

## **ITEM 609.30 11 – STONE WALLS**

### **DESCRIPTION**

Under this item, the Contractor shall provide and install all stone walls as shown on the plans and as directed by the Engineer.

### **MATERIALS**

Materials shall meet the requirements of the following subsections of Section 700 “Materials and Manufacturing”:

Concrete Cradle	501 – Class A
Mortar	705-21
Portland Cement	701-01
Mortar Sand	703-03
Water	712-01

All stone shall be as specified on plans, sound, durable, properly quarried, free from reeds, rifts, seams, laminations and minerals which, by weathering, would cause discolorations or deterioration. They shall be of a size, quality and color acceptable to the Engineer. Duplicate samples of stone which show complete color range shall be submitted to the Engineer for approval. Stones shall be so quarried that the stratification will be radial or parallel to bed when set in place except where split face or seam face finish is shown on the plans. All beds and joints shall be fine pointed at least 50 mm in from the arris lines, the balance to fall off not over one-sixth of the minimum dimension of the stone. When stones project beyond adjoining faces, the fine pointing shall be carried at least 50 mm in from the adjoining surfaces (arris lines of stone face). Stone shall be seam and split face.

The Contractor shall construct a sample wall 2 meters long in accordance with the plans and specifications for approval by the Engineer. Should this sample wall not be approved, a second sample wall shall be constructed and include the modification, corrections in materials and workmanship recommended by the Engineer.

Mortar shall be in accordance with Subsection 705-21 “Masonry Mortar”, except that the proportion of Portland cement 701-01 to mortar sand 703-03 shall be 1:2 by volume.

Mortar for pointing shall be one part cement and one part mortar sand 1:1 by volume.

### **CONSTRUCTION DETAILS**

Mortar shall be mixed in a batch type machine mixer. The size of the batch shall be as directed by the Engineer. The consistency shall be such that:

1. It shall be as stiff as practicable
2. The mortar shall show no free water when removed from the mixer.

The time of mixing shall be not less than two minutes for each batch. Mortar shall be used within thirty minutes after mixing. No re-tempering will be permitted.

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Mortar used for filling vertical or inclined joints shall be of such consistency that it will require rodding. The mortar shall be rodded until it rises to the top and completely fills the joints.

Stone masonry shall not be constructed in freezing weather or when the stone contains frost, except by written permission of the Engineer and subject to such conditions as he may require.

Stone shall not be dropped upon or slid over the wall, nor will hammering or turning of stones on the wall be allowed. Stones shall be carefully set without jarring the stone already laid, and they shall be handled with a lewis or other appliance which not cause disfigurement.

Each stone shall be cleaned thoroughly saturated with water before being set, and the bed which is to receive it shall be cleaned and well moistened. All stone shall be well bedded in mortar and settled in place with a suitable wooden maul before the setting of the mortar. Whenever possible, the face joints shall be properly pointed before the mortar sets. Joints shall be prepared for pointing by raking them out to a depth of one and one-half times the average width of joint. The face surfaces of stone shall not be smeared with the mortar forced out of the joints or that used in pointing. No pinning up of stones with spalls will be permitted, and no spalls will be permitted beds.

In case any stone is moved or the joint broken, the stone shall be taken up, the mortar thoroughly cleaned from beds and joints, and the stone reset in fresh mortar.

Joints shall not be filled by pouring in a thin or liquid mortar.

Pointing shall not be done in freezing weather nor when the stone contains frost.

Mortar for pointing shall be composed of one part cement and one part mortar sand mixed in the manner specified.

Joints not pointed at the time the stone is laid shall be thoroughly wet with clean water and filled with mortar. The mortar shall be well driven into the joints, and finished with an approved pointing tool. The wall shall be kept wet while pointing is being done, and in hot or dry weather the pointed masonry shall be protected from the sun and kept wet for a period of at least three days after completion.

After pointing is completed and the mortar set, all showing surfaces shall be cleaned of loose mortar and cement stains.

Set stones on a mortar setting bed in a random pattern, to height and width shown on the plans, with all joints pointed.

Clean wall of dirt or mortar spots by using clean water and stiff fiber brushes.

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### **METHOD OF MEASUREMENT**

This work shall be measured by the number of linear meters of stone wall actually furnished and placed in accordance with the plans, specifications and orders of the Engineer.

### **BASIS OF PAYMENT**

The unit price bid per linear meter of stone wall furnished and placed shall include the costs of all labor, materials and equipment necessary to complete the work. This includes stones, concrete cradle, sample walls, mortar for setting and pointing, cleaning and any other work or materials required to satisfactorily complete the work.

Excavation and subbase course will be paid for under other items of the contract.