

ITEM 07587.01 M - REMOVE, REHABILITATE, AND REINSTALL BRIDGE RAILING

DESCRIPTION:

The work shall consist of removing, rehabilitating, and reinstalling bridge railing and ornamental screen as shown on the plans or as specified by the Engineer. Rehabilitation shall include repair or replacement of damaged elements, fabrication of new railing sections, and cleaning and painting work.

MATERIALS:

New steel shall meet the requirements of ASTM A36M.

Anchor bolts shall be fully threaded rod meeting the requirements of ASTM A449M. Nuts and washers for anchor bolts shall meet the requirements of ASTM F563M Class 10S HH and F436M respectively.

Carriage bolts shall meet the requirements of ASTM A307 Grade A. Nuts for carriage bolts shall be square ASTM A563 Grade A.

Rivet material shall meet the requirements of ASTM A502 Grade 1.

Abrasive for blast cleaning, paint, and paint inspection equipment shall conform to Subsection 572-2 of the Standard Specifications.

Galvanizing shall be done in accordance with subsection 719-01 of the Standard Specifications.

Grout for setting anchor plates shall conform to Subsection 701-05 of the Standard Specifications.

CONSTRUCTION DETAILS:

The Contractor shall prepare a detailed work plan and drawings for railing removal, rehabilitation, and reinstallation work, to be approved by the Engineer prior to commencing work. The work plan and drawing shall be submitted a minimum of two weeks prior to commencing work.

Prior to any removals, the existing paint shall be removed in cut and rivet removal areas in accordance with the requirements of subsection 589-3.01.

The ornamental screen shall be disassembled into segments not to exceed 6 m in length and removed from the bridge railing. Welded connections shall be removed by grinding or other methods approved by the Engineer. Base metal of members to remain shall not be removed. Rivets shall be removed in accordance with Subsection 586-3.03 of the Standard Specifications.

The bridge railing shall be cut into sections not to exceed 10 m in length for removal. Cut lines shall be located within 0.5 m of post centerlines. Cutting shall be done in accordance with Section 601 of the New York State Steel Construction Manual (NYSSCM).

All railing and screen components which are to remain shall be blast cleaned in accordance with Subsection 572-3.01 of the Standard Specifications. All welded appurtenances shall be carefully removed from the railing and screen, and any excess weld material ground flush with the base metal. Base metal shall not be removed. All bent elements shall be straightened and all broken or missing elements shall be repaired or replaced in kind, as determined by the Engineer.

The Contractor shall prepare shop drawings in accordance with Section 203 of the NYSSCM for fabrication of all new railing and ornamental screen components, and for modifications to existing components other than straightening or in kind replacement.

Straightening procedures shall be approved by the Engineer prior to commencing rehabilitation work. For straightened railing or screen elements, the maximum permissible deviation from a straight line shall be 5 mm per meter of length.

Riveting work shall be performed in accordance with Section 1004 of the NYSSCM. All riveting work shall be performed in the shop. Replacement of rivets with bolts shall not be permitted, unless specified on the contract plans.

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Cleaning and painting work shall be performed in the shop in accordance with Subsection 572-3 of the Standard Specifications. Paint removal waste shall be treated and disposed of in accordance with Section 571 of the Standard Specifications.

New anchorage units shall be installed as indicated on the contract plans. The contractor shall accurately locate the new anchorages to accommodate the existing railing layout.

All sections of railing shall be reinstalled in their original locations. Posts shall be set vertical. Cement mortar pads shall be constructed in accordance with Subsection 568-3.02 of the Standard Specifications.

Rails cut during disassembly shall be reconnected using complete penetration groove welds. Welds shall be ground flush. Field welding shall be performed in accordance with the NYSSCM.

Rehabilitated sections of ornamental screen shall be reinstalled in their original locations, and secured to the railing as indicated on the contract plans.

METHOD OF MEASUREMENT:

This work shall be measured by the number of linear meters of railing removed, rehabilitated, and reinstalled in accordance with the specifications and to the satisfaction of the Engineer.

BASIS OF PAYMENT:

The unit price bid per meter shall include the cost of furnishing all labor, equipment, and materials necessary to complete the work.