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SPECIFICATIONS

POWELL RIVER SOUTH FLOAT & WHARF RECONSTRUCTION 2018

FISHERIES AND OCEANS CANADA
SMALL CRAFT HARBOURS – PACIFIC REGION

200 – 401 Burrard Street
Vancouver, British Columbia
V6C 3S4

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END OF SECTION

1 SITE LOCATION

- .1 Powell River Small Craft Harbours site is located at 6790 Wharf St, Powell River, BC, V8A 1T9.

2 WORK SCHEDULE

- .1 All work including site clean-up and demobilization must be completed by March 18, 2019. Refer to Section 01 13 00 for General Requirements.

3 DEFINITIONS

- .1 **“Owner”**: Small Craft Harbours Program of the Department of Fisheries and Oceans, 200-401 Burrard Street Vancouver B.C. V6C 3S4
- .2 **“Contracting Authority”**: Real Property Contracting Acquisitions and Compensation / Pacific Region, Public Works and Government Services Canada.
- .3 **“Harbour Authority (HA)”**: City of Powell River, 6790 Wharf St, Powell River, BC, V8A 1T9
- .4 **“Engineer”**: Employee(s) that represents the Owner for this project.
- .5 **“Contractor”**: The party accepted by the Owner with whom a formal contract is entered to complete the work of this project.
- .6 **“Replacement”**: Removal and disposal of existing component including treated timber, hardware and fasteners. Installation of new component including supply and installation of new hardware and fasteners, drilling, field fitting and field treating as required.

4 WORK INCLUDED

- .1 In general, the nature of work consists of light timber float and timber wharf repairs in the Powell River South Harbours. Refer to the drawings for detailed work scope and its associated location.
- .2 General work to be performed under this contract includes, but is not limited to:
 - .1 **Timber Float repairs:**
 - .1 Replacement of **ALL** floats bull rails, risers, rubboard, ladder, flange blockings, and of **ALL** bolt and washer hardware as outline in the drawings and the work breakdown found in APPENDIX A.
 - .2 Replacement **SOME** floats flanges, pontoons, decking, pile wells complete with rub wear UHMW as outline in the drawings and work breakdown in



APPENDIX A.

.2 Timber Wharf repairs:

- .1 Replacement of **ALL** decking, handrails and timber curbs (wheel guard).
- .3 Supply of miscellaneous materials.
- .4 Site cleanup and disposal.
- .3 A list of Owner supplied materials is provided in Section 01 13 00. Owner supplied materials will be accessible at Owner specified laydown area on site, to be determined after award.
- .4 All labour, equipment and materials shall conform to Technical Specifications herein.

END OF SECTION

1 MOBILIZATION / DEMOBILIZATION:

- .1 The lump sum cost for this item shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Move all crew, equipment/tools and materials on and off site.
 - .2 All crew living expenses and other associated costs.
 - .3 Any overhead costs not covered in other items.
 - .4 Site clean-up and disposal of all demolished materials, including but not limited to: hardware, treated timber, and general waste.

2 TIMBER FLOAT RECONSTRUCTION:

- .1 GENERAL
 - .1 The unit cost for the items shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Scope of work listed in the Schedule of Quantities and Prices.
 - .2 Use Owner supplied treated timber and galvanized hardware. Refer to SECTION 01 13 00 for list of Owner supplied materials.
 - .3 All materials not identified in SECTION 01 13 00 required to complete the work must be provided by the Contractor.
 - .4 Cut, drill and field treat all timber to match original length and drill pattern of existing float structure in accordance to SECTION 00 61 00 and SECTION 00 99 00.
 - .5 Maintain general site access and safety as per Section 01 15 00.
- .2 MEASUREMENT OF PAYMENT
 - .1 Item No. 2: TIMBER BULLRAIL W/RISER REPLACEMENT
 - .1 Payment will be made on the basis of per linear meter timber bull rail replaced. Risers and bull rail bolts replacement are to be incidental of bull rail replaced.



- .2 Owner to supply 4"x6" ACZA treated timber and ¾" galvanized hex bolt for the bull rail and the riser installation.
 - .3 Cut, drill and field treat timber to match float perimeter and it is expected to re-use the existing holes of the float.
- .2 Item No. 3: TIMBER FLANGE REPLACEMENT
- .1 Payment will be made on the basis of per linear meter timber flange replaced. Hardware replacement are to be incidental of the timber flange replaced.
 - .2 Owner to supply 6"x8" creosote treated timber and ¾" galvanized hex bolt for the flange installation.
 - .3 Cut into lengths, drill holes to match existing hole pattern and field treat timber according to Section 00 99 00.
- .3 Item No. 4: TIMBER FLANGE BLOCKING REPLACEMENT
- .1 Payment will be made on the basis of per location of blocking replaced. Each location has two (2) 6"x8" blockings (upper and lower) fastened with four (4) bolts as shown in the drawings.
 - .2 Owner to supply 6"x8"x3' creosote treated timber blocking and ¾" galvanized hex bolt for the flange blocking replacement.
- .4 Item No. 5: TIMBER RUBBOARD REPLACEMENT
- .1 Payment will be made on the basis of per linear meter of timber rubboard replaced.
 - .2 Owner to supply 2"x12" ACZA treated timber for the rubboard replacement.
 - .3 Cut into lengths and field treat timber according to Section 00 99 00.
 - .4 Contract to supply own hardware to install the rubboard according to Section 00 51 00.
- .5 Item No. 6: TIMBER DECKING REPLACEMENT
- .1 Payment will be made on the basis of number of timber plank replaced.
 - .2 Owner to supply ACZA 2"x12"x 8ft timber decking.



- .3 Contractor to supply on hardware to install decking according to Section 00 51 00.
- .6 Item No. 7: TIMBER PILE WELL REPLACEMENT
- .1 Payment will be made on the basis of number of complete pile well replaced.
- .2 One (1) Pile well consist of 4"x6" timber guard on risers complete with UHMW on all four (4) sides with countersunk bolts as per DWG 56138-008.
- .3 Owner to supply 4"x6" ACZA treated timber for the pile well.
- .4 Contractor to supply the UHMW and the hardware for pile well installation.
- .7 Item No. 8: FLANGE BOLT REPLACEMENT
- .1 Payment will be made as unit price to replace all flange bolt for all the floats, not counting item no.3 above.
- .2 It is estimated 650 pcs of Flange bolt throughout the float.
- .3 Owner to supply all Flange bolt with nuts and washers.
- .8 Item No. 9: STRINGER SPLICE BOLT REPLACEMENT
- .1 Payment will be made on the basis of number of stinger splice bolt replacement.
- .2 It is estimated 400 pcs of Stringer Splice bolt to be replaced throughout the float.
- .3 Owner to supply all Stringer splice bolt with nuts and washers.
- .9 Item No. 10: FLOAT LADDER REPLACEMENT/INSTALL
- .1 Payment will be made on the basis of number of complete ladder installed.
- .2 There are 6 existing timber ladder that needs to be replaced, and additional 10 ladder to be installed as per drawing layout.
- .3 Owner to supply sixteen (16) yellow painted ladders with Installation Kits.
- .10 Item No. 11: FLOATATION REPLACEMENT
- .1 Payment will be made on the basis of number of floatation replaced.



- .2 There are five (5) of the fibreglass pontoons and five (5) of the Aqua-Can pontoons to be replaced.
- .3 Supply and install 102mm (4") wide nylon webbing and 316 grade SS hardware as specified in Section 00 51 00 to secure the pontoon.

3 TIMBER WHARF RECONSTRUCTION:

- .1 The lump sum cost for this item shall include the supply of materials, equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Item No. 12: Remove and Reinstall ALL wharf timber decking. Wharf timber decking remains Owner's property. Stacked neatly in the parking lot nearby. No disposal of Wharf Decking.
 - .2 Item No. 13: Replacement ALL timber wheel guard and timber hand railing.
 - .3 Contractor must temporary relocate existing derrick and light pole on the timber wharf to complete decking underneath derrick.
 - .4 Cut, drill and field treat the ACZA treated timber on site in accordance to Section 00 99 00.
 - .5 Contractor to supply all required material and hardware for the work.
 - .6 Provide barricade to prevent public vehicles on the wharf and fencing at wharf leading edge during handrail demolition/construction.
 - .7 Maintain general site access and safety as per Section 01 15 00.

4 MISCELLANEOUS:

- .1 "3 person carpenter crew with tools"
 - .1 The unit cost per person ON-SITE shall include the supply of equipment, tools, services, and labour to perform light timber structure construction/demolition.
 - .2 Contractor is required to seek Owner's approval if more or less than three (3) person are required to perform a specific tasks that is considered as extra.

END OF SECTION



1 LOCATION

- .1 For tendering purposes, assume OWNER SUPPLIED MATERIALS will be brought to the parking area at Powell River Harbour.

2 HANDLING & USAGE

- .1 The Contractor shall be responsible for handling and transporting the materials around site. The contractors are expected to treat Owner supplied material with care.
- .2 Optimize usage and minimize wastage of Owner supplied material. Additional timber required to perform the work due to unnecessary wastage will be supplied by the Contractor.

3 OWNER SUPPLIED MATERIALS

- .1 All other materials required to complete the work that are not listed below shall be supplied by the Contractor (such as but not limited to lag screw, UHMW, ARDOX nails).
- .2 Additional quantity of the material listed below will be considered as extra.

.1 FLOATATION

- .1 Five (5) 2'x2'x4' Aqua-Can flotations.
- .2 Five (5) 2'x4'x8' fibreglass pontoons. Full Size Fibreglass Pontoon Frame typical shop drawings can be found in APPENDIX C.

.2 TREATED TIMBER

- .1 The Contractor shall field cut, drill and treat timber as required to complete the work in accordance to the Contract drawings and specifications.
- .2 The Owner shall supply treated timber required for replacement of bull rail, risers, pile well, flanges, flange blockings as listed in the table below.

Timber	Supply Length (ft)	Treatment	Approximate Quantity (pcs)	Use
4"x6"	20	ACZA	218	Bull rail, Riser, Pile Well
2"x12"	24	ACZA	125	Rub board
2"x12"	8	ACZA	635	Float Decking
6"x6"	3	Creosote	220	Flange Blockings
6"x8"	22	Creosote	15	Flange
6"x8"	30	Creosote	5	Flange

Table 1: Owner supply timber material



.3 HARDWARE

- .1 ¾" Hot dipped galvanized bolt at various length with nuts and washers to fasten the different components of the timber float. List of various bolt lengths and approximate quantity supplied listed in table below.

List of Bolts	Approximate Quantity (Pcs)
BULLRAIL BOLT	600
FLANGE BOLT	650
FLANGE SPLICE BOLT	392
STRINGER SPLICE BOLT	392

Table 2: ¾" Galvanized Hex Bolt Owner Supply

.4 LADDER

- .1 Sixteen (16) pcs 6ft long yellow steel ladder with Installation Kits.
- .2 Refer to APPENDIX B for ladder detail and installation guidelines.
- .3 Any damage to the ladder (structurally and/or paint) caused by the Contractor will be repaired or replaced by the Contractor at own cost.

.5 PONTOONS

- .1 Five (5) pcs of 2'x4'x8' Fibreglass Floatation. Refer to APPENDIX C for typical Fibreglass Flotation drawings.
- .2 Five (5) pcs of 2'x2'x4' Aqua-Can Floatation.

END OF SECTION



1 COMMENCEMENT AND COMPLETION

- .1 Work shall commence upon **Contract Award**.
- .2 All work including clean-up and demobilization must be completed **by March 18, 2019**.

2 INSPECTION OF SITE

- .1 It is the responsibility of each bidder to obtain all necessary information pertaining to local site conditions and existing works, beyond the information provided in this Specification and accompanying drawing(s).

3 PERMITS, CERTIFICATES, LAWS AND ORDINANCES

- .1 The Contractor must, at his own expense, procure all permits, certificates and licenses required of him by law for the execution of his work under this contract.
- .2 The shall comply with all Federal, Provincial or Municipal laws, ordinances or rules and regulations relating to the performance of his work and in force during the duration of this contract.
- .3 The Contractor is required to give all required notices, comply with all local, municipal, provincial, and federal laws, ordinances, codes, by-laws, rules and regulations relating to the work.
- .4 All work to be done in accordance with Work Safe BC regulations.
- .5 The Contractor shall comply with Federal and Provincial laws, orders and regulations concerning the control and abatement of water and air pollution.
- .6 The Contractor shall comply with the requirements of any local or other Noise By-Laws.

4 MINIMUM STANDARDS

- .1 In the absence of other standards specified in the contract documents, all work is to conform to, or exceed, the minimum standards of the Canadian Government Specifications Boards, the Canadian Standards Association, the American Society for Testing of Materials, or the National Building Code of Canada, whichever is applicable.
- .2 All work to be done in accordance with Work Safe BC regulations.

5 INTERFERENCE WITH OPERATION



- .1 The Contractor shall obey all navigation regulations and conduct operations so as to interfere as little as possible with the use of berthing spaces, fairways and passages.
- .2 During the course of construction and clean-up, do not dispose of surplus, waste or demolished materials in navigable waters.
- .3 The Contractor shall upon instruction of the Owner or Engineer, promptly remove any of the Contractor's equipment located outside the specified work area and obstructing any harbour operation.

6 COMPLIANCE WITH STANDARD SPECIFICATIONS CODES AND REGULATIONS

- .1 Unless expressly stated to the contrary, all materials, equipment and articles furnished by the Contractor shall comply with the applicable provisions of the standards of the Canadian Standards Association (CSA) or the Canadian Government Specification Board (CGSB) with the applicable provisions of the American Society for Testing Materials (ASTM), National Dredging Association (NFPA), American Concrete Institute (ACI) and the American Water Works Association (AWWA).
- .2 The Contractor shall follow all regulations in accordance with the Fisheries Act. Care shall be taken not to release any deleterious materials to fish habitat, into the water.
- .3 All work to be done in accordance with Work Safe BC regulations.

7 CONTRACTOR'S PERSONNEL

- .1 The Contractor's representative on site shall be completely familiar with the method of work to be employed. Such personnel shall remain on site for the duration of the work.

8 RESPONSIBILITY TO PERSONNEL

- .1 The Contractor shall have full responsibility for the board, lodging and transportation of his personnel and subcontractors. The cost for this shall be incorporated into his unit prices. He shall comply with all labor requirements, and Worker's Compensation regulations.

9 BARRIERS, LIGHTS AND WATCHING

- .1 The Contractor shall provide all requisite barriers, fences, warning signs, lights and watching for the protection of persons and property on or adjacent to the site.

10 SITE ACCESS

- .1 The Contractor shall provide access to the work for the Owner's inspectors and surveyors as required.



- .2 General site access shall be coordinated with the Owner.
- .3 The Contractor shall maintain routes of travel, with the Owner being the sole judge as to what may be deemed reasonable.
- .4 The Contractor shall erect and maintain barriers, fences, lights, warning devices, and other protective devices as may be required for prevention of theft or damage of goods and protection of the public and workmen, or if so ordered by the Owner.

