

Floating Wharves Construction and Installation**Petit-de-Grat****Richmond County, NS****Project No.: C2-00397**Specifications Index

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<u>Drawing No.</u>	<u>Title</u>
M0	Cover
M1	Existing Site Plan, Section and Detail
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M3	Float#3,5,7,8,&9 Plan View, Elev., Sections & Details
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M5	Float# 1 Plan View, Elev., Sections & Details
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M11	Gangway Sections & Details

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- 1.1 Scope .1 The work covered under this contract consists of the furnishing of all plant, labour, equipment and material for Floating Wharves Construction and Installation at Petit-de-Grat, Richmond County, Nova Scotia, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of contract.
- 1.2 Site Examination .1 All parties tendering should visit the site of the work prior to submission of tenders and make themselves thoroughly acquainted with site conditions, conditions of existing objects to be removed, tides, degree of exposure and all information necessary for the proper carrying out of the work covered by the drawings and this Specification. Submission of Tender will be deemed that Contractor is conversant with site conditions.
- .2 The *Departmental Representative* will give no consideration whatsoever to any claim by the Contractor resulting from failure to have made all the necessary investigations prior to tendering.
- 1.3 Documents Required .1 Maintain at job site, one copy each of following:
- .1 Contract drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Reviewed shop drawings/submissions;
 - .5 Change orders;
 - .6 Other modifications to Contract;
 - .7 Field test reports;
 - .8 Copy of approved work schedule; and
 - .9 Manufacturer's installation and application instructions.
- 1.4 Work Schedule and Completion Dates .1 Prepare and submit to the *Departmental Representative* within 5 days of notification of Contract award, one copy

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of the construction schedule in the form of a bar chart showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates for submissions, review and return of shop drawings, etc.; the dates of Substantial and Final Completion; and intended man hours of labour and equipment for each major item of work. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the *Departmental Representative*.

.3 The *Departmental Representative* is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Construction Schedule at all times. If, for any reason, the Construction Schedule is not followed, immediately notify the *Departmental Representative* of the change and submit a revised schedule for acceptance. Upon written acceptance by the *Departmental Representative*, this schedule will become the Construction Schedule.

.4 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the *Departmental Representative* of the Contractor's Construction Schedule or the furnishing of details and particulars thereto will not relieve the Contractor of any duties and responsibilities under the Contract.

1.5 Measurement Responsibilities

.1 Notify *Departmental Representative* sufficiently in advance of operations to permit required measurements for payment purposes.

1.6 Contractor's Use of Site

.1 The Contractor will be permitted to use the existing wharf structures at the harbour for loading or offloading

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equipment.

- .2 Co-operate with users of existing facilities. Should interferences occur, take directions from *Departmental Representative*.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of *Departmental Representative* or other Contractors.
- .5 Obtain and pay for use of additional storage or work areas needed for operations.
- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
- .7 Ensure no damage occurs to existing structures as a result of operations. Any said damage will be repaired at Contractor's expense.
- .8 Provide temporary barriers and warning signs in location where work is adjacent to areas used by public.

1.7 Codes and Standards

- .1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements will apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition will supersede the referenced date.
- .3 Observe and enforce construction safety measures by Canadian Construction Safety

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Code and Construction Safety Code of Nova Scotia. In the event of conflict between any provisions of above authorities the most stringent provision will apply.

- 1.8 Project Meetings .1 *Departmental Representative* will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
- 1.9 Setting Out of Work .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes.
- .2 Provide such masts, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the *Departmental Representative* to check or inspect any portion of the Work. The Contractor will not be allowed any extra compensation or time for completion because of this suspension of work.
- .3 Elevations for the various grades and features of the specified works to be referenced and properly related to a benchmark, which will be approved by the *Departmental Representative*.
- .4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the *Departmental Representative* before commencing work. Provide and maintain well-built batter boards at all points to facilitate the progress of the work. Establish all other grades, lines, levels required to facilitate the work.

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- 1.10 Existing Services .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify *Departmental Representative* of findings.
- .3 Submit schedule to and obtain acceptance from *Departmental Representative* for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise *Departmental Representative* and confirm findings in writing.
- 1.11 Contract Documents .1 Contract Drawings:
- .1 The drawings for the Work consist of all drawings listed in these "Plans And Specifications" and any additional drawings issued at a later date by the *Departmental Representative*.
- .2 *Departmental Representative* may furnish additional drawings to assist in proper execution of work. These drawings will be issued for clarification only. Such drawings will have same meaning and intent as if they were included with plans referred to in Contract Documents.
- .3 The drawings indicate the extent and general dimensions of the work. Make all necessary measurements to ensure that the result of the work is in accordance with the intent.
- .4 Verify all existing conditions in field prior to proceeding with work.

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- .2 Contract Specifications:
 - .1 The general requirements and technical specifications are written solely for the General Contractor. They are organized into the NMS format of separate divisions and sections.
 - .2 Specification language is of the 'Short Form type' for example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".
 - .3 This Specification and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either will be as binding as if called for by both. The Contractor shall understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will not avail himself of any errors or omissions.

 - 1.12 Permits and Regulations
 - .1 Fisheries and Oceans Canada will obtain all federal and provincial permits required for the in-water and site works.
 - .2 Comply with all by-laws, ordinances and regulations of all authorities having jurisdiction.
 - .3 Pay for any Municipal permits.

 - 1.13 Record of Construction
 - .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular

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reference to work which will be concealed. Prior to the inspection of the work for the issuance of the Final Certificate of Completion, provide the *Departmental Representative* with one set of white prints of the drawings with all deviations shown neatly thereon and an electronic version in Autocad.

- 1.14 Payment
- .1 Payment for all work under this contract to be according to the Contract.
 - .2 No separate payment will be made for work specified under any sections of Specification under Division 01. The cost of this work is to be considered as overhead and to be included in the lump sum of the Contract.
 - .3 Dimensional changes as directed by the *Departmental Representative* to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.
- 1.15 Maintenance of Shipping
- .1 Liaise with the local port officials to coordinate activities such that any interference is minimized.
- 1.16 Cooperation & Assistance to Departmental Representative
- .1 Co-operate with *Departmental Representative* on inspection of work.
 - .2 Provide assistance when requested.
 - .3 Provide small motor boat with operator and sounding chain for *Departmental Representative's* use when requested.
- 1.17 Datum
- .1 The datum referred to in this Specification is Chart Datum. Chart Datum is, by International Agreement a plane below which the tide will seldom fall. The Canadian Hydrographic Service has adopted the plane of the lowest normal tide (L.N.T.) as Chart Datum. As the rise, fall, and range of tides varies

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daily, the Canadian Tide and Current Tables, as issued by the Canadian Hydrographic Service, should be consulted for tidal predictions and other tidal information relating to the work.

