

**Section 02632****CAST-IN-PLACE INLETS, HEADWALLS, AND WINGWALLS****1.0 GENERAL****1.01 SECTION INCLUDES**

- A. Cast-in-place inlets for storm or sanitary sewers, including cast iron frame and plate or grate.
- B. Cast-in-place headwalls and wingwalls for storm sewers.
- C. References to Technical Specifications:
  - 1. Section 01200 – Measurement and Payment Procedures
  - 2. Section 01350 – Submittals
  - 3. Section 03300 – Cast-in-Place Concrete
  - 4. Section 02603 – Frames, Grates, Rings, and Covers
  - 5. Section 02318 – Excavation and Backfill for Utilities
- D. Referenced Standards:
  - 1. American Society for Testing and Materials (ASTM)
    - a. ASTM C 270, “Standard Specification for Mortar for Unit Masonry”
- E. Definitions:
  - 1. Normal Depth Type A, Type B, Type C and Type E Inlets - Depth of 2.25 feet or less (2' 3") plus pipe inside diameter when measured from grating, bottom of gutter, or throat to flow line of inlet lead.
  - 2. Normal Depth Type BB Inlet - Depth of 2.55 feet (2' 6<sup>5</sup>/<sub>8</sub>") plus pipe inside diameter when measured from curb beam to flow line of inlet lead.
  - 3. Extra Depth Inlet - Specified depth exceeding normal depth for the type inlet used.

**1.02 MEASUREMENT AND PAYMENT**

- A. Measurement for normal depth inlets is on a per each basis, complete in.
- B. Measurement for extra depth inlets is on a vertical foot basis for each foot in excess of normal depth, measured and complete in place.
- C. Measurement for headwalls and wingwalls is on a per each basis, complete in place.

- D. Payment for inlets and for culvert headwalls and wingwalls includes connection of lines and furnishing and installing frames, grates, rings and covers.
- E. Refer to Section 01200 – Measurement and Payment Procedures.

**1.03 SUBMITTALS**

- A. Make Submittals required by this Section under the provisions of Section 01350 – Submittals.
- B. Submit Shop Drawings for approval of design and construction details for cast-in-place units which differ from units shown on Plans.
- C. Submit manufacturer’s data and details for frames, grates, rings, and covers.

**2.0 PRODUCTS**

**2.01 MATERIALS**

- A. Concrete: Class A concrete with minimum compressive strength of 4000 psi conforming to requirements of Section 03300 – Cast-in-Place Concrete, unless otherwise indicated on Plans or approved by the Engineer.
- B. Reinforcing steel: Conform to requirements of Section 03300 – Cast-in-Place Concrete.
- C. Mortar: Conform to requirements of ASTM C 270, Type S using Portland cement.
- D. Miscellaneous metals: Cast-iron frames, grates, rings, and covers conforming to requirements of Section 02603 – Frames, Grates, Rings, and Covers.

**3.0 EXECUTION**

**3.01 EXAMINATION**

- A. Verify lines and grades are correct.
- B. Verify compacted subgrade will support loads imposed by inlets.

**3.02 INSTALLATION**

- A. Construct inlets, headwalls, and wingwalls complete in place to the dimensions, lines and grades as shown on Plans.

- B. Excavate in accordance with requirements of Section 02318 – Excavation and Backfill for Utilities.
- C. The box section of inlet may be constructed of Class A concrete.
- D. Forms will be required for both the outside and inside faces of concrete inlet walls, however, if the nature of the material excavated for the inlet is such that it can be hand trimmed to a smooth vertical face, the outside forms may be omitted with approval of the Engineer.
- E. Place reinforcing steel to conform to details shown on the Plans. Provide a positive means for holding steel cages in place during concrete placement. Welding of reinforcing steel is not permitted unless noted on the Plans. The maximum variation in reinforcement position is plus or minus 10 percent of wall thickness or plus or minus 1/2 inch whichever is less. Regardless of variation, the minimum cover of concrete over reinforcement as shown on the Plans shall be maintained.
- F. Chamfer exposed edges unless otherwise indicated on Plans.

### **3.03 FINISHES**

- A. Cut off inlet leads neatly at the inside face of inlet wall. Point up with mortar.
- B. When the box section of the inlet has been completed, shape the floor of the inlet with mortar to conform to the detailed Plans.
- C. Finish concrete surfaces in accordance with requirements of Section 03300 – Cast-in-Place Concrete.

### **3.04 INLET WATERTIGHTNESS**

- A. Verify that inlets are free of visible leaks. Repair leaks in an approved manner.

### **3.05 BACKFILL**

- A. Backfill the area of excavation surrounding each completed inlet according to the requirements of Section 02318 – Excavation and Backfill for Utilities.

**END OF SECTION**