



SPECIFICATIONS

STEVESTON PARAMOUNT FLOAT MODULE CONSTRUCTION **2021-2022**

FISHERIES AND OCEANS CANADA
SMALL CRAFT HARBOURS – PACIFIC REGION

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

SECTION NO.	SECTION TITLE
01 11 00	Summary of Work
01 13 00	General Requirements
02 02 00	Owner Supplied Materials
01 35 29.06	Health and Safety Requirements
01 35 43	Environmental Procedures
01 77 00	Closeout Procedures
03 03 00	Timber
03 02 00	Hardware

DRAWING NO.	DRAWING TITLE
FM9-ST-000	'2011 REVISION' 2.743m WIDE STANDARD FLOAT MODULE
FM9-ST-001	'2011 REVISION' 2.743m WIDE STANDARD FLOAT MODULE
FM9-ST-002	'2005 REVISION' 2.743m WIDE STANDARD FLOAT MODULE ASSEMBLY
FM9-ST-003	'2005 REVISION' 2.743m WIDE STANDARD FLOAT MODULE ASSEMBLY
FM9-END-200	2.743m WIDE FLOAT MODULE 2011 REVISION
FM9-END-201	2.743m WIDE FLOAT MODULE 2011 REVISION
STP-8	INVENTORY (DRAWING IS FOR REFERENCE ONLY)

END OF SECTION



Part 1 General

1.1 SITE LOCATION

- .1 Steveston Small Craft Harbours (the site) is located at 12740 Trites Road, Richmond, BC.

1.2 DEFINITIONS

- .1 **Contractor**: The party accepted by the Owner with whom a formal contract is entered to complete the work of this project.
- .2 **Engineer/Departmental Representative**: Employee(s) that represents the Owner who act as the Engineer and Technical Authority for the project.
- .3 **Harbour Authority**: Steveston Harbour Authority, 12740 Trites Road, Richmond BC.
- .4 **Owner**: Small Craft Harbours Program of the Department of Fisheries and Oceans, 200-401 Burrard Street Vancouver B.C. V6C 3S4.

1.3 WORK SCHEDULE

- .1 All work, including site clean-up and demobilization, is to commence upon award of contract and must be completed within twelve (12) weeks and no later than March 4, 2022. Refer to Section 01 13 00 - General Requirements

1.4 WORK INCLUDED

- .1 In general the nature of the work consists of
 - .1 Assembly of 45 float modules
 - .2 Assembly of 5 end kit modules
 - .3 Launching and Splicing 50 module pieces
- .2 A list of Owner supplied Materials is provided in Section 02 02 00.
- .3 All labour, equipment and materials shall conform to Technical Specifications.

1.5 DESCRIPTION OF UNIT PRICE ITEM

- .1 **Mobilization/Demobilization**
 - .1 The lump sum cost of mobilization/demobilization includes all labour, equipment and materials to complete the following:
 - .1 Move all crew, equipment and materials on and off site.
 - .2 Move materials, including Owner supplied materials, around the site as required to complete the work.
 - .3 Cover all crew expenses such as food and accommodations



- .4 Site clean-up daily throughout construction.
- .5 Cover all overhead costs not included in other items.
- .6 Dispose cut-offs, general waste and old materials that were replaced and not included in other items.

.2 Float Module Assembly

- .1 The unit rate per module for this item shall include the supply of equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Assembly of the Owner Supplied 2.74m wide timber float modules as identified in drawings FM9-ST-000, FM9-ST-001, FM9-ST-002, FM9-ST-003.
 - .2 Installation of decking, pile wells and fascia not included.
 - .3 All field cuts and treatment as per Section 03 03 00 – Timber.

.3 Float End Modules Assembly

- .1 The unit rate per 2 float end modules for this item shall include the supply of equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Assembly of Owner Supplied 2.74m wide timber float end modules as identified in drawings FM9-END-200 & FM9-END-201.
 - .2 Installation of decking, pile wells and fascia not included.
 - .3 All field cuts and treatment as per Section 03 03 00 – Timber.
 - .4 Once assembled, the Contractor shall use their own equipment to stack the float modules in the Designated Work Area outlined on drawing STP-8.

.4 Float Module Launch and Splicing

- .1 The unit rate per module for this item shall include the supply of equipment, tools, services, labour and all things necessary to complete the following:
 - .1 Launch float modules (regular module or 2-piece end kit module) in the water beside the Designated Work Area outlined on drawing STP-8, with the use of Contractor's own equipment such as a crane truck or other fitting equipment.
 - .2 Splicing of one float module pair (module to module, or end piece to module) as identified in drawings FM9-ST-000, FM9-ST-001, FM9-ST-002, FM9-ST-003.

