



TECHNICAL SPECIFICATIONS

Port Clements Harbour

Wharf and Float Timber Reconstruction

Graham Island, Haida Gwaii, British Columbia

Fisheries and Oceans Canada

Small Craft Harbours – Pacific Region

June 2022

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DRAWINGS	TITLE
C2-00248-001	Port Clements Site Plan
C2-00248-002	Timber Wharf Plan & Elevations
C2-00248-003	Timber Wharf Substructure Reconstruction and Repair
C2-00248-004	Timber Float Reconstruction
C2-00248-005	Timber Float Plan and Elevations

Appendices:

Appendix A: Site Photo –

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 **Contractor:** The party accepted by the Owner with whom a formal contract is entered to complete the work of this project.
- .2 **Contracting Authority:** Real Property Contracting Acquisitions and Compensation Pacific Region, Public Works and Government Services Canada.
- .3 **Contract Document:** Includes all Sections herein, as well as, attached drawings and appendices referenced in the Technical Specification Index.
- .4 **Engineer/Departmental Representative:** Employee(s) that represents the Owner who act as the Engineer and Technical Authority for the project.
- .5 **Owner:** Small Craft Harbours Program of the Department of Fisheries and Oceans, Vancouver, BC.
- .6 **Site:** Port Clements Small Craft Harbour
- .7 **Replacement:** Removal of existing component including treated timber, hardware and fasteners and to be replaced with new component including supply and install of new hardware and treated timber, drilling, field fitting and field treating as required.
- .8 **Removal:** Dismantling, demolition, handling, sorting, and hauling material away from Site.

1.2 SITE LOCATION

- .1 Port Clements Small Craft Harbour is located at the North end of Tingley Street on Graham Island, Haida Gwaii, British Columbia. Refer to Site Plans for the harbour location.

1.3 WORK INCLUDED

- .1 The nature of work consists of light timber wharf and timber float repairs in Port Clement Harbours. General work to be performed under this contract includes but is not limited to:
 - .1 Timber wharf repairs: Decking, wheel guard and riser, stringer, bearing pile banding and patching work, and cross braces.
 - .2 Timber float repairs: - decking, bull rail and riser, joist, stringer and rub boards.

1.4 COMMENCEMENT AND COMPLETION

- .1 Work shall commence upon **Contract Award**.



- .2 All work including clean-up and demobilization must be completed by **February 20th, 2023**.

1.5 DESCRIPTION UNIT PRICE TABLE

.1 Mobilization and Demobilization

- .1 This lump sum item is specified in Section 01 50 00.

.2 Wharf Timber Decking Replacement

- .1 The lump sum cost for the complete replacement of the entire timber wharf deck with new treated decking.
.2 Must maintain pedestrian access to the dock at any given time.

.3 Wharf Timber Wheel Guard Replacement

- .1 The lump sum cost to for the complete replacement of the entire wharf timber wheel guard including timber riser and associated hardware.
.2 Wheel guard to be painted safety yellow.
.3 Temporary disconnect and remove existing drylines and water lines prior to removal of timber wheel guard. Contractor is responsible to re-install the disconnected lines upon completion of new timber wheel guard. Pressure test the dryline to 200 psi for an hour after re-installation.

.4 Wharf Timber Cross Brace Replacement

- .1 The unit rate per creosote timber cross brace removed, supplied and installed with associated hardware.
.2 Cross-braces to be connected to bearing piles with 25mm diameter bolts using existing bolt holes in piles.

.5 Wharf Timber Pile Steel Banding and Patching

- .1 The unit rate per bearing pile banded and holes patched.
.2 Each banding location to have a minimum 2 bands installed.
.3 Banding to be stainless steel, type 316, 25mm width, 0.8mm thick.

.6 Float Timber Decking Replacement

- .1 The unit rate per timber deck removed, supplied and installed with associated hardware

.7 Float Timber Bull rail Replacement

- .1 The unit rate per linear meter of timber bull rail replaced with associated hardware

.8 Float Timber Joist Replacement

- .1 The unit rate per creosote joist removed, supplied and installed with associated hardware



.9 Float Timber Rubboard Replacement

.1 The unit rate per linear meter timber rub board replaced with associated hardware

.10 Hourly rate Miscellaneous Timber Repair Work

.1 The hourly rate per person onsite for additional work task determined and directed by the Departmental Representative.

