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

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0B2 / Noyau 0B2
Gatineau
Québec
K1A 0S5
Bid Fax: (819) 997-9776

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal 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.

Proposition 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 sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet
(3) Aluminum 5.3-5.5m Boats

Solicitation No. - N° de l'invitation	**Date**
F7044-170036/A	2018-01-02

Client Reference No. - N° de référence du client
F7044-170036

GETS Reference No. - N° de référence de SEAG
PW-$$MC-032-26618

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
032mc.F7044-170036	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2018-02-12

Time Zone
Fuseau horaire
Eastern Standard Time
EST

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☑ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Girard, Luc J.	032mc

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(819) 420-2890 ( )	( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Specified Herein
Précisé dans les présentes

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	**Delivery Offered - Livraison proposée**
See Herein	

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
Ship Construction, Refit and Related Services/Construction navale, Radoubs et services connexes
11 Laurier St. / 11, rue Laurier
6C2, Place du Portage
Gatineau
Québec
K1A 0S5

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 and Additional Information: includes the certifications and additional information 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 Technical Statement of Requirement, the Basis of Payment, the Insurance Requirements, the Bidder's Questions and Canada Responses, Subcontractors, the Inspection/Quality Assurance/Quality Control, and any other annexes.

1.2 Summary

1.2.1 The Department of Fisheries and Oceans Canada, Canadian Coast Guard, has a requirement for three, 5.3m to 5.5m aluminum open boats with trailers, delivered to Burlington, Ontario in accordance with the Technical Statement of Requirement (TSOR) at Annex A and the Bidder's Questions and Canada Responses at Annex D.

All deliverables must be delivered to the Canadian Coast Guard in Burlington, Ontario by October 25, 2018.

1.2.2 The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA) and the Canadian Free Trade Agreement (CFTA).

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 from 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 (2017-04-27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 *SACC* Manual Clauses

A9125T (2007-05-25), Valid Labour Agreement
B1000T (2014-06-26), Condition of Material – Bid
B3000T (2006-06-16), Equivalent Products

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.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 14 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 Ontario.

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.

2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 14 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Due to the nature of the bid solicitation, bids transmitted by epost Connect service or by facsimile will not be accepted.

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

Section I: Technical Bid, two hard copies

Section II: Management Bid, two hard copies

Section III: Financial Bid, one hard copy

Section IV: Certifications, one hard copy

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

3.2 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.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that

Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

In addition to providing the above requested information/documentation, Bidders must provide all documentation requested in the following articles:

3.2.1 Preliminary Drawings

Bidders must submit Preliminary Drawings that are in accordance with the TSOR and include at a minimum, the following technical drawings and information of the proposed vessel:

a) draft stability calculation;
b) calculated lightship weight;
c) general arrangement;
d) structural drawings showing deck plan, centerline profile and frame station construction details;
e) detailed lines plan; and
f) drawing of the fuel supply arrangement.

3.3 Section II: Management Bid

In their management bid, Bidders must describe their capability and provide all documentation/information as requested in the following articles.

3.3.1 Subcontractors

A list in the form of completed Annex E Subcontracts must be included with the Bidder's Proposal in accordance with article 06 (2013-06-27) Subcontracts of the 2030 General Conditions unless it is specifically requested in the requirement then the subcontract information must be provided.

3.3.2 Vessel Construction Experience

Bidders must provide documentation for a minimum of two proven aluminum vessels of similar size, type and complexity to the requirement of this RFP which have been produced and in service within the last five (5) years. A prototype hull will not be considered for this requirement

For the purposes of this evaluation, the terms similar size and type are defined as follows:

Similar size: 5m to 7m in length
Similar type: aluminum hull construction experience

Documentation required for each proven vessel must include:

(a) general arrangement drawings;
(b) photograph(s);
(c) references; and
(d) hull identification numbers (Transport Canada registration numbers)

3.3.3 Marine Drafting and Engineering Capability

The Bidder must provide objective evidence that it has either in-house capabilities, or has a written commitment for the duration of the Contract from a supplier to provide marine drafting and engineering services. The bidder or subcontractor must have the marine drafting and engineering experience and capabilities on construction projects for boats of similar size and type to the boats subject to this RFP.

For the purposes of this evaluation, the terms similar size and type are defined as follows:

Similar size: 5m to 7m in length

Similar type: aluminum hull construction experience

3.3.4 Contractor Quality Management System

1. 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 should address 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 should address these elements. Proof of registration with a recognized quality assurance organization whose system should address the minimum requirements below, may be submitted for consideration.

3. The Bidder must also provide a minimum of one sample of completed quality records used on the most recent marine vessel construction at its facility.

4. The quality control elements should, as a minimum, be:

- 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

5. Bidder 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.

6. The Contractor will be required to submit completed quality assurance documentation with each claim for payment, as applicable.

3.3.5 Inspection and Test Plan (ITP)

Bidders must provide with their bid the inspection plan and testing procedures that will be used to verify, test and inspect all of the compone*nts and systems on the boat from initial construction to completion. The ITP must be in accordance with* **Annex F** attached to this RFP.

Bidders must outline the process by which they will address and solve problems or delays with the fabrication, installations, testing and delivery of the boat.

3.3.6 Preliminary Project Schedule

1. As part of its technical bid, the Bidder must propose its preliminary project schedule, in MS Project 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.

2. The Bidder's schedule must also provide a target date for each of the following significant events as applicable:

   (a) hull materials delivered to Contractor and sustained construction commenced;

   (b) hull and deck completed, but not closed in to allow for full inspection of the structure and welding.

   The Contractor will be required to supply a hard copy of the material certs and construction drawings to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;

   (c) outfitting/electrical 75% complete but all equipment and components delivered to the Contractor and available for full inspection. The Contractor will be required to supply a hard copy of the list of equipment and electrical supplies to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;

   (d) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);

   (e) Contractor's tests and trial and final sea trials required by the TSOR;

   (f) boat and trailer delivered to Canada for approval;

   (g) the start and the end of the twelve month warranty period.

   Note: Technical Manuals will not be returned once approved.

3.4 Section III: Financial Bid

3.4.1 Firm Prices

Bidders must submit their financial bid in accordance with Annex B, Basis of Payment.

The unscheduled work rates requested in Annex B must be included, however they will not form part of the bid evaluation.

3.4.2 Exchange Rate Fluctuation

C3011T *(2013-11-16)*, Exchange Rate Fluctuation

3.5 Section IV: Certifications

3.5.1 Bidders must submit the certifications and additional information 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 technical, management & financial evaluation criteria.

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

4.1.1 Technical Evaluation

4.1.1.1. Mandatory Technical Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.2 Section I - Technical Bid.**

4.1.2 Management Evaluation

4.1.2.1 Mandatory Management Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.3 Section II – Management Bid.**

4.1.3 Financial Evaluation

4.1.3.1 Mandatory Financial Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.4 Section III – Financial Bid.**

4.1.3.2 Evaluation of Price

A0220T (2014-06-26), Evaluation of Price - Bid

4.2 Basis of Selection

4.2.1 Mandatory Technical, Management and Financial Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory “technical”, “management” and “financial” evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

A mandatory requirement is described using the words "shall", "must", "will" "is required" or "is mandatory".

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default 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 will 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 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the Forms for the Integrity Regime website (http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

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 available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#).

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.

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Workers Compensation Certification – 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 five calendar days** 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.

5.2.3.2 Welding Certification

1. Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following standards:

   (a) CT-043-EQ-EG-001-E, Canadian Coast Guard Welding Specification, August 2017;
   (b) CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum, division 2.

2. Before contract award and within five calendar days of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its certification to the welding standards.

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

There is no security requirement associated with this bid solicitation.

6.2 Financial Capability

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

6.3 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 Insurance Requirements.

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 nonresponsive.

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 to the Canadian Coast Guard three, 5.3 – 5.5m aluminum open boats with trailers, delivered to Burlington, Ontario in accordance with the Technical Statement of Requirement (TSOR) at Annex A and the Bidder's Questions and Canada Responses at Annex D.

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 (2016-04-04), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

1028 (2010-08-16), Ship Construction – Firm Price, apply to and form part of the Contract.

Warranty

The Supplemental General Conditions 1028, article 12 – Warranty, paragraph 3 is deleted and replaced with the following:

The warranty period for the propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding GSM) is twelve (12) months and the warranty period for the hull is 24 months from the date of delivery and acceptance by Canada.

7.3 Security Requirements

7.3.1 There is no security requirement applicable to the Contract.

7.4 Term of Contract

7.4.1 Period of the Contract

The period of the Contract is from date of Contract to March 25, 2019 inclusive.

7.4.2 Delivery Date(s)

All the deliverables must be received on or before October 25, 2018.

7.4.3 Delivery Point

Delivery of the requirement must be made to Canadian Coast Guard, 867 Lakeshore Road, Burlington, Ontario, L7S 1A1.

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Luc Girard
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Marine Systems Directorate
Portage III - Floor: 6C2
11, rue Laurier, Gatineau (Québec), K1A 0S5 Canada
Luc.Girard@tpsgc-pwgsc.gc.ca
Téléphone : 819-420-5807
Télécopieur/Facsimile : 819-956-6648

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.

7.5.2 Technical Authority *to be provided at contract award*

The Project Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ___-___-_____
Facsimile: ___-___-_____
E-mail address: _____

The Technical Authority 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.

7.5.3 Inspection Authority *to be provided at contract award*

The Inspection Authority for the Contract is:

_____
_____

The Inspection Authority is the representative of the department or agency for whom the Work is being carried out 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.

7.5.4 Contractor's Representative

(to be provided by the Bidder)
Name : _____
Title: _____
Telephone: _____
Email : _____

7.6 Payment

7.6.1 Basis of Payment

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

7.6.2 Limitation of Price

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.

7.6.3 Payment for Fuels, Oils and Lubricants

The Contractor is responsible for the supply and cost of all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials.

7.6.4 Field Engineering and Supervisory Services

If Field Service Representatives (FSR) and/or Supervisory Services are required for the Work, the cost of all such services is to be included in the price for the Work.

7.6.5 Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

(a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

(b) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;

(c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.6.6 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows and will be applied per vessel:

National Asset Codes (NAC) to be provided at contract award

Milestone No.	Description of deliverable(s)	% of contract value	Firm Amount CDN $
A	Hull materials delivered to Contractor and sustained construction commenced	30	
B	Boat, Trailer and technical manuals delivered and accepted by Canada	67	
C	End of 12 month warranty period – Final acceptance	3	
	Total.	100	$

The milestones A, B and C shown above must be included and identified in all production schedules.

The payment for the delivery, **Milestone B** will be payable by Canada upon delivery of the boat, trailer and manuals and Acceptance by Canada, minus the holdback for double the total estimated value of any outstanding work items.

The holdback for outstanding work will be payable by Canada upon completion of the outstanding work and when the work is accepted by Canada.

The payment for completion of the twelve month warranty period, **Milestone C,** will be payable by Canada upon completion of the warranty period of the workboat, minus the total cost of any work undertaken by Canada to repair any defects subject to warranty.

7.7 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;
(d) Quality assurance documentation when applicable and/or as requested by the Contracting Authority.

2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, 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 GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSCTPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

4. The Contracting Authority will then forward the original of the claim to the Technical Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

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

7.8 Certifications and Additional Information

7.8.1 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.

7.8.2 Welding

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 standards:

(a) CT-043-EQ-EG-001-E, Canadian Coast Guard Welding Specification, March 2014;
(b) CSA W47.2-M1987, Certification of Companies for Fusion Welding of Aluminum.

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

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.

7.8.3 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.

7.8.4 Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting 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.

7.9 Applicable Laws

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

7.10 Priority of Documents

If there is a discrepancy between the wordings 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 Supplemental General Conditions 1028 (2010-08-16), Ship Construction Firm Price;
c) The General Conditions 2030 (2016-04-04), Goods (Higher Complexity);
d) Annex A, Technical Statement of Requirement;
e) Annex B, Basis of Payment;
f) Annex C, Insurance Requirements;
g) Annex D, Bidder Questions and Canada Responses;
h) Annex E, Subcontractors;
i) Annex F, Inspection/Quality Assurance/Quality Control;
j) The Contractor's bid dated _____.

7.11 Defence Contract

SACC Manual clause A9006C (2012-07-16), Defence Contract

7.12 Insurance Requirements

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) 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.

