SECTION 57

REINFORCEMENT FOR CONCRETE MASONRY

57.1 DESCRIPTION

A. General

This work consists of furnishing and placing steel of the specified size and type, epoxy coating where required, as reinforcement in concrete masonry.

B. Related Work

Section 55 - Concrete Masonry
Section 100 - Portland Cement
Section 123 - Reinforcement

57.2 MATERIAL

Reinforcement and epoxy coating of reinforcing bars shall conform to the requirements of Section 123. Reinforcement shall be furnished in the full lengths indicated on the plans.

57.3 CONSTRUCTION MATERIALS

A. Protection of Material

Steel reinforcement shall be protected from injury and, when placed in the work, it shall be free from dirt, detrimental scale, paint, oil, and other foreign substances.

B. Bending

The reinforcement shall be bent to the shapes shown on the plans. Bending and bundling shall conform to the standard practice currently specified by the Concrete Reinforcing Steel Institute.

C. Placing and Fastening

Reinforcing steel shall be accurately placed and firmly held in the positions shown on the plans using chairs or other approved methods. Bars shall be tied at all intersections except where spacing is less than one (1) foot in each direction, in which case, alternate intersections shall be tied.

In addition to the requirements for tying bars at intersections, the top mat of bridge slab reinforcing steel shall be tied down with sixteen (16) gage minimum tie wires or other devices approved by the Engineer. Ties shall be plastic-coated when used in

conjunction with epoxy-coated reinforcing steel. Chairs, bolsters, supports, and clips for coated bars shall be plastic or completely epoxy- or plastic-coated. The Contractor may propose other devices for the approval of the Engineer.

On girder bridges, ties shall be used along each line of beams at longitudinal intervals not to exceed eight (8) feet. Where practical, the ties shall be secured to the shear transfer devices protruding from the top of the beam. Where shear transfer devices are not available, the ties may be secured to the bottom mat of slab reinforcing steel.

Other types of bridges shall have the top mat of reinforcement tied down at a maximum of twelve (12) foot longitudinal and transverse intervals with the ties secured to either the forms or bottom mat of slab reinforcing steel.

Distances from the forms shall be, maintained by stays, blocks, ties, hangers, or other supports approved by the Engineer. Devices for holding reinforcement from contact with the forms shall be of approved shape and dimensions. Layers of bars shall be, separated by metal devices approved by the Engineer. The use of pebbles, stone, brick, metal pipe, and wooden blocks will not be permitted for this purpose. It will not be permissible to tack weld reinforcement. Reinforcement in any member shall be inspected and approved by the Engineer before the placing of concrete begins.

The placing of any reinforcement except wire mesh during the process of placing the concrete will not be permitted. Concrete placed in violation of this provision may be rejected and ordered removed.

57.4 METHOD OF MEASUREMENT

Where a bid item for reinforcement for concrete masonry is provided in the Bidder's Proposal, such will be measured to the nearest pound, based on the theoretical number of pounds complete in place as shown on the plans or as ordered by the Engineer. The weights calculated shall be based upon the following table:

Size	1/4"	#3	#4	#5	#6	#7	#8	#9	#10	#11
Lbs./LF	.167	.376	.668	1.043	1.502	2.044	2.670	3.40	4.303	5.313

Allowance will not be made for the clips, wire, or other fastening devices for holding the steel in place.

Where no bid item for reinforcement is included, no measurement will be made.

57.5 BASIS OF PAYMENT

Reinforcement for Concrete Masonry and Epoxy-Coated Reinforcement for Concrete Masonry will be paid for at their contract unit prices per pound to the nearest whole pound.

Where no such bid item is included, such cost shall be incidental to the various masonry items.

END OF SECTION