

ITEM 5840.56103XX----25 - FULL DEPTH REMOVAL OF STRUCTURAL SLAB AND REPLACEMENT WITH RAPID HARDENING CONCRETE

1. DESCRIPTION:

- 1.01 The work shall consist of the full depth removal and disposal of unsound concrete from the existing structural slab/bridge deck and its replacement with new rapid hardening concrete, as indicated on the contract plans or where ordered by the Engineer.
- 1.02 Materials removed as part of this work shall be transported from the work site and disposed of by the Contractor, unless otherwise indicated on the contract plans, or ordered by the Engineer.

2. MATERIALS:

- 2.01 All the provisions of Subsection §555-2 Materials shall apply; Rapid Hardening Concrete Repair Material conforming to §-701-09 shall be used. Two (2) copies of the repair materials details shall be supplied to the Engineer at least ten (10) days prior to the intended use of the product.
- 2.02 All aggregates used in the to extend the yield of the rapid hardening material mix shall be as recommended by the manufacturer.

3. CONSTRUCTION DETAILS:

- 3.01 The provisions of Subsection §555-3 Construction Details shall apply.
- 3.02 Before starting work on this item, the Contractor shall submit to the Engineer for approval, a plan showing his proposed method, equipment and sequence for the removal work. No blasting or dynamiting will be permitted. The requirements of §580-3 of the Standard Specifications shall apply.
- The Contractor shall provide adequate protection, approved by the Engineer, at the bridge site to completely preclude any possibility of material dropping from the bridge onto highways, residences, railroads, rivers or any other objects below.

3.03 Repair Determinations: All repair locations will be determined by the Engineer prior to commencement of the removals. The Engineer shall be allotted one working day per span or portion thereof being worked on for his inspection. The Engineer shall sound the area to be repaired by examining the top and bottom of the deck visually and then by chain drag. Areas then determined to be unsound, shall be clearly marked.

Removal of Unsound Concrete: The existing concrete shall be sawcut to a minimum depth of one (1) inch, unless otherwise noted on the contract plans, to obtain a straight (keyed) joint between the existing concrete and the new material. Special care shall be taken to insure that reinforcing steel to remain is not damaged by the saw blade. All unsound concrete shall be removed to a 6 on 1 sloped, sound surface as determined by the Engineer. Care shall be taken while removing the unsound concrete so as not to damage materials that are to remain in place such as reinforcing steel and shear connectors. Material which is damaged shall be repaired or replaced in a manner satisfactory to the Engineer at the expense of the Contractor. Exposed reinforcement remaining in place shall be cleaned in accordance with the requirements of Subsection §556-3.01 of the Standard Specifications. Exposed shear connectors that remain in place shall be cleaned in a manner satisfactory to the Engineer. Upon completion of unsound concrete removal, the sound concrete surfaces shall be air-blown or vacuum cleaned. Air-blowing

3.04 may be used on vertical or overhead surfaces. Vacuum cleaning will be required for all other surfaces.

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3. CONSTRUCTION DETAILS: (cont'd)

3.04- (cont'd)

~~Saw cutting shall be performed only where specified on the Contract Plans or where ordered by the Engineer. Saw cutting will be utilized only when there is a necessity for a clean, sharp line to define the junction between the old surface and the new concrete. Maximum depth of saw cut shall be 1 inch. Special care shall be taken to insure that reinforcing steel is not damaged by the saw blade.~~

~~Care shall be exercised during the removal of unsound structural concrete so as not to damage sound concrete, reinforcing, shear connectors, or other materials which are to remain in place. Material which is damaged shall be repaired or replaced in a manner satisfactory to the Engineer at the expense of the Contractor. For any structural concrete removal item, where a hammer size limitation is specified on the plans or in the specification, the Engineer may order the Contractor to use a lighter hammer than that specified, if, in his opinion, the hammer being used is destroying concrete that should remain. A hammer heavier than that specified may be used if written permission is secured from the Engineer.~~

~~Existing reinforcing shall not be removed unless otherwise indicated in the plans or proposal, or as directed by the Engineer. Replacement reinforcement shall be as ordered by the Engineer and be of like size and galvanized. Exposed reinforcement and shear connectors that remain in place shall be cleaned in a manner satisfactory to the Engineer.~~

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3. CONSTRUCTION DETAILS: (cont'd)

~~3.03 All concrete surfaces which require cleaning, after the concrete removal has been performed, shall be thoroughly sandblast cleaned, or abraded by other mechanical means satisfactory to the Engineer. After blast cleaning, the surface shall be air blown or vacuum cleaned. Air blowing may be used on vertical or overhead surfaces. Vacuum cleaning will be required for all other surfaces.~~

~~3.045 Preparation & Placement: Immediately Pprior to the placement of the new concrete, the existing concrete surfaces shall be abraded, cleaned and made saturated surface dry as per the Contract Plans.~~

~~3.056 Curing: If recommended by the manufacturer, apply an manufacturer approved spray curing compound immediately after the concrete placement. The remaining curing procedure shall be in conformance with manufacturer recommendations the Standard Specifications.~~

~~3.07 Test cylinders and/or cubes, as directed by the Engineer, shall be prepared and the average of any three (3) break tests shall meet the requirements of Subsection §701-09 of the New York Standard Specifications. Failure of the cylinder breaks to meet the minimum compressive strengths will result in the removal and replacement of the replaced areas by the contractor at no additional cost to the Authority.~~

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4. METHOD OF MEASUREMENT:

4.01 Measurement shall be made as the number of square feet of structural slab replaced. No additional measure shall be included for haunch areas or other areas of greater than average thickness.

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5. BASIS OF PAYMENT:

- 5.01 The unit price bid per square foot shall include the cost of furnishing all labor, materials, and equipment, necessary to satisfactorily complete the work.
- 5.02 Replacement of deteriorated reinforcement shall be paid for under its appropriate pay item as shown on the plans. Reinforcement requiring replacement due to damage from the Contractor's operations shall be replaced at no cost to the Authority.

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