.2 The hourly rate shall include the supply of equipment, tools, services and labour to perform light timber structure construction and demolition.

.3 Regular work hours – Monday to Friday. Include any Living Out Allowance (LOA).

.4 No additional mobilization and demobilization will be paid under this or any other item.

.5 Contractor must provide estimate duration of additional work task and get written approval by the Departmental representative prior to any work that will be claimed under this line item.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION



Part 1 General

1.1 MEASUREMENT AND PAYMENT

- .1 Measurement and payment for work completed to Departmental Representative's satisfaction will be made as stipulated in the relevant technical Section of the Specification for that work item and the Unit Price Table.

1.2 NOTIFICATION

- .1 The Contractor shall give the Departmental Representative **minimum 2 week notice** for start of construction.
- .2 The Contractor shall give the Departmental Representative **minimum 72 hours notice** for work that requires vessels to be moved.
- .3 The Contractor shall give the Departmental Representative **minimum 72 hours notice** for work that may interrupt harbour operations including access to floats.

1.3 HOURS OF WORK

- .1 Normal work hours are between 0700 hrs to 1700 hrs Monday through Friday not including statutory holidays.
- .2 Contractor may request to work outside the above-mentioned normal work hours. Submit written request to Departmental Representative to work outside of the normal work hours a minimum of forty (48) hours in advance.

1.4 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 Time lost by the Contractor due to stoppage on account of adverse weather conditions may be allowed, at the discretion of the Departmental Representative, as an extension of time for the completion of the work over and above the date of completion specified in the contract agreement.
- .4 Contractor shall provide a schedule and sequence for all construction activities associated with this work.

1.5 HEALTH AND SAFETY



- .1 Specified in Section 01 35 29.06

1.6 ENVIRONMENTAL PROCEDURES

- .1 Specified in Section 01 35 43

1.7 REGULATORY REQUIREMENT

- .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 Contractor 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.

1.8 EXECUTION REQUIREMENTS

- .1 The Contractor is expected to familiarize themselves with the site, facilities and amenities within.
- .2 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.
- .3 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.
- .4 The site shall be left in a safe condition at the completion of each work day.

1.9 INSPECTION

- .1 Allow Departmental Representative access to the Work. If part of the Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.10 INTERFERENCE WITH OPERATION



- .1 During the course of construction and clean-up, do not dispose of surplus, waste or demolished materials in navigable waters.
- .2 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.

1.11 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.

1.12 SITE ACCESS

- .1 General site access shall be coordinated with the Owner.
- .2 The Contractor shall maintain routes of travel, with the Owner being the sole judge as to what may be deemed reasonable.

1.13 CONSTRUCTION AREA

- .1 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.
- .2 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.
- .3 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.

1.14 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.



1.15 EXISTING SERVICES

- .1 Notify Departmental Representative if existing utilities and services are found within the Site and will be treated as extra.

1.16 TEMPORARY SERVICES

- .1 The Contractor shall supply for own use; sanitary, first aid, and all other temporary services such as water and electricity and any other facilities or amenities required for the work.

1.17 RECORD 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.

1.18 WASTE MANAGEMENT

- .1 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.

Part 2 Products**2.1 NOT USED****Part 3 Execution****3.1 NOT USED****END OF SECTION**

Part 1 General**1.1 DESCRIPTION**

- .1 Health and safety considerations are required to ensure that the Contractor shows due diligence towards health and safety on construction sites.

1.2 MEASUREMENT AND PAYMENT

- .1 Health and Safety Requirements are considered incidental to the work and will not be measured separately. No separate payment will be made under this Section.

1.3 REFERENCES

- .1 Government of Canada:
 - .1 Canada Labour Code – Part II
 - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC):
 - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .3 The Canadian Electric Code
- .4 Canada Standards Association (CSA):
 - .1 CSA S269, Falsework for Construction Purposes.
 - .2 CSA S269.2, Access Scaffolding for Construction Purposes.
 - .3 CSA-S350, Code of Practice for Safety in Demolition of Structures.
 - .4 CSA Z462 – Workplace Electrical Safety Standard.
- .5 American National Standards Institute (ANSI):
 - .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .6 Province of British Columbia:
 - .1 Workers Compensation Act. Part 3 Occupational Health and Safety.
 - .2 Occupational Health and Safety Regulation
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
 - .1 Material Safety Data Sheets (MSDS).

