

## SECTION 638 STRUCTURAL PLATE CULVERTS

### 638.01 DESCRIPTION.

This item consists of furnishing, assembling, and backfilling structural plate pipe, elliptical structural plate pipe, pipe arches, or arches.

### 638.02 MATERIALS.

Material shall meet Section 830.02.

### 638.03 CONSTRUCTION REQUIREMENTS.

- A. **Excavation.** Excavation shall meet Section 714.03 A.1 and as modified here.

When a pipe structure is erected in a trench, the width of the trench shall be sufficient to permit thorough tamping of the earth backfill.

- B. **Bedding.** Bedding shall meet Section 714.03 A.2.
- C. **Assembly and Installation.** Pipe shall be assembled by the manufacturer's assembly instructions. Care shall be exercised in the use of drift pins or pry bars to prevent chipping or injury to the galvanized coating.
- D. **Backfill.** After assembling the pipe, the backfill shall be placed uniformly and equally on each side of the pipe in layers not to exceed 12 inches before compaction. Adequate earth cover shall be placed over the structure before heavy construction equipment is driven over it. Compaction of each layer of the backfill shall be equal to the compaction as described in Sections 714.03 A.6 and 714.03 A.7.

### 638.04 METHOD OF MEASUREMENT.

- A. **Linear Basis.** When the linear unit quantity is shown on the bid schedule, the structural plate pipe, elliptical structural plate pipe, arches, or pipe arches will be measured in Linear Feet, installed in place, completed, and accepted. The number of Linear Feet will be measured as shown on the Plans for the particular item.
- B. **Lump Sum Basis.** Each structural plate culvert shall be the type, size, gauge, and length designated and, for the purpose of measurement and payment, shall be considered as a unit installed in place, completed, and accepted.

### 638.05 BASIS OF PAYMENT.

Payment will be made at the Contract Unit Price as follows:

| <b>Pay Item</b>                  | <b>Pay Unit</b>       |
|----------------------------------|-----------------------|
| Structural Plate Pipe            | Linear Foot, Lump Sum |
| Elliptical Structural Plate Pipe | Linear Foot, Lump Sum |
| Pipe Arch                        | Linear Foot, Lump Sum |
| Arch                             | Linear Foot, Lump Sum |

This payment will be full compensation for all labor, equipment, and materials necessary to complete the work.

**SECTION 650  
REPAIR AND OVERLAY OF  
PORTLAND CEMENT CONCRETE  
BRIDGE DECKS WITH LOW-SLUMP CONCRETE OR  
LATEX-MODIFIED CONCRETE**

**650.01 DESCRIPTION.**

This work consists of removing unsound concrete or chloride contaminated sound concrete with mechanical or hydrodemolition equipment and replacing and resurfacing the bridge deck with low-slump concrete or latex-modified concrete.

**650.02 MATERIALS.**

**A. General.**

| <b>Item</b>          | <b>Section</b> |
|----------------------|----------------|
| Class AAE-3 Concrete | 802            |
| Portland Cement      | 804.01         |
| Concrete Admixtures  | 808            |
| Burlap               | 810            |
| Water                | 812            |
| Fine Aggregate       | 816.01         |
| Coarse Aggregate*    | 816.02         |

\*Coarse aggregate for Portland Cement Concrete shall be crushed stone with at least 75% by weight of the particles retained on the No. 4 sieve having at least one fractured face. Aggregate shall meet Size No. 5.

**B. Special Requirements for Low-Slump Concrete.**

- Cement.** Type I or IA cement shall be used.
- Basic absolute volume per Unit Volume of Concrete:

|                           |        |
|---------------------------|--------|
| Coarse Aggregate (Size 5) | 0.3121 |
| Fine Aggregate            | 0.3121 |
| Air                       | 0.0600 |
| Water                     | 0.1603 |
| Cement (Type I or IA)     | 0.1555 |
|                           | 1.0000 |
- Approximate quantities of dry materials per cubic yard of concrete: