Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government Services Canada/Réception des soumissions Travaux publics et Services gouvernementaux Canada
Pacific Region
401 - 1230 Government Street
Victoria, B.C.
V8W 3X4
Bid Fax: (250) 363-3344

INVITATION TO TENDER
APPEL D'OFFRES

Tender To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Soumission aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet Concrete Floats	
Solicitation No. - N° de l'invitation F1700-150924/A	**Date** 2016-01-20
Client Reference No. - N° de référence du client F1700-150924	**GETS Ref. No. - N° de réf. de SEAG** PW-$XLV-211-6909
File No. - N° de dossier XLV-5-38200 (211)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2016-03-01**	**Time Zone** **Fuseau horaire** Pacific Standard Time PST
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Buchan, Torrey	**Buyer Id - Id de l'acheteur** xlv211
Telephone No. - N° de téléphone (250) 363-3249 ( )	**FAX No. - N° de FAX** (250) 363-3960
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** FISHERIES AND OCEANS CANADA SEE HEREIN	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée See Herein	**Delivery Offered - Livraison proposée**
Vendor/Firm Name and Address **Raison sociale et adresse du fournisseur/de l'entrepreneur** **Telephone No. - N° de téléphone** **Facsimile No. - N° de télécopieur**	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) **Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)** **Signature** **Date**	

Issuing Office - Bureau de distribution
Public Works and Government Services Canada - Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Canada

Table of Contents

PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

Part 1 General Information: provides a general description of the requirement;

Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;

Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Requirement, and the Basis of Payment, and any other annexes.

1.2 Summary

The Department of Fisheries and Oceans (DFO), Small Craft Harbours (SCH) and Real Property, Safety, and Security (RPSS) branches have a requirement for the fabrication and delivery of Concrete floats to multiple locations in British Columbia. There are multiple configurations required. Two different dual concrete float module configurations, and a quad concrete float module configuration.

There exists an option to acquire two (2) additional modules, to be exercised by July 15, 2016.

Bidders must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2003.

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual*(https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.
Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2015-09-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as “proprietary” will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in British Columbia.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid - Two hard copies and one soft copy on USB flash drive;
Section II: Financial Bid - One hard copy and one soft copy on USB flash drive;
Section III: Certifications - One hard copy and one soft copy on USB flash drive;
* The soft copies for all sections should be provided on a single USB flash drive.

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

(a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
(b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html). To assist Canada in reaching its objectives, bidders should:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and

2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

3.1.1 Section I: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

3.1.2 Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet at Annex H. The total amount of Applicable Taxes must be shown separately.

3.1.2.1 Exchange Rate Fluctuation

SACC Manual clause C3011T (2013-11-06), Exchange Rate Fluctuation

3.1.3 Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Financial Evaluation

SACC Manual clause A0220T (2014-06-26), Evaluation of Price

4.2 Basis of Selection

A bid must comply with all requirements of the bid solicitation to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed Declaration Form, to be given further consideration in the procurement process.

5.2 Certifications Required Precedent to Contract Award

5.2.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid " list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex J, Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

5.2.3 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

5.2.4 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the

time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Financial Capability

SACC Manual clause A9033T (2012-07-16), Financial Capability

6.2 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex C.

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

6.3 Contract Financial Security

If the bid is accepted, the Bidder must provide one of the following contract financial securities within 10 calendar days after the date of contract award. The Bidder is to indicate below, the type of Contract Financial Security they intend to provide and for which they have inserted a cost in Annex H:

EITHER

( )

a. a performance bond (form PWGSC-TPSGC 505) and a labour and material payment bond (form PWGSC-TPSGC 506), each in the amount of 50% percent of the contract price. Any bond must be accepted as security by one of the bonding companies listed in Treasury Board Contracting Policy, Appendix L, Acceptable Bonding Companies.

OR

( )

b. a security deposit (as defined in Paragraph 4 below) to the value of 10 percent of the contract price.

2. Security deposits in the form of government guaranteed bonds with coupons attached will be accepted only if all coupons that are unmatured, at the time the security deposit is provided, are attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.

3. If Canada does not receive the required financial security within the specified period, Canada may terminate the Contract for default pursuant to the Contract default provision.

4. In this clause:

"security deposit" means

a. a bill of exchange that is payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or
b. a government guaranteed bond; or
c. an irrevocable standby letter of credit, or
d. such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;

“approved financial institution" means

a. any corporation or institution that is a member of the Canadian Payments Association;

b. a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the "Régie de l'assurance-dépôts du Québec" to the maximum permitted by law;
c. a credit union as defined in paragraph 137(6) of the Income Tax Act;
d. a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by a Canadian province or territory;
e. the Canada Post Corporation.

"government guaranteed bond" means

a. a bond of the Government of Canada or a bond unconditionally guaranteed as to principal and interest by the Government of Canada that is:
   i. payable to bearer;
   ii. accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the Domestic Bonds of Canada Regulations;
   iii. registered in the name of the Receiver General for Canada.

"irrevocable standby letter of credit" means

a. means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,
   i. will make a payment to or to the order of Canada, as the beneficiary;
   ii. will accept and pay bills of exchange drawn by Canada;
   iii. authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or
   iv. authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.

“conditions” of the letter of credit are

a. must state the face amount which may be drawn against it;
b. must state its expiry date;
c. must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by his/her office;
d. must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;
e. must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600;
f. must clearly specify that it is irrevocable or considered to be irrevocable pursuant to article 6c) of the ICC Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600; and
g. must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

6.4 Workers’ Compensation – Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The Bidder must provide, within **twenty-four hours** following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

6.5 Welding Certification

Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

a. CSA W47.1-09 (R2014), Certification of Companies for Fusion Welding of Steel (minimum division level 2.1).

Before contract award and within **twenty-four hours** of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its (or its subcontractor's) certification to the welding standards.

6.6 Valid Labour Agreement

If the Bidder has a labour agreement, or other suitable instrument, in place with its unionized labour or workforce, it must be valid for the proposed period of any resulting contract. Before contract award and within **twenty-four hours** of the written request by the Contracting Authority, the Bidder must provide evidence of that agreement.

6.7 List of Proposed Sub-contractors

As part of their Technical Bid, Bidders must submit a completed Annex L, Subcontractor List.

If the bid includes the use of subcontractors, the bidder must submit a completed Annex M, Subcontractor List, which includes a description of the things to be purchased, a description of the work to be performed by specification section and the location of the performance of that work. The list should not include the purchase of off-the-shelf items, software and such standard articles and materials as are ordinarily produced by manufacturers in the normal course of business, or the provision of such incidental services as might ordinarily be subcontracted in performing the Work, i.e. subcontract work valued at less than $1,000.00.

6.8 Preliminary Project Schedule

6.8.1 As part of their technical bid, the Bidder must submit their preliminary project schedule, in MS Project, MS Excel format, or equivalent. The project schedule must include the Bidder's work breakdown structure, the scheduling of main activities and milestone events, and any potential problem areas involved in completing the Work.

6.8.2 For the bidders scheduling purposes only, assume the contract will be awarded on **March 11, 2016.**

6.9 ISO 9001:2008 – Quality Management Systems

Before contract award and within **twenty-four hours** of the written request by the Contracting Authority, the Bidder must provide its current ISO Registration Documentation indicating its registration to ISO 9001:2008.

Documentation and procedures of bidders not registered to the ISO standards may be subject to a Quality System Evaluation (QSE) by the Inspection Authority or designate before award of a contract.

6.10 Contractor's Quality Management System

1. As part of their technical bid, the Bidder must provide objective evidence that it has a Quality Assurance Program, which must be in place during the performance of the Work, and which addresses the quality control elements below.

2. The objective evidence may be in the form of a copy of the Bidder's Quality Assurance Manual which addresses these elements.

3. The Bidder must also provide a minimum of two (2) samples of completed quality records used on the most recent marine vessel construction at its facility.

4. The quality control elements must include, as a minimum:

   Management Representative
   Quality Assurance Manual
   Quality Assurance Program Descriptions
   Quality Reporting Organization
   Documentation
   Measuring and Testing Equipment
   Procurement
   Inspection and Test Plan

Incoming Inspection
In-Process Inspection
Final Inspection
Special Processes
Quality Records
Non Conformance Corrective Action

1. Bidders' facilities may be audited by Canada, or its authorized representative, prior to award of contract to ensure that a system is in place in accordance with the foregoing requirement.

PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

7.1 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex A.

7.1.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire up to two (2) additional *Concrete Float Modules* as described at *Annex A* of the Contract under the same conditions and at the prices and/or rates stated in Annex B of the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before **July 15, 2016** by sending a written notice to the Contractor.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual*(https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

7.2.1 General Conditions

2030 (2015-09-03), General Conditions - Higher Complexity - Goods, and
1031-2 (2012-07-16), Contract Cost Principles, apply to and form part of the contract.

7.3 Term of Contract

7.3.1 Delivery Date

All the deliverables must be received on or before the following deadlines:

Module	Delivery Deadline
Firm Work	
Two (2) Dual Type I Modules	July 29, 2016
Two (2) Quad Type II Modules	September 15, 2016
Option Work (if exercised)	
One (1) Dual Type II Module	September 30, 2016
One (1) Quad Type II Module	January 15, 2017

7.3.2 Shipping Instructions – Delivered Duty Paid

Goods must be consigned and delivered to the destination specified in the contract:
Incoterms 2000 "DDP Delivered Duty Paid" to the locations stated in Annex A.

7.3.3 Failure to Deliver

Delivery is an essential part of this contract. Except for excusable delays notified in accordance with Section 11 of 2030 General Conditions - Higher Complexity - Goods, failure to deliver by the date(s) specified in this Contract will prejudice the Government of Canada and will, at the Government of Canada's discretion, entail either:

A. Contract Termination in accordance with 2030 General Conditions Sections 10 (Time of the Essence) and 30 (Default by the Contractor); or
B. Consideration for Contract Amendment. Delivery date(s) will not be extended without consideration being provided by the Contractor in the form of adjustment to the price, warranty, quantity and / or service to be provided.

7.4 Authorities

7.4.1 Contracting Authority

The Contracting Authority for the Contract is:

Name:	Torrey Buchan
Title:	Supply Specialist
	Public Works and Government Services Canada
	Acquisitions Branch
	Acquisitions, Marine
Address:	1230 Government Street, Suite 401
Victoria, BC	V8W 3X4 Canada
Telephone :	250-216-2092
Facsimile:	250-363-3960
E-mail address:	torrey.buchan2@pwgsc-tpsgc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

7.4.2 Technical Authority

The Technical Authority for the Contract is provided upon Contract award.

Name:	_____
Title:	_____
Organization:	_____
Telephone:	___-___-_____
Facsimile:	___-___-_____
E-mail address:	_____

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

7.4.3 Inspection Authority

The Inspection Authority for the Contract is the Technical Authority.

The Inspection Authority is the representative of the department or agency for whom the Work is being performed under the Contract and is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

7.4.4 Contractor's Representative

Bidder is to complete the table below and submit it with their bid.

Contact for:	Name	Telephone	Email
Contracting issues			
Technical issues			
Invoicing issues			

7.5 Payment

7.5.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit prices as specified in Annex B for a cost of $ _____. Customs duties included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

7.5.2 Progress Payments

Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work up to 90 percent of the amount claimed and approved by Canada if:

a. an accurate and complete claim for payment using form PWGSC-TPSGC 1111 and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract.

b. the amount claimed is in accordance with the basis of payment;

c. the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;

d. all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.

2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

7.5.3 Warranty Holdback

A warranty holdback of 5% of the contract price will be applied to the payment of the final invoice. This holdback will be payable by Canada upon the expiry of a 90 day holdback period. Applicable Taxes will be calculated on the warranty holdback amount and paid at the time that the warranty holdback is released.

7.5.4 Discretionary Audit

SACC Manual clause C0100C (2010-01-11), Discretionary Audit - Commercial Goods and/or Services

7.5.5 Time Verification

SACC Manual clause C0711C (2008-05-12), Time Verification

7.6 Invoicing Instructions

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.
   Each claim must show:
   a. all information required on form PWGSC-TPSGC 1111;
   b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
   c. the description and value of the milestone claimed as detailed in the Contract.

2. Each claim must be supported by an invoice on the Contractor's letterhead.

3. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.

4. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Inspection Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

   The Inspection Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

7.7 Certifications

7.7.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing associated information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

7.7.2 Workers' Compensation

The Contractor must maintain its account in good standing with the applicable provincial or territorial Workers' Compensation Board for the duration of the Contract.

7.7.3 Welding Certification

7.7.3.1 The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

CSA W47.1-03, Certification for Companies for Fusion Welding of Steel *(Minimum Division Level 2.1)*

7.7.3.2 In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

7.7.3.3 Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.

7.7.4 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the

Contractor will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

7.8 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____.

7.9 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

(a) the Articles of Agreement;
(b) the Contract Cost Principles 1031-2 (2012-07-16);
(c) the general conditions 2030 (2015-09-03), General Conditions - Higher Complexity – Goods;
(d) Annex A, Requirement;
(e) Annex B, Basis of Payment;
(f) Annex C, Insurance Requirements;
(g) Annex D, Warranty Procedures;
(h) Annex E, Procedure for Implementing Additional Work;
(i) Annex F, Project Management Services;
(j) Annex G, Questions and Answers;
(k) the Contractor's bid dated _____.

7.10 Insurance

The Contractor must comply with the insurance requirements specified in Annex C. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) calendar days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an Insurer with an A.M. Best Rating no less than “A-”. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

7.11 Contract Financial Security

1. The Contractor must provide one of the following contract financial securities within 10 calendar days after the date of contract award:

   a. a performance bond form PWGSC-TPSGC 505 and a labour and material payment bond form PWGSC-TPSGC 506, each in the amount of 50 percent of the Contract Price; or

   b. a security deposit as defined in clause E0008C in the amount of 10 percent of the Contract Price.

   Any bond must be accepted as security by one of the bonding companies listed in *Treasury Board Contracting Policy, Appendix L*, Acceptable Bonding Companies.

2. Security deposits in the form of government guaranteed bonds with coupons attached will be accepted only if all coupons that are unmatured, at the time the security deposit is provided, are

attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.

3. If Canada does not receive the required financial security within the specified period, Canada may terminate the Contract for default pursuant to the Contract default provision.

4. Security Deposit Definition - Contract

1. "security deposit" means

a. a bill of exchange that is payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or

b. a government guaranteed bond; or

c. an irrevocable standby letter of credit, or

d. such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;

2. "approved financial institution" means

a. any corporation or institution that is a member of the Canadian Payments Association;

b. a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec to the maximum permitted by law;

c. a credit union as defined in paragraph 137(6) of the *Income Tax Act*;

d. a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by a Canadian province or territory; or

e. the Canada Post Corporation.

3. "government guaranteed bond" means a bond of the Government of Canada or a bond unconditionally guaranteed as to principal and interest by the Government of Canada that is:

a. payable to bearer;

b. accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the *Domestic Bonds of Canada Regulations*;

c. registered in the name of the Receiver General for Canada.

4. "irrevocable standby letter of credit"

a. means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,

i. will make a payment to or to the order of Canada, as the beneficiary;

ii. will accept and pay bills of exchange drawn by Canada;

iii. authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or

iv. authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.

b. must state the face amount which may be drawn against it;

c. must state its expiry date;

d. must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by hisher office;

e. must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;

f. must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600. Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and

g. must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

5. Term of Financial Security

Any bond, bill of exchange, letter of credit or other security provided by the Contractor to Canada in accordance with the terms of the Contract must not expire before 90 days after the completion date indicated in the Contract.

Provided that no risk will accrue to Canada as a result, The Contracting Authority can, at its sole discretion, return the financial security to the Contractor before the expiration date indicated in the Contract.

7.12 Trade Qualifications

The Contractor must use qualified, certificated (if applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Inspection Authority may request to view and record details of the certification and/or qualifications held by the Contractor’s tradespeople. This request should not be unduly exercised but only to ensure qualified tradespeople are on the job

7.13 Sub-contract and Sub-contractor List

The Contracting Authority is to be notified, in writing, of any changes to the list of subcontractors before commencing the work.

When the Contractor sub-contracts work, a copy of the sub-contract purchase order is to be passed to the Contracting Authority. In addition, the Contractor must monitor progress of sub-contracted work and inform the Inspection Authority or designate on pertinent stages of work to permit inspection when considered necessary by the Inspector.

7.14 Project Schedule

The Contractor must provide a detailed work schedule to the Contracting and Technical Authorities no later than five (5) calendar days after the contract award date showing the commencement and completion dates for the Work in the available work period, including realistic target dates for significant events. During the Work Period the schedule is to be reviewed on an ongoing basis by the Inspection Authority and the Contractor, updated when necessary, and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

The schedules must be revised on a pre-defined basis. (The revised schedules must show the effect of progressed work and approved design changes. Any changes to the dates of the Work Period of the contract due to unscheduled work will not be accepted except as negotiated in accordance with Annex E, Procedures for Processing Additional Work.

7.14.1 Progress review report

Progress Review Reports shall be provided detailing the Work completed to date, a copy of the updated Master Schedule, problems incurred as well as problems solved and how they were solved for the current reporting period. The report shall be provided monthly to the Contracting Authority and should be provided electronically.

7.15 Progress Review and Technical Meetings

7.15.1 Progress Review Meetings shall be held at the Contractor's facility and chaired by the Contracting Authority. The first meeting shall be held within four (4) weeks of Contract Award and the following Progress Review Meetings shall be held as required or as requested by the Contractor, TA, or CA. Attendees will be the Contractor Representatives, the Contracting Authority, Inspection Authority and Technical Authority.

The draft agenda will be provided by the Contractor to the Contracting Authority with a copy to the Inspection Authority and Technical Authority approximately five (5) working days prior to each meeting for review by attendees and request for additions. The final agenda will be provided at the meeting by the Contractor.

The Contractor shall record the minutes of all meetings, and include as a minimum discussion items, records of decisions, all action items, risk items, and a record of conclusions reached at the Technical Meetings. The Contractor will distribute a draft of all minutes to the Contracting Authority, Inspection Authority and Technical Authority for review and comment of Canada prior to issuing the final version. The Minutes shall be signed as accepted by the Contractor, Contracting Authority, Technical Authority and the Inspection Authority once comments are incorporated to the satisfaction of Contracting Authority.

7.15.2 Technical Meetings shall be held as required at the Contractor's facility and chaired by the Technical Authority. Attendees will be the Contractor Representatives, Inspection Authority and Technical Authority.

The Minutes shall be signed as accepted by the Contractor and Technical Authority once comments are incorporated to the satisfaction of Technical Authority.

7.15.3 Wherever possible the Progress Review and Technical Review Meetings will be held together and co-chaired by the Contracting and Technical Authorities. The minutes of these meetings shall be signed as accepted by the Contractor, Contracting Authority and Technical Authority once comments are incorporated to the satisfaction of the Contracting Authority.

7.16 Outstanding Work and Acceptance

1. The acceptance of the Work must be in accordance with form PWGSC-TPSGC 1105, Acceptance.

   The Technical Authority or designate, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the Acceptance Document.

2. The Contractor must complete the above form in three (3) copies, which will be distributed by the Contracting Authority as follows:
   a. original to the Contracting Authority;
   b. one copy to the Technical Authority;
   c. one copy to the Contractor.

7.17 ISO 9001:2008 – Quality Management Systems

The Contractor is responsible for implementing a quality system appropriate to the scope of the work to be performed. It is recommended that the quality system be based on *ISO 9001:2008 "Quality management systems - Requirements."*

The Contractor is responsible for performing or having performed all inspections and tests necessary to substantiate that the materiel or services provided conform to the drawings, specifications and the requirements of the contract. The Contractor must keep accurate and complete inspection records which must, upon request, be made available to the Inspection Authority, who may make copies and take extracts during the performance of the Contract and for a period of one (1) year after the completion of the Contract.

Despite the above, all materiel is subject to verification and acceptance by the Inspection Authority at destination. The authorized DFO representative at destination may either be the consignee(s), the Technical Authority, or the Inspection Authority.

7.18 Quality Plan

No later than ten (10) calendar days after the effective date of the Contract, the Contractor must submit for acceptance to the Technical Authority a Quality Plan prepared according to the latest issue (at contract date) of ISO 10005:2005 "Quality management systems - Guidelines for quality plans". The Quality Plan must describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the Quality Plan.

The documents referenced in the Quality Plan must be made available when requested by the Technical Authority.

If the Quality Plan was submitted as part of the bidding process, the Contractor must review and, where appropriate, revise the submitted plan to reflect any changes in requirements or planning which may have occurred as a result of pre-contract negotiations.

Upon acceptance of the Quality Plan by the Technical Authority, the Contractor must implement the Quality Plan. The Contractor must make appropriate amendments to the Quality Plan throughout the term of the contract to reflect current and planned quality activities. Amendments to the Quality Plan must be acceptable to the Technical Authority.

7.19 Insulation Materials – Asbestos Free

All materials used to insulate the Work must meet Transport Canada Marine standards, for commercial marine work, and, for all work, be free from asbestos in any form.

7.20 SACC Manual clauses

A9055C (2010-08-16), Scrap and Waste Material;

ANNEX A

REQUIREMENT

A copy of the Annex A, Requirement is attached as an electronic attachment at the end of the solicitation.

APPENDIX 1 - DRAWINGS

For a copy of the Drawings, contact the Contracting Authority at:
torrey.buchan2@pwgsc-tpsgc.gc.ca

ANNEX B

BASIS OF PAYMENT

Bidder's Instructions
The following sample is provided as an example of the pricing structure of any resulting Contract. Bidder's should **NOT** complete this schedule. For submission of bid pricing, bidders are to refer to Annex H.

B1. Pricing Schedule – Known Work

Item	Description	Unit Price	QTY	Extended Price (CAD$)
1.	**Known Work (Four Modules)** In accordance with Annex A and all associated Appendices.	LOT		$ _XXXXXXXXXX_
			Subtotal	$ _XXXXXXXXXX_
			GST (5%)	$ _XXXXXXXXXX_
			Contract Financial Security	$ _XXXXXXXXXX_
			Firm Total	$ _XXXXXXXXXX_

B2. Optional Units (if exercised)

Item	Description	Unit Price	QTY	Extended Price (CAD$)
1.	**Optional Module – Dual Type II Concrete Float** In accordance with Annex A, and all associated Appendices.	LOT		$ _XXXXXXXXXX_
2.	**Optional Module – Quad Type II Concrete Float** In accordance with Annex A, and all associated Appendices.	LOT		$ _XXXXXXXXXX_
			GST (5%)	$ _XXXXXXXXXX_
			Firm Total	$ _XXXXXXXXXX_

B3. Unscheduled Work

3.1 Unscheduled work arising, as authorized by the Minister, will be calculated in the following manner:

Number of hours (to be negotiated) X $__XXXXX__ your firm hourly Charge-out Labour Rate which includes Overhead and profit, plus net laid-down cost of materials to which will be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour. The firm hourly Charge-out Labour Rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments.

3.2 Notwithstanding definitions or usage elsewhere in this document, or in the Bidder's Cost Management System, when negotiating Hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

3.3 Allowance for Related Labour Costs such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered above.

3.4 The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Charge-out Labour Rate. A separate labour component for the purchase and handling of materials or subcontract administration is not allowable.

B4. Overtime

4.1 The Contractor must not perform any overtime under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing the details of the overtime performed pursuant to the written authorization.

4.2 Payment for authorized overtime will be calculated as follows:

Number of hours (to be negotiated) X $___XXXXXX_ per hour Overtime Labour Rate.

ANNEX C

INSURANCE REQUIREMENTS

C.1 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $5,000,000 per accident or occurrence and in the annual aggregate.

2. The Commercial General Liability policy must include the following:
   a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
   b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
   c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
   d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
   e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
   f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
   g. Employees and, if applicable, Volunteers must be included as Additional Insured.
   h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
   i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
   j. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
   k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
   l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
   m. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.
   n. Litigation Rights: Pursuant to subsection 5(d) of the *Department of Justice Act*, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

      For the province of Quebec, send to:
      Director Business Law Directorate,
      Quebec Regional Office (Ottawa),
      Department of Justice,
      284 Wellington Street, Room SAT-6042,
      Ottawa, Ontario, K1A 0H8

      For other provinces and territories, send to:
      Senior General Counsel,
      Civil Litigation Section,
      Department of Justice

234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

ANNEX D
WARRANTY PROCEDURES

D.1 Scope

a. The following are the procedures that suit the particular requirements for warranty considerations for a new vessel.

D.2 Reporting Failures with Warranty Potential

a. The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification, location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.

b. These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions. Since the TA has the closest and most active involvement of the contracted work completed this agency must assume this role.

D.3 Procedures

a. Immediately once it becomes known to end user that an equipment/system is performing below accepted standards or has become defective, the procedures for the investigation and reporting are as follows:

i. The end user advises the Technical Authority when a defect has occurred.

ii. On review of the Specification and the Acceptance Document, the Technical Authority in consort with end user is to complete the Tombstone Data and section 1 of the Warranty Claim Form Appendix 1 of Annex "E" and forward the original to the Contractor for review with a copy to the PWGSC contracting Authority. If the PWGSC Contracting is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor. Warranty defect claims may be forwarded in hard copy, by fax or by e-mail whichever format is the most convenient.

iii.. Assuming the Contractor accepts full responsibility for repair, the Contractor completes Section 2 and 3 of the Warranty Claim Form, returns it to the TA who confirms corrective action has been completed, and who then distributes the form to the PWGSC Contracting Authority.

b. In the event that the Contractor disputes the claim as a warranty defect, or agrees to share, the contractor is to complete Part 2 and 3 of the Warranty Claim Form with the appropriate information and forward it to the Contracting Authority who will distribute copies as necessary.

c. When a warranty defect claim is disputed by the Contractor, the Technical Authority may arrange to correct the defect by in-house resources or by contracting the work out. All associated costs must be tracked and recorded as a possible charge against the contractor by PWGSC action. Material costs and manhours expended in correcting the defect are to be recorded and entered in Section 5 of the warranty defect claim by the Technical Authority who will forward the warranty defect claim to the PWGSC Contracting Authority for action. Defective parts of equipment are to be retained pending settlement of claim.

d. Defective equipment associated with potential warranty should not normally be dismantled until the Contractor's representative has had the opportunity to observe the defect. The necessary work is to be undertaken through normal repair methods and costs must be segregated as a possible charge against a contractor by PWGSC action.

D.4 Liability

a. Agreement between the Contracting Authority, Technical Authority and the Contractor will result in one of the following conditions:

i. The Contractor accepts full responsibility for costs to repair or overhaul under the warranty provisions of the contract;

ii. The Technical Authority accepts full responsibility for repair and overhaul of item concerned; or The Contractor and the Technical Authority agree to share responsibility for the costs to repair oroverhaul the unserviceable item, in such cases the PWGSC Contracting Authority will negotiate the best possible sharing arrangement.

b. The total cost of processing warranty claims must include accommodation and travel costs of the Contractor's employees as well as equipment/system down time and operational constraints. Accordingly, the cost to remediate the defect, in manhours and material, will be discussed between the Contracting/Inspection Authorities and the Technical Authority to determine the best course of action.

D.5 Alongside Period For Warranty Repairs and Checks

a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 12 month warranty periods. This alongside period is to provide time for warranty repair and check by the contractor.

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

PWGSC File No.; F1700-150924

WARRANTY CLAIM

Réclamation De Garantie

Vessel Number – Numero de navire	File No. – No de dossier	Contract No. –No de Contrat
Client Department – Ministere client		Warranty Claim Serial No. Numéro de série de réclamation de Garantie
Contractor – Entrepreneur		Effect on Vessel Operations Effet sur des operations de navire Critical Degraded Operational Non-operational Critique Dégradé Opérationnel Non-opérationnel

1. Description of Complaint – Description de plainte

Contact Information – l'information de contact	
~~Name-Nom~~ ~~Tel.No – No Tel~~	Signature/Date

2. Contractor's Investigative Report – Le rapport de l'entrepreneur

Canada

WARRANTY CLAIM 2/2

Réclamation De Garantie

2. Contractor's Investigative Report – Le rapport de l'entrepreneur

3. Contractor's Corrective Action – La modalite de reprise de l'entrepreneur	
Contractors Name and Signature-Nom et signature de l'entrepreneur	Date of Corrective Action-Date de modalite de reprise
Client Name and Signature-Nom et signature de client	Date

4. PWGSC Review of Warranty Claim Action – Examen d'action de reclamation de garantie par TPSGC	
Contract Authority	Date

Canada

ANNEX E
PROCEDURE FOR IMPLEMENTING ADDITIONAL WORK

E1 Purpose

The Additional Work Procedure has been instituted for the following purposes:

(a) To establish a uniform method of dealing with requests for Additional Work;

(b) To obtain the necessary Technical Authority approval and Contracting Authority authorization before Additional work commences; and

(c) To provide a means of maintaining a record of Additional Work requirements including Serial Numbers, dates, and accumulated cost.

E.2 Definitions

(a) An Additional Work Procedure is a contractual procedure whereby changes to the scope of Work under the Contract may be defined, priced and contractually agreed to;

(b) The procedure does not allow for the correction of deficiencies in the Contractor's Proposal.

E.3 Procedures

(a) The procedure involves the form PWGSC-TPSGC 1686 for new construction. This form is to be used when the work has been fully defined, and the final cost has been agreed to and/or negotiated. It will be the form for authorizing all Additional Work to be followed by Contract Amendment.

(b) Emergency measures required to prevent loss or damage to the Vessel, which would occur if this procedure is followed, shall be taken by the Contractor on its own authority. The responsibility for the cost of such measures shall be determined in accordance with the terms and conditions of the contract.

(c) The Technical Authority will initiate a work estimate request by defining the Additional Work requirement. It will attach drawings, sketches, additional Specification, other clarifying details as appropriate, and allocate their Serial Number for the request.

(d) Notwithstanding the foregoing, the Contractor may propose to the Technical Authority in writing, either by letter or a Defect Advice Form (this is the Contractor's own form) that certain Additional Work should be carried out. The Technical Authority will either reject or accept such proposal, and advise the Contractor and Contracting Authority. Acceptance of the proposal is not to be construed as authorization for the work to proceed. If required, the Technical Authority will then define the Additional Work requirement in accordance with subparagraph 3(c).

(e) After the Additional Work requirement is defined, the original and one (1) copy with all attachments, will be passed by the Technical Authority to the Contracting Authority.

(f) The Contracting Authority will retain the original with attachments and submit a copy with attachments to the Contractor.

(g) The Contractor will submit its Proposal (Paragraph 6 - Form Of Proposal and Supporting Documentation) to the Contracting Authority together with any qualifications, remarks or other information requested.

(h) After discussion between the Contracting Authority and the Contractor and if no negotiation is required, the Contractor will then complete the PWGSC-TPSGC 1686 including the agreed costs, allocate a Serial Number, sign the form and pass it to the Contracting

Authority. If the Technical Authority wishes to proceed, the form will be signed then. The Contracting Authority will then sign and Authorize the Additional Work to proceed.

(i) In the event negotiation is required, the Contracting Authority will arrange for the negotiations. If negotiations are successful the Contractor will then complete the PWGSC-TPSGC 1686 form including the agreed costs, sign the form and pass it to the Contracting Authority. The Contracting Authority will then pass the form to the Technical Authority. If the Technical Authority wishes to proceed they will sign the form. The Contracting Authority will then sign and authorize the Additional Work to proceed.

(j) In the event the Technical Authority does not wish to proceed with the work, they will cancel the proposed Additional Work through the Contracting Authority in writing.

(k) In the event the negotiation involves a Credit, the appropriate PWGSCTPSGC form 1686 will be noted as "credit" accordingly.

(l) In the event that Additional Work of an urgent nature is required by the Technical Authority, or an impasse has occurred in negotiations, the commencement of the Additional work should not be unduly delayed and should be processed as follows, in either case. The Contractor will complete the appropriate PWGSC-TPSGC form indicating the offered cost and pass it to the Contracting Authority. If the Technical Authority wishes to proceed, the Technical Authority and the Contracting Authority will sign the completed PWGSC-TPSGC form with the notation, "CEILING PRICE SUBJECT TO DOWNWARD ADJUSTMENT", and allocate a Serial Number having the suffix "A". The work will proceed with the understanding that following an audit of the Contractor's actual costs for completing the described work, the cost will be finalized at the ceiling price or lower, if justified by the audit. A new PWGSC/TPSGC form will then be completed with the finalized costs, signed and issued with the same Serial Number without the suffix "A", and bearing a notation that this form is replacing and canceling the form having the same Serial Number with the suffix "A". PWGSC-TPSGC forms bearing Serial Numbers with a suffix "A" shall not to be included in any contract amendments, and therefore no payment shall be made until final resolution of the price and incorporation into the contract.

(m) No work may be undertaken by the Contractor without written authorization of the Contracting Authority except under emergency circumstances described in sub-paragraph 3(b). Additional Work undertaken without written Contracting Authority authorization will be considered the Contractor's responsibility and cost.

(n) The PWGSC-TPSGC 1686 form is the final summary of the definition of the Additional work requirement, and the costs negotiated and agreed to. The Contracting Authority will forward the original to the Contractor and distribute copies as required.

E.4 Amendment to Contract or Formal Agreement

The Contract will be amended from time to time in accordance with the Contract terms to incorporate the costs authorized on the appropriate PWGSC-TPSGC 1686 forms.

E.5 Form of Description of Additional Work

The Statement of Work for the Additional Work will be limited to a statement of what has to be done. It will state how conformance will be measured or inspected.

E.6 Form of Proposal and Supporting Documentation

(a) The Contractor will be afforded an opportunity, prior to submitting a Proposal, to discuss any technical questions regarding the statement of work for the Additional Work item. If

necessary, a meeting will be held, prior to the submission of a Proposal, to review the statement of work in order to ensure that there is a clear understanding of the technical and other requirements, including the effect on Annex “B” to schedules and supply of materials. Requests for such meetings will be made to the Contracting Authority who will also chair the meetings. Any additions or deletions to the statement of work agreed to at such meetings will be the subject of a formal amendment to the statement of work and processed by the Technical Authority through the Contracting Authority.

(b) The Contractor's Proposal for each Additional work item shall be broken down as to person hours by trade and material cost per item. These breakdowns shall accompany each submission by the Contractor to the Contracting Authority prior to any required negotiations.

(c) Prior to any required negotiation, the Contractor shall provide to the Contracting Authority, for its retention, the following:
   (i) A work plan and/or any sketches and marked-up drawings as appropriate or requested; and
   (ii) Copies of subcontractor and/or material suppliers' quotations (including the Contractor's requests for such quotations). In the event telephone quotations are used to finalize the negotiations, these quotations would be subject to later verification by the Crown. The Contractor shall provide copies of purchase orders and paid invoices for subcontracts and/or materials, including stocked items, in either case.

(d) Subcontracts and materials - The Contractor shall provide a minimum of two quotations for subcontracts or materials. If other than the lowest, or sole source is being recommended for quality and/or delivery considerations, this shall be noted. On request to the Contractor, the Contracting Authority shall be permitted, to meet with any proposed subcontractor or material supplier for discussion of the price. These requests will generally be limited to major sole source situations and always with the Contractor's representative present.

(e) The selected Contractor shall have a cost accounting system that is capable of assigning job numbers for each Additional Work requirement so that each requirement can be audited individually. Prior to award of Additional Work, the selected Contractor shall provide written statements that a cost accounting system exists. The cost accounting system may be reviewed by the Contracting Authority prior to award of any Additional Work.

E.7 Supply Of Forms

On request, the Contracting Authority will supply the appropriate form PWGSC-TPSGC 1686.

ANNEX F
PROJECT MANAGEMENT SERVICES

F.1 Intent

a. Job titles used in this Annex are for clarity within this document only. The Contractor is free to choose job titles that suit their organization.

b. The Contractor, through their Project Management Team, is responsible to discharge the duties and supply the deliverables required in the Contract and the Specifications.

c. Project Management is considered to encompass the direction and control of such functions as engineering, planning, purchasing, manufacturing, assembly, overhauls, installations and test and trials.

F.2. Project Manager

a. The Contractor must supply an experienced Project Manager (PM) dedicated to this project and delegate to him/her full responsibility to manage the project.

F.3 Project Management Team

a. Other than the Project Manager, the Contractor may assign and vary other job descriptions to suit their organization; provided however that the collective resume of their Project Management Team must provide for effective control of the project elements including but not limited to:

i. Project Management
ii. Quality Assurance
iii. Material Management
iv Planning and Scheduling
v. Subcontracts Management

F.4 Reports

a. The following Management Reports and Documentation are to be prepared and maintained by the Contractor and submitted to the Crown in accordance with the Contract or upon request by the Contracting Authority:

i. Production Work Schedule
ii. Inspection Summary Report

F.5 Bid Solicitation Deliverables

a. Names, brief resumes, and a list of duties for each of the team members that ensures that each of the project elements listed in article 3 above have been addressed.

ANNEX G
QUESTIONS AND ANSWERS

This Annex will include a list of any Questions and Answers addressed during the Solicitation period.

To be completed as required during the bid solicitation period.

Item	Spec-RFP description	Questions	Answers

ANNEX H
FINANCIAL BID PRESENTATION SHEET

Bidder's Instructions:

For an excel version of this Annex, contact the Contracting Authority.

The bidder must fill out the pricing schedule below and include it in their Financial Bid package. The aggregate total of all the extended prices provided in the schedule below will form the price that will be evaluated. GST is extra.

To be considered responsive, the bidder must complete the Financial Bid Presentation Sheet and the supporting Appendix 1 – Detailed Pricing Datasheet, and submit them with their bid.

The Pricing provided in the bid will be incorporated into the resulting Basis of Payment of the Contract. The Option Module and Unscheduled Work priced herein is included for the purpose of evaluation, but the associated costs will only be incurred if the work is authorized in writing by the Contracting Authority. If there is a discrepancy between the unit pricing provided under Item 1 below and the unit pricing under the detailed pricing datasheet, the detailed pricing datasheet unit price will take precedence.

Pricing Schedule

Item	Description	Unit Price	QTY	Extended Price (CAD$)
Firm Work				
1	Fabrication and Supply of Dual Type I Concrete Float Modules	$ -	2	$ -
1.1	Delivery of the completed Dual Type 1 Modules	LOT		$ -
2	Fabricate and Supply of Quad Type II Concrete Float Module	$ -	2	$ -
2.1	Delivery of the completed Quad Type II Modules	LOT		$ -
			Total - Firm Work	$ -
Contract Financial Security				
3	The cost of the performance bond and labour and material payment bond, each in the amount of 50% of the Contract Price. If a security deposit is chosen, leave price blank.	LOT		$ -
			Total - Contract Financial Security	$ -

Optional Modules				
4	Fabricate and Supply (optional) Dual Type II Concrete Float Module	1 module		$ -
4.1	Delivery of the completed Dual Type II Module	LOT		$ -
5	Fabricate and Supply (optional) Quad Type II Concrete Float Module	1 module		$ -
5.1	Delivery of the completed Quad Type II Module	LOT		$ -
		Total - Optional Modules		$ -
Unscheduled Work				
The following rates will apply to all unscheduled work if requested and authorized in writing by the Contracting Authority.		**Unit Price**	**Estimated QTY* (HOURS)**	
1	Charge-out Labour Rate	$ -	800	$ -
2	Over-time Labour Rate	$ -	65	$ -
		Total - Unscheduled Work		$ -
*The Estimated Quantity provided in the table above is for evaluation purposes only and is not a guarantee of work.				

EVALUATED PRICE		
Item	**Description**	**Price**
I1.1	Total - Firm Work	$ -
I1.2	Total - Contract Financial Security	$ -
I1.3	Total - Optional Modules	$ -
I1.4	Total - Unscheduled Work	$ -
	EVALUATED PRICE (CAD$)	**$ -**

APPENDIX 1 – DETAILED PRICING DATASHEET

The following pricing schedule is on a per module basis. In order for a bid to be considered, the Detailed Pricing Datasheet and the Financial Bid Presentation Sheet must be submitted with the bid.

Line Item	Specification Detail	Material Cost	Labour Cost	Total Module Cost
1. Module Pricing - Dual Type I Concrete Float				
1.1	All materials and services not separated out below			
1.2	Project Management			
1.3	Quality Assurance			
1.4	Production Engineering & Shop Drawings			
1.5	Expanded polystyrene foam billets			
1.6	Concrete formwork and falsework			
1.7	Concrete Reinforcement			
1.8	Cast-in-place concrete work			
1.9	Concrete Curing & Finishing (including saw cutting & silane sealing)			
1.10	Coating & Anchoring for polystyrene mooring wells			
1.11	Metal fabrications			
1.12	Timber Bull Rails			
	Module Total - Dual Type I Concrete Float			
2. Module Pricing - Dual Type II Concrete Float				
1.1	All materials and services not separated out below			
1.2	Project Management			
1.3	Quality Assurance			
1.4	Production Engineering & Shop Drawings			

1.5	Expanded polystyrene foam billets			
1.6	Concrete formwork and falsework			
1.7	Concrete Reinforcement			
1.8	Cast-in-place concrete work			
1.9	Concrete Curing & Finishing (including saw cutting & silane sealing)			
1.10	Coating & Anchoring for polystyrene mooring wells			
1.11	Metal fabrications			
1.12	Timber Bull Rails			
	Module Total - Dual Type II Concrete Float			
3.	**Module Pricing - Quad Type II Concrete Float**			
1.1	All materials and services not separated out below			
1.2	Project Management			
1.3	Quality Assurance			
1.4	Production Engineering & Shop Drawings			
1.5	Expanded polystyrene foam billets			
1.6	Concrete formwork and falsework			
1.7	Concrete Reinforcement			
1.8	Cast-in-place concrete work			
1.9	Concrete Curing & Finishing (including saw cutting & silane sealing)			
1.10	Coating & Anchoring for polystyrene mooring wells			
1.11	Metal fabrications			
1.12	Timber Bull Rails			
	Module Total - Quad Type II Concrete Float			

ANNEX I
INTEGRITY PROVISIONS – LIST OF NAMES

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

_____
_____
_____
_____
_____

2. For a Partnership, General Partnership or Limited Partnership - the names of all current partners;

_____
_____
_____
_____
_____

3. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

_____
_____
_____
_____
_____

4. For a Joint Venture - the names of all current members of the Joint venture;

_____
_____
_____
_____
_____

5. For an individual - the full name of the person

_____
_____
_____
_____
_____

ANNEX J
FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC) – Labour's website.

Date:_____(YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.
A. Check only one of the following:

( ) A1. The Bidder certifies having no work force in Canada.

( ) A2. The Bidder certifies being a public sector employer.

( ) A3. The Bidder certifies being a federally regulated employer being subject to the *Employment Equity Act*.

( ) A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

( ) A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.
OR
( ) A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

( ) B1. The Bidder is not a Joint Venture.
OR
( ) B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

ANNEX K
SUB-CONTRACTOR LIST

Specification Item	Description of Goods/Services (Including Make, Model Number as applicable)	Name of Supplier	Address of Supplier

ANNEX L

BID PACKAGE CHECKLIST

L1.1 Mandatory Tender Deliverable Check List

Notwithstanding deliverable requirements specified anywhere else within this bid solicitation and its associated Requirement (Annex A), mandatory deliverables that must be submitted with the Bidder's tender to be deemed responsive, are summarized below.

The Bidder must submit a completed Annex L.

The following are mandatory and the Bidder's submission will be evaluated against the requirement as defined herein. The Bidder must be determined to be compliant on each item to be considered responsive.

No	Reference to Solicitation	Description	Condition	Document provided	Reference to Bid (Section, Page no., etc.)
1	Front page	Request for Proposal document part 1 page 1 completed and signed;	Mandatory with the bid	☐	
2	Article 3.1.1	Technical Bid	Mandatory with the bid	☐	
3	Article 6.2 / Annex C	Either a letter substantiating that the required insurance coverage will be provided, as per article 6.2 **OR** proof of insurance coverage, as required by Annex C,	Mandatory with the bid	☐	
4	Article 6.7, Annex K	Subcontractor list	Mandatory with the bid	☐	
5	Article 6.8	Preliminary Project Schedule	Mandatory with the bid	☐	
6	Article 6.10	Contractor Quality Management system	Mandatory with the bid	☐	
7	Annex F	Project Management Team Details, as per article G.5 of Annex F.	Mandatory with the bid	☐	
8	Annex H	Financial Bid Presentation Sheet, completed;	Mandatory with the bid	☐	
9	Appendix 1 to Annex H	Detailed Pricing Datasheet, completed;	Mandatory with the bid	☐	
10	Annex L	Annex L – Bid Package Checklist, completed	Mandatory with the bid	☐	

L1.2 Supporting Deliverable Requirements

If the following information which supports the bid is not submitted with the Bid; it may be requested by the Contracting Authority, and it must be provided within 24 hours of the written request:

No	Reference to Solicitation	Description	Condition	Document provided	Reference to Bid (Section, Page no., etc.)
1	Article 6.1	Financial Statements and information	24 hrs of written request	☐	
2	Article 6.4	Workers' Compensation Certification	24 hrs of written request	☐	
3	Article 6.5	Proof of welding certification	Mandatory with the bid	☐	
4	Article 6.6	Proof of valid Labour Agreement or similar instrument covering the work period.	24 hrs of written request	☐	
5	Article 6.9	ISO Registration Certificate (if applicable)	24 hrs of written request	☐	
6	Article 7.4.4	Contractor's Representatives, table completed	24 hrs of written request	☐	
7	Annex J, article 5.1.2	Federal Contractors Program for Employment Equity - Certification, completed and signed	24 hrs of written request	☐	
8	Annex I. article 5.1.1	Integrity Provisions – List of Names, completed and signed	24 hrs of written request	☐	

L1.3 Deliverables after contract award

The following information, which supports the bid, may be requested by the Contracting Authority, and it must be provided within the conditions stated in the table below of the written request:

No.	Article	Description	Condition
1	7.10	Insurance certificate	10 days after contract award
2	7.11	Contract Financial Security	10 calendar days after contract award
3	7.14	Project Schedule	5 calendar days after contract award
4	7.18	Quality Plan	10 calendar days after contract award

ANNEXE A

REQUIREMENT

TABLE OF CONTENTS

END OF TABLE

PART 1 References

1.1 Canadian Standards Association (CSA):

.1 CAN3-B78.1-M83 (R2000), Technical Drawings – General Principles.

.1 CAN/CSA-B78.2-M91 (R2000), Dimensioning and Tolerance of Technical Drawings.

.2 CSA 269.1-1975 (R1998), Falsework for Construction Purposes.

.3 CAN/CSA-269.2-M87 (R1998), Access Scaffolding for construction Purposes.

1.2 Description of Work – Provision of Standard Concrete Float Module

.1 Fisheries and Oceans, Canada has a requirement for two (2) modules of Dual Type I with an option for one module of Dual Type II. In addition two quad concrete floats with an option for one more quad are also required. This procurement call requires the units to be fabricated at the contractors' designated facility and be delivered to the sites as outlined in clause 1.19.5 of this section.

.2 In the event the contractor decides to tow the float modules to the sites in clause 1.19.5, the contractor shall submit a towing plan for review by Fisheries and Oceans, Canada prior to towing. The tow plan shall avoid towing the float modules in waves higher than 600 mm. The contractor shall include an allowance for temporary mooring of the float modules at each site as agreed with Fisheries and Oceans Canada.

.3 The standard single float drawing set has a module called Dual type I that is comprised of two singles providing 447.68 M^2 of deck area with dimensions of 52.44 metres x 8.537 metres x 1.625 metres deep. A total of two Dual type I units will be constructed from the four single units; For the optional two more single units, one unit will be constructed with side by side details from the drawing set to construct one Dual type II to create an overall dimension of 26.22m x 17.074m. The standard single float drawing set also has a module called the Quad type II that is constructed from four singles that provides a deck area of 895.36 M^2 with dimensions of 52.44 metres x 17.074 metres x 1.625 metres deep. Two (2) Quad Type II units will be required plus one optional Quad Type II unit. The total quantities and completion dates or the units are outlined in clause 1.7.2 of this section. The floats are to be constructed with the following materials; marine quality expanded polystyrene foam billets, steel fabrications with marine coatings and some with hot dip galvanizing, 40 MPa concrete with silica fume and fly ash, uncoated reinforcing steel and urethane coatings on the exposed foam surfaces in the mooring wells.

.4 The float modules shall have a freeboard of 600 mm minimum, no tolerance is allowed for freeboard less than 600 mm. Acceptable trim is a difference in freeboard between any two adjacent corners or diagonals, not greater than 50 mm. The manufacturer shall adjust the pitch and list with trim weights. Trim weights must not interfere with moored vessels. The floats shall have a sloped deck, float level and have square corners and straight untwisted walls to allow end to end and side to end float connections if required. In the event a barge is used for fabrication, the float shall not have a camber or sag over its length due to barge flexing.

.5 The marine quality foam billets shall be bonded in a staggered manner vertically and horizontally and bonded as shown on the drawings and specifications.

.6 The concrete walls and deck shall be cast in one pour to promote concrete shrink wrap onto the marine foam with no construction joints.

.7 The silica fume concrete float shall be water pond cured for seven days immediately after the concrete deck and walls have been placed and the deck has been float finished.

.8 The concrete deck shall have traction grooves saw cut into it after water pond curing and sealed with two coats of Silane sealer applied no earlier than 14 days after casting concrete.

.9 Complete independent professional inspections and certifications as fabrication progresses with strict adherence to the submittal check off prescribed in the specifications and copy the Owner regularly with the latest entries. See submittal section 01 33 00.

.10 Site Joining of floats is not a part of this contract, but this contract shall provide the site joining parts for IOS and PBS sites as directed by Fisheries and Oceans Canada with these parts transported with the floats.

1.3 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Document.

1.4 Related Sections

1.5 Work Covered by Contract Documents

.1 Work of this Contract comprises general fabrication of the standard concrete float module, located at the contractors' designated facilities.

1.6 Contract Method

.1 Fabricate Work under unit price contract for each module.

1.7 Work Sequence

.1 Coordinate Progress Schedule with Owners' timeline.

.2 Required Stages:

.1 Two Dual type I units. Final Completion and delivered before July 29, 2016.

.2 One Dual type II unit for the optional units. Completed and delivered before September 30, 2016 (if required).

.3 Two Quad type II units. Start work no earlier than April 1, 2016 with a completion and delivery date of September 15, 2016.

.4 One Quad Type II unit for optional unit. Start work no earlier than September 1, 2016 with a completion and delivery date of January 15, 2017 (if required).

1.8 Documents Required

.1 Maintain one copy of each of the following documents at the fabrication site:

.1 Contract drawings.
.2 Contract specifications.
.3 Addenda to Contract documents.
.4 Reviewed shop drawings.
.5 Change orders.
.6 Other modifications to Contract.
.7 Professional Compliance test reports.
.8 Product data sheets.
.9 Supplier / Manufacturer's instructions / directions / application information.
.10 Material / Product Warranty information / agreements.

1.9 Work Schedule

.1 Within five (5) working days after contract award, provide a schedule showing anticipated progress stages and final completion of the work within the time period required by the Contract documents.

.2 Refer to clause 1.7.2 of this specification.

.3 Complete Performance and Acceptance - Refer to clause 1.18.

1.10 Setting Out of Work

.1 The Contractor shall provide survey control points and set such stakes as necessary to layout the alignment and elevations of work at his facility.

.2 The Contractor shall set elevations and lay out work in detail from control points.

.3 In the event the Contractor employs a barge, the contractor shall provide survey control from shore to demonstrate for the professional compliance inspection that the barge is level for casting concrete and that the barge is not twisted, sagged or hogged in the middle. The professional compliance inspection must be copied to the owner before casting concrete. The Contractor shall provide a base of clean river sand to the barge deck to allow for twist, sag or hogging in the barge deck to provide a level foundation for the foam blocks and formwork. Casting of concrete shall be controlled by the shore survey to prevent barge twisting, sagging or hogging as explained in section 03 05 10.

.4 The Contractor shall assume full responsibility for and to execute complete layout of work.

1.11 Measurement for Payment

.1 General:

.1 Payment for work will be made at the Prices Per Unit as tendered for the various classifications of the work appearing in the 'Financial Bid Presentation Sheet" at Annex B.

.2 Any work called for in the specifications or shown on the plans, or which is necessary for the completion of the work called for in the specifications and is not specifically listed as a separate item in the "Financial Bid Presentation Sheet", shall be deemed incidental to the general purpose of the Contract and no separate payment will be made on account of any such work, but the cost of any such incidental work shall be included in the Price Per Unit values as tendered for the various items appearing in the " Financial Bid Presentation Sheet".

.3 The metric system of measurement (SI) will be employed on this Contract.

.2 Fabrication and Supply of Dual Type I Concrete Float Modules - Pay Item #1:

.1 The unit of measurement will be each Dual Type I module fabricated.

.2 This will include all labour, material and equipment to fabricate all of the following:

40 MPa silica Fume Concrete; Reinforcing steel; Expanded polystyrene foam billets; Steel fabrications; Embed Metal with Marine Coatings; Utility chases and Metal Hatch Covers with marine coatings; Fender Chain Metal Stops also marine coated; Concrete curing and finishing; Timber Bull Rails, Sawcut deck grooves; Deck Drain Holes complete with PVC piping; Silane sealing of concrete deck and walls; urethane coating and providing float joining parts.

.3 Fabricate and Supply Quad Type II Concrete Float Modules– pay Item # 2:

.1 The unit of measurement will be each Quad Type II module fabricated.

.2 This will include all labour, material and equipment to fabricate all of the following:

40 MPa silica Fume Concrete; Reinforcing steel; Expanded polystyrene foam billets; Steel fabrications; Embed Metal with Marine Coatings; Utility chases and Metal Hatch Covers with marine coatings; Fender Chain Metal Stops also marine coated; Concrete curing and finishing; Timber Bull Rails, Sawcut deck grooves; Deck Drain Holes complete with PVC piping; Silane sealing of concrete deck and walls; urethane coating and providing float joining parts.

.4 Fabricate and Supply (optional) Dual Type II Concrete Float Modules - Pay item #4:

.1 The unit of measurement will be each Dual Type II module fabricated.

.2 This will include all labour, material and equipment to fabricate all of the following:

40 MPa silica Fume Concrete; Reinforcing steel; Expanded polystyrene foam billets; Steel fabrications; Embed Metal with Marine Coatings; Utility chases and Metal Hatch Covers with marine coatings; Fender Chain Metal Stops also marine coated; Concrete curing and finishing; Timber Bull Rails, Sawcut deck grooves; Deck Drain Holes complete with PVC piping; Silane sealing of concrete deck and walls; urethane coating and providing float joining parts

.5 Fabricate and Supply (optional) Quad Type II Concrete Float Modules – Pay Item # 5:

.1 The unit of measurement will be each Quad Type II module fabricated.

.2 This will include all labour, material and equipment to fabricate all of the following:

40 MPa silica Fume Concrete; Reinforcing steel; Expanded polystyrene foam billets; Steel fabrications; Embed Metal with Marine Coatings; Utility chases and

Metal Hatch Covers with marine coatings; Fender Chain Metal Stops also marine coated; Concrete curing and finishing; Timber Bull Rails, Sawcut deck grooves; Deck Drain Holes complete with PVC piping; Silane sealing of concrete deck and walls; urethane coating and providing float joining parts.

.6 Delivery of the completed Dual Type I Units – Pay Item #1.1:

.1 The unit of measurement will be a single pay item to deliver all Dual Type I Modules to the locations outlined in Clause 1.19.5 of this section.

.7 Delivery of the completed (Optional) Dual Type II Units – Pay Item #4.1:

.1 The unit of measurement will be a single pay item to deliver all (Optional) Dual Type II Modules to the locations outlined in Clause 1.19.5 of this section.

.8 Delivery of the completed Quad Type II Units – Pay Item #2.1:

.1 The unit of measurement will be a single pay item to deliver all Quad Type II Modules to the locations outlined in Clause 1.19.5 of this section.

.9 Delivery of the completed (Optional) Quad Type II Unit – Pay Item #5.1:

.1 The unit of measurement will be a single pay item to deliver all (Optional) Quad Type II Modules to the locations outlined in Clause 1.19.5 of this section.

1.12 Project Meetings

.1 The Owner or manufacturer may arrange for project meetings, from time to time.

.2 The Owner may furnish additional drawings to assist proper execution of work. These drawings will be issued for clarification only, and will have the same meaning and intent as if they were included with drawings referred to in the Contract documents.

1.13 Record Documents

.1 The manufacturer shall be responsible for compliance test reports by independent professional testing companies to inspect the work in accordance with the technical specifications that form a part of this contract document.

.2 The compliance inspections must be carried out regularly, both before and after parts are covered up or embedded. The inspection reports and certificates must be copied to the owner regularly and must be readily available for the owners' review from time to time at the manufacturers' facility.

.3 At completion, supply one complete set of as-built drawings and specifications with all deviations clearly marked and a complete document of professional certifications.

.4 At completion provide all product, material and equipment warranties by the suppliers and manufacturers.

1.14 Codes and Standards

.1 Perform work in accordance with the Standards and codes identified in the technical specifications. Related Codes are CSA, National Building Code, and the National Fire Code.

.2 The manufacturer must have good standing with the Work Safe B.C. and all federal, provincial and local regulators.

.3 In any case of conflict or discrepancy between referenced codes, standards and regulations, the most stringent requirements shall apply.

.4 Meet or exceed the requirements of specified standard, codes and referenced documents.

1.15 Environmental Protection

.1 Comply with federal, provincial and municipal laws, orders and regulations concerning protection of the environment and the control and abatement of soil, water and air pollution at the manufacturers' facility during execution of this contract.

.2 Do not dispose of debris, contaminated water or volatile materials such as oil, paint thinner or mineral spirits into waterways, storm or sanitary sewers, or the sea. Comply with all environmental regulations concerning the proper disposal of these materials and products.

.3 Fires and burning of rubbish on site are not permitted unless proper permission by regulators has been granted to the manufacturer at his site.

.4 Do not bury or dispose of rubbish and waste materials on site unless approved by the appropriate regulators.

1.16 Permits and Notifications

.1 Obtain and pay for all permits including the launching of each float and temporary storage.

.2 Conform to the noise by-laws and requirements of local authorities impacted by the fabrication of these floats.

.3 Notify Environmental Protection Service and the local Fisheries Officer at least five days before launching the each float.

1.17 Site Security

.1 Assume responsibility for the following:

.1 All personnel, vessels and vehicles requiring access to the fabrication site.

.2 Temporary safe moorage until the owner hauls the floats away.

1.18 Complete Performance

.1 Provide a minimum of 5 days' notice to the Owner of the date of completion.

.2 Provide marine vessel for the Owner's visit upon completion.

.3 All Compliance inspection reports must be contained in an organized binder referenced to samples that have been properly stored and labelled for easy review by the owner and his representatives.

.4 Final Acceptance:

.1 All work shall have been completed including deficiencies and compliance inspected by the manufacturer's professional inspection agencies prior to requesting complete performance (Final) inspection in writing to the Owner a minimum of 5 working days before the requested date of inspection pursuant to the General Conditions. Real Properties and Technical Support and their representatives require time and effort to pre-plan acceptance. Incurred costs resulting from cancellation or delay notice by the manufacturer may be assessed against the contract.

1.19 Material and Equipment

.1 General:

.1 Use new material unless otherwise specified.

.2 Record the following information for any or all materials and products proposed for supply:

.1 Name and address of manufacturer.

.2 Trade name, model and catalogue number.

.3 Performance, descriptive and test data.

.4 Manufacturer's installation/application instructions.

.5 Evidence of arrangements to procure.

.3 Provide equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.

.4 Use products of 1 manufacturer for equipment or material of the same type or classification unless otherwise specified.

.2 Metric sized products:

.1 SI metric units of measurement are used exclusively on the drawings and in the specifications for the project.

.2 The manufacturer is required to provide metric products where specified in the sizes called for in the contract documents, except where a valid claim can be made that a particular product is not available on the Canadian market.

.3 Difficulties caused by the manufacturer's lack of planning and effort to obtain modular metric sized products which are available on the Canadian market will not be considered sufficient reason for claiming they cannot be provided.

.4 Claims for additional costs due to provision of specified modular metric sized products will not be considered.

.3 Substitution after Contract award:

.1 No substitutions will be permitted without prior written approval of the Owner and the Contracting Authority

.2 Proposals for substitution may only be submitted after Contract award. Such request must include statements of respective costs of items originally specified and the proposed substitution.

.3 Proposals will be considered by the Owner if:

.1 Materials selected by tenderer from those specified are not available;

.2 Delivery date of materials selected from those materials specified would unduly delay completion of Contract, or

.3 Alternative materials to that specified, which is brought to the attention of and considered by the Owner as equivalent to the material specified, and will result in a credit to the Contract amount.

.4 Should the proposed substitution be accepted whether in part or in whole, assume full responsibility and costs when substitution affects other work on the project. Pay for design or drawing changes required as a result of substitution.

.5 Amounts of all credits arising from approval of substitutions will be determined by Engineer and the Contract price will be reduced accordingly.

.4 Manufacturer's instructions:

.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

.2 Notify Owner in writing of any conflict between these specifications and the manufacturer's instructions. The Owner will designate which document is to be followed.

.5 Delivery and storage:

.1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.

.2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.

.3 Store material and equipment in accordance with suppliers' instructions.

.4 Touch-up damaged factory finished surfaces to comply with the specifications. Use coatings in accordance with the specifications. Do not paint over nameplates.

.5 Maintain fabrication equipment and plant in good operating order.

.6 Deliver two (2) Dual Type I units to Institute of Ocean Sciences located at 9860 West Saanich Road, Sidney, BC, V8L 4B2.

.7 Deliver one (1) Dual Type II unit to Institute of Ocean Sciences located at 9860 West Saanich Road, Sidney, BC, V8L 4B2 (**if option is exercised**).

.8 Deliver two (2) Quad Type II units to Steveston Paramount Site located at 12740 Trites Road, Richmond, BC, V7E 3R8.

.9 Deliver one (1) Quad Type II unit to Steveston Paramount Site located at 12740 Trites Road, Richmond, BC, V7E 3R8 (**if option is exercised**).

PART 2 Products

2.1 Not Used

PART 3 Execution

3.1 Not Used

END OF SECTION

PART 1 General

1.1 Section Includes

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 Precedence

.1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Document.

1.3 Related Sections

.1 Section 01 35 30 – Health and Safety Requirements.

1.4 Administrative

.1 In the event a review of shop drawings is carried out by the Owner, the review is for the sole purpose of ascertaining conformance with general concept. This review shall not mean that the Owner approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

.2 Shop drawings, product data, samples and mock-ups in SI Metric units.

.3 Where items or information is not produced in SI Metric units converted values are acceptable.

.4 Shop drawings to be a part of the document of records with certifications.

1.5 Shop Drawings And Product Data

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data, which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Accompany submissions, if required with transmittal letter, in duplicate, containing:

.1 Date.
.2 Project title and number.
.3 Contractor's name and address.
.4 Identification and quantity of each shop drawing, product data and sample.
.5 Other pertinent data.

.4 Submissions, if Required shall include:

.1 Date and revision dates.
.2 Project title and number.
.3 Name and address of:
.1 Subcontractor.
.2 Supplier.
.3 Manufacturer.

.4 Contractor's stamp, signed by Contractor’s authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.5 Details of appropriate portions of Work as applicable:
.1 Fabrication.
.2 Layout, showing dimensions, including identified field dimensions, and clearances.
.3 Setting or erection details.
.4 Capacities (If details deviate from drawings)
.5 Performance characteristics.
.6 Standards.
.7 Operating weight.
.8 Wiring diagrams.
.9 Single line and schematic diagrams.
.10 Relationship to adjacent work.

.5 After Owner's review, distribute copies.

.6 Submit 4 prints of shop drawings, if required for each requirement requested in specification Sections and as the Owner may reasonably request.

.7 Submit 4 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by the Owner where shop drawings will not be prepared due to standardized manufacture of product.

.8 Delete information not applicable to project.

.9 Supplement standard information to provide details applicable to project.

.10 If upon review by the Owner, no errors or omissions are discovered or if only minor corrections are made, 3 copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, and must be performed before fabrication of Work may proceed.

1.6 Samples

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to the Owner.

.3 Notify the Owner in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by the Owner are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Owner prior to proceeding with Work.

.6 Make changes in samples, which the Engineer may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.7 Progress Photographs

.1 Maintain progress photographs as part of the document of compliance records.

1.8 Certificates and Transcripts

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transcription of insurance immediately after award of Contract.

.3 Compliance certificates, material and product certificates shall be maintained in the document of compliance records.

PART 2 Products

2.1 Not Used

PART 3 Execution

3.1 **Professional Inspection and Submittal Check off List**

The following list of certified items shall be deemed as fulfilling an obligation of providing evidence of compliance with the specifications and design to the Owner and the design engineer:

.1 Submit Letter's of Good Standing from Compensation Board of BC and from Federal, Provincial and Local Authorities regulating the manufacturers' operations and facilities in accordance with the terms and conditions.

.2 Submit Health and Safety Plan and the associated components in accordance with section 01 35 30 c1auses 1.5 and 1.10 in accordance with the terms and conditions.

.3 Certify that the lay out of the float module dimensions complies with the drawings and specifications as prescribed in section 01 11 00 clause 1.10.

.4 In the event a barge is employed professional certification is required that setting out of the work and concrete casting has complied with Section 01 11 00 clause 1.10.3 and section 03 05 10.

.5 Certify Trim Weight Adjustment Method is in accordance Section 03 05 10.

.6 Certify Concrete Mix conforms to Section 03 05 10.

.7 Document all Concrete Test Reports certifying supplied mix conforms to Design Mix; strength; air content; silica fume content; slump and plastic density. Each of these components must comply for the mix to be certified in compliance.

.8 Certify Concrete water pond curing complied with section 03 05 10 clause 3.3.

.9 Certify Traction Grooves complied with section 03 05 10 clause 3.4.

.10 Certify formwork complied with section 03 10 00 clause 2.1.2 and Part 3.

.11 Certify shop drawings of the concrete reinforcing steel bars bend and cut sheets comply with the design drawings and specifications.

.12 Certify concrete clear cover for steel reinforcing steel bars complies with Section 03 05 10 clause 3.1.7 and section 03 20 00 and that the reinforcing bar placement and splices comply with the design drawings and shop drawings.

.13 Certify that concrete deck float finish, traction grooves and silane sealer work complied with section 03 35 00.

.14 Certify that the concrete deck slope complies with the drawings.

.15 Certify that metal fabrications have complied with the drawings and specifications.

.16 Certify that metal fabrication coatings are in compliance with the specifications.

.17 Certify samples of Expanded Polystyrene Foam billets are in compliance with section 35 51 23 Part 2 before any cutting, bonding or placement of foam billets or built up blocks take place.

.18 Certify bonding method, application and adhesive are in compliance with the design drawings and specifications.

.19 Certify that bonded foam is in compliance section 35 51 23 and the reviewed bonding method.

.20 Certify that launch of the float module complied with Section 35 51 23 clause 3.2.

.21 Certify that all coatings are in compliance with the drawings and specifications.

END OF SECTION

PART 1 References

1.1 Section Includes

.1 Canada Labour Code, Canada Occupational Safety and Health Regulations.

.2 American National Standards Institute (ANSI):

.1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.

.3 Canadian Standards Association (CSA):

.1 CSA S269.1-1975 (R1998), Falsework for Construction Purposes.

.2 CSA S269.2-M87 (R1998), Access Scaffolding for Construction Purposes.

.3 CSA S350-M1980 (%R1998), Code of Practice for Safety in Demolition of Structures.

.4 Province of British Columbia:

.1 Workers Compensation Act (Occupational Health & Safety), Amendment Act, BC Reg. 185/99, herein referred to as the Workers Compensation Act (WCA).

1.2 Related Sections

.1 Refer to the following sections as required (Not Attached):

.1 Submittals Procedures Section 01330

1.3 Workers Compensation Board Coverage

.1 Comply fully with the Work Safe BC 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.

1.4 Compliance with Regulations

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

.2 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.

1.5 Submittal

.1 Perform submittals, if required in accordance with Section 01 33 00

.2 The following shall be in the Records Document:

.1 Health and Safety Plan.

.2 Copies of reports or directions issued by federal and provincial health and safety inspectors.

.3 Copies of incident and accident reports.

.4 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.

.5 Emergency Procedures.

.3 Records of Health and Safety Plan, and any revised version, to the Owner is to be a part of the Records Document and it shall not:

.1 Be construed to imply approval by the Owner.

.2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.

.3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

1.6 Responsibility

.1 Be responsible for:

.1 The safety of persons and property on site; and

.2 The protection of persons off site, and the environment to the extent that they may be affected by the conduct of the work.

1.7 General Protection

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

.2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

.3 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.

.4 Secure site at night time or provide security guard as deemed necessary to protect site against entry.

1.8 Regulatory 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.

1.9 Work Permits

.1 Obtain all necessary permits related to the project before start of work.

1.10 Health and Safety Plan

.1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.

.2 Prepare and comply with a job-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:

.1 Primary requirements:

.1 Contractor's safety policy.

.2 Identification of applicable compliance obligations

.3 Definition of responsibilities for project safety/organization chart for project.

.4 General safety rules for project.

.5 Job-specific safe work procedures.

.6 Inspection policy and procedures.

.7 Incident reporting and investigation policy and procedures.

.8 Occupational Health and Safety Committee/Representative procedures.

.9 Occupational Health and Safety meetings.

.10 Occupational Health and Safety communications and record keeping procedures.

.2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.

.3 List hazardous materials to be brought on site as required by work.

.4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.

.5 Identify personal protective equipment (PPE) to be used by workers.

.6 Identify personnel and alternates responsible for site safety and health.

.7 Identify personnel training requirements and training plan, including site orientation for new workers.

.3 Develop the plan in collaboration with all sub-contractors. Ensure that work/activities of sub-contractors are included in the hazard assessment and are reflected in the plan.

.4 Revise and update Health and Safety Plan as required, and re-submit to the Engineer.

1.11 Emergency Procedures

.1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:

.1 Designated personnel from own company.

.2 Regulatory agencies applicable to work and as per legislated regulations.

.3 Local emergency resources.

.4 Engineer and site staff.

.2 Include the following provisions in the emergency procedures:

.1 Notify workers and the first aid attendant, of the nature and location of the emergency.

.2 Evacuate all workers safely.

.3 Check and confirm the safe evacuation of all workers.

.4 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.

.5 Notify Engineer and staff.

.3 Provide written rescue/evacuation procedures as required for, but not limited to:

.1 Work at high angles.

.2 Work in confined spaces or where there is a risk of entrapment.

.3 Work with hazardous substances.

.4 Underground work.

.5 Work on, over, under and adjacent to water.

.6 Workplaces where there are persons who require physical assistance to be moved.

.4 Design and mark emergency exit routes to provide quick and unimpeded exit.

.5 At least once each year, emergency drills must be held to ensure awareness and effectiveness of emergency exit routes and procedures, and a record of the drills must be kept.

.6 Revise and update emergency procedures as required, and re-submit to the Engineer.

1.12 Meetings

.1 Contractor to hold health and safety meetings related to execution of the work for the float module on his designated facility.

1.13 Health and Safety Officer

.1 The Health and Safety Officer must:

.1 Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the site to perform work.

.2 Be responsible for implementing, daily enforcing, and monitoring the site-specific Health and Safety Plan.

.3 Be on site during execution of work.

1.14 Hazardous Products

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Engineer and in accordance with the Canada Labour Code.

.2 Where use of hazardous and toxic products cannot be avoided:

.1 Obtain appropriate permission beforehand of the product(s) intended for use.

.2 Submit applicable MSDS and WHMIS documents as per Section 01 33 00.

.3 Provide adequate means of ventilation in accordance with Work Safe of British Columbia.

1.15 Removal of Lead-Containing Paints

.1 All paints containing TCLP lead concentrations above 5 ppm are classified as hazardous.

1.16 Electrical Safety Requirements

.1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.

.2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

1.17 Electrical Lock-out

.1 Develop, implement and enforce use of established procedures to provide electrical lock-out and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.

.2 Prepare the lock-out procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have the procedures available for review upon request by the Owner.

.3 Keep the documents and lock-out tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Owner or by any authorized safety representative.

1.18 Overloading

.1 Ensure no part of work is subjected to a load, which will endanger its safety or will cause permanent deformation.

1.19 Falsework

.1 Design and construct falsework in accordance with CSA S269.1.

1.20 Scaffolding

.1 Design, construct and maintain scaffolding in a rigid, secure and safe manner, in accordance with CAN/CSA-S269.2.

1.21 Confined Spaces

.1 Carry out work in confined spaces in compliance with provincial regulations.

1.22 Blasting

.1 Not Required.

1.23 Powder-Actuated Devices

.1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Engineer.

1.24 Fire Safety Requirements

.1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.25 Fire Protection and Alarm Systems

.1 Fire protection and alarm systems shall not be:

.1 Obstructed.

.2 Shut off.

.3 Left Inactive at the end of a working day or shift.

.2 Do not use fire hydrants, standpipes and hose systems for purposes other than fire fighting.

.3 Be responsible/liable for costs incurred from the fire department and the building owner and tenants, resulting from false alarms.

1.26 Posted Documents

.1 Post legible versions of the following documents on site:

.1 Health and Safety Plan.

.2 Sequence of work.

.3 Emergency procedures.

.4 Drawing showing project layout, locations of the first aid station, evacuation route and marshalling station, and the emergency transportation provisions.

.5 Floor plans

.6 Notice as to where a copy of the workers' Compensations Act and Regulations are available on the work site for review by employees and workers.

.7 Workplace Hazardous Materials Information System (WHMIS) documents.

.8 Material Safety Data Sheets (MSDS).

.9 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.

.2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.

1.27 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues as directed by the appropriate regulators.

.2 Record action taken to correct non-compliance with health and safety issues identified by the appropriate regulators.

PART 2 Products

2.1 Not Used

PART 3 Execution

3.1 Not Used

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 03 10 00 – Concrete Forming and Accessories.

.2 Section 03 20 00 - Concrete Reinforcing.

.3 Section 05 50 00 - Metal Fabrications.

.4 Section 09 97 19 - Painting Exterior Metal.

.5 Section 35 51 23 - Floats.

1.2 Measurement Procedures

.1 No measurement will be made for concrete under this section. Include all costs for concrete forming, supply, placing, reinforcing, curing, finishing in the measurement for payment procedures for concrete floats in section 01 11 00.