11 CONSTRUCTION AREA

- .1 The Contractor shall regulate construction traffic on public areas and comply with all local ordinances in connection therewith, including load limitation and removal of debris.
- .2 The Contractor shall confine his operations on the site to those areas actually required for the work including routes and regulations approved by the Owner for haulage of materials.

12 NIGHT WORK

- .1 The Contractor shall keep proper lights each night between the hours of sunset and sunrise upon all floating plants, false-work and other obstructions where necessary, and upon all buoys of such size and in such locations as required by a governing authority.
- .2 When work is done at night, maintain from sunset to sunrise such lights on or about the work and plant as necessary for the proper observation of the work and the efficient prosecution thereof.

13 CLEAN-UP

- .1 At all times the Contractor shall keep the site free from accumulation of waste material and debris and leave the site clean and tidy on completion.

14 TEMPORARY SERVICES

- .1 On site the Contractor shall make his own arrangements for supply of water and electricity.
- .2 The Contractor shall supply for his own use; sanitary, first aid, and all other temporary services and facilities required for the work.

15 PROGRESS REPORT



- .1 The Contractor shall keep a daily record of progress of the work available for inspection by the Engineer.
- .2 The daily record shall include particulars of weather conditions, number of men working, plant and equipment working and work performed.

16 PERMITS AND ROYALTIES

- .1 Permits and licenses required for the Contractors work are the responsibility of the Contractor and shall be for the Contractor's account. The Contractor shall have the appropriate business license.

17 PROTECTION OF EXISTING STRUCTURES

- .1 Existing structures, adjacent marine facilities, roads, services, piping or equipment within the work area which are not to be replaced shall be properly protected from any injury or damage, direct or indirect.
- .2 Any damage that is caused as a result of the operations of the Contractor shall be repaired and made good at the Contractor's expense to the satisfaction of the Engineer.

18 WEATHER

- .1 Time lost by the Contractor due to stoppage on account of adverse weather conditions may be allowed, at the discretion of the Engineer, as an extension of time for the completion of the work over and above the date of completion specified in the contract agreement.

19 UTILITIES AND SERVICES

- .1 The Contractor shall be responsible for any damage to overhead, underwater and/or underground utilities and/or services caused by the Contractor's operations and shall repair and make good the repairs at the Contractor's own expense.
- .2 The Contractor shall be responsible, unless otherwise agreed to by the Engineer, for all temporary or construction services and utilities, and first aid facilities.

20 CARE OF FINISHED WORK

- .1 The Contractor shall protect all finished work from injury, defacement, unauthorized entry, or trespass until such time as the work described in the contract documents is substantially complete.

21 DISPOSAL



- .1 All material designated to be replaced or removed (except the wharf decking) will become the property of the Contractor and will be disposed of in an environmentally acceptable manner so that they neither become a menace to marine navigation nor a nuisance to the public on adjacent or any other property.
- .2 All replaced items, cut-offs and waste material shall be disposed by the Contractor in strict accordance with provincial, local, and municipal regulations and Part 8 of the National Building Code and with the Canadian Construction Safety Code.
- .3 Conduct clean-up and disposal operations to comply with local ordinances and antipollution laws.
- .4 All decking wharf will be stacked on parking lot. Wharf decking retain ownership by the owner.

22 MATERIAL HANDLING AND STORAGE

- .1 Any materials damaged by the Contractor during handling, transportation and storage shall be replaced at the Contractor's expense.
- .2 While the Contractor is mobilized on site, the Contractor is responsible for protecting all materials (including Owner supplied materials) from damage and theft.

23 CONSTRUCTION WORK SCHEDULE

- .1 The Contractor shall work whatever shifts while abiding to the noise-by-law required in order to ensure the work meets regulatory windows and is completed by the completion date of the contract.
- .2 The Contractor shall normally perform all work within daylight hours, except in instances where the Contractor has requested and received approval for shift changes from the Owner.
- .3 Within 7 days of award the Contractor shall supply a week by week schedule of proposed activities related to the contract.
- .4 The Contractor must notify the Owner immediately whenever a variation from the construction schedule is expected to occur.

24 SETTING OUT OF WORK

- .1 The Contractor is expected to familiarize themselves with the site, facilities and amenities within.



- .2 The Contractor shall not enter on nor occupy with men, tools, equipment or material, any ground outside the property of the Harbour Authority without the written consent of the party owning such ground. Other Contractors or employees or representatives of the Department may, for all necessary purposes, enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by others nor adjacent to the site.

25 AS-BUILT DRAWINGS

- .1 The Contractor shall mark up one set of plans with any changes or amendments implemented during the Contract. These plans shall be submitted to the engineer before the Final Certificate of completion is issued.

26 SITE SECURITY

- .1 The Contractor is responsible for all materials and equipment either supplied by the Contractor, the Client Department, or the Owner. The Contractor is responsible for the repair and replacement of stolen or damaged items.