- 1.18 Contractor's Representative .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods.
- 1.19 Workers Compensation .1 Contractor and all sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.
- .2 At completion of Contract and before final payment is made, the Contractor will present to the *Departmental Representative* a Letter of Certification from the Workers Compensation Board, showing that all required assessments are paid in connection with all trades.
- 1.20 Laws, Standards Taxes and Fees .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive will govern, but in no instance will the standards established by the drawings and this Specification, which exceed such requirements, be reduced.
- 1.21 Protection and Repair .1 Take appropriate measures to protect existing infrastructure and services.
- .2 Do not operate tracked equipment on concrete surfaces without suitable protection.

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| | .3 | Repair any damage resulting from operations under this contract. |
| 1.22 | Location of Equipment and <u>Fixtures</u> | .1 Location of equipment, fixtures or any appurtenances indicated are to be considered approximate. |
| 1.23 | Inspection and <u>Testing</u> | .1 The <i>Departmental Representative</i> may employ an Inspector and/or Testing Company to ensure work conforms with contract. |
| 1.24 | Disposal of <u>Debris</u> | .1 Debris, including construction materials not incorporated in the work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. This includes costs of disposing of contaminated materials such as creosote treated timber. Disposal is the responsibility of the Contractor.

.2 Material from the work will not be permitted to go adrift or otherwise become a menace to navigation. |
| 1.25 | Relics and <u>Antiquities</u> | .1 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.

.2 Give immediate notice to <i>Departmental Representative</i> and await written instructions before proceeding with work in this area.

.3 Relics, antiquities and items of historical or scientific interest remain Her Majesty's property. |
| 1.26 | Temporary <u>Navigational Buoys</u> | .1 The Contractor is to maintain temporary buoys as required to mark any |

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obstructions as construction proceeds.

All buoys are to meet the requirements of Canadian Coast Guard Standard TP968 and be equipped with radar reflectors.

<http://www.ccg-gcc.gc.ca/folios/00020/docs/CanadianAidsNavigationSystem2011-eng.pdf>

- .2 The Contractor shall coordinate the buoy installation with the local harbour authority.
- .3 The Contractor is responsible for all costs associated with the supply, installation and removal of all temporary navigational buoys.

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

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Project Particulars and
Measurement for Payment

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PART 1 - PROJECT PARTICULARS

- 1.1 Description of Work .1 In general, the work under this contract includes but will not necessarily be limited to:
- .1 Mobilization and demobilization.
 - .2 Fabrication, supply and installation of new floating wharves.
 - .3 Fabrication and installation of new concrete anchor blocks and chains for anchoring finger floating wharves.
 - .4 Fabrication, supply and installation of new galvanized strong-arm assemblies.
 - .5 Fabrication, supply and installation of new aluminum gangway assemblies.
 - .6 Demolition of existing floating wharves and removal from DFO property.
 - .7 Supply and installation of treated timber utility poles.

Part 2 - PROJECT MEASUREMENT

- 2.1 General .1 This section details the measurement method to be used for payment purposes. Incidental items covered in the various sections of the Specification are to be included in the pricing of each pay item as applicable.
- 2.2 Measurement for Payment **Division 1**
- .1 Mobilization and Demobilization to the site will not be measured but paid Lump Sum. Include in this item, the cost to deliver materials and equipment to the site and to carry out (install) the work.
 - .2 Fabrication, Supply and Installation of Floating Wharves (Float #3,5,7,8 and 9) will be measured by the number of new units incorporated into the work. Include in this item all necessary treated timber, buoyancy billets, aluminum checker connection plates, and all associated hardware.
 - .3 Fabrication, Supply and Installation of Floating Wharves (Float#2,4 and 6) will be

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- measured by the number of new units incorporated into the work. Include in this item all necessary treated timber, buoyancy billets, aluminum checker connection plates, stiffening arms, and all associated hardware (including fastening chains).
- .4 Fabrication, Supply and Installation of Floating Wharf (Float#1) will be measured by the number of new units incorporated into the work. Include in this item all necessary treated timber, buoyancy billets, aluminum checker connection plates, stiffening arms, and all associated hardware.
- .5 Fabrication, Supply and Installation of Floating Wharf (Float#10) will be measured by the number of new units incorporated into the work. Include in this item all necessary treated timber, buoyancy billets, aluminum checker connection plates, stiffening arms, and all associated hardware (including fastening chains).
- .6 Fabrication, Supply and Installation of New Reinforced Concrete Anchor Blocks will be measured by the number of new units incorporated into the work. Include in this item all necessary labour, material, and installation (fastening to contractor supplied chain included in Items 1 thru 5).
- .7 Fabrication, Supply and Installation of New Galvanized Steel Strong Arm Assemblies will be measured by the number of new units incorporated into the work. Include in this item all necessary labour, material, and installation (utilize existing concrete abutment).
- .8 Fabrication, Supply and Installation of New Aluminum Gangway Assemblies will be measured by the number of new units incorporated into the work. Include in this item all necessary labour, material, and

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installation.

- .9 Supply and Installation of New Treated Timber Utility Poles will be measured by the number of new units incorporated into the work. Include in this item the cost of all materials and labour required to provide three (3) chemical anchors with 7/8" galvanized threaded rod embedded 8" into concrete at each pole location. Exact pole locations to be determined on site by Departmental Representative.

Division 31

- .10 Sitework, Demolition and Removals will not be measured but paid as Lump Sum. Include in this item the demolition and removal from the site of existing ten (10) floating wharves including chains, concrete anchor blocks, shackles and any other associated items. Upon Removal, the existing floating wharves become property of the Harbour Authority of Petit de Grat and must be delivered to 24 Boudreauville Road, Petit de Grat, NS, B0E 2L0

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

Floating Wharves Construction and Installation**Petit-de-Grat****Richmond County, NS****Project No.: C2-00397**1.1 General

- .1 Submit to *Departmental Representative* for review submittals listed, including shop drawings, samples, certificates and other data, as specified in other sections of these Specifications.
- .2 Submit with promptness and in orderly sequence so as to allow for *Departmental Representative's* review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions are reviewed by *Departmental Representative*.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units. Where items or information is not produced in SI Metric units, provide converted values.
- .5 Review submittals prior to submission to *Departmental Representative*. Ensure during review that necessary requirements have been determined and verified, required field measurements or data have been taken, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.
 - .1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by *Departmental Representative* and considered rejected.
- .6 Notify *Departmental Representative*, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

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- .7 Verify field measurements and affected adjacent work and coordinate.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by *Departmental Representative's* review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by *Departmental Representative's* review.
- .10 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by *Departmental Representative*. Poorly printed non-legible photocopies or facsimiles will not be accepted.
- .11 Make changes or revision to submissions which *Departmental Representative* may require, consistent with Contract Documents and resubmit as directed by *Departmental Representative*. When resubmitting, notify *Departmental Representative* in writing of any revisions other than those requested.
- .12 Keep one reviewed copy of each submittal document on site for duration of Work.