7.13 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:

Delivered Duty Paid (DDP) Burlington, Ontario, Incoterms 2000.

7.14 SACC Manual Clauses

B5007C - Procedures for Design Change or Additional Work, (2010-01-1)
B9028C – Access to Facilities and Equipment, (2007-05-25)
B9035C - Progress Meetings, (2008-05-12)
C0711C - Time Verification, (2008-05-12)
C2604C - Customs Duties, Excise Taxes and Applicable Taxes – Non-resident, (2013-04-25)
D0018C – Delivery and Unloading, (2007-11-30)
D2000C – Marking, (2007-11-30)
D2001C – Labelling, (2007-11-30)
D3015C - Dangerous Goods/Hazardous Products – Labelling and Packaging Compliance, (2014-09-25)
D9002C – Incomplete Assemblies, (2007-11-30)
H4500C - Lien - Section 427 of the Bank Act, (2010-01-11)

7.15 Post Contract Award/Pre-Production Meeting

Within **three working days** of the receipt of the Contract, the Contractor must contact the Contracting Authority to determine the details of a pre-production meeting. The meeting will be held at the Contractor's plant. Cost of holding such pre-production meeting must be included in the price of the bid. Please note that the travel and living expenses for Government Personnel will be arranged and paid for by Canada.

7.16 Project Schedule

1. The Contractor must provide an updated detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **five days after award of Contract.**

2. This schedule must highlight the specific dates for the events listed below.

   (a) hull materials delivered to Contractor and sustained construction commenced;

   (b) hull and deck completed, but not closed in to allow for full inspection of the structure and welding. The Contractor must supply a hard copy of the material certs and construction drawings to the Technical/Inspection Authority one (1) week prior to inspection by the Technical/Inspection Authority;

   (c) outfitting/electrical 75% complete but all equipment and components delivered to the Contractor and available for full inspection. The Contractor must supply a hard copy of the list of equipment and electrical supplies to the Technical/Inspection Authority one (1) week prior to inspection by the Technical/Inspection Authority;

   (d) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);

   (e) Contractor’s tests and trial and final sea trials required by the TSOR;

   (f) boat and trailer delivered to Canada for approval;

   (g) the start and the end of the twelve (12) month warranty period.

   Note: Technical Manuals will not be returned once approved***.***

3. The schedule is to be regularly updated and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

7.17 Progress Report

1. The Contractor must submit monthly reports on the progress of the Work in an electronic format to the Technical Authority and to the Contracting Authority.

2. The progress report must contain two (2) Parts:

PART 1: The Contractor must answer the following three questions:

(i) is the project on schedule?
(ii) is the project within budget?
(iii) is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

Each negative response must be supported by an explanation.

PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

(i) a description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.

(ii) an explanation of any variation from the schedule.

7.18 Quality Management Systems

1. The Contractor must have in place a Quality Assurance Program approved by the Inspection Authority during the performance of the Work which addresses the quality control elements below.

2. The quality control elements should 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

3. The Contractor's facilities may be audited by Canada, or its authorized representative, during the performance of the Work to ensure that the approved system is in place and in accordance with the foregoing requirement.

4. The Contractor will be required to submit completed quality assurance documentation with each claim for payment as applicable.

7.19 Inspection, Test & Trials

1. During construction of the vessel, the Contractor must arrange for regular inspections and upon completion of the construction of the vessel, the Contractor must arrange trials. All Inspections and test and trials performed must be in accordance with the Annex A - TSOR and Annex F - Inspection/Quality Assurance/Quality Control. The Inspection Authority must approve any additional testing not specified in the TSOR.

2. The Contractor must update as required the Inspection and Test Plan (ITP) provided with its bid and submit to the Contracting Authority and the Inspection Authority **seven days after contract award** for review and amended by the Contractor to the satisfaction of the Inspection Authority.

3. Once approved, any modification to the ITP must be pre-approved by the Inspection Authority. A revised ITP will be required should any modification be made.

7.20 Manuals

1. The Contractor must obtain and deliver to the Technical Authority for approval, no later than fourteen calendar days prior to delivery of the boat, all Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the vessel as required. Once approved by the TA, the Contractor will provide two complete copies in accordance with and as specified in the TSOR.

2. Where manuals are examined by Canada, such examination does not relieve the Contractor of any responsibility under the Contract for ensuring the correctness of all details and adequacy of performance of the vessel, nor does it obligate Canada to accept, in part or in whole, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the TSOR.

7.21 Acceptance

1. Canada's provisional acceptance for delivery of the vessel must occur with the execution of a certificate in accordance with **form PWGSC 1105** upon satisfactory completion of the vessel and all trials. The execution of the certificates must in no way relieve the Contractor of any obligations under the Contract.

2. It is understood and agreed that where the work has been substantially completed and the parties have agreed upon the terms and conditions for the Contractor to make good any deficiencies, the certificate referred to above may be executed with a statement attached concerning the rectification of the deficiencies by the Contractor.

3. Canada's final acceptance must occur upon completion of the twelve (12) month warranty period and settlement of all accounts between the parties in relation to the Contract.

7.22 Government Supplied Material

The following equipment will be Government Supplied Material (GSM) and must be installed, mounted, set-up, fully functional and in accordance with each manufacturer's installation recommendations:

1. Three LF175XCA Yamaha outboard engines with 25" shaft (one outboard engine per boat).

Note: The GSM parts will be shipped to the Contractor's facility within 1- 2 months after Contract award.

ANNEX “A”

TECHNICAL STATEMENT OF REQUIREMENT (TSOR)

see attached separate document

ANNEX "B"

BASIS OF PAYMENT

Bidders must indicate for each of the following Items, their Unit Bid price, excluding taxes.

Firm Prices:

Item	Description	Unit Price CAN$ (a)	Quantity (b)	Total Price (a)x(b)
1	Aluminum boat, 5.3 to 5.5m, built in accordance with Annex A and D:	$	3	$
2	A Boat trailer built in accordance with Annex "A" and "D"	$	3	$
3	Delivery of boat and trailer, Delivered Duty Paid (DDP) as per RFP destination.	$	3	$
			Total (somme Item 1, 2 & 3)	$

Unscheduled Work Rates

The following unscheduled work rates will be included in the Basis of Payment, however they will not form part of the bid evaluation.

Bidders must provide the following requested rates:

1. The Charge-out Rate specified below includes all classes of labor, engineering and foreperson, and all overheads, supervision and profit. The Charge-out Rate will be used for pricing unscheduled work that results in an increase or decrease in the Work Period, except as noted in the clause entitled "Overtime."

Charge-out Rate - $..... /person/hour.

2. Overtime:

Occasionally, Canada may elect to authorize overtime, for Unscheduled Work only. If this is the case, and the rate is greater than the Charge-out Rate, cost of labor hours will be determined on the following basis;

Time and one-half rate: $..... /person/hour

Double Time Rate: $..... /person/hour

3. The cost of material must be the net laid-down cost of the material to which must be added a mark-up of 10% of the net laid-down cost of the material. For the purposes of pricing, Unscheduled Work and material must be deemed to include subcontracts.

ANNEX "C"

INSURANCE REQUIREMENTS

1. The Contractor must comply with the insurance requirements specified below. 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.

2. 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.

3. The Contractor must forward to the Contracting Authority within 10 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. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

(A) General Commercial 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 $2,000,000 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 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) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

(n), (o), (p), (q) not used.

(r) 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.

(B) Marine Liability Insurance

1. The Contractor must obtain Protection & Indemnity (P&I) insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection and Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the Marine Liability Act, S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.

2. The Contractor must obtain Worker's Compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the Territory or Province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is assessed any additional levy, extra assessment or super-assessment by a Worker's Compensation Board, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.

3. The Protection and Indemnity insurance 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 as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.

(b) Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Fisheries and Oceans Canada and Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.

(c) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

(d) 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.

(e) 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:
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For other provinces and territories, send to:
Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
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4. 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”

BIDDERS QUESTIONS AND CANADA RESPONSES

To be completed as required during the bid solicitation and inserted here

ANNEX “E”

SUBCONTRACTORS

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

ANNEX "F"

INSPECTION / QUALITY ASSURANCE / QUALITY CONTROL

1. Conduct of Inspection

(a) Inspections will be conducted in accordance with the ITP provided and accepted by the Inspection Authority and as detailed in this Annex.

