

**Machon's Point Marginal****Wharf Construction****Murray Harbour, Kings Co, PEI****Project No. R077232.001**

Dimension Timber

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PART 1 - GENERAL1.1 Related Work

- .1 Refer to Section 01 29 00 Project Particulars and Measurement
- .2 Refer to Section 01 33 00 for Shop Drawing/Submission requirements.
- .3 Refer to Section 06 10 00 Carpentry.

1.2 Reference Standards

- .1 ASTM A307-14, Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod, 60,000 PSI Tensile Strength.
- .2 CAN/CSA-O80 Series-08 (R2012), Wood Preservation.
- .3 ASTM A123/A123M-13, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .4 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
- .5 Copper naphthenate containing 2% copper for Brush or Spray Treatment for Field Cuts.
- .6 CSA O86-14, Engineering Design in Wood
- .7 National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber 2014.
- .8 ASTM D4637, Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane.

1.3 Submissions

- .1 At least two (2) weeks prior to finalizing timber order, submit drawings, clearly indicating installation details.
- .2 Submit methodology for field treatment.
- .3 Provide submissions in accordance with Section 01 33 00.

1.4 Measurement For Payment

- .1 Timber will be measured in accordance with Section 01 29 00.

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PART 2 – PRODUCTS2.1 Materials

- .1 Softwood Timber: Graded and stamped to National Lumber Grading Authority (NLGA) No. 1 Structural.
  - .1 Timber lagging, wheelguard, blocking: Eastern or Western Hemlock species.
  - .2 All other timber: Douglas Fir species.
- .2 Timber Treatment:
  - .1 Preservative treatment to CAN/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: Provide treatment plant identification, date of treatment, list of various pieces in the charge, charge number, plant assay testing results, concentration and type of preservative used, duration of treatment, gauge retention, species of wood; and make arrangements with the treatment 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.
- .3 Miscellaneous Hardware: Hardware must meet the following specifications:
  - .1 Machine bolts, lag bolts, drift bolts, anchor bolts, nuts, round plate washers: to ASTM A307.
  - .2 Spikes: to CSA B111.
  - .3 Hot dip galvanized hardware, bolts, nuts, washers and spikes to ASTM A123/A123M, with minimum zinc coating of 600 g/m<sup>2</sup>.
  - .4 All hardware will be galvanized unless otherwise shown on the drawings.

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PART 3 - EXECUTION3.1 General

- .1 Supply and install dimension timber lagging, wheelguards, blocking, etc. to details shown on drawings or as specified. Treated timber to be supplied in pre-cut lengths to suit. Install lag bolts in sound timber.
- .2 Boreholes for drift bolts to be 1.5mm smaller in diameter than bolt and for full length of bolt. Boreholes for machine bolts 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 will be installed using a wrench, not by driving.
- .3 All countersunk holes to be recessed 25 mm and shall receive a minimum of two coats of approved treatment, allowing sufficient time between applications to permit total absorption. The cost of supply and application of approved treatment will not be measured for payment but will be considered incidental to the work.

3.2 Handling Timber

- .1 Timber will be protected during handling, shipping, offloading 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 Tops of vertical untreated timber to be field treated with minimum three (3) liberal coats of approved treatment.

3.3 Handling Treated Timber

- .1 Handle treated material to avoid damage causing alteration in original treatment.
- .2 Treat in field, spike holes, boreholes, plugged holes, cuts and any damage to treated material, using approved treatment, as specified herein, regardless of plant treatment type. Fill all unused bored holes and any other holes with tight fitting treated wooden plugs prior to any exposure to water containing marine borers.
- .3 Treat boreholes, using a pressurized container with an extension rod, to produce a fine spray in the holes with one application. Alternately a cylindrical brush may be used.

