

**Wharf Construction****Marie Joseph Wharf****Guysborough County, Nova Scotia****Project No. R.076162.001**

Dimension Timber

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PART 1 - GENERAL

- 1.1 Related Work .1 Refer to other Specification Sections for related information.
- .2 Section 01 33 00 - Submissions / Shop Drawings.
- 1.2 Reference Standards .1 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
- .2 ASTM B111, Wire Nails, Spikes and Staples.
- .3 ASTM D4637, EPDM Sheet Used In Single-Ply Roof Membrane.
- .4 CSA G164, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 CSA O80 Series, Wood Preservation (including CSA preliminary standard O80.31).
- .6 CSA O86.1, Engineering Design in Wood (Limit States Design).
- .7 NLGA standard grading rules for Canadian Lumber.
- 1.3 Submissions .1 At least 2 weeks prior to finalizing timber order, submit drawings clearly indicating installation details. Show splice locations, splice details, fastening arrangements, etc.
- .2 Submit methodology for field treatment.
- .3 Provide submissions in accordance with Section 01 33 00 - Submissions / Shop Drawings.
- 1.4 Measurement for Payment .1 Supply and application of field applied preservative shall not be measured separately but shall be considered

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incidental to the Work in accordance with Section 01 29 00 - Project Particulars and Measurement.

- .2 Supply and installation of all bolts, washers, nuts, hardware, etc., shall not be measured but shall be considered incidental to the Work in accordance with Section 01 29 00 - Project Particulars and Measurement
- .3 Dimensional timber including timber wales, fenders and sheathing shall be measured in accordance with Section 01 29 00 - Project Particulars and Measurement.

PART 2 - PRODUCTS2.1 Materials

- .1 Softwood Timber:
  - .1 Graded and stamped to National Lumber Grading Authority (NLGA) No. 1, Structural. Eastern Hemlock, Western Hemlock or Douglas Fir Species, only, shall be used.
- .2 Hardwood Timber:
  - .1 Sound merchantable grade yellow birch, hard maple, red or white oak conforming to grading rules approved by the National Hardwood Lumber Association.
- .3 Timber Treatment:
  - .1 Preservative treatment to CSA O80 Series for Marine Construction Coastal Waters. Where assay retentions are not indicated, they are to be taken as 1.5 times the indicated gauge retention.
  - .2 Make arrangements for testing of timber by:
    - .1 Plant Inspection providing:
      - .1 Plant identification.
      - .2 Date of treatment.
      - .3 List of various pieces in the charge.
      - .4 Charge number.

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- .5 Plant assay testing results.
- .6 Concentration and type of preservative used.
- .7 Duration of treatment.
- .8 Gauge retention.
- .9 Species of wood.
- .10 Note: Arrange with the plant to locate bundles, move bundles, break open bundles and carry out other measures to facilitate the inspection.
- .2 Filling in and submitting a preprinted form, agreed to by the *Departmental Representative*, containing the above information.
- .4 Miscellaneous Hardware:
  - .1 Hardware shall meet the following specifications:
    - .1 Machine bolts, carriage bolts, lag bolts, drift bolts, anchor bolts, nuts and round plate washers shall meet the requirements of ASTM A307.
    - .2 Spikes shall meet the requirements of CSA B111.
    - .3 Hot dip galvanize hardware, bolts, nuts, washers and spikes to CSA G164, with minimum zinc coating of 600 g/m<sup>2</sup>.
    - .4 All hardware shall be hot dip galvanized, unless noted otherwise.

PART 3 - EXECUTION

- 3.1 General
  - .1 Supply and install dimension timber to details shown on drawings, and as specified. Treated timber to be supplied in pre-cut lengths to suit.
  - .2 Boreholes for drift bolts to be 1.5 mm smaller in diameter than bolt and for full length of bolt. Boreholes for machine bolts

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to be same diameter as bolts. Boreholes for lag bolts to be same diameter as shank for unthreaded portion and 0.70 times the shank diameter for the threaded portion. Threaded portion of lag bolts shall be installed using a wrench, not by driving.

- .3 All countersunk holes to be recessed 25 mm and shall receive two coats of field applied preservative allowing sufficient time between applications to permit total absorption.

**3.2 Handling Timber**

- .1 Timber shall be protected during handling, shipping, off-loading and field handling by use of suitable equipment and procedures. Use rope or fabric strap slings on site for moving bundles or individual timbers rather than metal grabs, chains or cables.
- .2 Handle treated material to avoid damage causing alteration in original treatment.
- .3 Field treat spike holes, boreholes, plugged holes, cuts and any damage to treated material using two liberal coats of field-applied preservative, regardless of plant treatment type. Fill all unused boreholes and any other holes with tight fitting treated wooden plugs prior to any exposure to water containing marine borers.
- .4 Treat boreholes using a pressurized container with an extension rod to produce a fine spray in the holes with one application. Alternatively, a cylindrical brush may be used.
- .5 Treat field cuts and any abrasions with minimum two liberal coats of field-applied preservative, using either spray or brush.
- .6 If underwater timber is field cut or damaged, remove timber and replace or

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repair/treat as directed by the *Departmental Representative*.

- .7 Environmental: Ensure no spillage or excess application of field preservative. Provide workmen with sufficient training and protective gear to properly and safely handle treated materials and apply field treatment, so as to prevent undue hazard to themselves, others or the environment.
- .8 Contain all debris and leachates (films on water surface) within the area of work by using containment facilities such as floating silt booms or silt screens.

3.3 Fenders and Sheathing

- .1 Fasten fenders to timber wales with countersunk machine bolts on exterior face of fenders, as shown. Fasten sheathing to timber wales using round-head carriage bolts, as shown.
- .2 Bevel tops of fenders and sheathing so tops are 8 horizontal to 1 vertical, or as required to match bevel on tops of existing members. Treat tops and bottoms of all timbers as specified.