(b) The Contractor must provide its own staff or subcontractors to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

(c) As applicable, the Contractor must ensure that the required conditions stated in the specification prevail at the commencement of, and for the duration of, each inspection/test/trial.

(d) The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

(e) The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

2. Inspection Records and Reports

(a) The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records.

(b) The Contractor's Quality Control (QC) representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

(c) Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

(d) Corrective action to remove cause of unsatisfactory inspections must be submitted to the Contracting Authority and to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Contracting Authority and to the Inspection Authority.

(e) The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

(f) The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

(g) Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Contracting Authority and to the Inspection Authority upon request.

3. Inspection and Trials Process

3.1 Drawings and Purchase Orders

(a) Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the TSOR. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Government of Canada Authorities.

3.2 Inspection

(a) Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

(b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate INSPECTION NON-CONFORMANCE REPORTS.

(c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.

(d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

(e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3.3 Inspection Non-conformance report

(a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.

(b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.

(c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance documents before the Inspection Authority's certification of such documents.

3.4 Tests, Trials, and Demonstrations

(a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and specifications, the Contractor must schedule, co-ordinate, perform, and record all specified tests, trials and demonstrations required by the Inspection Authority and the Specifications and any additional tests and trials performed by the Contractor required by the Inspection Authority.

(b) Where the specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.

(c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

(d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.

(e) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection, Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Government of Canada Authorities with a minimum of ten (10) working days' notice of each scheduled test, trial, or demonstration.

(f) The Contractor must keep written records of all tests, trials, and demonstrations conducted required by the QA System.

(g) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

(h) The Contracting Authority and the Inspection/Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

Fisheries and Oceans Canada | Pêches et Océans Canada

DEPARTMENT OF FISHERIES AND OCEANS

ANNEX A

Technical Statement of Requirements
Requisition Number F7044-170036 for Three (3) 5.3 to 5.5 m Aluminium Open Boats with Trailers

December 7th, 2017
Revision 0

Canada

Fisheries and Oceans Canada | Pêches et Océans Canada

TRANSPORT CANADA MARINE SAFETY BRANCH (TCMSB)
TP 1332 APPROVED CONSTRUCTION

Record of Amendments

#	Date	Description	Initials
0	December 7, 2017	Original release	JW

Canada

Fisheries and Oceans Canada
Pêches et Océans Canada

Canada

Table of Contents

ABBREVIATIONS

ABYC	American Boat and Yacht Council
ABS	American Bureau of shipping
AC	Alternating Current
ASTM	American Society for Testing and Materials
CFM	Contractor Furnished Material
CSA	Canadian Shipping Act
CSA	Canadian Standards Association
COLREGS	Collision Regulations
DC	Direct Current
GPS	Global Positioning System
GSM	Government Supplied Material
ISO	International Organization for Standardization
PVC	Polyvinylchloride
TA	Technical Authority (As defined by the Contract)
TCMS	Transport Canada Marine Safety
TSOR	Technical Statement of Requirements
UV	Ultraviolet
VHF	Very High Frequency

LIST OF REFERENCE DOCUMENTS

REFERENCE	TITLE
ASTM F1166	Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities
TP 1332	Construction Standards for Small Boats
TP 13430	Standard For Tonnage Measurement of Ships
TP 14070	Small Commercial Vessel Safety Guide
ISO 12217	Small Boat – Stability and Buoyancy Assessment and Categorization
ISO 12215	Small Boat – Hull Construction and Scantlings
Canada Shipping Act	Small Vessel Regulations
Canada Shipping Act	Collision Regulations (COLREGS)
ABYC	American Boat and Yacht Council Standards
Canadian Standards Association (CSA) CSA W47.2-M1987	Certification of Companies for Fusion Welding of Aluminium
(CSA) C22.2 No. 183.2-M1983 (R1999)	Standards for DC Electrical Installations on Boats
CT-043-EQ-EG-001-E	Canadian Coast Guard Welding Specification, August 2017

1 OVERVIEW

1.1 Requirement

1.1.1 The Contractor shall design, fabricate and supply quantity one (1) 5.3 – 5.5 metre Aluminium Open Boat with a Trailer based on the current Transport Canada Marine Safety Branch (TCMSB) Marine Safety Publication TP 1332 “Construction Standards for Small Vessels” (hereinafter referred to as TCMSB TP 1332). The boat shall be outfitted with a one (1) Government Supplied LF175XCA Yamaha outboard engine with 25” shaft.