1.3 References

.1 Canadian Standards Association (CSA)

- .1 CAN/CSA-A23.1-14, Concrete Materials and Methods of Concrete Construction.
- .2 CAN/CSA-A23.2-14, Methods of Test for Concrete.
- .3 CSA A363-98, Cementitious Hydraulic Slag.
- .4 CAN/CSA-G30.18-09, Billet-Steel Bars for Concrete Reinforcement.

1.4 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

1.5 Submittals

.1 Shop Drawings

- .1 Certify drawings of Trim Weights complies with adjustment specification and does not interfere with moored vessels.
- .2 Submittals, if required to be in accordance with Section 01 33 00.
- .3 Provide certification that:
  - .1 Mix proportions selected will produce concrete of specified quality and yield.
  - .2 Strength will comply with CAN/CSA- A23.1.
  - .3 Mix design is adjusted to prevent alkali aggregate reactivity problems.

PART 2 Products

2.1 Materials

.1 Portland cement with maximum 30% fly ash replacement.

.2 Reinforcing bars: to CAN/CSA-G30.18, Grade 400.

.3 Water, fine aggregates and normal density coarse aggregates: to CAN/CSA-A23.1-14

.4 Mineral admixtures: type N (natural Pozzolan) to CAN/CSA-A23.1 and CSA A23.5.

.5 Air entraining admixtures to CAN/CSA-A23.1-14 and ASTM C260.

.6 Chemical admixtures to CAN/CSA-A23.1-14 and ASTM C494/C494M, as approved by the engineer.

.7 Curing compound to ASTM C309, type 1, Class A

2.2 Mix

.1 Proportion concrete in accordance with CAN/CSA-A23.1.

.2 Minimum compressive strength at 56 days shall be 40 Mpa.

.3 Type 10 cement, 380 kg.

.4 Silica Fume 30 kg.

.5 Fly Ash 115 kg.

.6 Coarse Aggregate 14 mm minus pit run SSD 1000 kg.

.7 Fine aggregate: SSD 750 kg.

.8 Estimated water 145L.

.9 High Range water reducer (Rheobuild 1000) (L) 4.000.

.10 Air-Entraining Admixture as Required.

.11 Air content 6.5% minimum.

.12 Total Weight 2,107 kg.

.13 Slump: 80+30 mm.

.14 Sand content % 42.9.

.15 Calculated Plastic Density 2,217 kg/m^3

.16 Calcium Chloride is NOT Permitted.

PART 3 Execution

3.1 Construction

.1 Perform cast-in-place concrete work in accordance with CAN/CSA-A23.1-14 & A23.2.-14.

.2 Cast the concrete directly onto the foam billets to ensure a sound bond develops between the foam billets and cured concrete and taking care to prevent movement of the foam billets. Maintain square and true walls and corners to accommodate future float to float connections. Refer to section 03 10 00 on Formwork.

.3 Place concrete in a manner to prevent twisting and warping of the floats, particularly so if a barge is employed to construct the floats.

.4 Hot and cold weather concrete shall comply with all requirements of CAN/CSA-A23.1-14 & A23.2.-14.

.5 Obtain approval of compliance from the professional testing agency before placing concrete that concrete mix and reinforcing steel are in accordance with the specifications and drawings.

.6 Maintain accurate records of poured concrete. Records to include date, batch time, placement time, pour location, plastic density, air temperature, slump, air content and test samples taken.

.7 Concrete Clear Cover:

.1 – 50 mm to top of concrete deck.

.2 . –50 mm to exterior walls.

.3 – 50 mm to submerged surfaces.

.4 – 20 mm to foam billets.

3.2 Inserts

.1 Embed plates with headed anchors shall be secured sufficiently to prevent movement during concrete placing and vibration.

3.3 Curing

.1 Cure and protect concrete in accordance with CAN/CSA-A23.1-14 & A23.2-14. Type 3 using water pond curing for the deck and continuous sprinkling on the walls for as follows:

.1 Do not use curing compounds where bond is required by subsequent topping or coating.

.2 Pond Cure the deck with a minimum of 25 mm deep pond and sprinkler the walls 24 hours a day, commencing immediately after float finishing the deck.

.3 Fresh water only, shall be used.

.4 Cure for 7 days at a minimum temperature of 10 ^{o}C.

.5 Curing compound shall be applied at the rate recommended by the manufacturer to achieve ASTM C309 water retention limits.

3.4 Traction Grooves on the Deck

.1 Saw cut traction grooves latitudinally the full width of the float 4.8 mm deep at 300 mm center to center the full length of the float module after curing is complete.

3.5 Sealing

.1 After saw cutting, apply two even coats of silane sealer in accordance with the supplier's directions.

.2 Apply low modulus epoxy caulking around perimeters of steel embed plates after curing to seal the grooves.

3.6 Field Quality Control

.1 Concrete testing: to CAN/CSA-A23.2-14 by testing laboratory designated and paid for by the contractor using his compliance professional testing agency.

.2 Cure Cylinders near the float under same curing conditions as the float.

.3 Non – destructive testing methods shall be in accordance with CAN/CSA-A23.1-14 & A23.2-14.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 03 05 10 – Cast-in-Place Concrete

1.2 Measurement Procedures

.1 No measurement will be made under this Section. Include costs in Section 01 11 00 Measurement of Payments

1.3

.1 Canadian Standards Association (CSA)

.1 CAN/CSA-A23.1-14, Concrete Materials and Methods of Concrete Construction.

.2 CAN/CSA-O86.1-10, Engineering Design in Wood (Limit States Design).

.3 CSA O121-M1978, Douglas Fir Plywood.

.4 CSA O151-M1978, Canadian Softwood Plywood.

.5 CSA S269.1-1975, Falsework for Construction Purposes.

.6 CAN/CSA-S269.3-M92, Concrete Formwork.

.2 Council of Forest Industries of British Columbia (COFI)

.1 COFI Exterior Plywood for Concrete Formwork.

1.4 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

PART 2 Products

2.1 Materials

.1 Formwork materials:

.1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121, CAN/CSA-O86.1, CSA O437 Series and CSA-O153.

.2 Exterior- Wall Forms:

.1 Do not use removable or snap-off metal ties, brace the wall forms from the outside at the top and bottoms to maintain poured concrete clear cover, patched snap tie holes are NOT permitted. Fix the embed steel plates to the forms without drilled holes in the steel. Coatings of embed plates must be repaired if disturbed or damaged when fixing the steel plates into the formwork.

.2 Plywood: Douglas Fir to CSA O121

.3 Form release agent: non-toxic, biodegradable, low VOC.

.4 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 70 and 110s Saybolt Universal 15 to 24 mm^2/s at 4C, flashpoint minimum 15C, open cup.

.5 Falsework materials: to CSA-S269.1.

PART 3 Execution

3.1 Fabrication and Erection

.1 Manufacturer's Professional Compliance testing agency shall verify lines, levels and centers before proceeding with formwork/falsework and ensure dimensions agree with drawings.

.2 Fabricate and erect falsework in accordance with CSA S269.1 and COFI Exterior Plywood for Concrete Formwork. All formwork to be braced with screw jack type forming accessories and anchored at the base of the wall form snug to the foam billets to prevent bowing of the formwork. The screw brace shall be anchored to provide wall straightness and resist vibrated concrete.

.3 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.1-14 & A23.2-14 and a tolerance of plus or minus of 6 mm.

.4 Align wall forms to maintain a square corner and provide straight walls to a tolerance of 12.7 mm maximum over the 26.22 metre wall and 6 mm over the 8.537 metre wall. Top of wall shall deviate no more than 3 mm from the vertical at the base of the concrete wall.

.5 Form the chamfers with chamfer strips as shown on the drawings.

.6 Form blockouts, chases, slots, openings, recesses, expansion and control joints to comply with the drawings and specifications.

.7 Secure embed anchors, assemblies, and other inserts required to accommodate the Work specified in other sections. Assure that all anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.

.8 Clean formwork in accordance with CAN/CSA-A23.1-14 & A23.2-14, before placing concrete.

.9 If floats are to be constructed on a barge, the contractor to ensure that concrete placement and forms do not create a permanent twist in the floats and that a base lift of clean river sand shall be placed on the barge deck to ensure a level base for the erection of the formwork and foam billets.

.10 Fabricator to ensure side and end walls are square and true to facilitate float-to-float connections.

3.2 Removal and Reshoring

.1 Sequence formwork removal with concrete curing specified in sections 03 35 00.

.2 All formwork and accessories must be removed from the concrete floats before launching. This includes all wood, plywood, steel components and plastic beneath the floats.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 03 05 10 - Cast-in-Place Concrete.

.2 Section 05 50 00 – Metal Fabrications

.3 Section 35 51 23 – Floats

1.2 Measurement Procedures

.1 Reinforcing steel added by the Engineer during shop drawing review to be negotiated for payment with the owner as part of the call-up contract.

.2 No measurement will be made for reinforcing steel shown on the drawings under this section. Include costs for reinforcement shown on the drawings in the measurement for payment procedures for concrete floats for which reinforcement is required.

1.3 References

.1 Canadian Standards Association (CSA)

.1 CAN/CSA-A23.1-14, Concrete Materials and Methods of Concrete Construction.
.2 CAN3-A23.3-14, Design of Concrete Structures for Buildings.
.3 CSA G30.3-M1983 (R1991), Cold Drawn Steel Wire for Concrete Reinforcement.
.4 CSA G30.5-M1983 (R1991), Welded Steel Wire Fabric for Concrete Reinforcement.
.5 CSA G30.14-M1983 (R1991), Deformed Steel Wire for Concrete Reinforcement.
.6 CSA G30.15-M1983 (R1991), Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
.7 CAN/CSA-G30.18-09, Billet-Steel Bars for Concrete Reinforcement.
.8 CAN/CSA-G40.21-M92, Structural Quality Steels.
.9 CSA W186-M1990, Welding of Reinforcing Bars in Reinforced Concrete Construction.

1.4 Shop Drawings

.1 Certification to be provided that shop drawings of the cut and bend sheets comply with the design drawings and specifications and the placement of reinforcing steel is in accordance with the drawings and specifications and complies with Section 01 33 00.

.2 Indicate on shop drawings, bar bending details, lists, quantities of reinforcement, sizes, spacings, locations of reinforcement and mechanical splices if approved by Engineer, with identifying code marks to permit correct placement without reference to structural drawings. Indicate sizes, spacings and locations of chairs, spacers and hangers. Prepare

reinforcement drawings in accordance with Reinforcing Steel Manual of Standard Practice - by Reinforcing Steel Institute of Canada.

.3 Detail lap lengths and bar development lengths to CAN3-A23.3-04, unless otherwise indicated. Provide staggered tension lap splices on the deck and wall bars and lap splices as follows:

.1 10M – 300 mm

.2 15M - 445 mm except deck bars at 600 mm

.3 20 M – 600 mm

.4 25 M - 925 mm.

1.5 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

PART 2 Products

2.1 Materials

.1 Substitute different size bars only if permitted in writing by Engineer.

.2 Reinforcing steel: billet steel, bare grade 400, deformed bars to CAN/CSA-G30.18, unless indicated otherwise.

.3 Reinforcing steel: weldable low alloy steel deformed bars to CAN/CSA-30.18.

.4 Cold-drawn annealed steel wire ties: to CSA G30.3.

.5 Chairs, bolsters, bar supports, spacers: to CAN/CSA-A23.1-14. All chairs to be plastic style and be supported on 20 mm or 25 mm thick cement fibre board squares approximately 150 mm by 150 mm for adequate support on the expanded polystyrene foam for concrete deck reinforcing.

.6 Plain round bars: to CAN/CSA-G40.21.

.7 Cast in place Nelson anchors 16 mm diameter x 150 long c/w nuts and galvanized for the timber bull rail HSS stubs on the quad floats.

2.2 Fabrication

.1 Fabricate reinforcing steel in accordance with CAN/CSA-A23.1-14, and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.

.2 Obtain Engineer's approval for locations of reinforcement splices other than those shown on reinforcing steel placement drawings.

.3 In the event reinforcement is to be welded, it shall be certified that it is in accordance with CSA W186.

.4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.

2.3 Source Quality Control

.1 Provide certification that mill test reports and certificates of reinforcing steel show all physical and chemical analyses and comply with the design and specifications.

PART 3 Execution

3.1 Field Bending

.1 Do not field bend or field weld reinforcement except as allowed by the professional certification agency confirming it is in accordance with the specified codes and standards.

.2 When field bending is authorized, bend without heat, applying a slow and steady pressure.

.3 Replace bars, which develop cracks or splits.

3.2 Placing Reinforcement

.1 Place reinforcing steel as indicated on reviewed placing drawings and in accordance with CAN/CSA-A23.1-14.

.2 Only plastic chairs are to be used to support the steel bars.

.3 Prior to placing concrete, obtain certification that reinforcing steel and embed assemblies comply with the drawings and specifications.

.4 Ensure cover to reinforcement is maintained during concrete pour.

.5 Place the 16 mm dimeter Nelson stud anchors to suit the locations for the HSS stubs that are to be used on the quad floats in lieu of the embed plates for the single and duals. Both embeds and HSS stubs are to be located as shown on drawing sheet 15.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 03 05 10 - Cast-in-Place Concrete.

.2 Section 03 10 00 – Concrete Forming and Accessories

1.2 References

.1 Canadian Standards Association (CSA)

.1 CSA-A23.1-14& A23.2-14, Concrete Materials and Methods of Concrete Construction.

1.3 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

PART 2 Execution

2.1 Execution

.1 Concrete deck to receive a Float Finish in accordance with CAN/CSA-A23.1-14 & A23.2-14. Float finish to have sufficient roughness only to assist with traction. No depressions or bird baths are allowed as they will allow ice to form during winter nights.

.2 Deck surface shall be struck off and power floated and edger finished before curing.

.3 Sawcut grooves 4.8 mm deep as shown on drawings for traction, crack control and drainage after pond curing for seven days at 24 hours a day.

.4 Apply silane sealer to deck and grooves after the pond curing no earlier than 14 days after curing period.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 03 05 10 - Cast-in-Place Concrete.

.3 Section 03 20 00 – Concrete Reinforcing

.4 Section 09 97 19 - Painting Exterior Metal Surfaces

.5 Section 35 51 23 - Floats

1.2 References

.1 American Society for Testing and Materials, (ASTM)

.1 ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.2 ASTM A490, Specification for Carbon Steel Bolts and Studs, 1,040 Mpa Tensile Strength.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.

.2 CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating.

.3 Canadian Standards Association (CSA International)

.1 CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.

.2 CAN/CSA-S16.1-09, Limit States Design of Steel Structures.

.3 CSA W48-01, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).

.4 CSA W59-1989(R2001),Welded Steel Construction (Metal Arc Welding) (Imperial Version).

1.3 Submittals

.1 Product Data:

.1 Record all manufacturer's printed product literature, specifications and data sheets for periodic review by the owner and in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop Drawings

.1 Provide certification that shop drawings are in accordance with the drawings and specifications and comply with Section 01 33 00 - Submittal Procedures.

