

**Section 02520****VALVE BOXES, METER BOXES, AND METER VAULTS****1.0 GENERAL****1.01 SECTION INCLUDES**

- A Valve boxes for water service.
- B Meter boxes for water service.
- C Meter vaults for water service.
- D References to Technical Specifications:
  - 1. Section 01200 – Measurement and Payment Procedures
  - 2. Section 01350 – Submittals
  - 3. Section 03300 – Cast-in-Place Concrete
  - 4. Section 02542 – Concrete Manholes and Accessories
  - 5. Section 02318 – Excavation and Backfill for Utilities
  - 6. Section 01140 – Contractor’s Use of Premises

**1.02 MEASUREMENT AND PAYMENT**

- A Unless indicated as a Bid Item, no separate payment will be made for valve boxes under this Section. Include cost in Bid Items for which this Work is a component.
- B No separate payment will be made for installation of meter boxes furnished by the Owner under this Section. Include cost of installation of meter boxes in Bid Items for which the Work is a component.
- C Measurement for installation of meter vaults is on a per each basis for each meter vault type and size, complete in place. Payment includes all labor and materials required to complete installation as indicated on Plans.
- D 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 manufacturer’s product data for following items for approval:
  - 1. Each type of valve box and lid.
  - 2. Each type of meter box and cover.
  - 3. Each type of meter vault frame and cover.

- C Submit Shop Drawings for cast-in-place meter vaults for approval if proposed construction varies from Plans.
- D Submit manufacturer's certification that meter boxes purchased for Work meet the requirements of this Section.

## **2.0 PRODUCTS**

### **2.01 VALVE BOXES**

- A Provide adjustable, cast-iron, screw-type, valve boxes as manufactured by Bass and Hays Foundry, Inc., or approved equal. Design of valve box shall minimize stresses on valve imposed by loads on box lid.
- B Cast the word "WATER" into lid, 1/2 inch in height and raised 3/32 inch, for valves serving potable water lines.
- C Provide 6-inch PVC, Class 150, DR 18, riser pipes.
- D Concrete for valve box placement:
  1. For locations in new concrete pavement, use strength and mix design of new pavement.
  2. For other locations, use class "A" concrete, with minimum compressive strength of 3000 psi, conforming to requirements of Section 03300 – Cast-in-Place Concrete.

### **2.02 METER BOXES**

- A Refer to City of Pearland Standard Details or contact the Public Works Department for list of acceptable products.

### **2.03 METER VAULTS**

- A Meter vaults may be constructed of precast concrete, cast-in-place concrete, or solid masonry unless a specific type of construction is required by Plans.
- B Concrete for meter vaults: Class A concrete, conforming to requirements of Section 03300 – Cast-in-Place Concrete, with minimum compressive strength of 4000 psi at 28 days.
- C Vaults for meters 3" and greater shall be procured through the City's utility billing department.

## **3.0 EXECUTION**

### **3.01 EXAMINATION**

- A Obtain approval from the City Engineer or designee for location of meter vault.
- B Verify lines and grades are correct.
- C Verify compacted subgrade will support loads imposed by vaults.

### **3.02 VALVE BOXES**

- A Provide riser pipe with suitable length for depth of cover indicated on Plans or to accommodate actual finish grade.
- B Install adjustable valve box and riser piping plumbed in a vertical position. Provide 6 inches telescoping freeboard space between riser pipe top butt end, and interior contact flange of valve box, for vertical movement damping. Riser may rest on valve flange, or provide suitable footpiece to support riser pipe.
- C Paint covers of new valve boxes as directed by the Owner.

### **3.03 METER BOXES**

- A Install plastic boxes in accordance with manufacturer's instructions.
- B Construct concrete meter boxes to dimensions shown on Plans.
- C Adjust top of meter boxes to conform to cover elevations specified in this Section, 3.05 "Frame and Cover for Meter Vaults".
- D Do not locate under paved areas unless approved by Engineer. Use approved traffic-type box with cast iron lid when meter must be located in paved areas.

### **3.04 METER VAULTS**

- A Construct concrete meter vaults to dimensions and requirements shown on Plans. Do not cast in presence of water. Make bottom as uniform as practicable.
- B Precast Meter Vaults:
  - 1. Install precast vaults in accordance with manufacturer's recommendations. Set level on a minimum 3 inch thick bed of sand conforming to the requirements of Section 02318 – Excavation and Backfill for Utilities.
  - 2. Seal lifting holes cement-sand mortar or non-shrink grout.
- C Meter Vault Floor Slab:
  - 1. Construct floor slabs of 6-inch-thick reinforced concrete. Slope floor 1/4 inch per foot toward sump. Make sump 12 inches in diameter, or 12 inches square, and 4 inches deep, unless other dimensions are required by Plans. Install dowels at maximum of 18 inches, center-to-center, or install mortar trench for keying walls to floor slab.
  - 2. Precast floor slab elements may be used for precast vault construction.

**3.05 FRAME AND COVER FOR METER VAULTS**

- A Diamond Plate Aluminum as follows:
  - 1. In unpaved areas, set top of meter box or meter vault cover 2 to 3 inches above natural grade.
  - 2. In sidewalk areas, set top of meter box or meter vault cover 1/2 to 1 inch above adjacent concrete.

**3.06 CLEAN-UP AND RESTORATION**

- A Perform clean-up and restoration in and around construction zone in accordance with Section 01140 – Contractor’s Use of Premises
- B Backfill and compact in accordance with Section 02318 – Excavation and Backfill for Utilities.
- C In unpaved areas, slope backfill around meter boxes and vaults to provide a uniform slope 1 to 5 from top to natural grade.
- D Meter boxes are not allowed in sidewalk.

END OF SECTION