

ITEM 424

EXTENDING CONCRETE STRUCTURES

- 424.1 Description. This item shall govern for concrete for extending existing concrete structures and for the preparation of the existing structures for extending or widening, including the materials used; the removal of portions of the existing structure, preparation of exposed surfaces of steel and concrete for bonding new construction to old; and the construction of the proposed extensions, all as indicated on the plans.
- 424.2 Materials. All materials shall conform to the requirements of the Specification Items for, "Concrete", and "Reinforcing Steel".
- 424.3 Construction Methods. The work shall be performed in accordance with the provisions of the Item, "Concrete Structures", and in conformance with the requirements as stated and outlined herein. Concrete shall be of the class shown on the plans.

The Contractor shall verify all pertinent dimensions of the existing structure, prior to ordering materials required for the extensions.

Portions of the old structure shall be removed to the lines and dimensions shown on the plans and these materials shall be disposed of as shown on the plans or as directed by the Engineer. Unless noted on the plans, metal railing shall be removed in such a manner that it will not be damaged, stacked neatly on the right-of-way at convenient loading points and will remain the property of Harris County. Any portion of the existing structure, outside of the limits designated for removal, damaged by the operations of the Contractor shall be restored to its original condition at the Contractor's entire expense. Explosives shall not be used in the removal of portions of the existing structure.

When the headwalls, wingwalls and apron are specified on the plans to be reused in the extended structure, the portion to be reused shall be severed from the old structure to the lines and details shown on the plans. The headwall unit shall be moved to the new location specified, by methods approved by the Engineer, and the extension concrete and reinforcement placed according to the plan details. Any portion of the headwall unit damaged by the moving operation shall be restored to its original condition at the expense of the Contractor.

Unless otherwise noted on the plans, a demolition ball or other swinging weight or impact tool, will be permitted on those portions of the structure not immediately adjacent to the break line of the concrete. The concrete shall be severed at the break line by pneumatic tools, followed by the use of the demolition ball, or other methods acceptable to the Engineer. The final removal of concrete at the break line shall be with pneumatic tools. Damaged concrete shall be treated as specified above. Bridge slabs shall first be sawed along the break line one-half of an inch deep prior to the beginning of the removal of concrete.

Except where otherwise provided on the plans, new reinforcing bars shall be spliced to exposed bars in the old structures by lap splices in accordance with the Item, "Reinforcing Steel". When welded splices are permitted, they shall conform to the Item, "Structural Welding". For lap splices, not welded, new reinforcing steel need not be tied to existing steel, where spacing and/or elevation does not match that of existing steel, provided the proper lap length is attained.

Dowels, if required by the plans shall be installed by grouting reinforcement bars to a minimum length of 12-inches into the old structure. Holes for dowel bars shall be cleaned of all loose material and wetted and filled with a 1:3 mix grout or other approved material, immediately prior to placing of dowel bars.

Concrete surface which will be in contact with new construction shall be roughened and cleaned prior to placing of forms. These surfaces shall be dampened and coated with mortar just prior to placing fresh concrete. Roadway slabs shall be finished in accordance with the Item, "Concrete Structures". Where an overlay is required, the slabs shall be given a reasonably smooth surface finish by longitudinal or transverse screeding, without any straight edge requirements.

The widened portion of bridges and direct traffic culverts shall not be opened to construction traffic until authorized by the Engineer.

424.4 Measurement. The quantities of concrete of the various classifications which will constitute the completed and accepted structure or structures in-place will be measured by the cubic yard, each, square foot, square yard or linear foot as the case may be.

424.5 Payment. The concrete quantities measured as provided above, will be paid for at the unit price bid per "Cubic Yard, per "Each", per "Square Foot", per "Square Yard", or per "Linear Foot", in place, for the various classifications of concrete shown.

The unit price bid for the various classifications shown shall be full compensation for furnishing, hauling and mixing all concrete material; placing, curing and finishing all concrete; all grouting and pointing; furnishing and placing drains, furnishing and placing metal flashing strips; furnishing and placing expansion joint material required by this item; removing the designated portion of the existing structure; moving of headwall units for reuse; cleaning, bending and cutting of exposed reinforced steel; welding of new reinforcing steel to old; all grilling and grouting for dowels; cleaning and painting old concrete with neat cement mortar; and for all forms and falsework, labor, new reinforcing tools equipment and incidentals necessary to complete the work.

There are line code(s), description(s), and unit(s) for this item.

END OF ITEM 424

SUMMARY SHEET

ITEM 424 - EXTENDING CONCRETE STRUCTURES

Other Specifications Required

Item 421 - Concrete
Item 440 - Reinforcing Steel
Item 420 - Concrete Structures

Reference Standards

None

Description

Discusses the requirements for, and the methods for, extending concrete structures.

Payment

Paid for at the contract unit price bid per:

- (a) Cubic Yard,
- (b) Per Each,
- (c) Per Square Foot,
- (d) Per Square Yard,
- (e) Per Linear Foot

DO NOT INCLUDE THIS SHEET IN CONTRACT SPECIFICATIONS.