27 SITEWORK

- .1 All heavy construction equipment shall be free of leaks and cleaned prior to construction.
- .2 The Contractor shall have absorbent pads on site in case of any oil leaks or contaminants entering the water.
- .3 The Contractor shall develop a construction plan that minimizes disruption to harbour operations.
- .4 The site shall be left in a safe condition at the completion of each work day.

28 CO-OPERATION WITH HARBOUR AUTHORITY

- .1 The Contractor shall give the Harbour Authority **minimum 1 week notice** for start of construction.
- .2 The Contractor shall give the Harbour Authority **minimum 48 hours notice** for work that requires vessels to be moved.
- .3 The Contractor shall give the Harbour Authority **minimum 48 hours notice** for work that may interrupt harbour operations including access to floats.

29 INSPECTION OF STRUCTURE



- .1 The Owner or Engineer, shall inspect the completed works. The Contractor shall be responsible for the costs of any re-inspections that may be required due to errors or omissions of the Contractor.

END OF SECTION



1 GENERAL

This section provides Health and Safety Requirements, required as part of this Contract.

2 REFERENCES

Unless specified otherwise, Health and Safety Requirements shall conform to the current edition of the following standards:

- .1 Government of Canada
Canada Labour Code, Part II
Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC):
Part 8, Safety Measures at Construction and Demolition Sites.
- .3 Canadian Standards Association (CSA):
CSA S269, Falsework for Construction Purposes.
CSA S269.2, Access Scaffolding for Construction Purposes.
CSA-S350, Code of Practice for Safety in Demolition of Structures.
- .4 Fire Protection Engineering Services, HRSDC:
FCC No. 301, Standard for Construction Operations.
FCC No. 302, Standard for Welding and Cutting.
HRSDC website:
http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/index.shtml
- .5 American National Standards Institute (ANSI):
ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .6 Province of British Columbia:
Workers Compensation Act. Part 3 Occupational Health and Safety.
Occupational Health and Safety Regulation
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

3 GENERAL CONDITIONS

- .1 Provide safety barricades around work site as required to provide a safe working environment for workers and protection for pedestrian traffic.



- .1 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
- .2 Provide appropriate means by use of barricades, fences, and warning signs as required.
- .3 Secure site at night time as deemed necessary to protect site against entry.
- .4 Mark floating equipment with lights in accordance with International Rules of Road and maintain radio watch on board.
- .5 Place and maintain buoys, markers and lights required to define work and disposal areas.

4 RESPONSIBILITY

- .1 Assume responsibility as the Prime Contractor under this Contract.
- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .3 Comply with and enforce compliance by employees with safety requirements of contract documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

5 GENERAL REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- .2 In event of conflict between any provisions of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Engineer will advise on the course of action to be followed.
- .3 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .4 Engineer may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns

6 COMPLIANCE REQUIREMENTS

- .1 Comply with Workers Compensation Act, B.C.
- .2 Comply with Occupational Health and Safety Regulations.



- .3 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.
- .4 Small Craft Harbours may terminate the Contract without liability to Small Craft Harbours where the Contractor, in the opinion of Small Craft Harbours, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
- .5 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

7 WORKER'S COMPENSATION BOARD COVERAGE

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

8 SUBMITTALS

- .1 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .3 Risk Management and Safety Procedure for possible events including but not limited to storm, fire, and fall.
- .2 Submit one copy of Contractor's authorized representative's work site health and safety inspection reports to the Engineer weekly.
- .4 Submit copies of incident and accident reports.
- .5 Submit WHMIS MSDS - Material Safety Data Sheets if requested.
- .6 Engineer may review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Engineer within 5 days after receipt of comments from the Engineer.



- .7 The Engineer review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .8 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Engineer.
- .9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

9 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

10 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

11 MEETINGS

- .1 Schedule and administer Health and Safety meeting prior to commencement of Work.

12 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Harbour Manager – Contact to be given after award.
 - .2 Engineer – Contact to be given after award.

13 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, 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 Engineer verbally and in writing.

14 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have site-related working experience specific to activities associated with the repairs.



- .2 Have working knowledge of occupational safety and health regulations.
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work.

15 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Engineer.

16 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by the Engineer.
- .2 Provide the Engineer with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 The Engineer may stop Work if non-compliance of health and safety regulations is not corrected.

17 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

END OF SECTION



1 GENERAL

.1 Definitions

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

.2 In Water Works

- .1 Waterways to be kept free of excavated fill, waste material and debris.

.3 Notification

- .1 The Engineer will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, take action of The Engineer proposed corrective action.
- .3 Take action only after receipt of written approval by The Engineer.
- .4 The Engineer will issue stop order of work until satisfactory corrective action has been taken.
- .5 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

2 PRODUCTS

.1 Not Used

3 EXECUTION

.1 Cleaning

- .1 Leave work area clean at end of each day.



- .2 Clean up and contain saw dust to prevent migration.
- .3 Minimize saw dust falling in water.
- .4 Contain saw dust in water and collect it at end of each day.
- .5 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials.
- .6 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment to the approval of the Owner.

END OF SECTION



1 GENERAL

.1 WASTE MANAGEMENT

- .1 Prior to start of Work, conduct meeting with Owner to review and discuss PWGSC's Waste Management Plan and Goals.
- .2 Accomplish maximum control of solid construction waste.
- .3 Preserve environment and prevent pollution and environment damage.