1.1.2 The primary role of this vessel is to be a workboat platform for a variety of operations. The vessel will be used in sheltered waters as well as some coastal regions across Canada. Operations will be conducted from early spring to late fall.

1.1.3 The secondary roles of the vessel must be search and rescue and other fisheries enforcement duties such as boarding and surveillance duties within the reasonable capabilities for this type and size of craft.

1.1.4 This boat must be shore-based and launched and recovered by trailer and/or ship based and launched and recovered from a ship.

2 DESIGN AND CONSTRUCTION REQUIREMENTS

2.1 General

2.1.1 Unless stated otherwise all components, equipment and material must be contractor supplied.

2.2 Ergonomic Design – General

2.2.1 Hazardous operating conditions must be prevented by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards to personnel; and providing guards or covers for any controls that might accidentally be activated by contact of personnel.

2.2.2 The boat(s) must be designed and constructed to accommodate both male and female crew from approx. 5’ to 6’ 5’’ in height, wearing cold weather clothing and equipment in accordance with ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities.

2.2.3 Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort. All equipment must be accessible for use, inspection, cleaning and maintenance.

2.2.4 Equipment must be accessible for use, inspection, cleaning and maintenance as per ASTM F1166-07.

2.3 Vibration

2.3.1 The boats and all components must be free of local vibration that could endanger boat personnel, damage boat structure, machinery or systems, or interfere with the operation or maintenance of boat machinery or systems.

2.3.2 Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling.

2.3.3 Loosening of fasteners under vibration must be prevented by the use of self-locking fasteners.

2.4 Equipment Protection

2.4.1 The Contractor is responsible for the care of all equipment. All parts, especially those having working surfaces or passages intended for lubricating oil, must be kept clean and protected during manufacture, storage, assembly and after installation. Equipment must at all times be protected against dust, moisture or foreign matter and must not be subject to rapid temperature changes or extremes in temperature.

2.5 Site Cleanliness

2.5.1 During construction, all chips, shavings, refuse, dirt and water must be removed at the completion of the work shift or sooner. The Contractor must ensure measures are taken to avoid wear and damage incident to construction, and to prevent corrosion or other deterioration. Equipment subject to freezing must be kept drained, except during test and trials. Equipment must be kept clean and protected from the environment prior to installation.

2.6 Facilities (Applicable to GRP Lamination, Collar and Painting Facilities Only)

2.6.1 Contractor must have a shop capable of maintaining temperature and humidity. It must be capable of maintaining temperature between 16°C and 25°C. It must be capable of maintaining relative humidity below 70%.

2.7 Structural Strength

2.7.1 All structures and components (hull, deck, seating, etc.) must be of sufficient strength to withstand the lateral and vertical impact-loading that equates to the conditions of the operational requirements.

2.8 Standards

2.8.1 The boats must be designed, constructed, inspected, and certified to meet the requirements of the following standards, regulations and codes:

2.8.1.1 Transport Canada Marine Safety Regulation TP 1332 (current edition) Construction Standards for Small Boats. This standard references ISO and ABYC standards covering structure, fuel, electrical, stability and drainage requirements;

2.8.1.2 CSA C22.2 No. 183.2-M1983 (R1999) Standards for DC Electrical Installations on Boats and ABYC 'E' Electrical Standards; and

2.8.1.3 CT-043-EQ-EG-001-E Canadian Coast Guard Welding Specification, August 2017.

2.8.2 The Contractor must supply the boats as per this TSOR and where this TSOR interferes or contravenes the above standard; the above TCMSB TP 1332 standard must take precedence.

2.8.3 The Contractor must supply a certificate of approval insuring the proposed boats complies with TCMSB TP 1332, to ensure compliance with the current Canadian Coast Guard, Maritime Services Policies.

2.9 Materials

2.9.1 All materials must be corrosion resistant and suitable for use in a salt water environment as detailed in the Operational Requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation. Galvanized materials are unacceptable.

2.9.2 Direct contact of electrolytically dissimilar metals is not allowed. Electrolytic corrosion must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material.

