

**ITEM 594.5000--25 - PREFABRICATED TIMBER PEDESTRIAN SUPERSTRUCTURE**

**1. DESCRIPTION:**

- 1.01 This work shall consist of designing, detailing, fabricating and installing prefabricated, timber bridge superstructures at the locations indicated on the Contract Plans, in accordance with the Contract Documents and as directed by the Engineer.
- 1.02 The Contractor is hereby advised that compliance with the requirements of this specification may necessitate modifications to the standard design and configurations of the prefabricated bridge superstructures offered as stock items by various firms, such as those hereinafter named.

**2. MATERIALS:**

- 2.01 All materials for this work shall meet the applicable requirements of the New York State Steel Construction Manual (N.Y.S.S.C.M.), and modifications made herein.
- 2.02 Manufacturers offering prefabricated superstructures which meet the basic geometric requirements indicated on the Contract Plans (span, width and camber) include, but are not limited to, the following:

Echo Bridge, Inc.  
123 Bob Masia Drive  
Pine City, NY 14871

Laminated Concepts, Inc.  
PO Box 369  
3310 State Route 352  
Big Flats, NY 14814

Wheeler Lumber, LLC  
9330 James Avenue, South  
Bloomington, MN 55431

- 2.03 Prefabricated bridge superstructure material shall conform to the following requirements:
  - A. Glued laminated timber shall comply with the requirements of the American Institute of Timber Construction (AITC).
  - B. All wood products shall be pressure treated with wood preservative as follows:
    - 1. All railing and deck components shall be treated with waterborne wood preservative meeting the requirements of §708-31 (only ACQ shall be used), untreated railing components made from Port Orford Cedar are also acceptable.
    - 2. All other stringers, diaphragms and other components shall be treated with oil borne preservative meeting the requirements of §708-32.
  - C. High Strength Bolts, Nuts and Washers: §715-14
  - D. Weld Material: Welding electrodes shall conform to the requirements of the N.Y.S.S.C.M. and ANSI/AWS D1.1, suitable for the steel and intended service.
  - E. Timber and Lumber shall be the type and allowable stress gradations shown on the plans and meet the requirements of Subsection 712-14 – Stress Graded Timber and Lumber.
  - F. Bolts shall be galvanized and meet the requirements of ASTM A307.
  - G. Nuts, washers and screws shall be galvanized and meet the requirements of ASTM A307.
  - H. All steel shall have corrosion protection conforming to Section 719-01 –Galvanized Coatings and Repair Materials.
- 2.04 The following Subsections of the Standard Specifications shall also apply:
  - A. §594-2.02 – Approval of Order
  - B. §594-2.03 – Preservative Treatment
  - C. §594-2.04 – Sampling and Inspection
- 2.05 For steel fabrication work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or a combination of welding and grinding. Provide finish surfaces of members exposed in final structure free of markings, burrs and other defects.

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**2. MATERIALS:** (cont'd)

2.06 Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

2.07 **Design:**

- A. The services of a Professional Engineer licensed to practice in New York State, and experienced in timber bridge design, shall be engaged to design and detail the prefabricated bridge superstructure. These services shall include any required consultation for interpreting the plans and for the resolution of problems which may arise during the performance of the work.
- B. All design and details (including design loadings) shall be in conformance with the current New York State Department of Transportation Standard Specifications for Highway Bridges (N.Y.S.D.O.T.S.S.H.B, including current Interim A.A.S.H.T.O. Specifications), the current A.A.S.H.T.O L.R.F.D Guide Specifications for Design of Pedestrian Bridges, and the current N.Y.S.S.C.M.
- C. Span length and clear width between main (Truss) members shall be as indicated on the Contract Plans.

2.08 **Shop Drawings:**

- A. Six (6) legible, standard size prints, as defined in the N.Y.S.S.C.M., Section 2, of each working drawing, stamped and signed by the New York State Professional Engineer, together with three (3) copies of all design computations, shall be submitted to the Engineer for approval. Failure to submit drawings of the required size will be cause for their return without examination.
- B. The Engineer's comments shall be indicated on the returned copies. Should be proposed design not be approved, the reasons shall be indicated with the return of the material. The Contractor shall then submit a revised design and drawings for approval, subject to the same terms as the first submission.
- C. Resubmission shall not be considered legitimate reason to request an extension of time under Subsection 108-04, Extension of Time.
- D. Final reproducible shop drawings and Manufacturer's Specifications shall be furnished to the Engineer. All work shall be done in accordance with the approved working drawings. The Contractor shall have approved working drawings prior to the start of any superstructure fabrication.
- E. The Contractor shall bear all cost damages which may result from the ordering of any materials or equipment, or the use of any preparatory labor prior to the start of any to the approval of the design and working drawings.
- F. All connections shall be clearly shown, in detail, on shop drawings. Substitution of sections or modifications of details, or both, and reasons therefore, shall be submitted prior to shop drawings for review. Submitted substitutions must be clearly identified and noted as such. Reviewed substitutions, modifications and necessary changes in related portions of the work shall be coordinated by the fabricator and shall be accomplished at no additional cost to the Authority.

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**2. MATERIALS:** (cont'd)

**2.08 Shop Drawings:** (cont'd)

- G. Provide drawings, templates and directions for installation and setting of anchor bolts and bearing plate assemblies to be installed by other trades. Each prefabricated bridge superstructure shall include all hardware necessary for complete installation including bearing devices.

- 2.09 **Certification:** All materials furnished for this work will be accepted at the work site only when accompanied by the Manufacturer's certification that all material used and all fabrication work done, meets the requirements of this specification.

**3. CONSTRUCTION DETAILS:**

- 3.01 When the structure is delivered and prior to any erection work being performed, the Engineer will inspect and approve the bridge superstructure (or kit). Bridge superstructures not approved by the Engineer shall be removed from the work site and replaced with a superstructure acceptable to the Engineer at no additional cost to the Authority. If the bridge superstructure is delivered in kit form, the assembly and installation shall be in accordance with the manufacturer's instructions.
- 3.02 The requirements of Subsection 594-3 shall apply.

**4. METHOD OF MEASUREMENT:**

- 4.01 The quantity to be measured for payment will be the number of bridges actually constructed in accordance with the requirements of the Contract Documents and to the satisfaction of the Engineer.

**5. BASIS OF PAYMENT:**

- 5.01 The unit price bid for each Prefabricated, Timber Pedestrian-Bicycle Bridge Superstructure shall include the cost of furnishing all Engineer, labor, materials and equipment necessary to complete the work. The price bid shall also include, but not limited to, transportation and storage of materials; bolting and welding both in the shop and in the field.