

# Special Specification 5009

## Stone Masonry

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### 1. DESCRIPTION

- 1.1. This Item will govern for the construction and repair work of stone masonry wall composed of approved stone and lime-cement mortar on a concrete footing.

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### 2. MATERIALS

Unless otherwise shown on the plans, the Contractor will supply materials, or reuse material in good condition for repair work.

- 2.1. **Rubble Stone and Roughly Squared Stone.** The stone will be sound, durable limestone, free from structural defects, uniform in color and texture, and will be clean of earth, clay, oil or other foreign substances. Stones will be of the type and thickness shown on the plans or match the type and thickness for repair work.
- 2.2. **Concrete.** Concrete will be Class A, in accordance with Item 421, "Hydraulic Cement Concrete."
- 2.3. **Cement.** Cement will be Type II or Type III hydraulic cement and will conform to the pertinent requirements of DMS-4600, "Hydraulic Cement."
- 2.4. **Sand.** Sand will be free of deleterious or organic matter and will conform to the grading requirements for Grade 1 Fine Aggregate, Section 421.2.6.2.
- 2.5. **Lime.** Hydrated lime will conform to A.S.T.M. C-207, Type S.
- 2.6. **Water.** Mixing water will conform to the requirements of Item 421 "Hydraulic Cement Concrete," Section 421.2.5.
- 2.7. **Excavation and Backfill for Structures.** Excavation and backfill will comply with Item 400, "Excavation and Backfill for Structures."
- 2.8. **Reinforcing Steel.** Reinforcing steel will comply with Item 440, "Reinforcement for Concrete."

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### 3. CONSTRUCTION METHODS

- 3.1. **General.** The Contractor will submit samples of the stone which show the complete color range to the Engineer for approval.

Record existing wall and column geometry prior to demolition, provide documentation to the Engineer.

The Contractor will be responsible for verifying all dimensions incidental to this work and will promptly report any discrepancies to the Engineer.

The stone masonry will be constructed in accordance with these specifications, in conformity with the form and dimensions of the existing wall and columns.

- 3.2. **Mortar.** Mortar will be mixed in the proportions by volume of 1 part Portland cement, 1 part hydrated lime, and 4 parts of sand; or, 1 part of Type II masonry cement and 3 parts of sand.

- 3.2.1. Water content in the mortar mix will be the amount required to obtain a workable plastic mortar. Mixture will be mixed for a minimum period of 3 minutes in a drum type batch mixer and used within 1 hr. after mixing. Mortar not used within that time will be discarded (re-tempering will not be permitted). The mortar boxes will be cleaned at the end of each day's work.
- 3.3. **Footing.** A reinforced concrete footing should be constructed to the dimensions shown on the plans. The footing will be given a wood float finish and will be in place a minimum of 24 hr. before any masonry is placed on it. No curing or strength testing of the footing will be required.
- 3.4. **Workmanship.** Stone masonry must be set by competent, experienced masons. Each stone will be cleaned, sponged, and drenched with clean water just before setting. Each stone will be set in a full bed of plastic mortar.
- 3.4.1. Face joints of Random Rubble Stone may vary from 1/2 in. to 2 in. in thickness. Face joints of Roughly Squared Stone may vary from 1/4 in. to 1/2 in. in thickness. Joints will be uniform and raked out 3/4 in. deep for face pointing. Where necessary to prevent crushing mortar, small lead pads the thickness of the joint and set 1 in. back of the face will be used. Wood wedges will not be allowed. Joints not pointed at the time the stone is laid will be thoroughly wet with clean water and filled with mortar. The mortar will be well driven into the joints and finished with an approved pointing tool. The wall will be kept wet while the pointing is being done.
- 3.4.2. After the pointing is completed and the mortar set, all showing surfaces will be cleaned of loose mortar and cement stains. Just prior to the completion of the contract, the showing surfaces will again be cleaned in a manner satisfactory to the Engineer.

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#### 4. MEASUREMENT

- 4.1. **Wall.** This Item will be measured by the sq. ft. of surface area or by the cu. yd., complete in place. Only accepted work will be included, and the dimensions used for measurement will be those shown on the plans or ordered in writing by the Engineer.
- 4.2. **Column.** This Item will be measured by each, complete in place. Only accepted work will be included, and the dimensions used for measurement will be those shown on the plans or ordered in writing by the Engineer.

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#### 5. PAYMENT

- 5.1 **Wall.** The work performed and materials furnished, when required, in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Stone Masonry (Rock Wall)." This price will be full compensation for furnishing and hauling all materials; for all freight involved; for preparing and placing all materials, including concrete and reinforcement for footing and stone masonry wall; and for all labor, tools, equipment, anchoring appurtenances, and incidentals necessary to complete the work.
- 5.2 **Column.** The work performed and materials furnished, when required, in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Stone Masonry Columns." This price will be full compensation for furnishing and hauling all materials; for all freight involved; for preparing and placing all materials, including concrete and reinforcement for footing and stone masonry column; and for all labor, tools, equipment, anchoring appurtenances, and incidentals necessary to complete the work.