1.2 Shop Drawings

- .1 Drawings to be originals prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate appropriate portion of work; showing fabrication, layout, setting or erection details as specified in appropriate Sections.
- .2 Identify details by reference to sheet and detail numbers shown on Contract Drawings.

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- .3 Maximum sheet size 860 X 1120 mm.
- 1.3 Product Data
- .1 Certain Specification Sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of shop drawings.
- 1.4 Samples
- .1 Submit samples in sizes and quantities specified.
 - .2 Construct field samples and mock-ups at locations acceptable to *Departmental Representative*.
 - .3 Accepted samples will become standards of workmanship and material against which, installed work will be checked on project.
- 1.5 Miscellaneous Data
- .1 Provide certificates, methodologies, designs and test results as required.
- 1.6 Coordination of Submissions
- .1 Review shop drawings, product data, samples and miscellaneous data prior to submission.
 - .2 Verify:
 - .1 Field Measurements;
 - .2 Field Construction Criteria; and
 - .3 Catalogue numbers and similar data.
 - .3 Coordinate each submission with requirements of work and Contract documents. Individual submissions will not be reviewed until all related information is available.
 - .4 Contractor's responsibility for errors and omissions in submission is not relieved by *Departmental Representative's* review of submissions.

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- .5 Contractor's responsibility for deviations in submission from requirements in Contract documents is not relieved by *Departmental Representative's* review of submission, unless *Departmental Representative* gives written acceptance of specified deviations.
 - .6 Notify *Departmental Representative*, in writing at time of submission, of deviations from requirements of Contract documents stating reasons for deviations.
 - .7 After *Departmental Representative's* review, distribute copies.
- 1.7 Submission Requirements
- .1 Schedule submissions at least fourteen (14) days before dates reviewed submissions will be needed.
 - .2 Submit number of copies of shop drawings, product data which Contractor requires for distribution, plus 2 copies which will be retained by *Departmental Representative*.
 - .3 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample submitted.
 - .5 Other pertinent data.
 - .4 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Contractor
 - .2 Sub-Contractor
 - .3 Supplier
 - .4 Manufacturer
 - .5 Separate detailer when pertinent

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- .4 Identification of product or material.
- .5 Relation to adjacent structure or materials.
- .6 Field dimensions, clearly identified as such.
- .7 Specification Section Number.
- .8 Applicable standards, such as CSA or CGSB numbers.
- .9 A Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract documents.

1.8 Shop Drawings Review

- .1 The review of shop drawings by Fisheries and Oceans Canada or its authorized consultant is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that Fisheries and Oceans Canada approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the work of all sub-trades.

1.9 Other Reviews

- .1 As for shop drawings above, other reviews are for the sole purpose of ascertaining conformance with the general concept.

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for Marine Work

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1.1 References

- .1 Canada Shipping Act, 2001, amended 2013-12-01; Transport Canada
- .2 Canadian Coast Guard Regulations, Fisheries and Oceans Canada
- .3 Canadian Environmental Protection Act, 1999, amended 2014-03-28; Environment and Climate Change Canada
- .4 Canadian Navigable Waters Act, 2019-08-28; Transport Canada
- .5 Fisheries Act, 1985, amended 2019-06-21; Fisheries and Oceans Canada
- .6 Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, 1998; Fisheries and Oceans Canada
- .7 Impact Assessment Act, 2019-08-28; Environment and Climate Change Canada
- .8 Migratory Birds Convention Act, 1994, amended 2010-12-10; Environment and Climate Change Canada
- .9 Nova Scotia - Environment Act
- .10 Species at Risk Act, 2002, amended 2013-03-08; Environment and Climate Change Canada and Fisheries and Oceans Canada
- .11 The Federal Policy on Wetland Conservation, 1991; Environment and Climate Change Canada
- .12 Transportation of Dangerous Goods Act, 1992, amended 2009-06-16; Transport Canada
- .13 Workplace Hazardous Materials Information System; Health Canada.

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Environmental Protection Procedures
for Marine Work

1.2 Definitions

- .1 Archaeological resources: all tangible evidence of human activity that is of historical, cultural or scientific interest. Examples include features, structures, archaeological objects or remains at or from an archaeological site, or an object recorded as an isolated archaeological find.
- .2 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.
- .3 Deleterious substance: (a) any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, or (b) any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water.
- .4 Fish habitat: spawning grounds and any

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other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes.

- .5 Hazardous material: product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .6 Invasive or alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.
- .7 Navigable water: a canal and any other body of water created or altered as a result of the construction of any work.
- .8 Surface watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.
- .9 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands," and mineral wetlands that are influenced by excess water but produce little or no peat.

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for Marine Work

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- 1.3 Transportation
- .1 Transport hazardous materials and hazardous waste in compliance with the *Transportation of Dangerous Goods Act*.
 - .2 Prior to commencement of work, advise and seek approval from the *Departmental Representative* of the existing roads and temporary routes / roads proposed to be used to access work areas and to haul material to and from the site.
 - .3 Vessels are to be permitted safe access through the worksite at all times, and assisted as necessary.
 - .4 All materials and equipment used in construction must be marked in accordance with the Collision Regulations of the *Canada Shipping Act, 2001* when located on the waterway.
- 1.4 Operation of Machinery
- .1 Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
 - .2 Whenever possible, operate machinery on land above the high water mark in a manner that minimizes disturbance to the banks and bed of the water body.
 - .3 Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.
 - .4 Do not perform cleaning and wash down within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
- 1.5 Containment and
- .1 Comply with Federal (CEPA *Storage Tank*

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Spill Management

Systems for Petroleum Products and Allied Petroleum Products Regulations) and provincial regulations, codes, standards and guidelines for the storage of fuel and petroleum products on site.

- .2 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .3 Be diligent and take all necessary precautions to avoid spills when handling petroleum products on site and during fueling and servicing of vehicles and equipment.
- .4 Maintain on site appropriate emergency spill response equipment consisting of at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills. Develop a response plan that is to be implemented immediately in the event of a release or spill of a deleterious substance.
- .5 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .6 Materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals are not to enter the watercourse or soils.
- .7 All equipment to be used in or over the marine environment is to be free from leaks or coatings of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks.
- .8 In the event of a petroleum spill

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immediately notify the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour reporting line and the *Departmental Representative*. Perform cleanup in accordance with all regulations and procedures stipulated by authorities having jurisdiction.

