ITEM 11564.99 M - STRUCTURAL STEEL 38 MM DIAMETER BRIDGE STRAND

Description:

Under this work, the Contractor shall fabricate, furnish, and erect 38 mm diameter bridge strands and related metal parts as shown on the plans and in accordance with the provisions of the contract documents. The Contractor's attention is directed to §106-01, Source and Supply and Quality Requirements, with regard to advising Departmental Representatives of the source(s) of the proposed materials.

Materials:

Materials for this work shall meet the requirements of this specification, the *New York State Steel Construction Manual (SCM),* and the following subsections of §700 – Materials:

Paint as specified	708
High Strength Bolts, Nuts, and Washers	715-14
Painting Procedures	740
Painting Galvanizing Surfaces	740-03

Bridge Strand: The bridge strand shall be an arrangement of wires laid helically around a center wire to produce a symmetrical cross-section. The bridge strand shall meet the requirements of ASTM A586-98 and shall be provided with a Class C weight zinc-coating. The bridge strands shall be pre-stretched under a tension not to exceed 55% of the breaking strength. After pre-stretching, the minimum Modulus of Elasticity, E, shall be 158,600 Mpa.

Certified copies of the results of the tests conducted by the manufacturer shall be furnished to the Engineer in accordance with the requirements of §715-01, Structural Steel.

Galvanized Open Bridge Sockets: Two compatible Galvanized Open Bridge Sockets shall be provided with each bridge strand in accordance with the bridge strand manufacturer's requirements. The bridge sockets shall be designed by the Contractor. The bridge sockets shall be designed to develop the minimum required ultimate strength of the bridge strand without suffering stresses beyond the yield point of the socket steel or excessive creep of the zinc filler under load. Bridge socket castings shall be cast steel conforming to the requirements of 715-02 of the Standard Specifications except that the material shall be ASTM A148 Grade 620-415. One bridge socket shall be radiographed in accordance with Section 1600 of the SCM and ASTM E280. Forgings shall conform to the requirements of ASTM A668 Class F. Pins shall be hot rolled steel Grade 1045. Nuts and washers shall be of a type compatible with the socket assembly. Galvanizing shall meet the requirements of ASTM A153.

Construction details:

This work, including, but not limited to fabrication, transportation, and erection shall be in accordance with the provisions of the SCM. Shop drawings shall be prepared, approved, and distributed in accordance with the requirements of the SCM, except that the term "D.C.E.S." shall be interpreted as "the Engineer".

The bridge strands shall be transported to the job site in a manner such that no permanent deformation of the bridge strand wires occurs.

The bridge strands shall be erected and tensioned in accordance with the sequence and procedure shown in the plans.

At times during the erection of the cable-stayed portion of the bridge, the Contractor shall be required to adjust the bridge strand tension in accordance with the procedure found in the plans.

Method of Measurement:

Lump sum. No measurements will be taken.

ITEM 11564.99 M - STRUCTURAL STEEL 38 MM DIAMETER BRIDGE STRAND

Basis of Payment:

The following provisions of §564-5 shall apply:

564-5.01 General
564-5.02 Additional Work Sections A, C, I, O, and P.

The price bid shall also include the cost for furnishing all labor, materials, and equipment for all adjustments of the bridge strand tension during construction of the cable-stayed portion of the structure.

Partial payment will be made in accordance with § 109.04 PARTIAL PAYMENTS. Progress payments will be made for installation of each bridge strand and after each adjustment of the bridge strand tension.