

PART 1 - GENERAL

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| 1.1 <u>Description of Work</u> | .1 This Section includes but is not limited to the following:
.1 All demolition and removals as required to complete the work in accordance with the Plans and these Specifications.
.2 Tire fenders shall be removed and salvaged for re-installation complete with new chains, shackles and all other necessary hardware. |
| 1.2 <u>Related Work</u> | .1 Refer to other specification sections for related information. |
| 1.3 <u>Submissions</u> | .1 Provide methodology for carrying out the work to <i>Departmental Representative</i> .

.2 Provide submissions in accordance with Section 01 33 00 - Submittal Procedures |
| 1.4 <u>Protection</u> | .1 Prevent movement, settlement or damage of adjacent structures. Provided bracing and shoring as required. In event of damage, immediately replace such items or make repairs to approval of <i>Departmental Representative</i> and at no additional cost to <i>Departmental Representative</i> .

.2 Prevent debris from going adrift and becoming a menace to navigation.

.3 All damage to existing structures, roadways, pipelines, electrical systems not specified for removal to be repaired at the Contractor's cost to the satisfaction of the <i>Departmental Representative</i> . |
| 1.5 <u>Measurement for Payment</u> | .1 Sitework, demolition and removals will be measured as a lump sum in accordance with Section 01 29 00. |

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION3.1 Preparation

- .1 Inspect site and verify with *Departmental Representative* items designated for demolition and removal and items to be salvaged and preserved.
- .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.
- .3 Provide temporary power and lighting as required and to approval of the *Departmental Representative*.

3.2 Demolition and Removal

- .1 Demolish and remove all items as indicated on the Plans and in these Specifications.
- .2 The Wharf facility shall remain operational to the public and harbour users for the duration of the Work with the exception of the specific Work Site(s) delineated by the contractor throughout the duration of the Work. The Contractor shall undertake demolition and reinstatement work in phases.
 - 1. For transverse wales and cross bracing the contractor will be limited to the demolition of two (4) consecutive pile bents prior to reinstatement of new timber members.
 - 2. For longitudinal wales, sheathing, fenders, and ladders, the Contractor will be limited to the demolition of five (6) consecutive pile bents along one (1) wharf face prior to reinstatement of new timber members.

- .3 Reinstatement of new timber members must occur without delay after removal of existing members.
 - .4 Do not disturb adjacent structures designated to remain in place.
 - .5 At end of each day's work, leave work in safe condition so no part is in danger of toppling or falling.
- 3.3 Disposal of Material
 - .1 Disposal of materials not designated for salvage or re-use in work, shall be the contractor's responsibility and these materials must be disposed of off-site.
 - .2 The material to be disposed is to be transported and disposed of in an environmentally acceptable manner to the satisfaction of the *Departmental Representative* and in accordance with any local, municipal, provincial and federal restrictions and regulations.
- 3.4 Restoration
 - .1 Upon completion of work, remove debris, trim surfaces and leave work site clean.
 - .2 Reinstall areas and existing works outside areas of demolition to conditions that existed prior to commencement of work. Match condition of adjacent, undisturbed areas.