.2 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
- .3 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .4 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .5 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
- .6 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
- .7 Returning reusable items including pallets or unused products to vendors.
- .8 Salvage: removal of structural and non-structural materials from reconstruction/disassembly projects for purpose of reuse or recycling.
- .9 Separate Condition: refers to waste sorted into individual types.
- .10 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

.3 STORAGE, HANDLING AND PROTECTION



- .1 Store materials to be reused, recycled and salvaged in locations as directed by Owner.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.
- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Owner.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
- .10 On-site source separation is recommended.
- .11 Remove co-mingled materials to off-site processing facility for separation.
- .12 Provide waybills for separated materials.

.4 DISPOSAL OF WASTE

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways, storm, or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

2 PRODUCTS

- .1 **Not Used**

3 EXECUTION



.1 Cleaning

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors, and leave Work clean and suitable for occupancy.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Owner.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site bin containers for collection of waste materials and debris.
- .5 Dispose of waste materials and debris off site.
- .6 Refer to Construction General Conditions for stipulated interpretation.
- .7 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

END OF SECTION

1 GENERAL

- .1 Demolition and disposal shall be carried out in strict accordance with provincial, local, and municipal regulations and Part 8 of the National Building Code and with the Canadian Construction Safety Code.

2 EQUIPMENT

- .1 The Contractor shall furnish all labour, materials, tools, plant and services required incidental to the completion to the full extent of the drawings and specifications for execution of all demolition salvage and protection work specified herein.
- .2 Demonstrate that tools and machinery are being used in manner which allows for salvage of materials in best condition possible or reinstatement of temporarily relocated structures.

3 REMOVAL OF DEMOLISHED MATERIAL

- .1 All materials, which are not to be salvaged for the Owner, shall become the Contractor's property and the Contractor must remove it from the work site.
- .2 If not specifically identified, the Owner and/or Engineer shall decide as to which material shall be salvaged and which materials shall be disposed of.

4 SALVAGED MATERIAL

- .1 Material to be salvaged for the Owner shall be stored as directed by the .
- .2 Remove items to be reused, stockpile and re-install as directed by Engineer.
- .3 Designate appropriate security resources/measures to prevent vandalism, damage and theft of salvaged items.
- .4 Contractor is responsible for lost, stolen or damaged materials.

5 PROTECTION OF STRUCTURES TO REMAIN

- .1 Protect remaining structural elements, services and equipment against damage from demolition works.
- .2 Contractor is liable for any damage caused to structures not specified for removal as a result of completing work.

6 SERVICES



- .1 All services that must be removed from existing structures in order to perform work must be removed so as not to damage them.
- .2 All service materials including miscellaneous hangers, fasteners and supplies required to reinstall the services shall be supplied by the Contractor and will be of equivalent quality to the new conditions of such materials being replaced.
- .3 All materials that are not reusable shall be disposed of by the Contractor.
- .4 The Contractor shall be responsible for the handling and storage of services lines, lamps standards and other equipment during construction. All materials damaged by the Contractor shall be replaced at the Contractor's expense.

7 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout demolition procedure.
- .2 Upon completion of project or as appropriate, reinstate gangway, floats, walkways, light standards, electrical and water services and other items affected by Work to condition which existed prior to beginning of Work.

END OF SECTION



1 GENERAL

.1 Reference Standards

Unless specified otherwise, all steel shall be new and conform to the current edition of the following standards:

- .1 CSA B-111-M: Wire nails, spikes and staples
- .2 CSA-G164-M: Hot dip galvanizing of irregularly shaped articles
- .3 CSA-G40.21-M81: Drift bolts, machine bolts, washers, and miscellaneous iron
- .4 ASTM A307: Specification of carbon steel bolts and studs
- .5 ASTM A153: Hot dipped galvanizing
- .6 CSA B34: Lag screws

2 PRODUCTS

.1 Steel Hardware

- .1 Bolts, nuts, and washers through timber shall conform to ASTM A307.
- .2 Drift pins shall conform to CSA G40.21-M81 Grade 260W.
- .3 All spikes, nails, and staples to conform to CSA B-111-M.
- .4 All lag screws to conform to CSA B34.
- .5 Hot-dip galvanize all miscellaneous metal and fasteners in accordance with CSA G164-M, unless noted otherwise.
- .6 Unless noted otherwise, use plate washers under heads and nuts of all bolts bearing on timber; plate washers against piles shall be curved to match the rounded surface.
- .7 All bolts shall be National Course Thread, unless shown otherwise.
- .8 Unless noted otherwise, all bolts shall have minimum 152mm (6") of thread.
- .9 All hardware including, but not limited to, bolts, drift bolts, spikes, carriage bolts, lag bolts, nuts and washers shall be hot dipped galvanized in accordance with the ASTM A153. Galvanize to 610gm/m³ (2oz/ft²).