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- .4 Treat field cuts and any abrasions with minimum of three (3) liberal applications of approved preservative, using either spray or brush.
- .5 In addition, field cuts and underwater damaged areas will receive a coating of plastic compound, capped with lead flashing secured with galvanized roofing nails. Plastic compound not to be water soluble and is subject to approval.
- .6 Environmental Concern: Ensure no spillage or excess application of field preservative. Provide workers with sufficient training and protective gear to properly and safely handle the treated materials and to apply field treatment, so as to prevent undue hazard to themselves, others, or the environment.
- .7 Contain all debris and leachates (films on water surface) within the area of the work by using containment facilities such as floating booms or screens.

**Machon's Point Wharf****Pier 404 Construction****Murray Harbour, Kings Co, PEI****Project No. R077232.001**

## Carpentry

PART 1 - GENERAL

- |     |                                |    |  |
|-----|--------------------------------|----|--|
| 1.1 | <u>Work Included</u>           | .1 | This Section specifies requirements for supplying, transporting and installing all items of rough carpentry.   |
| 1.2 | <u>Related Work</u>            | .1 | Dimension Timber: Section 06 05 73   |
| 1.3 | <u>References</u>              | .1 | CAN/CSA-O141-05(R2014), Softwood Lumber.   |
|     |                                | .2 | CSA O80 SERIES-08 (R2012), Wood Preservation.  |
|     |                                | .3 | CSA B111-1974(R2003), Wire Nails, Spikes and Staples.  |
|     |                                | .4 | National Lumber Grades Authority (NLGA), Standard Grading Rules for Canadian Lumber, 2014.                     |
| 1.4 | <u>Quality Assurance</u>       | .1 | Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board. |
| 1.5 | <u>Measurement For Payment</u> | .1 | This item will not be measured separately and is considered incidental to the work.                            |

PART 2 - PRODUCTS

- |     |                         |    |   |
|-----|-------------------------|----|---|
| 2.1 | <u>Lumber Materials</u> | .1 | Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:<br>.1 CAN/CSA-O141.<br>.2 NLGA Standard Grading Rules for Canadian Lumber.  |
|     |                         | .2 | Glued end-jointed (finger-jointed) lumber is not acceptable.  |
|     |                         | .3 | Machine stress-rated lumber is acceptable for all purposes.   |
|     |                         | .4 | Blocking, nailing strips and sleepers:<br>.1 S2S is acceptable.<br>.2 Board sizes: "Standard" or better grade.<br>.3 Dimension sizes: "Standard" light framing or better grade.<br>.4 Post and timbers sizes: "Standard" or better grade. |

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- 2.2 Accessories
- .1 Nails, spikes and staples: to CSA B111, galvanized for exterior work, plain finish for interior work.
  - .2 Bolts: 13 mm diameter unless indicated otherwise, complete with nuts and washers.
  - .3 Proprietary fasteners: recommended for purpose by manufacturer.
- 2.3 Finishes
- .1 Use galvanized fasteners for exterior work.
- 2.4 Wood Preservative
- .1 Surface-applied wood preservative: clear copper naphthenate or 5% pentachlorophenol solution, water repellent preservative to meet specific requirements of CAN/CSA O80.
  - .2 Use pressure preservative treated wood to CAN/CSA O80 SERIES, water borne for stained finish, where indicated and as follows:
    - .1 Treat plywood to CAN/CSA-O80.9 and lumber to CAN/CSA-O80.2 using CCA or ACA preservative with minimum retention of 24.0 kg/m<sup>3</sup>.
    - .2 Following water-borne preservative treatment, kiln dry material.

**PART 3 - EXECUTION**

- 3.1 Preparation
- .1 Treat cut surfaces of pressure preservative treated material with surface applied wood preservative, before installation, and as follows:
    - .1 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.
    - .2 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.
    - .3 Treat all material as indicated.

- 3.2    Installation
- .1

Comply with requirements of NBC 2010.
- .2

Install members true to line, levels and elevations, square and plumb.
- .3

Construct continuous members from pieces of longest practical length.
- .4

Install spanning members with "crown-edge" up.
- .5

Install nailers and other wood supports as required and secure using galvanized or stainless steel fasteners. All wood supports to be pressure treated with wood preservative.