END OF SECTION



Part 1 General

1.1 NOTIFICATION

- .1 The Contractor shall give the Departmental Representative and Harbour Authority **minimum 1 week notice** prior to mobilization to site.
- .2 The Contractor shall give the Harbour Authority and Owner a minimum 3 days notice for any disruptions to the normal harbour activities.

1.2 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.

1.3 SCHEDULING

- .1 Submit to the Departmental Representative within 2 weeks after award of the Contract, the schedule of work including time periods during which each operation involved in work will be undertaken. At time of submission of schedule, meet with the Departmental Representative to review schedule.
- .2 Adhere to schedule and take immediate action to correct any slippage by effectively altering existing dredging operations or mobilizing other equipment. Notify the Departmental Representative of corrective action to be taken.

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 Within 14 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.
- .5 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.

1.5 MEASUREMENT AND PAYMENT

- .1 Before submitting the first progress claim, submit a breakdown of the Contract unit rates and lump sum prices in detail as requested by Departmental Representative, aggregating to the Contract price.
- .2 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.

1.6 HEALTH AND SAFETY

- .1 Specified in Section 01 35 29.06

1.7 ENVIRONMENTAL PROCEDURES

- .1 Specified in Section 01 35 43

1.8 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.
- .6 The Contractor shall comply with the requirements of any local or other Noise By-Laws.
- .7 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.



1.9 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.

1.10 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.

1.11 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.

1.12 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.



1.13 TEMPORARY SERVICES

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

1.14 PROGRESS REPORT

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

1.15 CLOSEOUT PROCEDURES

- .1 Specified in Section 01 77 00.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution**3.1 NOT USED**

- .1 Not Used.

END OF SECTION

1 OWNER SUPPLIED MATERIALS

This section provides a list of Owner Supplied materials. All other materials required to complete the work shall be supplied by the Contractor.

Refer to drawing FM9-ST-000 and FM9-END-200 for the detail of each module. The owner supplied material constitutes of 45 float modules kits and 5 float end module pairs.

Material	Quantity	Dimensions
Cross Ties – Creosote treated	230	(6x6) 141 x 141 x 2743
Flange – Creosote treated	90	(6x8) 141 x 191 x 6706
Stringer – Creosote treated	90	(6x10) 141 x 241 x 6706
Joists – Creosote treated	180	(6x6) 141 x 141 x 6706
Risers – ACZA treated	270	(6x6) 141 x 141 x 300
Rail – ACZA treated	90	(4x6) 89 x 141 x 5950
Lower Flange Splice – Creosote treated	95	(6x6) 141 x 141 x 900
Upper Flange Splice – Creosote treated	95	(6x6) 141 x 141 x 900
Upper Stringer Splice – ACZA treated	95	(6x6) 141 x 141 x 1140
Lower Stringer Splice – Creosote treated	95	(6x6) 141 x 141 x 900
Foam Buoyancy Billet	225	1000 x 597x 2438
End Cross Ties – Creosote treated	10	(6x10) 141 x 241 x 2743
Flange End – Creosote treated	10	(6x8) 141 x 191 x 1372
End Rail – ACZA treated	10	(4x6) 89 x 141 x 2460
Joist End 'B' – Creosote treated	10	(6x6) 141 x 141 x 2281
End Block - ACZA treated	70	(6x6) 141 x 141 x 300
Stringer End – Creosote treated	10	(6x10) 141 x 241 x 1372
Modified Joist – Creosote treated	5	(6x6) 141 x 141 x 3359
Spacer End 'B' – ACZA treated	10	(6x6) 141 x 141 x 575



Spacer End – ACZA treated	10	(6x6) 141 x 141 x 378
Rail End – ACZA treated	10	(4x6) 89 x 141 x 952
Rail End 'B' – ACZA treated	10	(4x6) 89 x 141 x 378
WASHER 19mm DIA.	4880	19mm DIA.
HEX NUT 19mm DIA.	2440	19mm DIA.
HEX BOLT 19 x 406mm	485	19 x 406mm
HEX BOLT 19 x 660mm	760	19 x 660mm
HEX BOLT 19 x 508mm	470	19 x 508mm
HEX BOLT 19 x 356mm	10	19 x 356mm
HEX BOLT 19 x 300mm	658	19 x 300mm
HEX BOLT 19 x 557mm	30	19 x 557mm
100mm GALVANIZED SPIRAL NAILS	8640	100mm

END OF SECTION



Part 1 General

1.1 DESCRIPTION

- .1 Health and safety considerations are required to ensure that Small Craft Harbours/DFO shows due diligence towards health and safety on construction sites, and meets the requirements laid out in PWGSC Departmental Policy DP 073 - Occupational Health and Safety – Construction.