- 1.6 Hazardous Material Handling
- .1 Store and handle hazardous materials in accordance with applicable federal and provincial regulations, codes, standards and guidelines. Store in location that will prevent spillage into the environment.
 - .2 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
 - .3 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when stored.
 - .4 Store and handle flammable and combustible materials in accordance with National Fire Code.
- 1.7 Disposal of Wastes
- .1 Do not bury rubbish, construction and demolition debris (i.e., concrete, timbers, steel, impacted soil, etc.) and waste materials on site.
 - .2 All work(s) and associated equipment shall be removed from the waterway at Contractor's expense in the event the operation of the work(s) is interrupted or terminated.
 - .3 Dispose and recycle construction and demolition debris and waste materials in

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accordance with provincial waste management regulations.

- .4 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc.) and petroleum products into waterways, storm sewers or in waste landfill sites.
- .5 Dispose of hazardous waste in accordance with applicable federal and provincial, regulations, codes, standards and guidelines.
- .6 Conduct daily clean-up of floating or sinking construction materials, litter, and other debris arising from the work site to ensure protection of the marine environment. Any construction debris/material that enters the marine environment must be removed immediately and be disposed of in a provincially approved manner.
- .7 Concrete waste shall be handled as follows:
 - .1 Do not discharge residual or rejected concrete on site.
 - .2 Immediately clean any accidental release of concrete on site prior to solidification.
 - .3 Do not wash or clean concrete vehicles on site.
 - .4 Perform dumping of residual material and truck cleaning operations only at the concrete plant. Follow environmental regulations and good practices as approved by the Provincial Department of the Environment and Climate Change and other authorities having jurisdiction.

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- 1.8 Water Quality
- .1 Where work may affect water quality, schedule work in cooperation with the Harbour Authority as directed by *Departmental Representative* to minimize interference and impact on harbour users.
 - .2 Conduct in-water operations in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.
 - .3 Water contamination by preservative treated wood shall be handled as follows:
 - .1 Preservative treated lumber and timber, whether plant or site treated, shall be cured for a minimum of 30 days from date of the treatment application before installation in areas which will be in contact with the water.
 - .2 Do not cut treated wood over the surface of a watercourse or wetland.
 - .3 Do not use liquid-applied preservative products over the surface of a watercourse or wetland.
 - .4 Do not use timber or lumber treated with creosote, petroleum or pentachlorophenol for any part of the work.
- 1.9 Socioeconomic Restrictions
- .1 Abide by municipal and provincial regulations for any restrictions on work performed during the night time and with flood lighting of the site. Obtain applicable permits.
 - .2 Direct flood lights in opposite direction of adjacent residential and business areas.

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- .3 Equipment and machinery must be equipped with purposely designed mufflers to reduce noise to lowest possible level.
- .4 The Contractor will coordinate with the local Harbour Authority prior to commencement of the project activities such that the schedule with the least possible conflicts will be implemented.

1.10 Fish Protection

- .1 Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- .2 Contractor shall be aware of the risk for contamination of the fish habitat at the site as a result of alien species being introduced in the water.
- .3 To minimize the possibility of fish habitat contamination and the spread of aquatic invasive/alien species, all construction equipment which will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must be cleaned and washed to ensure that it is free of marine growth and invasive/alien species. Equipment shall include boats, barges, rafts, cranes, excavators, haul trucks, pumps, pipe lines and all other miscellaneous tools and equipment previously used in a marine environment.
- .4 Cleaning and washing of equipment shall be performed immediately upon arrival at the site and before use in or over the body of water.
- .5 Conduct cleaning and washing operations

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as follows, at a minimum:

- .1 Scrape and remove heavy accumulation of mud and dispose appropriately.
- .2 Wash all surfaces of equipment by use of a pressurized fresh water supply.
- .3 Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.
- .4 Check and remove all plant, animal and sediment matter from all bilges and filters.
- .5 Drain standing water from equipment and let fully dry before use.
- .6 Upon removal from the water, drain standing water from equipment and let fully dry before removal off the site.

1.11 Bird and Bird
Habitat

- .1 Become knowledgeable with and abide by the *Migratory Birds Convention Act (MBCA)* in regards to the protection of migratory birds, their eggs, nests and their young encountered on site and in the vicinity.
- .2 Minimize disturbance to all birds on site and adjacent areas during the entire course of the Work.
- .3 Do not approach concentrations of seabirds, waterfowl and shorebirds when anchoring equipment, accessing wharves or ferrying supplies.
- .4 During night time work, position flood lights in opposite direction of nearby bird nesting habitat.
- .5 Do not use beaches, dunes and other

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natural previously undisturbed areas of the site to conduct work unless specifically approved by the *Departmental Representative*.

- .6 Should nests of migratory birds in wetlands be encountered during work, immediately notify *Departmental Representative* for directives to be followed.
 - .1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
 - .2 Minimize work immediately adjacent to such areas until nesting is completed.
 - .3 Protect these areas by following recommendations of Canadian Wildlife Service.
- .7 All machinery must be well muffled. If necessary, trucks may be required to avoid the use of "hammer" braking along specific sections of the route.

1.12 Species at Risk
and Marine Mammals

- .1 Maintain periodic visual surveys for leatherback sea turtles and marine mammals in and around the project area. In the event of a sighting within a 500 m radius of the project, work must be curtailed until the animal(s) has departed the area, at which time the work can resume.

1.13 Air Quality

- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
- .2 Dust suppression by the application of water must be employed, when required. Apply dust control measures to roads, parking lots and work areas. The *Departmental Representative* shall

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determine locations where water is to be applied, the amount of water to be applied, and the times at which it shall be applied. Waste oil must not be used for dust control under any circumstances.

.3 Spray surfaces with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust control during the entire course of the work.

.4 Do not use oil or any other petroleum products for dust control.

1.14 Fires

.1 Fires and burning of rubbish on site is not permitted.

1.15 Archaeological

.1 All construction personnel are responsible for reporting any unusual materials unearthed during construction to the construction supervisor. If the find is believed to be an archaeological resource, the Construction Supervisor will immediately stop work in the vicinity of the find and notify the *Departmental Representative*.

.2 If an archaeological and / or historically significant item is discovered during the work activities, work in the area will be stopped immediately and the *Departmental Representative* will be contacted as well as the provincial Archaeological Services unit.

a) Nova Scotia - NS Department of Communities, Culture and Heritage, Special Places Program, telephone:

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(902) 424-6475.

- .3 Work can only resume in the vicinity of the find when authorized by the *Departmental Representative* and Construction Supervisor, after approval has been granted by the Nova Scotia Department of Communities, Culture and Heritage.

- .4 In the event of the discovery of human remains or evidence of burials, excavation work will immediately cease and nearest law enforcement agency will be contacted immediately by the *Departmental Representative* and/or the Construction Supervisor.

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

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Health and Safety Requirements**Page 1**1.1 Definitions

- .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- .2 Competent Person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
 - .3 Knowledgeable about potential or actual danger to health or safety associated with the Work.
- .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .4 PPE: Personal Protective Equipment
- .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.2 Submittals

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within five (5) work days of notification of Bid Acceptance. Provide 2 copies.
 - .2 *Departmental Representative* will review Health and Safety Plan and provide comments.