3 EXECUTION

.1 Assembly

- .1 All bolts shall be tightened to 100 newton meters (80 lbs feet).
- .2 Care shall be taken not to damage the treated wood finish. All treatment damaged by the Contractor shall be repaired at his own expense.
- .3 Predrill all timbers that require bolting (hex or lag) and end timbers that require nails prior to installation to prevent splitting.
- .4 Holes for machine bolts shall be bored to provide a driving fit.
- .5 All field drilled holes shall be treated with preservative as specified prior to bolting.

.2 Decking

- .1 Lay boards heart side down, spaced 6mm to 10mm apart.
- .2 Secure each contact point with 2 – 102mm (4") galvanized ARDOX nails.
- .3 Pre-drill deck boards for nails nearest board ends.

.3 Rub Board (Fascia)

- .1 Secure each contact point with 3 – 152mm (6") galvanized ARDOX nails.
- .2 Contact points every 500mm maximum.
- .3 Pre-drill rub boards for nails nearest board ends. Do not pre-drill into the float timbers (stringer and flanges).

.4 UHMW Liners

- .1 Hardware heads shall be fully countersunk and an additional 6mm (1/4") below flush.
- .2 Pre-drill through UHMW and mooring well timber to avoid splitting.
- .3 Fasteners shall not interfere with piling wear surfaces.

.5 pontoons



- .1 Secure pontoon webbing to top of each crosstie with two #6 Stainless 316 Grade Pan Head Wood Screws, 25.4mm (1”) long, complete with #6 Stainless 316 Grade Flat Washers.

END OF SECTION



1 GENERAL

- .1 DFO's General Conditions and related contract documents form an integral part of this section.
- .2 All work shall be carried out in accordance with Specification CAN/CSA 086.1-M, latest revision and in accordance with Best Management Practices (BMP) for the use of treated wood in aquatic environments.
- .3 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

2 PRODUCTS

- .1 Lumber Material
 - .1 Lumber grades shall conform to the requirements of the N.L.G.A. Standard Grading Rules for Canadian Lumber, latest revision.
 - .2 All lumber shall be D.Fir-L(N), No. 2 Structural grade or better as called for on the drawings.
 - .3 All lumber, unless specified otherwise, shall be properly air dried and seasoned, containing not more than 19% moisture.
- .2 Fasteners
 - .1 All bolts, nuts and washers shall be hot dip galvanised in accordance with Specification CAN/CSA G164-M.
 - .2 Bolt holes in timber shall be bored to provide driving fit. Holes for drift bolts shall be 2 mm undersize and longer than the drift bolts.
 - .3 All bolts to meet the requirements of Standard ASTM - A325.
- .3 Wood Preservative
 - .1 All preservative treatment, inspection and re-treatment shall be in accordance with Specification CAN/CSA 080-M, latest edition.
 - .2 All lumber shall be given a CCA or ACZA preservative treatment in accordance with the Best Management Practices.
 - .3 All treated timbers shall be incised before treatment.



3 EXECUTION

- .1 All timber, which has been given a preservative treatment, shall be carefully handled to avoid breaking through the treated surfaces. Hooks and rafting dogs shall not be used on timbers. No spikes shall be driven into timbers except to tack the timbers in their final position. If spikes are used, they shall be fully driven and left in.
- .2 Bolt holes and countersunk holes shall be filled with CCA or ACZA preservative and the bolts shall be dipped in CCA or ACZA preservative concentrate before the bolts are placed.
- .3 Bolt holes with a final position at an elevation below water level shall be filled with approved mastic before the bolts are placed.

END OF SECTION



1 GENERAL

.1 Reference Standards

Unless specified otherwise, timber shall conform to the following standards:

- .1 American Wood Preservers' Association (AWPA)
 - .1 AWPA M2, Standard for Inspection of Wood Products Treated with Preservatives.
 - .2 AWPA M4, Standard for the Care of Preservative Treated Wood Products.
- .2 ASTM International
 - .1 ASTM A153M-09, Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware.
 - .2 ASTM A307-14, Standard Specification for Carbon Steel Bolts, Studs and Threaded Rod, 60,000 PSI Tensile Strength.
 - .3 ASTM D256-10, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
 - .4 ASTM D638-10, Standard Test Method for Tensile Properties of Plastics
 - .5 ASTM D790-10, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- .3 CSA International
 - .1 CSA B111-03, Wire Nails, Spikes and Staples. (Note: This standard is actually discontinued but there is no equivalent replacement – consequently have chosen to make reference to the old version.)
 - .2 CSA O80 Series-12, Wood Preservation.
 - .3 CSA O86-09 Consolidated – Engineering Design in Wood
 - .4 CAN/CSA Z809-13, Sustainable Forest Management.
 - .5 CAN/CSA G164-03, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)



- .1 Material Safety Data Sheets (MSDS).
- .5 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2014.

.2 Protection

- .1 Deliver, store and handle materials in a manner that protects products from damage. Replace damaged or defective materials with new products conforming to the requirements of this section.