-----END of SECTION-----

PART 1 - GENERAL

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| 1.1 | <u>Related Work</u> | .1 | Section 31 09 18 - Pile Driving Templates. |
| | | .2 | Section 31 61 13 - Pile Foundations General |
| 1.2 | <u>Reference Standards</u> | .1 | ASTM A123-15, Standard Specification for Zinc Hot-Dip Galvanized Coatings on Iron and Steel Products |
| | | .2 | ASTM A307-14, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile. |
| | | .3 | CAN/CSA-G40.21-13, Structural Quality Steels. |
| | | .4 | CAN/CSA-080 Series-15, Wood Preservation. |
| | | .5 | CSA O56-10(R2015), Round Wood Piles |
| | | .6 | CSA W59-13, Welded Steel |
| | | .7 | NLGA standard grading rules for Canadian Lumber 2013. |
| 1.3 | <u>Submissions</u> | .1 | At least two (2) weeks prior to finalizing timber order, submit a schedule of pile lengths for review. |
| | | .2 | Submit methodology for field treatment. |
| | | .3 | Provide submissions in accordance with Section 01 33 00. |
| 1.4 | <u>Protection</u> | .1 | Avoid dropping, bruising or breaking of wood fibres. |
| | | .2 | Avoid breaking surfaces of treated piles. |
| | | .3 | Do not damage surfaces of treated piles below cut-off elevation by boring holes or driving nails or spikes into them to support temporary material or staging. Support staging in rope slings carried over tops of piles or by attaching to pile clamps of approved design. |
| | | .4 | Treat cuts, breaks or abrasions on surfaces of treated piles, bolt holes and field cuts in accordance with CAN/CSA-080, using approved project or material. |

- 1.5 Inspection .1 Have all timber piles inspected and accepted by Departmental Representative prior to being incorporated in the work.
- 1.6 Measurement for Payment .1 Consider shoes and cap plates incidental to installation of piles.
- .2 Supply of timber piling will be measured in accordance with Section 01 29 00.
- .3 Installation of timber piling will be measured in accordance with Section 01 29 00.
- .4 Mobilization and demobilization of equipment will be lump sum item in accordance with Section 01 29 00.
- .5 Base tender on number and lengths of piles indicated on the plan.
- .6 Adjustments in contract price due to changes in number and lengths of piles will be based on unit prices established in Contract.

PART 2 - PRODUCTS

- 2.1 Materials .1 Round Wood Piles: Red pine, with minimum butt size of 300 mm and tip diameter in accordance with Table A-1. Order length to suit conditions indicated. Departmental Representative shall be sole judge as to quality and dimension of piles and that they are in accordance with CSA-056.
- .2 Timber Treatment:
.1 Preservative treatment to CAN/CSA-080 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. Creosote preservative will not be permitted for fender piles.
.2 Make arrangements for timber testing 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 Field Inspection: Providing same information as above and facilitating the inspection in the field.

.3 Filling in and submitting a pre-printed form, agreed to by the Departmental Representative, containing the above information.

.3 The Departmental Representative may test in the plant or in the field or may choose to not test some charges at either the plant or the field.

.4 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.

.5 Field treatment: P7 creosote.

.3 Miscellaneous Hardware: Hardware must meet the following specifications:

.1 Machine bolts, drift bolts, nuts, round plate washers: to ASTM A307

.2 Spikes: to CSA B111

.3 Pile shoes: fabricated from steel plate minimum 6 mm thickness. Steel plate to CSA-G40.21, Grade 300W. Welding to CSA W59. No galvanizing required.

.4 Hot dip galvanize bolts, nuts, washers and spikes to ASTM A123 with minimum zinc coating of 600 g/m².

.5 All hardware to be hot-dipped galvanized unless otherwise shown on plans or specified.

2.2 Wood Preservation

.1 Treat wood piles with wood preservative treatment as specified.

PART 3 - EXECUTION

3.1 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.

3.2 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 product or material, regardless of plant treatment type.
- .3 Provide methodology pertaining application of field treatment. Apply to dry surfaces, wherever possible.
- .4 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.
- .5 Treat field cuts and any abrasions with minimum of two liberal applications, using either spray or brush.
- .6 Environmental Concern: allow for no spillage or excess application of field preservative. Provide workmen 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.

3.3 Preparation

- .1 Protect pile heads during driving and hold in position by using a combination cushion-driving head and pilot. Closely fit driving heads to top of pile, and extend down sides of pile for at least 75 mm. Where necessary protect pile heads by means of heavy steel straps of wrought iron rings.

3.4 Installation

- .1 Install piles to the tip elevation shown in the drawings
- .2 During driving restrain lateral movement of piling at intervals not exceeding 6 m over length between ground surface and driving head.

.3 Cut off fender piles giving a bevel of 4H:1V.

END OF SECTION