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- .3 Revise the Plan as appropriate and resubmit within five (5) work days after receipt of comments.
- .4 *Departmental Representative's* review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
- .5 Submit revisions and updates made to the Plan during the course of Work.

- .3 Submit name of designated Health and Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit compliance certificates and other permits obtained.
- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
 - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .6 Submit copies of reports or directions issued by federal, provincial and territorial health and safety inspectors.
- .7 Submit copies of incident reports.
- .8 Submit WHMIS MSDS - Material Safety Data Sheets.

- 1.4 Compliance Requirements
 - .1 Comply with *Occupational Health and Safety Act* for Province of Nova Scotia, and Regulations made pursuant to the Act.
 - .2 Comply with *Canada Labour Code - Part II* (entitled Occupational Health and Safety)

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and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant.

- .1 The Canada Labour Code can be viewed at: <http://laws-lois.justice.gc.ca/eng/>
- .2 COSH can be viewed at: <http://laws-lois.justice.gc.ca/eng/regulations/SOR-86-304/index.html>
- .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F)
- .3 Treasury Board of Canada Secretariat (TBS):
 - .1 Treasury Board, Fire Protection Standard April 1, 2010
www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316§ion=text
- .4 Canadian Standards Association (CSA):
 - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .5 Observe construction safety measures of:
 - .1 Part 8 of National Building Code
 - .2 Municipal by-laws and ordinances.
- .6 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .7 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
- .8 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance

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documentation.

- 1.5 Responsibility
- .1 Contractor shall be responsible for health and safety of persons and safety of property on site and for protection of other employees and general public circulating adjacent to work operations to extent that they may be affected by conduct of Work.
 - .2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to Work Site with safety requirements of Contract Documents, applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.
- 1.6 Site Control and Access
- .1 The harbour and facility shall have ongoing operations during construction including:
 - .1 vessel traffic navigating and berthed to harbour facilities within the harbour basin.
 - .2 Regular vehicle traffic on the access road, wharf and service area.
 - .2 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
 - .1 *Departmental Representative* will provide names of those persons authorized by *Departmental Representative* to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
 - .3 Isolate Work Site from other areas of the premises by use of appropriate means.

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- .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.
- .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
- .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
- .4 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
- .5 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .6 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.

1.7 Protection

- .1 Carry out work placing emphasis on health and safety of public, wharf users, site personnel and protection of the environment.
- .2 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
- .3 Provide temporary facilities for protection and safe passage of wharf users, public pedestrians and vehicular traffic around and adjacent to work site.

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- .4 Should unforeseen or peculiar safety-related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise *Departmental Representative* verbally and in writing.

1.8 Filing of Notice

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
- .2 Upon request, *Departmental Representative* will provide name and mailing address of provincial department to whom the Notice of Project must be sent.

1.9 Permits

- .1 Obtain applicable permits, licenses and compliance certificates at appropriate times and frequency as stipulated by Authorities having jurisdiction.
- .2 Post permits, licenses and compliance certificates at Work Site.
- .3 Where a particular permit or compliance certificate cannot be obtained, notify *Departmental Representative* in writing and obtain approval to proceed before carrying out applicable portion of work.

1.10 Hazard Assessments

- .1 Perform site-specific health and safety hazard assessment of the Work and its site.
- .2 Carry out initial assessment prior to start of Work with further assessments as needed during progress of Work.
- .3 On-going hazard assessments performed during the progress of work identifying new or potential health risks and safety hazards not previously known. At a minimum, hazard assessments shall be carried out

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when:

- .1 New sub-trade work, new subcontractor(s) or new workers arrive at the site to commence another portion of the work.
- .2 The scope of work has been changed by Change Order.
- .3 Potential hazard or weakness in current health and safety practices are identified by *Departmental Representative* or by an authorized safety representative.
- .4 Hazard assessments to be project and site specific and based on review of the Contract Documents, site conditions and weather conditions. Record results and address in Health and Safety Plan.
- .5 Each hazard assessment shall be made in writing. Keep documentation on site for entire duration of the Work.

1.11 Project/Site Conditions

- .1 There are no known hazardous or controlled products stored on site.
- .2 The following are known or potential project-related safety hazards at site:
 - .1 Overhead and underground electrical lines;
 - .2 Working over water;
 - .3 Working under water;
 - .4 Vehicle traffic;
 - .5 Pedestrian traffic;
 - .6 Vessel traffic;
 - .5 Slip and fall hazards;
 - .6 Debris;
 - .7 Noise;
 - .8 Adverse weather;
 - .9 Heavy equipment operation and stability
- .3 Include above items in the hazard assessment of the Work Site.

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- .4 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered as a result of Contractor's operations during the course of work.

1.12 Meetings

- .1 Attend pre-construction health and safety meeting, convened and chaired by *Departmental Representative*, prior to commencement of Work, at time, date and location determined by *Departmental Representative*. Ensure attendance of:
 - .1 Superintendent of Work
 - .2 Designated Health & Safety Site Representative
 - .3 Subcontractors
- .2 Provide site safety orientation session to all workers and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the minimum site safety rules in force at site.
- .3 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.
- .4 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
 - .1 Progress of Work.
 - .2 New sub-trades arriving on site.
 - .3 Changes in site and project conditions.
- .5 Keep documents on site.

1.13 Health and Safety Plan

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

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- .2 Health and Safety Plan shall include the following components:
 - .1 **Part 1:** - List of individual health risks and safety hazards identified by hazard assessment(s).
 - .2 **Part 2:** - List of specific measures to control or mitigate each hazard and risk identified in Part 1 of Plan. Describe the engineering controls, safe job procedures, and safe work practices and personal protective equipment to be implemented and followed when performing work related to each identified hazard or risk.
 - .3 **Part 3:** - Emergency Measures and Communication Plan and Procedures as follows:

Emergency Measures:

- .1 On site operational procedures, evacuation measures and emergency response to be implemented in the event of an occurrence of an accident or incident.
- .2 Evacuation Plan: site plan layouts showing escape routes, marshalling areas and muster stations. Details on alarm notification methods, fire drills, location of fire-fighting equipment and other related data. Harmonize Plan with facility's Emergency Response and Evacuation Plan. *Departmental Representative* will provide pertinent data including facility management contacts.

Communication Plan and Procedures

- .1 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
- .2 Emergency Contacts: name and telephone number of officials from:

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- .1 General Contractor and subcontractors.
 - .2 Pertinent federal and provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .3 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .4 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.
 - .5 Procedures for sharing of work-related safety information to workers and subcontractors, including emergency and evacuation measures.
 - .6 List of critical construction activities to be communicated with the Facility Manager and designated Harbour Authority representative(s) which could affect facility and user operations, or pose a risk to the health and safety of their employees and to the general public.
- .3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

Column 1	Column 2	Column 3
Identified Hazard	Control Measures Implemented	Emergency Measures and Communication Procedures

- .4 Develop Health and Safety Plan in

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collaboration with all Subcontractors. Address all work and activities of Subcontractors as they arrive on site. Immediately update Plan and submit to *Departmental Representative*.