1.4 WORKERS 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.

1.5 COMPLIANCE WITH REGULATIONS

- .1 The Owner may terminate the Contract without liability to the Owner where Contractor, in the opinion of the Owner, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
- .2 It is 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.

1.6 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.
 - .4 WHMIS MSDS - Material Safety Data Sheets if requested.
 - .5 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations
- .2 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.
- .3 Submit copies of incident and accident reports to Department Representative whenever an unforeseen incident and/or accident occurred.

1.7 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.



- .4 Report all safety and environmental incident to the Department Representative as soon as it happened.

1.8 BARRICATION

- .1 Provide safety barricades around work site as required to provide a safe working environment for workers and protection for pedestrian traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
 - .1 Provide appropriate means by use of barricades, fences, and warning signs as required.
 - .2 Secure site at night time as deemed necessary to protect site against entry.

1.9 REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at the Contractor's Work Site.
- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representatives will advise on the course of action to be followed.

1.10 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Provide copies of all notices to Departmental Representative.

1.11 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.
- .2 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.
- .3 Schedule and administer Health and Safety meeting prior to commencement of Work.

1.12 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.



1.13 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.

1.14 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.
- .4 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule consideration for Work.

Part 2 Products**2.1 NOT USED****Part 3 Execution****3.1 NOT USED****END OF SECTION**

Part 1 General**1.1 DESCRIPTION**

- .1 This Section describes environmental procedures that are required for the Contract. Contractor shall be responsible for adhering to these special procedures while completing all work under this Contract.
- .2 Contractor is responsible for environmental protection during all construction activities at all locations it performs work.

1.2 MEASUREMENT AND PAYMENT

- .1 Environmental Procedures are considered incidental to the work and will not be measured separately. No separate payment will be made under this Section.

1.3 SUBMITTALS

- .1 Contractor shall submit a Environmental Protection Plan (EPP) and Spill Response Emergency Plan for review and acceptance by Departmental Representative at least one (1) week prior to site mobilization.
- .2 Contractor must submit spill incident report if occurred at minimum detailing the timing, the root cause, the spill substance and quantity, the clean up and the implemented preventive action.

1.4 ENVIRONMENTAL RESPONSIBILITY

- .1 Contractor shall demonstrate in the performance of the work that it is environmentally responsible by complying with environmental legislation, regulations, and authorizations.
- .2 Follow all Departmental Representative instructions and policies, practices, and procedures established by Departmental Representative with respect to the environment that are communicated by Departmental Representative to Contractor from time to time.
- .3 Take all reasonable and necessary measures in the performance of the work to avoid causing negative impacts to the environment. Where negative impacts occur, Contractor shall immediately advise Departmental Representative and shall be solely liable to undertake all reasonable and necessary measures to minimize the effect of such negative impacts and restoring the site to pre-impact conditions.
- .4 Maintain key pollution control systems in working condition throughout the project and undertake all works such that there are no unauthorized discharges of liquids or solids to the marine environment, or of gas to the atmosphere.



- .5 Maintain a neat work area free of unnecessary debris, tools, equipment, or materials; dispose of sewage, refuse, and chemical wastes in compliance with the Best Management Practices and applicable federal, provincial, and municipal or local legislation, regulations, or laws; and remove all tools, equipment, supplies, and wastes from the site upon completion of the work.
- .6 Minimize timber saw dust entering into water body. Timber saw dust from Contractor work activity must be contain and collected at end of each work day.

1.5 FIRES

- .1 Fires and burning of rubbish on Site is not permitted.

1.6 SPILL OR RELEASE OF DELETERIOUS SUBSTANCES

- .1 Contractor shall immediately contain and assess the spill, provide appropriate notifications, and take the necessary steps to prevent further discharge.
- .2 Contractor is responsible for immediate cleanup of the spill and restoration of the area to the satisfaction of Departmental Representative and other regulatory agencies, where involved.
- .3 Departmental Representative shall be immediately informed of all spills that occur at the Work Site.
- .4 Spill kits will be kept at the Work Site at all times.

