

## **ITEM 07555.2503 M - CONCRETE GROUT UNDER WATER PLACEMENT**

### **DESCRIPTION:**

Under this item, the Contractor shall furnish and install forms and grout to fill voids in the bridge piers where indicated on the contract drawings and where directed by the Engineer.

This work shall be done underwater. The use of experienced divers shall be required.

### **MATERIALS:**

Forms - Forms may be constructed of wood, metal or other materials acceptable to the Engineer. The Engineer shall approve the forming system prior to its installation.

Concrete Grouting Material      701-05

### **CONSTRUCTION DETAILS:**

The Contractor shall submit a construction procedure in writing to the Engineer for approval three weeks prior to placement. No work shall begin until this procedure is approved by the Engineer. The Contractor shall also submit in writing to the Engineer three weeks in advance of placement for review and approval a list of all equipment to be used.

- A. Surface Preparation: The underwater surface against which the grout is to be placed shall be clean and sound. All loose concrete or deteriorated concrete shall be removed by mechanical means approved by the Engineer to insure a sound surface. In addition, the surface against which the grout is to be placed shall be thoroughly cleaned of all foreign material. These materials include, but are not limited to: laitance, grease, oil, curing compounds, marine growth, impregnations, disintegrated materials, etc.
- B. Formwork shall contain at least two ports, one for grout injection and the other for water expulsion. The grout port shall be located at the lowest point of the location to be grouted, while the water expulsion port shall be located at the uppermost point. Forms shall remain in place for a minimum of five (5) days after grout placement, then removed.
- C. The grout shall be placed where shown in the plans, or where ordered by the Engineer.
- D. Repair: It shall be the Contractor's sole responsibility to gain access to the locations of permanent repair, properly prepare the surface of the locations and place the grout in these locations. The Contractor shall keep the Engineer informed of the progress of work on a daily basis. Upon completion of all the repair work, the State shall perform an under-water inspection of the locations repaired within ten (10) working days. The repaired locations shall be inspected for soundness and adhesion to the existing concrete surface. Any locations determined not to be adequately repaired shall be identified. The Contractor shall once again repair these identified locations for reinspection, until all locations designated are satisfactorily repaired. All repairs in addition to the first repair shall be at the Contractor's own expense.

### **METHOD OF MEASUREMENT:**

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This work will be measured as the number of kilograms of dry grout actually placed into production, approved and recorded by the Engineer. Grout placed into production which has not been approved and recorded by the Engineer will not be measured for payment.

### **BASIS OF PAYMENT:**

The price bid per kilogram of dry grout shall include the cost of furnishing all labor, equipment and materials necessary to complete the work.

Payment will be made for the kilograms of grout introduced into the mix even though some of it will be used for delivery purposes and not necessarily incorporated in the work. Mechanical break-downs of equipment shall be the Contractor's responsibility, and the cost of the material required to refill the discharge system shall be borne by the Contractor.

If the Engineer directs the Contractor to discontinue the pumping operation due through no fault of the Contractor, his materials, or his equipment, the material required to refill the system when the pumping operation resumes will be paid for by the State.