- .5 Implement, maintain and enforce compliance with requirements of the Health and Safety Plan until final completion of work and demobilization from site.
- .6 As work progresses, review and update Plan addressing additional health risks and safety hazards identified by on-going hazard assessments.
- .7 Submit revised versions of Plan to *Departmental Representative*.
- .8 Post a typed written copy, including all updates, of the Health and Safety Plan in a common visible location at work site.
- .9 Submission of the Health and Safety Plan, and updates, to the *Departmental Representative* is for review and information purposes only. Its submission shall not be construed to imply approval by *Departmental Representative*, be interpreted as a warranty of being complete, accurate or legislative compliant and shall not relieve the Contractor of legal obligations for the provision of Health and Safety on the construction project..

1.14 Safety Supervision

- .1 Employ Health and Safety Site Representative responsible for daily supervision of health and safety of the Work.
- .2 Health and Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority

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to:

- .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work.
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
- .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
- .4 All supervisory personnel assigned to the Work shall also be competent persons.
- .5 Inspections:
- .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken. Follow-up and ensure corrective measures are taken.
- .6 Cooperate with facility's Occupational Health and Safety representative, should one be designated by *Departmental Representative*.
- .7 Keep inspection reports and supervision related documentation on site.

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Health and Safety Requirements**Page 13**1.15 Training

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to *Departmental Representative* upon request.
- .3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise *Departmental Representative* verbally and in writing.

1.16 Minimum Site Safety Rules

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
 - .1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety glasses and hearing protection.
 - .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
 - .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
 - .4 Obey warning signs and safety tags.
- .2 The following actions or conduct by Contractor, workers and Subcontractors shall be considered as non-conformance with the health and safety requirements of the contract for which a Non-Compliance Notification will be issued to the General Contractor by the *Departmental*

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- .1 Failure to follow the minimum site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
 - .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.
 - .4 Falsification of information in Workers' Compensation Reports, safety reports or other health and safety related documents submitted to *Departmental Representative* or to Authority Having Jurisdiction.
 - .5 Possession of firearms on site.
 - .6 Possession of non-prescriptive illegal drugs or alcohol.
 - .7 Action, or lack thereof, resulting in the issuance of warnings, fines or stop work orders from an Authority Having Jurisdiction.
 - .8 Violation of other specified health and safety rules and requirements as determined by the *Departmental Representative*.
-
- .3 The final decision as to what constitutes a safety violation or non-compliance issue will be made by *Departmental Representative*.
 - .4 Brief workers on site safety rules and on the disciplinary measures to be taken for violation or non-compliance of such rules. Post such information on site.
-
- 1.17 Correction of Non-Compliance
 - .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by *Departmental Representative*.
 - .2 Provide *Departmental Representative* with written report of action taken to correct non-compliance of health and safety issues identified.

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- .3 *Departmental Representative* will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.
- 1.18 Incident Reporting
- .1 Investigate and report the following incidents to *Departmental Representative*:
 - .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory agency.
 - .2 Medical aid injuries.
 - .3 Property damage in excess of \$10,000.00,
 - .4 Interruptions to facility operations resulting in an operational lost to a Federal department in excess of \$5,000.00.
 - .2 Submit report in writing.
- 1.19 Tools and Equipment Safety
- .1 Implement and follow a scheduled tool and equipment inspection/maintenance program at the work site. Regularly check tools, equipment and machinery for safe operation and perform maintenance at pre-established time and frequency intervals as recommended by manufacturer. Include Subcontractor's equipment as part of the inspection process.
 - .2 Do not modify tools or remove guards or safety devices.
 - .3 Use appropriate PPE including safety glasses, safety goggles, gloves and hearing protection.
 - .4 Use standardized checklists to ensure established safety checks are stringently followed.
 - .5 Immediately tag and remove items found

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Health and Safety Requirements**Page 16**

faulty or defective off site.

- .6 Maintain written documentation on each inspection. Make available to *Departmental Representative* upon request.

1.20 Hazardous Products

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to *Departmental Representative*

1.21 Confined Spaces

- .1 Abide by occupational health and safety regulations regarding work in confined spaces.

1.22 Site Records

- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to *Departmental Representative* or authorized Safety Officer for inspection.

1.23 Posting of Documents

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
 - .1 Site-specific Health and Safety Plan
 - .2 WHMIS data sheets

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

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Temporary Facilities

Page 1

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|-----|------------------------------------|----|---|
| 1.1 | <u>Access</u> | .1 | Provide and maintain adequate access to project site. |
| | | .2 | If authorized to use existing roads or structures for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads. |
| | | .3 | The contractor is to maintain full access to the work site. Should a court injunction be required ordering a person or group to refrain from impeding access to the site, such as a demonstration, picketing or union action, then obtaining the injunction and any associated costs will be considered incidental to this contract. Any delays associated with such activity will be considered incidental to this contract. |
| 1.2 | Contractor's Site
<u>Office</u> | .1 | Not required. |
| | | .2 | Keep on site a copy of contract documents, all letters, orders, notices and other communications as well as all other materials as specified under Section 01 10 10. |
| 1.3 | <u>Storage Sheds</u> | .1 | Provide adequate weather tight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather. |
| | | .2 | Contractor to make his own arrangements for on-site storage areas. |
| 1.4 | <u>Sanitary Facilities</u> | .1 | Provide sanitary facilities for work force in accordance with governing regulations and ordinances. |
| | | .2 | Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. |

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Temporary Facilities

Page 2

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|-----|----------------------------------|----|--|
| 1.5 | <u>Parking</u> | .1 | Contractor to make own arrangements to provide parking space for work force. |
| 1.6 | <u>Power</u> | .1 | Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances. |
| | | .2 | Install temporary facilities for power such as poles, lines and cables to approval of local electric utility. |
| 1.7 | <u>Barricades</u> | .1 | Provide and maintain sufficient barricades, fencing, notices, warning signs, light signals, etc. for the protection of adjoining property and to warn others and workmen engaged on the job of the dangers caused by the work. |
| | | .2 | Types and location of barricades, etc. to be in accordance with local regulations and to the satisfaction of <i>Departmental Representative</i> . |
| | | .3 | The presence of such barricades, lights, etc. shall not relieve the Contractor of the responsibility for any damages. |
| 1.8 | <u>Security</u> | .1 | Contractor to make his own arrangements for security of his equipment, materials, damages resulting from fire and theft. |
| 1.9 | Site Signs and
<u>Notices</u> | .1 | Only Project Identification and Consultant/ Contractor signboards and notices for safety or instruction are permitted on site. |
| | | .2 | Format, location and quantity of site signs and notices to be accepted by <i>Departmental Representative</i> . |
| | | .3 | Signs and notices for safety or instruction to be in English and French languages, or commonly understood graphic symbols. |

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Temporary Facilities

1.10 Removal of
Temporary
Facilities

- .1 Remove temporary facilities from site when directed by *Departmental Representative*.
- .2 If project is closed down for a period of time, keep temporary facilities operational until no longer required by *Departmental Representative*.