1.7 EQUIPMENT MAINTENANCE

- .1 All heavy construction equipment shall be free of leaks and cleaned prior to construction. The Contractor shall have absorbent pads on site in case of any oil leaks or contaminants entering the water.
- .2 Hydraulic machinery shall use environmentally friendly hydraulic fluids (i.e. non toxic to aquatic life and biodegradable).
- .3 Equipment washing, refueling and servicing shall be conducted away from the water (i.e. no closer than 30m from the river).
- .4 Do not refuel any type of equipment within 100m of a waterbody

1.8 WASTE MANAGEMENT

- .1 Accomplish maximum control of solid construction waste.
- .2 Preserve environment and prevent pollution and environment damage.
- .3 Store materials to be reused, recycled and salvaged in locations as directed by Owner. Unless specified otherwise, materials for removal become Contractor's property.



- .4 Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Do not bury rubbish or waste materials. Do not dispose of waste into waterways, storm, or sanitary sewers.
- .6 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .7 Leave work area clean end of each work day.

1.9 NOISE AND LIGHT CONTROL

- .1 Ensure that noise control devices (i.e. mufflers and silencers) on construction equipment are properly maintained.
- .2 Contractor shall implement use of lighting shrouds for work to be completed during night-time hours to minimize lighting disruptions to local residents.

1.10 NOTIFICATION

- .1 The Departmental Representative will notify Contractor of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 The Contractor shall inform the Engineer of proposed corrective action after receipt of such notice, and take such action for approval by the Engineer.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION



Part 1 General**1.1 DESCRIPTION**

- .1 This Section covers mobilization and demobilization for the work at Port Clements Work Site.

1.2 MEASUREMENT AND PAYMENT

- .1 Mobilization and demobilization will be paid for at the Lump Sum price tendered for “Mobilization and Demobilization”. Payment shall include for all costs in connection with mobilization and demobilization as described in Clause 1.3 of this Section.
- .2 Supply and set up of plant and equipment not specifically noted in Clause 1.3 of this Section shall be deemed to be incidental to the work.
- .3 Progress claim upon complete mobilization shall not be more than 60% of this lump sum item. Progress claim for the balance of this lump sum item will be upon complete demobilization.

1.3 MOBILIZATION AND DEMOBILIZATION

- .1 Mobilization shall include but not limited to the following activities:
 - .1 One pre-construction meeting onsite at least one week prior to mobilization.
 - .2 All pre-construction submittals;
 - .3 Workshops and other temporary facilities, including utility connections;
 - .4 All work required to prepare and move to the Work Site the Contractor’s plant and equipment, pile-driving derricks and equipment to be used for the above mentioned work tasks;
 - .5 Move all crew and tools to site;
 - .6 Making ready for work; and,
 - .7 The cost of maintaining bonds and insurance as required.
- .2 Demobilization shall include the following activities:
 - .1 Project closeout and required closeout submittals;
 - .2 Removal of all construction equipment, plant and excess materials from the Site;
 - .3 Clean up of the Site to a condition satisfactory to Departmental Representative at completion of the work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION



Part 1 General

1.1 DESCRIPTION

- .1 Where existing works are to be removed, they shall be removed and salvaged or disposed of to the satisfaction of the Departmental Representative.
- .2 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 the execution of all demolition salvage and protection work specified herein.
- .3 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.

1.2 DEFINITION

- .1 Removal: Dismantling, demolition, handling, sorting, and hauling material away from Site.

1.3 MEASUREMENT AND PAYMENT

- .1 Structural Demolition are considered incidental to the work and will not be measured separately. No separate payment will be made under this Section.

1.4 SUBMITTALS

- .1 Contractor must seek approval for propose disposal and/or recycling facility for each material type prior to any construction work commence onsite.

1.5 DISPOSAL

- .1 Contractor must not truck any waste, debris, resulted from this demolition activity to any other location other than the proposed and approved preconstruction submittals.
- .2 No payment of work for illegal dumping including waste dump at people's property, public property, or any other location other than the agreed licensed recycling and landfill facilities.
- .3 Contractor must provide proof to confirm disposal ends up at the authorized facility for payment. This includes but not limited to invoices, receipt and truck weigh slip containing net weight and final disposal address.
- .4 Contractor is responsible for all waste and debris generated from the Work.



Part 2 Product

2.1 NOT USED

Part 3 Execution

3.1 DEMOLITION

- .1 Demolition shall be carried out in accordance with the construction schedule as approved by the Owner.

