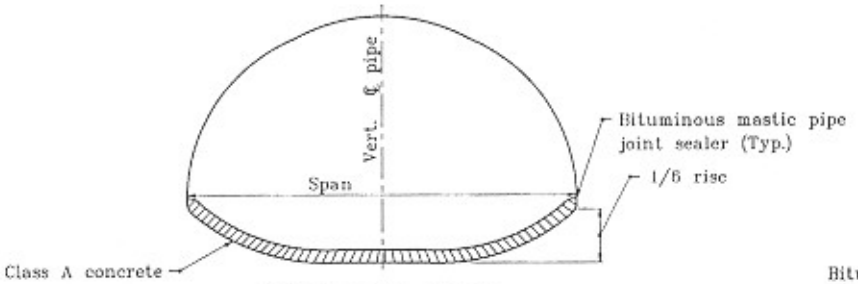
## GENERAL NOTES

(1) In order to maintain their manufactured shape, all 3" x 1" corrugated steel pipe-arch sections shall have wire ties attached at each end as shown in the detail. The wire ties shall be attached across the largest vertical and horizontal dimension of the pipe-arch. The wire ties shall be installed by the manufacturer and shall remain in place until the on-site installation is complete.

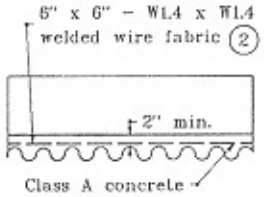
(2) Welded wire fabric shall be securely wired to every second circumferenial bolt and every twelfth longitudinal bolt.



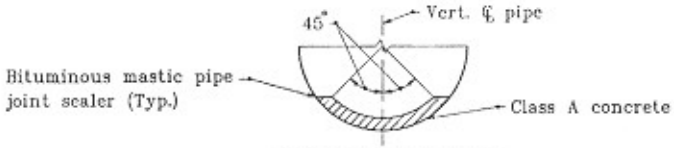

**END STABILIZATION OF 3" x 1" CORRUGATED STEEL PIPE-ARCH SECTIONS (1)**




**STRUCTURAL PLATE PIPE-ARCH CULVERT ELEVATION**

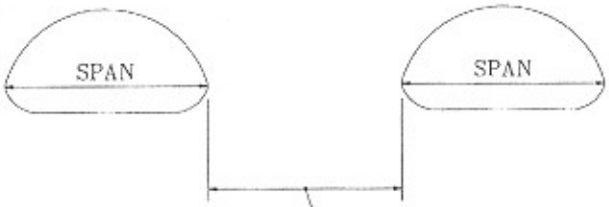



**TYPICAL LONGITUDINAL SECTION**

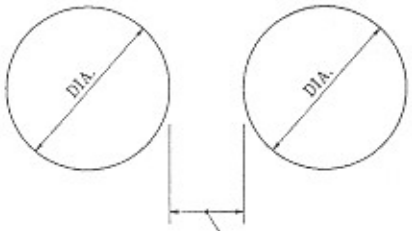



**STRUCTURAL PLATE PIPE CULVERT**

**CONCRETE FIELD PAVED INVERT DETAILS**




| SPAN | MINIMUM |
|---|---|
| Up to 48" | 2' |
| 48" to 96" | 1/2 Span |
| Greater than 96" | 4' |




| DIAMETER | MINIMUM |
|---|---|
| Up to 48" | 2' |
| 48" to 96" | 1/2 Dia. |
| Greater than 96" | 4' |

**MULTIPLE INSTALLATIONS**

INDIANA DEPARTMENT OF TRANSPORTATION

**MISCELLANEOUS PIPE DETAILS**

JANUARY 1996

STANDARD DRAWING NO. **E 715-PIPE-02**

ANTHONY L. DREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

DETAILS PLACED IN THIS FORMAT 7-27-99

/s/ Anthony L. Dremovich 7-27-99
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoz Zandi 7-27-99
CHIEF HIGHWAY ENGINEER — DATE

ORIGINALLY APPROVED 1-02-90