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

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Material and Equipment

Page 1

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- 1.1 General
- .1 Use new material and equipment unless otherwise specified.
 - .2 Submit following information for any or all materials and products proposed for supply within 7 days of request by *Departmental Representative*:
 - .1 name and address of manufacturer
 - .2 trade name, model and catalogue number
 - .3 performance, descriptive and test data
 - .4 manufacturer's installation or application instructions
 - .5 evidence of arrangements to procure.
 - .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
 - .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- 1.2 Manufacturer's Instructions
- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
 - .2 Notify *Departmental Representative* in writing of any conflict between these specifications and manufacturer's instructions. *Departmental Representative* will designate which document is to be followed.
- 1.3 Delivery and Storage
- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seal and labels intact.
 - .2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage.

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Material and Equipment

Page 2

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- Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with supplier's instructions.
- 1.4 Conformance
- .1 When material or equipment is specified by standard or performance specifications, upon request of *Departmental Representative*, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.
- 1.5 Substitution
- .1 Proposals for substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by *Departmental Representative* if:
- .1 Products selected by tenderer from those specified, are not available, or
- .2 Delivery date of products from those specified would unduly delay completion of Contract, or
- .3 Alternative products to those specified, which are brought to attention of, and considered by *Departmental Representative* as equivalent to those specified and will result in a credit to Contract amount.
- .3 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.

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Material and Equipment

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- .4 Amounts of all credits arising from approval of substitutions will be determined by *Departmental Representative* and Contract price will be reduced accordingly. No substitutions will be permitted without prior written approval of *Departmental Representative*.
- .5 Owner reserves the right for acceptance or rejection of substitution of materials.
- 1.6 Construction Equipment and Plant
- .1 On request, prove to the satisfaction of *Departmental Representative* that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order.
- 1.7 Damaged and Rejected Materials
- .1 Immediately replace, repair or otherwise make good any material damaged, broken or defaced during construction to the satisfaction of *Departmental Representative*.
- .2 Remove rejected materials from site.

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

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Cleaning

1.1 General

- .1 Conduct cleaning and disposal operations to comply with ordinances and laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Prevent accumulation of waste which create hazardous conditions.

1.2 Cleaning During Construction

- .1 Maintain the work, at least on a daily basis free from accumulations of waste material and debris.
- .2 Provide on-site containers for collection of waste materials, and debris.
- .3 Remove all waste and debris from site.
- .4 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet concrete or newly painted surfaces.

1.3 Final Cleaning

- .1 In preparation for acceptance of the project on an interim or final certificate of completion perform final cleaning.
- .2 Remove grease, dust, dirt, stains, and other foreign materials from finished surface.
- .3 Remove surplus materials, rubbish, tools and equipment.

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

Floating Wharves Construction and Installation**Petit-de-Grat****Richmond County, NS****Project No.: C2-00397**PART 1 - GENERAL1.1 Reference Standards

- .1 ASTM A123/A123 M-13 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products (with minimum zinc coating of 600 g/m²).
- .2 ASTM A307-14, Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
- .3 ASTM B111-1974 (or latest edition), Wire Nails, Spikes and Staples.
- .4 CAN/CSA-G40.21-13, Structural Quality Steels.
- .5 CAN/CGSB-1.181-1999 (or latest edition), Ready-Mixed Organic Zinc-Rich Coating.
- .6 CAN/CSA-S16-14, Design of Steel Structures.
- .7 CSA G164, Hot Dip Galvanizing of Irregularly Shaped Articles
- .8 CSA W59-13, Welded Steel Construction (Metal Arc Welding).
- .9 CSA-W47.2-11, Certification of companies for fusion welding of aluminum.

1.2 Shop Drawings

- .1 Submit shop drawings for all items not detailed on the plans in accordance with Section 01 33 00.
- .2 Contractor is responsible to review project plans for accuracy of the detail dimensions, general fit-up of parts to be assembled, adequacy of proposed methods and procedures or for errors or defects contained in the details.

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Metals and Metal Fabrication

Page 2

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- .3 Indicate materials, core thicknesses, finishes, connections, joint, method of anchorage, number of anchors, supports, reinforcement, details and accessories.
- .4 It is the responsibility of Contractor to field confirm the exact locations and construction of related work to which work under this section connects to, or is supported on.
- 1.3 Measurement for Payment .1 There will be no measurement for payment for this section. Include costs in items for which metals and metal fabrication is required.
- 1.4 Source Quality Control .1 The Contractor is to provide written documentation from the Canadian Welding Bureau certifying that all welders used for this work are qualified to the requirements of CSA-W47.1, Division 1 or 2.1 and CSA-W47.2.
- 1.5 Quality Assurance .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- PART 2 - PRODUCTS
- 2.1 Materials .1 All steel will be hot-dipped galvanized unless otherwise indicated.
- .2 Steel Sections: to CAN3-G40.21, Grade 350W.

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Metals and Metal Fabrication

Page 3

- .3 Steel plates and angles: to CAN#-G40.21, Grade 300W.
- .4 Welding materials: to CSA W59.
- .5 Bolts and anchor bolts: to ASTM A307.
- .6 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to ASTM A123/A123M.
- .7 Zinc primer: Zinc rich, ready mix to CGSB 1-GP-181.
- .8 Aluminum to consist of 6061-T6 Marine grade alloy.
- .9 Aluminum welding to be MIG welding with S356 filling alloy in accordance with CAS W47.2-M procedure.
- .10 Do not use items manufactured or fabricated from scrap steel of unknown chemical composition or physical properties.

2.2 Fabrication

- .1 Build work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Fabricate items from steel unless otherwise noted.
- .3 Where possible, fit and shop assemble work, ready for installation.
- .4 Ensure exposed welds are continuous for length. File or grind exposed welds smooth and flush.

2.3 Miscellaneous Metal Work Items

- .1 Miscellaneous anchors, bolts and inserts:
 - .1 Where size, spacing and the like are not indicated, provide as necessary for the purpose.
 - .2 Galvanize all miscellaneous anchors, bolts and inserts.
- .2 Miscellaneous Steel:
 - .1 Provide miscellaneous steel as required for guide units and the like

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to the shape, size and details required.

- .2 Galvanize all miscellaneous steel.