3.2 REMOVAL OF DEMOLISHED MATERIAL

- .1 All material, which are not to be salvaged for the Owner, shall become the Contractor's property and the Contractor must remove it from the site.
- .2 It shall be the Engineer's decision as to which material shall be salvaged and which materials shall be disposed of. Material to be salvaged for the Owner shall be stored as directed by the Engineer. No material is currently identified for salvage.

3.3 PROTECTION

- .1 The Contractor shall protect the remaining structural elements and adjacent structures against damage from falling debris or other causes.
- .2 The Contractor shall take precautions to guard against movement or settlement of adjacent structures and remaining structural elements, provide and place shoring or bracing as required, and be responsible for the safety and support of such structures, be liable for any damage or injury caused thereby or resulting therefore. If at any time safety of any adjacent structure appears to be endangered; the Contractor shall cease operations and notify the Engineer.

END OF SECTION



Part 1 General**1.1 DESCRIPTION**

- .1 This section covers all timber float and timber wharf repair work.

1.2 MEASUREMENT AND PAYMENT

- .1 Wharf components and float component replacement will be measured and paid as per unit rate established in the tendered unit price table.

1.3 WORKMANSHIP

- .1 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.
- .2 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

Part 2 Product**2.1 HARDWARE**

- .1 Bolts, washers and nuts shall conform to ASTM specification A325.
- .2 Drift pins shall conform to CSA G40.21-M81 Grade 260W.
- .3 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.
- .4 All bolts shall be National Course Thread, unless shown otherwise.
- .5 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).

2.2 LUMBER

- .1 Lumber Grades
 - .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 except deck planks and guard rails shall be D.Fir-L(N), No. 1 Structural grade or better as called for on the drawings. Deck planks and guard rails shall be D.Fir-L(N), No. 2 Structural grade or better.



- .3 All lumber, unless specified otherwise, shall be properly air dried and seasoned, containing not more than 19% moisture.
- .2 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, crossties, 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 at Contractor's cost.

2.3 WOOD PRESERVATIVE

- .1 Timber treatment
 - .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 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.
 - .3 All treated timbers shall be incised before treatment.
- .2 Creosote-treated Materials:
 - .1 Float: All joists, stringers, lower stringer splice blocks, crossties, well blocking, flanges, flange splice blocks (upper and lower) shall be creosote treated.
 - .2 Wharf: All braces shall be creosote treated.
 - .3 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, wheel guards, bull rails, risers and upper stringer splice blocks shall be ACZA treated, unless specified otherwise.
 - .2 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.



Part 3 Execution

3.1 FIELD TREATING

- .1 All timber, which has been given a preservative treatment, shall be carefully handled to avoid breaking through the treated surfaces. 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. Bolt holes with a final position at an elevation below water level shall be filled with approved mastic before the bolts are placed.
- .3 All cut ends of lumber shall be treated with two separate coats of CCA or ACZA preservative. Cut ends of lumber with a final position at an elevation below water level shall in addition be treated with one coat of approved mastic at least 5 mm thick.
- .4 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 0.050 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.
- .5 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.
- .6 Ensure field preservatives are properly stored and protected in case of spillage.

3.2 HANDLING OF MATERIAL

- .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.

3.3 TIMBER COMPONENT ASSEMBLY

- .1 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.
- .2 Deck planks shall be fastened with two galvanized nails at each contact with one nail at each side of the plank. Nails shall be 100 mm long.



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

3.4 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.

3.5 FLOAT RUB BOARD

- .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).

3.6 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.

3.7 PILE REPAIRS

- .1 Bandings shall be minimum 19mm by 0.76mm Type 316 Stainless steel banding. Each pile requiring banding shall receive two bands, spaced 200mm apart located at the split or check.
- .2 Hole Patching:
 - .1 Marine borer cavity to be filled with fast setting hydraulic cement or equivalent
 - .2 Plugged cavity to be coated with a layer of mastic and sealed with ship’s felt secured beneath a copper patch.
 - .3 Patching of cavity to be performed in the dry.



3.8 CROSS BRACE REPLACEMENT

- .1 Field treat any exposed cut timber as per clause 3.1.4.
- .2 All cross-braces shall be installed with cut end up (out of water).

3.9 SERVICES

- .1 All service materials miscellaneous hangers, fittings, fasteners and supplies required to reinstall the services shall be supplied by the contractor.

END OF SECTION

