

**ITEM 582.06--25 - REMOVAL OF STRUCTURAL CONCRETE AND REPLACEMENT WITH CLASS D CONCRETE**

**1. DESCRIPTION:**

- 1.01 The work shall consist of the removal and disposal of unsound structural concrete from an existing structure and its replacement with new structural concrete, as indicated on the contract plans.
- 1.02 All miscellaneous materials, including bar reinforcement removal, if necessary as determined by the Engineer, encountered during the removal of unsound structural concrete, shall be removed and disposed of unless indicated on the plans, or directed by the Engineer.

**2. MATERIALS:**

- 2.01 Materials used in this work shall conform to the following requirements:

Water	712-01
Quilted Covers (for curing)	711-02
Polyethylene Coated Fiber Blankets (for curing)	711-03
Membrane Curing Compound	711-05

- 2.02 Replacement concrete shall be Class D concrete for structures. It shall conform to requirements of Section 501 - Portland Cement Concrete-General.

No vertical or overhead patching materials will be allowed as a substitution.

**3. CONSTRUCTION DETAILS:**

**3.01 Repair Determinations**

All of repair locations will be indicated on the plans, and verified by the Engineer prior to the commencement of the removals.

**3.02 Removal of Unsound Concrete**

- A. All unsound concrete shall be removed to a sound surface as determined by the Engineer. The existing concrete shall be sawcut to a minimum depth of 1" unless noted otherwise on the drawings to obtain a straight (keyed) joint between the existing concrete and the new material. Care shall be exercised while removing the unsound concrete so as not to damage materials that are to remain in place. Exposed reinforcement remaining in place shall be cleaned in accordance with the requirements of Subsection 584-3.02. Chipping hammers shall meet the requirements of Subsection 580-3.02.
- B. The minimum depth of removal shall be 1 ½" behind the rear-most exposed reinforcement to sound concrete. Feathered edges shall not be permitted. All edges of the removal area shall be sawed 1" deep in accordance with repair details as shown on the plans, such that the width of the repair area is greater at the back of the repair area than the surface.

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**3. CONSTRUCTION DETAILS:** (cont'd)

**3.03 Preparation of Surface**

- A. All surfaces receiving new material shall be sandblasted in accordance with Subsection 584-3.
- B. Existing reinforcement which, in the Engineer's opinion, has lost significant section shall be repaired in a manner satisfactory to the Engineer. Payment for this work will be made in accordance with Subsection 109-5, or the appropriate Items if included in the contract. Any damage to existing reinforcement, as determined by the Engineer, shall be replaced at the contractor's expense.

**3.04 Placement**

- A. Immediately prior to the placement of the Class D Concrete, receiving surfaces shall be air cleaned. All air cleaning shall be done by means of oil-free air.
- B. All concrete placement shall conform to applicable requirements of the following Subsection 555-3. No material shall be placed when the ambient air or concrete surface temperature is at or below 7°C (45°F).

3.05 Curing shall be performed according to the Subsection 555-3.08.

3.06 The Contractor shall provide access to proposed and completed repair areas for the Engineer at the Contractor's expense.

**4. METHOD OF MEASUREMENT:**

4.01 Measurement for Removal of Structural Concrete and Replacement with Class D Concrete shall be made as the number of surface square feet repaired as indicated on the contract plans, or where approved by the Engineer. Where vertical and horizontal surfaces intersect at a repair, payment will be made for the horizontal surface repaired plus the vertical surface minus any corner overlap area up to the horizontal repair depth. All the necessary labor, materials and equipment shall be included.

**5. BASIS OF PAYMENT:**

5.01 Payment for the Removal of Structural Concrete and Replacement with Class D Concrete shall be made as the number of square feet repaired as indicated on the Contract Plans or approved by the Engineer, and shall include the cost of furnishing all labor, equipment, and materials necessary to complete the work.