PART 3 - EXECUTION

3.1 General

- .1 Do steel work in accordance with CAN/CSA-S16.
- .2 Do welding work in accordance with CSA W47.1 and CSA W47.2 unless specified otherwise.
- .3 Erect metal work square, plumb, square, and true, accurately fitted, with tight joints and intersections.

3.2 Welding Inspection

- .1 The Contractor is responsible to assure that materials, fabrication, and examination procedures for all welding conforms to CSA W59 and W59.2.

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

PART 1 - GENERAL

- 1.1 Reference Standards
- .1 CAN/CSA-080 Series 08(R2012) Wood Preservation
 - .2 CSA 086-14, Engineering Design in Wood (Limit States Design)
 - .3 Copper naphthenate containing 2% copper for brush or spray treatment for field cuts
 - .4 NLGA standard grading rules for Canadian Lumber 2013 edition or most recent edition at time of tendering
- 1.2 Submittals
- .1 Submit product details for field treatment.
 - .2 Provide methodology pertaining to heating, handling and application of field treatment.
 - .3 Submit product details for non-shrink grout.
 - .3 Provide submissions in accordance with Section 01 33 00 - Submittal Procedures
- 1.3 Measurement for Payment
- .1 There will be no measurement for payment for this section. Include the supply and installation of treated timber into items for which treated timber is required.
 - .2 Supply and application of field applied preservative and non-shrink grout shall not be measured separately but shall be considered incidental to the Work.
 - .3 Fabrication, supply and installation of all bolts, washers, nuts, hardware, etc., shall not be measured but shall be considered incidental to the Work.

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Dimension Timber/Utility Poles

Page 2

PART 2 - PRODUCTS2.1 Materials

- .1 Softwood Dimension Timber:
 - .1 Sound seasoned wood with ends square.
 - .2 Dimensions as indicated on the contract drawings including chamfering and beveling as indicated.
 - .3 Straight, free from loose knots, sweep, shakes, excessive wane, rot and checks.
 - .4 Grade 1 to National Lumber Grading Authority (NLGA) Species: Eastern Hemlock, Western Hemlock or Douglas Fir.

- .2 Timber Treatment:
 - .1 All timber to be treated with CCA (chromated copper arsenate) preservatives in accordance with CSA O80 Series 15, water borne salt preservative (24 kg/m³). 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.
 - .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.

PART 3 - EXECUTION

3.1 General

- .1 Supply and install dimension timbers to details shown on drawings or 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 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 from the head of the bolt and shall receive two coats of copper naphthenate, allowing sufficient time between applications to permit total absorption. The cost of supply and application of copper naphthenate will not be measured for payment but will be considered incidental to the work.
- .4 Apply non-shrink grout to all countersunk holes on the timber guard.
- .5 Install utility poles as indicated and to utility standards.

3.2 Protecting 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

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Dimension Timber/Utility Poles

grabs, chains or steel cables.

- 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 copper naphthenate, 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 Apply field treatment to dry surfaces, wherever possible.
 - .4 Treat boreholes, using a pressurized spray applicator 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 of preservative, using either spray or brush.
 - .6 Environmental Concern: Ensure no spillage or excess application of field preservative. Provide employees with sufficient training and PPE to properly and safely handle the treated materials and to apply field treatment, so as to prevent undue hazard to themselves, others, or the environments.
 - .8 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.

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Dimension Timber/Utility Poles

3.4 "Plastic Wood"
Decking

.1 **To be supplied by contractor.**

.2 "Plastic Wood" is to be utilized for decking on specified floats only. It is to be 1-1/2"x5-1/2"x9'. It shall contain approximately 25-50% recycled fishing rope.

.3 Suggested supplier- Goodwood Plastic Ltd.

.4 Contact: Mike Chassie (902) 221-1049

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

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Buoyancy Billets

Page 1

PART 1 - GENERAL

- 1.1 Reference Standards .1 All material shall be new, best quality and meet all CSA or other applicable performance standards.
- 1.2 Submittals .1 Submit product details for buoyancy billets.
- .3 Provide submissions in accordance with Section 01 33 00 - Submittal Procedures
- 1.3 Measurement for Payment .1 There will be no measurement for payment for this section. Include the supply and installation of buoyancy billets into items for which buoyancy billets are required.

PART 2 - MATERIALS

- 2.1 Materials .1 Billets moulded from 3.8 mm (0.150") thick polyethylene resin (minimum wall thickness).
- .2 Billet filled with minimum 32 kgs/m³ (2.0 lbs./ft³) closed cell high density flotation foam.
- .3 Billet completely seamless and sealed to prevent ingress of water.
- .4 Billet coating resistant to salt water, diluted concentrations of oil and grease, and ultra violet radiation.
- .5 Billet coating resilient to high abrasion, damage by animals, impact from handling, and chemicals.
- .6 Ambient temperature range: -35°C to 40°C.

PART 3 - EXECUTION

- 3.1 General .1 Install buoyancy billets to details shown on drawings or as specified.

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Buoyancy Billets

3.2 Handling

- .1 Buoyancy billets to be completely be protected during handling, shipping, offloading and field handling, by use of suitable equipment and procedures.
- .2 Any damaged buoyancy billets to be replaced by the Contractor.

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

Floating Wharfs Construction and Installation**Petit-de-Grat****Richmond County, NS****Project No.: C2-00397**

Sitework, Demolition and Removals

PART 1 - GENERAL

- 1.1 Description of Work .1 This Section includes but is not limited to the following:
.1 All normal demolition and removals as required to complete the work in accordance with the plans and these specifications.
- 1.2 Related Work .1 Refer to other specification sections for related information.
- 1.3 Submissions .1 Methodology:
.1 If requested by *Departmental Representative*, provide methodology for carrying out the work, provide submission in accordance with Section 01 33 00.
- 1.4 Protection .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 *Departmental Representative* and at no additional cost to *Departmental Representative*.
.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 *Departmental Representative*.
- 1.5 Measurement for Payment .1 Sitework, demolition and removals will be measured in accordance with Section 01 29 00.

PART 2 - PRODUCTS

Not applicable.

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PART 3 - EXECUTION

- 3.1 Preparation
 - .1 Inspect site and verify with *Departmental Representative* items designated for removal and items to be preserved.
 - .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.
 - .3 Provide temporary power and lighting as shown on the plan or as required by the *Departmental Representative*.
- 3.2 Removal
 - .1 Remove all items as indicated.
 - .2 Do not disturb adjacent structures designated to remain in place.
 - .3 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 All material to be transported and disposed of in an environmentally acceptable manner to the satisfaction of the *Departmental Representative*, and in accordance with any provincial, federal, or municipal regulations or by-laws.
- 3.4 Restoration
 - .1 Upon completion of work, remove debris, trim surfaces and leave work site clean.
 - .2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work. Match condition of adjacent, undisturbed areas.