

TECHNICAL SPECIFICATIONS
FOR
TIMBER STRUCTURES

1. Description

This work shall consist of constructing structures or parts of structures, other than piling, composed of timber, treated or untreated, or a combination of both. Timber structures shall be constructed on prepared foundations at the locations indicated or directed, in reasonably close conformity with the dimensions, lines, and grades shown on the Plans or as directed by the Engineer, and in accordance with these Specifications.

Parts of timber structures to be constructed with materials other than timber, such as concrete, steel, etc., shall be constructed in accordance with the requirements of the Sections pertaining to the respective types of structure.

2. Materials

Timber shall meet the requirements of Subsections 911.01 and 911.02 of the TDOTSS, January 1, 2015, unless otherwise shown on the Plans.

Timber shall be of the dimensions shown on the Plans. The dimensions indicated on the Plans are intended to represent the commercial product.

Hardware and connectors for timber structures shall be of the design, size, kind and composition shown on the Plans or as directed by the Engineer. All hardware and connectors shall be of noncorrosive metal.

3. Construction Requirements

(a) Care and Protection of Timber

Timber, either treated or untreated, shall be carefully handled by the Contractor. All timber shall be stored upon platforms, skids or other supports at least 12 inches above the ground surface and shall be so stacked and stripped as to permit free circulation of air between the tiers and courses. The stacked timber shall be covered as directed. The ground underneath and in the vicinity of the timber shall be cleared of weeds and rubbish.

(b) Components of Timber Structures

- 1) Concrete pedestals or footings for the support of timber posts/columns shall be constructed to the dimensions shown on the Plans. Concrete shall meet the requirements of Section 15.0 of these Specifications.
- 2) Beam and column timbers shall be cut and framed to a close fit in such manner that they will have an even bearing over the entire contact surface of the joint without requiring blocking or shimming.
- 3) Joists shall be so set or placed to required elevations as to give flooring an even bearing at all contacts or intersections. Joist to beam connections shall be as detailed on the Plans.

- 4) Flooring shall be constructed as indicated on the Plans. Flooring shall have even, full, and uniform bearing on each and all stringers and outside beams and shall not be pulled or warped so as to have such bearing.
- 5) Railing shall be built in accordance with the designs indicated on the Plans. Unless otherwise indicated, all rail posts shall be bolted to beams.
- 6) Bolts, nuts and washers shall be of the kinds and sizes specified. Wherever possible, bolts shall be placed so that the nut is hidden from view. Holes for bolts shall be bored with a bit of the same diameter as the bolt. Washers shall be used underneath the head or nut of all bolts coming in contact with timber.
- 7) Nails for all framing connections shall be of the type and size specified in the Plans and shall have a minimum embedment into the framing member as specified.

(c) Erection

- 1) In erecting timber structures, or parts of structures, to finished or required elevations and required dimensions, knowledge of the variations in Plans dimensions from commercial dimensions of timber shall be exercised in order that the required finished elevations and finished dimensions of the structure will be obtained, without the use of shims or blocks.
- 2) Timbers shall be positioned and fastened as shown on the Plans or as directed by the Engineer. A minimum of two fasteners shall be used at all timber connections. All construction shall be performed in workmanlike manner and the structure shall present a neat finish and appearance when completed.
- 3) Planks shall be laid with the heart side down, with 1/4-inch openings between planks, unless otherwise indicated or directed and shall be fastened at each intersection to a nail strip or joist with two common nails of the size indicated or as directed.
- 4) Any timber damaged or found unsatisfactory in the structure shall be removed and replaced at the Contractor's expense.

4. Method of Measurement

Timber structures using treated or untreated timber, or other acceptable material, complete in place and accepted, will be measured for payment by the foot board measure (FBM). Measurement will be based on nominal widths and thicknesses and the extreme length of each piece. No allowance will be made for hardware used in a structure as this is a necessary part of the structure and is to be included in the unit price bid for timber.

5. Basis of Payment

The accepted quantities of timber structures will be paid for at the Contract unit price per foot board measure (FBM) for Timber Structures (Description), complete in place.