2 PRODUCTS

.1 General

- .1 All timber shall be suitable for the purpose intended and shall conform to the Standard Grading Rules for Canadian Lumber, (NLGA), of the Canadian Lumber Standards Administration Board.
- .2 Except as otherwise noted, only new materials will be used in, and remain an integral part of the structures.
- .3 The Engineer may inspect materials and products at his/her discretion at all stages of their manufacture, and transportation to the site. Satisfactory inspection at any stage does not preclude future rejection if the materials or products are subsequently found to lack uniformity or fail to conform to the requirements specified. Acceptance will not be made until the materials or products are satisfactorily installed in the completed structures as specified.

.2 Cedar

- .1 All cedar shall be No. 2 Grade or Better, tight knot one side, pencil wane back face and no shake.
- .2 The Contractor shall supply to the Engineer documentation indicating the grade class and species of all timber delivered to the site.
- .3 Cedar shall have a length tolerance of +0-12". Any boards that measure less than the specified length shall be rejected.
- .4 Cedar shall be provided surfaced one face and two edges (S1S2E).
- .5 The Engineer shall be the sole judge as to the acceptability of timber incorporated into the work. Timber not accepted by the Engineer shall be removed from the site.



.3 Douglas Fir

- .1 All Douglas Fir shall be No. 1 Structural Grade Coast Douglas Fir.
- .2 The Contractor shall supply to the Engineer documentation indicating the grade class and species of all timber delivered to the site.
- .3 Stringers, crossies, joists, flanges, bull rails, risers, rub boards (fascia) shall be provided surfaced four sides (S4S). Decking shall be provided surfaced one face and two edges (S1S2E).
- .4 The Engineer shall be the sole judge as to the acceptability of timber incorporated into the work. Timber not accepted by the Engineer shall be removed from the site.

3 TREATMENT

.1 General

- .1 All timber specified for treatment shall be pressure preservative treated in accordance with CSA-O80-M 'Wood Preservation', its applicable subsections and amendments. The use category to which timber elements will be exposed is UC5A (Marine (salt water) applications).
- .2 The contractor shall provide certification that the specified treatment retention has been achieved.
- .3 Preservative treatment of timber shall be undertaken in compliance with the latest revision of the 'Best Management Practices (BMP's) for the Use of Treated Wood in Aquatic Environments', as published by The Canadian Institute of Treated Wood and the Western Wood Preservers Institute. The Contractor shall provide assurance to the Engineer that preservative treatment has been undertaken in accordance with these BMP's.

.2 Creosote-treated Materials:

- .1 All joists, stringers, lower stringer splice blocks, crossies, well blocking, flanges, flange splice blocks (upper and lower) shall be creosote treated, unless specified otherwise.
- .2 All creosote treated materials will have a minimum retention of 225kg per cubic meter (14lb. per cubic foot).

.3 Salt-treated Materials:



- .1 All decking, rub board, guards, bull rails, risers and upper stringer splice blocks shall be ACZA treated, unless specified otherwise.
- .2 All timber specified to be treated with water-soluble salts will be treated in accordance with CSA-080-M, "Wood Preservation", and its applicable subsections and amendments, for materials in contact with ground or water. Only non-leachable ACA salts will be accepted.
- .3 All salt-treated timber will have a minimum retention of 6.4 kg/m³ (0.40 lb. per cubic foot) and a depth of penetration of 10mm as specified in CSA 080.14.

4 EXECUTION

.1 Field Treating

- .1 All field cut creosote members shall also be protected by covering the ends with caps consisting of 12mm (1/2") of Roof Patch mastic and two thicknesses of tar-saturated fabric and a cap consisting of .050 inch thick copper sheeting. The cap shall extend 100mm from the end of the timber. Attach with minimum ten copper nails (copper deters marine borers). All field drilled holes in creosote timbers shall be protected by installing a bolt fully covered in Roof Patch mastic.
- .2 All salt treated members that are modified (cut or drilled) shall be field treated with two coats of Copper Naphthenate or pentachlorophenol. When field treating by brushing, spraying, dipping or soaking, do so in such a manner that the preservative does not drip into the water or onto the ground.
- .3 Ensure field preservatives are properly stored and protected in case of spillage.

.2 Handling of Materials

- .1 Treated material will not be accepted if damaged in any manner in handling. This includes damage from strapping and slings.
- .2 The Contractor shall be responsible to repair or replace all materials damaged by his handling, storage and installation of materials.

.3 Decking

- .1 Float decking (2"x12") will be supplied at 8ft long and should be installed in continuous lengths. Intermediate joints will not be permitted.
- .2 Wharf decking (4"x12") supplied by Contractor shall be installed in continuous lengths. Seek approval from Owner if intermediate joints is expected.

.4 Existing Structures



- .1 Any structures damaged by the Contractor during the works shall be repaired and made good at the Contractor's expense to the satisfaction of the Engineer.

.5 Services

- .1 All services that must be removed from existing structures in order to perform work must be removed so as not to damage them.
- .2 All service materials, misc. hangers, fasteners and supplies required to reinstall services shall be supplied by the Contractor.
- .3 All materials that are not reusable shall be disposed of by the Contractor.
- .4 The Contractor shall be responsible for the handling and storage of the service lines, lamp standards and other equipment during construction. All materials damaged by the Contractor shall be replaced at the Contractor's expense.

END OF SECTION

