

## **SECTION S918 - WATER MANHOLE**

### **S918-1 DESCRIPTION**

Work consists of adjustment or replacement of existing water vault manhole frame and cover as required in the Contract Documents and as directed by the Project Manager.

Work is to be in conformance with the requirements of Section S900 General Water Provisions.

### **S918-2 MATERIALS**

#### **S918-2.01 Manhole**

New manhole frame and cover shall be heavy duty conforming to the type and model as indicated in the Contract Documents, or approved equivalent. Manhole covers are to have non-penetrating pick holes and a rubber gasket cemented into a machined groove on the underside of the manhole cover. Manhole frame and cover are to be coated with one coat of a coal tar pitch varnish. Word "WATER" shall be cast into the top of the cover.

#### **S918-2.02 Brick**

Brick shall be first quality, sound, hard-burned common brick conforming to ASTM C32, manhole brick, grade MS (for grade adjustment). Brick shall be culled of all irregulars and unsound or damaged brick before laying.

#### **S918-2.03 Mortar**

Mortar is to be portland cement mortar conforming to ASTM C270, Type M, mortar for unit masonry.

### **S918-3 CONSTRUCTION DETAILS**

#### **S918-3.01 General**

All work shall be coordinated with the Bureau of Water, and if required, Monroe County Water Authority.

Appropriate measures shall be taken to prevent dirt, debris, and surface water from entering into the vault. Following completion of the work, all debris shall be removed from inside the vault and properly disposed of, and the inside of the vault left in a broom clean condition.

#### **S918-3.02 Replace Existing Water Manhole**

Existing manhole frame and cover shall be removed, cleaned of all extraneous debris and delivered to the Bureau of Water Materials and Equipment Office.

After removal of the existing frame and cover, exposed portion of the vault structure shall be prepared for installation of the new manhole frame and cover, and new manhole frame and cover installed within 2 days of the removal of the existing frame and cover.

New manhole frame and cover shall be placed true to line and grade. Suitable measures shall be taken to ensure that cover has continuous, full and uniform bearing contact with corresponding frame. Cover shall be non-rocking when in place and under influence of traffic or other loads. Suitable methods to achieve non-rocking fits between cover and corresponding frame shall include, but not be limited to, the following:

- Ground mating surfaces
- Machined and milled mating surfaces (horizontal and vertical)
- Match marked elements
- Locking elements

If match marked elements are utilized, care shall be taken to retain the identity of the elements in order to correctly match them and assure proper fit.

Field repair procedures for improperly fitting castings shall be as approved by the Project Manager. Field repairs may include grinding or proper welding techniques for the material involved. Repairs that involve welding shall be allowed only on steel castings and only with prior approval of the Project Manager. Repairs shall result in units whose parts have continuous, full and uniform bearing contact with each other, and that the cover does not rock or move under influence of traffic or other loads.

New manhole frame and cover shall be encased 12 inches all around with a minimum thickness of 8 inches of concrete. Concrete encasement shall be a minimum of 3-1/2 inches below grade in pavement area, and 5 inches below grade in sidewalk or lawn area.

### **S918-3.03 Adjust Existing Water Manhole**

Existing manhole frame and cover shall be removed and cleaned of all extraneous debris. Existing frame and cover shall not be removed unless they can be reinstalled the same day. Under no circumstances shall the opening be left uncovered overnight.

After removal of the existing frame and cover, exposed portion of the vault structure shall be prepared for reinstallation of the frame and cover.

Manhole frame and cover shall be placed true to line and grade. Suitable measures shall be taken to ensure that the cover shall have continuous full and uniform bearing contact with the frame, and shall be non-rocking when in place and under the influence of traffic or other loads, as outlined under subsection S918-3.02 Replace Existing Water Manhole. Brick and mortar leveling course shall be constructed so the manhole frame and cover shall be flush with the finished road surface and centered over the existing opening in the vault roof.

Manhole frame and cover shall be encased 12 inches all around with a minimum thickness of 8 inches of concrete. Concrete encasement shall be a minimum of 3-1/2 inches below grade in pavement area, and 5 inches below grade in sidewalk or lawn area.

### **S918-4 METHOD OF MEASUREMENT**

The quantity to be measured for payment shall be on a lump sum basis for each water manhole replaced or adjusted.

### **S918-5 BASIS OF PAYMENT**

#### **S918-5.01 Replace Existing Water Manhole**

The lump sum price bid for this item shall include the cost of: excavation; removing, cleaning and delivering existing manhole; furnishing and installing new manhole; field repairs; preparation of existing vault; furnishing and installing brick and mortar mix; concrete encasement; cleaning existing vault; removal and disposal of all debris; and furnishing all labor, material and equipment necessary to complete the work.

**S918-5.02 Adjust Existing Water Manhole**

The lump sum price bid for this item shall include the cost of: excavation; removing, cleaning and reinstalling existing manhole; field repairs; preparation of existing vault; furnishing and installing brick and mortar mix; concrete encasement; cleaning existing vault; removal and disposal of all debris; and furnishing all labor, material and equipment necessary to complete the work.

Payment will be made under:

<b>ITEM NO.</b>	<b>ITEM</b>	<b>PAY UNIT</b>
S918.01XX	Replace Existing Water Manhole Frame and Cover (Location)	Lump Sum
S918.02XX	Adjust Existing Water Manhole Frame and Cover (Location)	Lump Sum

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