.2 Indicate materials, core thicknesses, finish, connections, joints, and method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 Delivery, Storage, and Handling

.1 Packing, Shipping, Handling and Unloading:

.1 Deliver, store, handle and protect materials in accordance with Section 01 11 00.

1.5 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

PART 2 Products

2.1 Materials

.1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.

.2 HSS sections to G40.21 350W.

.3 Pipe to A252 grade 3.

.4 Threaded rod to grade C1008.

.5 Welding materials: to CSA W59.

.6 Welded cast in place anchors to be Nelson studs.

.7 Timber bolts to ASTM standard A307.

.8 Welding electrodes: to CSA W48 Series.

.9 **Embed Assemblies to Support Timber Bull Rails on the Single and Duals**

Contractor to supply and fabricate the assemblies as depicted on the drawings made with a U-head plate; 114.3 OD x 6 wall pipe, embed plate 200 x 200 x 12.7 and three embed Nelson studs 16 diameter. Shall be coated in accordance with section 09 97 19 except for embed anchors and the plate surface contacting concrete. The contractor shall supply M20 or 19 diameter A307 timber bolts galvanized and the splice plates for timber corners using plate 6 thick plate 250 x 76, galvanized.

.10 **Deck Plates**

Contractor to supply and fabricate from 25.4 mm steel plate as shown on the drawings for mooring wells, deck pockets and covers for utility raceways. The deck plates shall coated in accordance with section 09 97 19.

.11 **Chain Stops**

Contractor to supply and fabricate the chain stops as depicted on the drawings made from 127 OD x 6.3 wall pipe, 25 x 25 square bar, stiffeners from 6 thick plate and hand grip from 6 diameter rod. Coated in accordance with section 09 97 19.

.12 **Float Joining Transfer Plate**

Contractor to supply and fabricate the transfer plate as depicted on the drawings made from plate 20 thick either bent or cut and welded in two segments. Coated in accordance with section 09 97 19.

.13 **Float Joining Tension Plate Links**

Contractor to supply and fabricate the transfer plate as depicted on the drawings made from plate 20 x 150 x 1200, pipe 101.6 OD x 8 wall and HSS 102 x 102 x 9.5. Coated in accordance with section 09 97 19.

.14 **Float Joining Threaded End Rod Bars**

Contractor to supply and fabricate the 50 diameter rod by 2150 long with threaded ends c/w thread pitch of 4.23 (6 per inch), lock nuts and 6 x 100 x 100 steel washers as depicted on the drawings. To be galvanized in accordance with the requirements of CSA G164-M.

.16 **Float Joining HSS Beams**

Contractor to supply and fabricate the HSS beams with sealed ends from 152 x 152x 13 by 1200 long c/w steel plate capped ends with 6 thick plate as depicted on the drawings. To be galvanized in accordance with the requirements of CSA G164-M.

.17 **HSS Stub Assemblies for the Quad Timber Bull rails**

Contractor to supply and fabricate the HSS stubs 203 x 203 x 16 in both 300 long and 150 lengths to suit the timber bull rail butt joint and continuous locations. The contractor to supply the cast in place 16 diameter by 150 long Nelson studs galvanized. The contractor shall supply the 19 diameter timber bolts galvanized in lengths depicted on the drawings and galvanized in accordance with the requirements of CSA G164-M.

PART 3 Execution

3.1 Fabrication and Installation

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

.3 Perform welding work in accordance with CSA W59.

.4 Erect metal work square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.5 Secure embed plate assemblies firmly for casting into concrete together with setting templates.

.6 Touch-up field welds, bolts and damaged surfaces after completion in accordance with section 09 97 19.

.7 Repair damaged galvanized surfaces in the field with galvanizing repair sticks.

.8 One set of parts for joining two floats only shall be supplied, fabricated, coated and packaged for shipment to site with the floats, care shall be taken to prevent damage in transit. To be installed by others at site.

.9 Install the embeds / HSS stubs in the locations shown on drawing sheet 15.

3.2 Cleaning

.1 Upon completion of float module, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 General

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 Metal Fabrications.

1.2 REFERENCES

.1 ASTM International

.1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.2 ASTM A653/A653M-11,

.3 ASTM D1761-06, Standard Test Methods for Mechanical Fasteners in Wood.

.4 ASTM D5055-11, ASTM D5456-11, Standard Specification for Evaluation of Structural Composite Lumber Products.

.2 Canada Green Building Council (CaGBC)

.1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations (including Addendum 2007).

.2 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations 2009.

.3 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for Commercial Interiors.

.4 LEED Canada-EB: O M-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System for Existing Buildings: Operations and Maintenance 2009.

.3 CSA International

.1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

.2 CSA O112.9-10, Evaluation of Adhesives for Structural Wood Products (Exterior Exposure).

.3 CSA O121-08, Douglas Fir Plywood.

.4 CAN/CSA O122-06(R2011), Structural Glued-Laminated Timber.

.5 CSA O141-05(R2009), Softwood Lumber.

.6 CSA O151-09, Canadian Softwood Plywood.

.7 CSA O153-M1980(R2008), Poplar Plywood.

.8 CSA O325-07, Construction Sheathing.

.9 CAN/CSA-Z809-08, Sustainable Forest Management.

.4 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.

.5 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2010.

.6 Sustainable Forestry Initiative (SFI)

.1 SFI-2010-2014 Standard.

.7 Underwriters' Laboratories of Canada (ULC)

.1 CAN/ULC-S706-09, Standard for Wood Fibre Insulating Boards for Buildings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for wood products and accessories and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Submit drawings for timber bull rail cuts and verification of Douglas Fir number one or better and preservative treatment verification of 0.2 pound ACZA salt treatment.

1.4 QUALITY ASSURANCE

.1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Sustainable Standards Certification:

.1 Certified Wood: submit listing of wood products and materials used in accordance with CAN/CSA-Z809 or FSC or SFI.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials with care to prevent damage prior to installation.

.2 Storage and Handling Requirements:

.1 Store materials off ground in dry location.

.2 Replace defective or damaged materials with new.

PART 2 Products

2.1 FRAMING STRUCTURAL MATERIALS

.1 355 x 355 Douglas Fir timber bull rails using Number 1 or better with ACZA 0.2 pound Salt Treatment in accordance with following standards:

.1 CSA O86.

.2 NLGA Standard Grading Rules for Canadian Lumber.

PART 3 Execution

3.1 PREPARATION

.1 Treat cut and drilled timber surfaces with ACZA salt treatment wood preservative, before installation with field size containers from the supplier of the preservative.

.2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on timber.

.3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

3.2 INSTALLATION

.1 Install members true to line, levels and elevations, square and plumb.

.2 Install timber butt joints and continuous timber connections to embeds or HSS stubs at the locations shown on drawing sheet 15.

.3 Install the timber bull rails on the embeds or HSS stubs and corner timber splices as shown on drawing sheet 6.

3.3 CLEANING

.1 Progress Cleaning:

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment and dispose of in approved sites approved by regulatory agencies.

3.4 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by rough carpentry installation.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 05 50 00 – Metal Fabrications

1.2 References

.1 American Society for Testing and Materials, (ASTM).

- .1 ASTM D610-01, Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces.
- .2 ASTM D2369-03, Test Method for Volatile Content of Coatings.
- .3 ASTM D2832-92(R1999), Guide for Determining Volatile and Non-volatile Content of Paint and Related Coatings.
- .4 ASTM D5326-94a(2002), MPI-9 Test Method for Color Development in Tinted Latex Paints.

.2 Master Painters' Institute (MPI), Exterior Structural Steel and Metal Fabrications;

- .1 EXT 5.1, Alkyd.
- .2 EXT 5.1G, Zinc Rich/Aliphatic Polyurethane.

.3 Environmental Choice Program (ECP).

- .1 CCD-048-95, Recycled Water-borne Surface Coatings.
- .2 CCD-047a-98, Paints - Surface Coatings.

.4 Federal Standard (FS).

- .1 FS-595B-89, Paint Colours.

.5 Steel Structures Painting Council (SSPC).

- .1 SSPC-SP-1-82, Solvent Cleaning.
- .2 SSPC-SP-2-00, Hand Tool Cleaning.
- .3 SSPC-SP-3-00, Power Tool Cleaning.
- .4 SSPC-SP-6/NACE No. 3-00, Commercial Blast Cleaning.
- .5 SSPC-SP-7/NACE No 4-00, Brush-off Blast Cleaning.
- .6 SSPC-Vis-1-89, Visual Standard for Abrasive Blast Cleaned Steel (Standard Reference Photographs) Editorial Changes September 1, 2000 (Steel Structures Painting Manual, Chapter 2 - Surface Preparation Specs.).
- .7 SSPC-SP-10/NACE No. 2-00, Near White Blast Cleaning.
- .8 SSPC-PA-02, Measurement of Dry Coat Thickness with Magnetic Gauges.
- .9 SSPC Good Painting Practices, Volume 1, 4th Edition.
- .10 SSPC –SP-11, power Tool cleaning to Bare Metal

.11 SSPC-Guide 6, Debris Containment

.6 British Columbia Waste Management Act (SWEP)

1.3 Measurement Procedures

.1 Cleaning of structural steel and components, shop painting and field painting will be included in lump sum bid for the floats and all associated work.

1.4 Submittals

.1 Product Data.

.1 Record manufacturer's printed product literature, specifications and data sheets in accordance with Section 01 33 00 - Submittal Procedures and for the owners periodic review.

.2 Record copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for paint.

.2 Samples.

.1 Certify samples are in accordance with the drawings and specifications and record as per Section 01 33 00 - Submittal Procedures.

.3 Paints that do not appear on Approved Products List must be approved by the Engineer before use on project. When it is proposed to use non-qualified paint, submit one 2 L sample of paint to the Engineer at least 2 weeks prior to commencement of painting for analysis and acceptance. Mark samples with name of project, its location, paint manufacturer's name and address, name of paint, MPI standard number and manufacturers paint code number.

.4 Provide certification that paints used comply with the design and specifications and maintain two 2 L samples of each paint delivered to site for Owners review.

.5 Test Reports.

.1 Record all test reports in accordance with Section 01 33 00.

.6 Manufacturer's Instructions:

.1 Record manufacturer's installation instructions.

1.5 Quality Assurance

.1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

.2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements with contractor’s professional certifying agencies.

1.6 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports in accordance with specification section 01 33 00 clause 3.1.

1.7 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Federal and Provincial regulations.

.2 Divert unused coating materials from landfill through disposal at a special wastes depot.

PART 2 Products

2.1 Materials

.1 Paint.

.1 Primer: MPI EXT 5.1C, primer, marine for steel.

.1 Primer for second coat: tinted sufficiently off finish colour of first coat to show where second coat is applied.

.2 Tinting material: compatible with primer and not detrimental to its service life.

.2 Paint Systems Approved

	Supplier	Paint System	Coat	Dry Film Thickness
.1	Ameron Canada	Amerlocck 2	2	8-10 mils DFT/coat
.2	Westcoast Industrial Coatings	Jotomastic 87	2	8-10 mils DFT/coat
.3	Camcoat Industries	Interseal 670HS	2	8-10 mils DFT/coat
.4	Devoe Coatings	Bar-Rust 236H	2	8-10 mils DFT/coat
.5	Stonecor Group	Carbogard 890	2	8-10 mils DFT/coat

.6 Minimum DFT of finished paint system to be 18 mils at any location.

.3 Sand for sandblasting: to SSPC (Steel Structures Painting Council).

.5 Dry film thickness shall be stated in mils where 1 mil = 1/1000 inch.

PART 3 Execution

3.1 Manufacturer's Instructions

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 Preparation

.1 New metal surfaces.

.1 Clean surfaces of new metal to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and foreign substances in accordance with the following:

.1 Commercial blast cleaning: SSPC-SP-6 (Steel Structures Painting Council).

.2 Solvent cleaning: SSPC-SP-1.

.3 Hand tool cleaning: SSPC-SP-2.

.4 Power tool cleaning: SSPC-SP-3.

.5 Brush-off blast cleaning: SSPC-SP-7.

.6 Near White Blast Cleaning: SSPC-SP10/NACE No. 2.

.2 Metal surfaces to be repainted.

.1 Clean surfaces by removing loose, cracked, brittle or non-adherent paint, rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with following.

.1 Commercial blast cleaning: SSPC-SP-6.

.2 Brush-off blast cleaning: SSPC-SP-7.

.3 Solvent cleaning: SSPC-SP-1.

.4 Hand tool cleaning: SSPC-SP-2.

.5 Power tool cleaning: SSPC-SP-3.

.2 Commercial blast clean rusted and bares metal surfaces where existing paint system has failed.

.3 Brush-off blast clean remaining metal surfaces to be painted.

.4 Scrape edges of old paint back to sound material where remaining paint is thick and sound, feather exposed edges.

.3 Touch-Up Work

.1 All field welds shall be cleaned of slag, debris and burnt paint and painted as specified.

.2 All steel surfaces to receive paint material shall be fresh water power washed a minimum of 3,500 psi to remove all dirt, soluble salts or other foreign matter. Soluble salt contamination shall be less than 20 PPM prior to any coating material application. Remove all grease and oil by washing with solvents / degreaser to SSP-SP1.

.3 All steel surfaces to receive coating shall be prepared in accordance with SSPC-SP11 (Power Tool Cleaning to Bare Metal).

.4 Only tightly adhering coating material can remain on the substrate prior to recoating. All rough welds or protruding miscellaneous attachments in the areas to be coated shall be ground smooth prior coating material application.

.5 All surfaces to be coated shall be accepted by the engineer prior to application.

.4 Compressed air to be free of water and oil before reaching nozzle.

.5 Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes, by blowing with clean dry compressed air, or by vacuum cleaning.

.6 Do not apply paint until prepared surfaces have been accepted by the professional testing agency.

.7 Prior to commencing paint application the degree of cleanliness of surfaces to be in accordance with SSPC-Volume 1.

.8 Abrasives to be acceptable to the Worker' Compensation Board of B.C., Fisheries and Oceans Canada, Environment Canada and BC Environment. Minimum profile depth shall be 2 mils. Maximum depth shall not exceed one third of dry film thickness of total system.

.9 Prior to blast cleaning, all weld splatter and slag on welds to be removed. All sharp edges to be rounded to 3 mm radius.

.10 Any blast cleaning left longer than 8 hours (under a strictly controlled environment) shall be re-blasted in accordance with SSP-SP10 to remove any subsequent surface corrosion.

.11 All surfaces to be coated shall be inspected and approved by the professional testing agency prior to coating application.

.12 Protection of surfaces.

.1 Protect surfaces not to be painted and if damaged, clean and restore such surfaces as directed by the Engineer.

.2 Apply primer, paint, or pre-treatment after surface has been cleaned and before deterioration of surface occurs.

.3 Clean surfaces again if rusting occurs after completion of surface preparation.

.4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats of paint. Remove contaminants from surface and apply paint immediately.

.5 Protect cleaned and freshly painted surfaces from dust to approval of the Engineer.

.13 Mixing paint.

.1 Do not dilute or thin paint for brush application; use as received from manufacturer.