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 Province of British Columbia:
 - .1 Workers Compensation Act. Part 3 Occupational Health and Safety.
 - .2 Occupational Health and Safety Regulation
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
 - .1 Material Safety Data Sheets (MSDS).

1.4 SUBMITTALS

- .1 Submit site-specific Health and Safety Plan: Within 14 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must at least 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 Safe work plan.
 - .4 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 if requested.

1.5 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.

1.6 COMPLIANCE WITH REGULATIONS

- .1 PSPC may terminate the Contract without liability to PSPC where Contractor, in the opinion of PSPC, 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.

1.7 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 BARRICADES

- .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.

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 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 Environmental degradation arising from construction activities shall be prevented, abated, controlled, and minimized by complying with all applicable federal, provincial, and local laws and regulations concerning environmental pollution control and abatement, as well as the specific requirements in the Project Permits.
- .3 Contractor shall comply with all permit conditions. Although provincial laws and municipal by-laws generally do not apply on federal lands, Contractor will respect provincial laws and municipal bylaws and rules at the Site.
- .4 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 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 Be observant for, and immediately notifying Departmental Representative of, any environmental problems that develop at the Work Site.
- .4 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.



- .5 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.
- .6 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.
- .7 Ensure that workers and supervisory staff are knowledgeable with the provisions of the proposed Spill Emergency Response Plan and are adequately trained to implement the measures contained therein.

1.4 FIRES

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

1.5 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. 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.
- .2 All workers shall be fully aware of the spill prevention and response procedures including notification of Departmental Representative.
- .3 Departmental Representative shall be immediately informed of all spills that occur at the Work Site.
- .4 Further information on dangerous goods emergency cleanup and precautions including a list of companies performing this work can be obtained from the Transport Canada 24-hour number (613) 996-6666 collect.
- .5 Spill kits will be kept at the Work Site at all times.
- .6 Contractor shall take due care to ensure no deleterious materials, including sediment-laden runoff, leave the Work Site or enter any surface water or stormwater at or near the Work Site.
- .7 The application of paints, corrosion protective coatings, wood preservatives or any other potentially deleterious substance should occur away from water wherever possible to ensure no accidental release of deleterious chemicals by runoff or overspray.
- .8 Any equipment remaining on site overnight shall have appropriately placed drip pans or other spill/leak containment measures.



1.6 NOISE AND LIGHT CONTROL

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

1.7 NOTIFICATION

- .1 The Departmental Representative 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 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

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION



Part 1 General

1.1 DESCRIPTION

- .1 This Section provides project closeout requirements for post-construction submittals that Contractor is required to submit to Departmental Representative following completion of the work.
- .2 This Section also presents process and requirements for inspection and declaration that the work has been completed as required by the Contract documents. Upon formal review and acceptance of the work by Departmental Representative, the work will be determined to be complete and Contractor shall then demobilize from the Work Site.

1.2 MEASUREMENT AND PAYMENT

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

1.3 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
- .2 Notify Owner in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
- .3 Request inspection by Departmental Representative.
- .4 Departmental Representative, accompanied by Contractor, will inspect the work to identify defects or deficiencies in the work and then compile a deficiency list describing all noted defects and deficiencies.
- .5 Contractor shall correct work accordingly, as advised by Departmental Representative, at no cost to the Owner.
- .6 Final Inspection: When items noted above are completed, request Final Inspection of work by Departmental Representative, accompanied by Contractor. If work is still deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection. Repeat this process until the work is complete to Departmental Representative's satisfaction.

1.4 COMPLETION

- .1 Submit a written certificate that the following actions have been performed:
 - .1 Work has been completed and inspected for compliance with the Contract documents.



- .2 Defects have been corrected and deficiencies have been completed.
- .3 Work is complete and ready for final inspection.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION



1 GENERAL

This section refers to timber specifications required as part of this Contract.

.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 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 shak



- .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, crossties, joists, flanges, bull rails, risers, rub boards (fascia) shall be provided surfaced four sides (S4S).
- .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 of Material

.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, crossties, 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 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.

3 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. (ie: place in tray).

.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.

.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.

.6 Painting

- .1 Timber specified to be painted will receive one brushed undercoat. After 48 hours, two brushed finish coats of 2-part urethane paint will be applied with a minimum of 48 hours between finish coats. Paint will be applied to clean, dry surfaces only.
- .2 Provide paint specifications to Owner to be approved before construction.
- .3 Paint colours will match the following:
 - .1 "Signal Red"
 - .2 "Safety Yellow"

END OF SECTION



1 GENERAL

This section refers to Hardware specifications required as part of this Contract.

.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
- .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.

END OF SECTION