.2 Mix ingredients in container before and during use and ensure breaking up of lumps, complete dispersion of settled pigment, and uniform composition.

.3 Do not mix or keep paint in suspension by means of air bubbling through paint.

.4 Thin paint for spraying according to manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to the Engineer.

.14 Number of primer coats.

.1 New metal surfaces.

.1 Shop: Two primer coats to minimum dry film thickness of 200 microns (8 mils) per coat.

.2 Field: Two primer coats to minimum dry film thickness of 225 microns (9 mils) per coat.

.2 Repainting existing metal surfaces.

.1 One primer coat to minimum dry film thickness of 200 microns (8 mils) to bare and commercial sand blasted areas.

3.3 Application

.1 Apply paint by spraying, brushing, or combination of both. Use sheepskins or daubers when no other method is practical in places of difficult access. All specified painting systems to be applied in accordance with this specification and the manufacturer's data sheets. In the event of a conflict between the technical specifications and manufacturer's data sheets, the technical specifications shall take precedence.

.2 Use dipping or roller coating method of application when specifically authorized by the Engineer in writing.

.3 Caulk open seams at contact surfaces of built up members with material approved by the Engineer, before second undercoat of primer is applied.

.4 Where surface to be painted is not under cover, do not apply paint when:

.1 Air temperature is below 5 degrees C or when temperature is expected to drop to 0 degrees C before paint has dried.

.2 Temperature of surface is over 50 degrees C unless paint is specifically formulated for application at high temperatures.

.3 Fog or mist occurs at site; it is raining or snowing; there is danger of rain or snow; relative humidity is above 85%.

.4 Surface to be painted is wet, damp or frosted.

.5 Previous coat is not dry.

.6 Substrate temperature shall not be less than 3° C above dew point during all coating applications.

.5 All high solid paint shall be applied by Conventional or Airless Spray. Spray painting equipment shall be of ample capacity and shall be kept clean and in good working order at all times. Spray guns shall be suited to the type of paint used and shall be operated with orifices, nozzles and air pressure suited to type of paint and consistency. If conventional paint pots are used they shall be of ample capacity and shall be equipped with means of controlling air pressure at the gun.

.6 Air lines shall be equipped with water traps to positively remove condensed moisture.

.7 Provide cover when paint must be applied in damp or cold weather. Protect, shelter, or heat surface and surrounding air to comply with temperature and humidity conditions

specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.

.8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

.9 Apply each coat of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied. Each coat of paint shall have a definite colour difference from the preceding and subsequent coats of paints.

.10 Brush application of paints to be thinned approximately 10% shall be applied to all welds, corners, crevices, etc, prior to the first spray application of the paint.

.11 .Brush application.

.1 Work paint into cracks, crevices and corners and paint surfaces not accessible to brushes by spray, daubers or sheepskins.

.2 Brush out runs and sags.

.3 Remove runs, sags and brush marks from finished work and repaint.

.12 Spray application.

.1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.

.2 Provide traps or separators to remove oil and water from compressed air and drain periodically during operations.

.3 Keep paint ingredients properly mixed in spray pots or containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.

.4 Apply paint in uniform layer, with overlapping at edges of spray pattern.

.5 Brush out immediately runs and sags.

.6 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray. In areas not accessible to spray gun, use brushes, daubers or sheepskins.

.7 Remove runs, sags and brush marks from finished work and repaint.

.13 Shop painting.

.1 Do shop painting after fabrication and before damage to surface occurs from weather or other exposure.

.2 Spray paint contact surfaces of field assembled, bolted, friction type joints with primer coat only. Do not brush primer after spraying.

.3 Do not paint metal surfaces, which are to be embedded in concrete.

.4 Paint metal surfaces to be in contact with wood with either full paint coats specified or three shop coats of specified primer.

.5 Do not paint metal within 50 mm of edge to be welded. Give unprotected steel one coat of approved primer after shop fabrication is completed.

.6 Remove weld spatter before painting. Remove weld slag and flux by methods as specified by manufacturer. Metal Surfaces to be repainted.

.7 Protect machine finished or similar surfaces that are not to be painted but that do require protection, with coating of rust inhibitive petroleum, molybdenum disulphide, or other coating approved by Engineer.

.8 Copy previous erection marks and weight marks on areas that have been shop painted.

.14 Field painting.

.1 Paint steel structures as soon as practical after erection.

.2 Touch up metal which has been shop coated with same type of paint and to same thickness as shop coat. This touch-up to include cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas.

.3 Field paint surfaces (other than joint contact surfaces), which are accessible before erection but which are not to be accessible after erection.

.4 Where painting does not meet with requirements of specifications, and when so directed by the professional certifying agency, remove defective paint, thoroughly clean affected surfaces and repaint in accordance with these specifications.

.15 Touch-Up Work.

.1 All specified painting systems to be applied in accordance with this specification and the manufacturer's data sheets. In the event of a conflict between the technical specifications and manufacturer's data sheets, the technical specifications shall take precedence.

.2 Where surface to be painted is not under cover, do not apply paint when:

.1 Air temperature is below 5 degrees C or when temperature is expected to drop to 0 degrees C before paint has dried.

.2 Temperature of surface is over 50 degrees C unless paint is specifically formulated for application at high temperatures.

.3 Fog or mist occurs at site; it is raining or snowing; there is danger of rain or snow; relative humidity is above 85%.

.4 Surface to be painted is wet, damp or frosted.

.5 Previous coat is not dry.

.6 Substrate temperature shall not be less than 3° C above dew point during all coating applications.

.7 All prepared steel surfaces to receive coating shall be brush or roller applied in two or more coats to provide the originally specified DFT for new work.

.8 Additions of paint thinner to be from same manufacturer as coating system and must not exceed manufacturer's recommendations.

.9 .All work to be accepted by the engineer prior to and after painting.

.16 Do not handle painted metal until paint has dried, except for necessary handling for painting or stacking for drying.

.17 Scrape off and touch up paint, which is damaged in handling, with same number of coats and kinds of paint as were previously applied to metal.

3.4 Field Quality Control

.1 Site Tests, Inspections.

.1 Upon completion of the painting procedures test for dry film reading and evaluate the results as per SSPC PA 2.

.2 Contractor shall take wet film thickness measurements or spreading rate checks at once every ten minutes or once per 4.5 square metres of coated surface. The engineer may require more frequent checks.

.3 Coating material shall be subject to high voltage Holiday Testing at 2000 volts at the discretion of the engineer.

.4 At the discretion of the engineer, occasional spot checks for coating material adhesion may be performed. Such test areas shall be repaired at the expense of the Contractor.

.5 Newly painted surfaces shall be inspected when the paint has thoroughly dried. The painted surfaces shall be considered to lack uniformity, continuity and soundness if any of the following defects are apparent upon inspection:

.1 runs and sags, hiding or shadowing caused by inefficient application. methods.

.2 evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.

.3 damage due to touching before paint is dry or any other contributory cause.

.4 damage due to application on moist surfaces or inadequate protection from weather.

.5 damage and / or contamination of the paint due to wind blown contaminants (dust, sand blast materials, etc.)

3.5 Cleaning

.1 Upon completion of painting work, remove surplus materials, rubbish, tools and equipment barriers.

3.6 Containment

.1 Contractor to provide containment to prevent overspray damage to adjacent areas of float that is not a part of the painting zone, adjacent property, structures, vehicles or people.

3.7 Shipping And Handling

.1 After finish coating has dried use only synthetic ropes or rubber-covered device to handle. Use wood softeners to prevent movement, strap smaller pieces into bundles for transportation.

END OF SECTION

PART 1 General

1.1 Related Sections

.1 Section 03 10 00 - Concrete Forming and accessories.

.2 Section 03 20 00 - Concrete Reinforcing.

.3 Section 03 05 10 - Cast- in-Place Concrete.

.4 Section 03 35 00 - Concrete Finishing.

.5 Section 05 50 00 - Metal Fabrications.

.6 Section 06 10 00 - Rough Carpentry

.7 Section 09 97 19 – Painting Exterior Metal Surfaces

1.2 Measurement For Payment

.1 Measurement for payment shall be made under section 01 11 00.

.2 Substantial Performance Inspection in accordance with section 01 11 00.

.3 Complete Performance in accordance with section 01 11 00.

1.3 Dimensions

.1 Overall dimensions of finished concrete floats shall be in accordance with drawings and generally to the following:

.1 length 26.22 metres, breadth 8.537 metres and height 1.695 metres for singles.
.2 length 52.44 metres, breadth 8.537 metres and height 1.695 metres dual type I.
.3 length 26.22 metres, breadth 17.074 metres and height 1.695 metres dual type II.
.4 length 52.44 metres, breadth17.074 metres and height 1.695 metres quad type II

1.4 Inspection

.1 Manufacturer to employ professional testing agency to provide compliance test reports and inspection reports as work progresses in accordance with specification section 01 33 00 clause 3.1

.2 Floats fabricated in whole or in part without certification inspection shall not be accepted.

.3 Initial acceptance of floats by Canada will be made at the area arranged by the manufacturer and final acceptance will take place in accordance with the Contract at destination.

.4 One Recommended Testing Agency for Expanded Polystyrene Foam material is Intertek Testing of Vancouver, telephone 604-520-3321.

1.5 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Federal and Provincial regulations.

.2 Place materials defined as hazardous or toxic in designated containers.

.3 Fold up metal banding, flatten and place in designated area for recycling.

.4 Preservative treated wood must not be disposed of through incineration.

.5 Preservative treated wood must not be disposed of with other materials destined for recycling or reuse.

.6 Dispose of treated wood, end pieces, wood scraps and sawdust at sanitary landfill as approved by the appropriate regulators.

.7 Dispose of unused glue materials at municipally operated hazardous materials depot as approved by the appropriate regulators.

PART 2 Products

2.1 Material

.1 Concrete to be in accordance with section 03 05 10:

.2 Steel reinforcing to be in accordance with Section 03 20 00.

.3 Metal Fabrications to be in accordance with Section 05 50 00.

.4 Expanded Polystyrene Billets to be in accordance with the following;

.1 Professional certification of the material to be in accordance with Section 01 33 00;

.2 Provide professional certification that proposed method of bonding the Buoyancy Billets complies with all relevant parts of this section. The sample for bonding shall be 300 mm x 300 mm x 900 mm with at least one bond face of 900 x 300;

.3 Provide professional certification of tests confirming the conformance of polystyrene to specified physical properties, a minimum of 14 days before any cutting, bonding and installation of buoyancy billets in the float.

.4 The contractor shall have his shop drawings professionally certified at least 7 days before start of float fabrication that they comply with the design drawings and specifications. The shop drawings must show stock billet sizes, special block sizes, bonding, drain holes with PVC pipe sleeves, cuts or notches for concrete walls mooring wells, chamfers and utility raceways.

.5 Expanded Polystyrene Billets shall be of a material that provides a Minimum density of 16 kg / M^3, Compressive Resistance of 50 kPa (7.3 psi) @ 1 % deformation in accordance with ASTM D 1621 and comply with the water absorption requirements of ASTM D 2842.

.6 Contractor shall use Bakor 230-21 Adhesive to bond the lower 300 mm of each billet face, both vertical and horizontal and shall use Low Expansion Polyurethane Foam for bonding above the Bakor 230-21 Adhesive zone.

.7 Polyurea Hybrid Elastomeric Protective Coating on Exposed Expanded Polystyrene surface inside the mooring wells.

.1 Coating shall be 6 mm thick and applied in accordance with the manufacturer's specifications. Coating shall be applied over a synthetic meshing bonded to the foam walls. Polyurea Coating shall be a chemical resistant class with ultra violet resistant colouring and shall be overlapped 50 mm onto the concrete wall.

.5 Trim Weights

.1 In the event the trim weights are required they shall be designed and fabricated from materials that provide the same service life as the concrete components to provide a system that will allow adjustments to the trim and provide a freeboard of 650 mm minimum with an overall difference in freeboard of 50 mm maximum between any two adjacent or diagonal corners. The weights shall not occupy deck space or interfere with moored vessels drafting up to 6 meters.

PART 3 Execution

3.1 Floats

.1 Contractor to provide a sound bond on all billet faces with Low Expansion Polyurethane Foam above the bottom 300 mm foam and shall bond the lower 300 mm of foam with Bakor 230-21 Synthetic rubber adhesive.

.2 Deck to wall corners shall be chamfered.

.3 Billets shall be set into place and secured sufficiently to resist movement from concrete pouring forces. The contractor shall take extreme care to place concrete in an even manner and brace the billets and exterior wall forms to resist vibratory concrete pressures.

.4 Cast the concrete directly onto the foam billets to maintain design intent of developing a sound bond between the foam billets and concrete.

.5 Apply the Polyurethane Coating to the foam in the mooring wells after synthetic meshing has been applied to the foam in the mooring wells to the thicknesses in Part 2 above. Apply the polyurethane to a hardness of 75 on the Shore D scale with overlaps of 50 mm onto the concrete no earlier than 14 days after curing the concrete and after the silane sealer has been applied to the concrete walls.

.6 All formwork to be in accordance with Section 03 10 00.

.7 All reinforcing to be in accordance with section 03 20 00.

.8 All embedded metal to be in accordance with Section 05 50 00 and set and secured against the concrete pour forces.

.9 All concrete finishing including water pond curing, float finish, deck Sawcut grooves and silane sealer to be in accordance with sections 03 05 10 and 03 35 00.

3.2 Launch Floats

.1 Manufacturer to provide Marine Surveyor certificate that float launching was carried out with a maximum deck slope of 400 mm over the 26.22 metre length and that no damage above or below water line was caused by the launch.

.2 Adjustable Trim weights shall be fabricated and attached to the float by the contractor to adjust the pitch and list so that a 600 mm minimum freeboard is achieved with no more than 50 mm difference between any two corners, diagonal or adjacent.

.3 The trim weights shall be attached to the float by the contractor with all materials to have the same service life as the float module components and shall not occupy deck space or interfere with moored vessels drafting up to 6 meters. The contractor shall set the trim weights to provide a freeboard of 650 mm minimum with an overall difference in freeboard of 50 mm maximum between any two adjacent or diagonal corners. The contractor shall provide a professional certification that trim weight system complies with the design and specifications including service life and no obstruction with moored vessels.

.4 The contractor is reminded that exercising tight control of the plastic density of the concrete and strict compliance to providing a sound bond between the foam billets shall ensure achievement of the freeboard and trim expectations. Lack of a sound bond in the foam billets permits the concrete vibrator to force cement paste and smaller aggregates into the bonds increasing the dead weight of the float.

3.3 Joining Floats on Site

.1 Joining of the floats shall be performed at the location for deployment under a separate construction contract for site work.

.2 The site contractor shall supply and install the parts for joining in accordance with the drawings and specifications as agreed with Fisheries and Oceans, Canada.

.3 The owner will design the mooring system and determine if the joining design details are adequate for the mooring forces on the joining details.

3.4 Cleanup

.1 Remove all waste and loose material on, around and under floats before launching.

.2 Float decks to be cleaned of any cementitious material detrimental to marine waters prior to launching.

END OF SECTION