2.9.3 Aluminium alloy types 5086, and dual rated 5086/5083 H116/321 must be used for plate; aluminium alloy 6061-T6 (anodized grade), suitable for type 5356 filler alloy, must be used for extruded shapes and welded tubing and pipe.

2.9.4 Transverse bulkheads or lightened plate frames may use type 5052 to facilitate braked tabs.

2.9.5 Specialized use of type 6061 T6 plate in fresh water for high strength delta pads is allowed.

2.9.6 Non-hull structural items of trim and outfit such as hatch frames, castings, consoles and hardware items may be of other aluminium alloys suitable for commercial saltwater marine use such as type 5052 or 6063.

2.9.7 Fittings and clamps must be stainless steel. Bolts used in all fittings must be Type 316 stainless steel.

2.9.8 Where flexible connections are required for steering and fuel systems, suitable hose with permanently crimped, detachable reusable type fittings must be used.

2.9.9 All materials and equipment must be stored installed and tested in accordance with the manufacturer's guidelines, recommendations and requirements.

2.10 Fasteners

2.10.1 All fasteners must be of corrosion resistant materials.

2.10.2 Cadmium plated parts and fasteners, including washers, must not be used.

2.10.3 Direct attachment of alloys containing copper to aluminium is not permitted except for an electrical bonding strap, with contact bolt and separating isolation washer.

2.10.4 No fastener must be directly threaded into aluminium alloys, except with adequate bolt or insert sizes, minimum 1/4" diameter, tapped into a suitable alloy type, and thickness, such as 1/4" 6061, with the use of thread adhesive type material.

2.10.5 Aluminium or Stainless steel washers or backing plates must be used as appropriate.

2.10.6 Where nuts must become inaccessible after assembly of the boats, nuts must be captured or anchored to allow reassembly and prevent backing off.

2.10.7 Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration.

2.10.8 Fasteners in deck traffic areas must be flush-mounted to eliminate tripping and snagging hazards.

3 OPERATIONAL REQUIREMENTS

3.1 General

3.1.1 Unless otherwise stated, performance must be for conditions of zero sea state and no wind, salt water with Normal Load and complement. The boat must be designed and constructed for ease of maintenance and repair, long life, and to be easily supportable by local commercial facilities and suppliers. The boat is expected to have a service life of at least 12 years, with an expected usage of between 250 and 500 hours per year.

3.1.2 Must meet the following requirements:
3.1.2.1 ISO design category “C”;
3.1.2.2 Maximum speed: 30 to 35 knots (at normal load condition);
3.1.2.3 Cruising speed: 20 knots; and
3.1.2.4 Endurance: 30 knots for 3 hours, 20 knots for 10 hours.

3.2 Steering

3.2.1 Operator must be able to steer the vessel as follows:
3.2.1.1 Capable of steering 15° from heading, in Beaufort Force 4, with seas from any direction;
3.2.1.2 Steer and manoeuvre effectively at 3 knots in Beaufort Force 4;
3.2.1.3 Maintain course, made good over ground, when proceeding at 3 knots with relative cross wind of 20 knots;
3.2.1.4 Operate carefully in depths of 0.7 meter with outboards lowered; and
3.2.1.5 Vessel must be able to manoeuvring in depths of 0.5 meters with outboards in a partially raised position.

3.3 Environmental Conditions

3.3.1 Capable of operating day or night in the following conditions:
3.3.1.1 Average ambient air temperature range: -15°C to +35°C;
3.3.1.2 Average water temperature: 0°C to +20°C;
3.3.1.3 Sea state of Beaufort Force 4;
3.3.1.4 Wave heights of up to 1.85 metres;
3.3.1.5 Wind speeds of 11-16 knots (Beaufort Force 4); and
3.3.1.6 Operate in freezing spray or freezing rain with accumulations of up to 6.0 mm while maintaining stability to allow for safe transit in Beaufort Force 4.

3.4 Launching, Recovery & Transportation

3.4.1 The boat must be readily road transportable on a trailer, must be able to be launched and recovered using the trailer at launch ramps.
3.4.2 The maximum length, width and height of the vessel on its trailer must fall within all Canadian regulations for maximum road dimensions without an oversized load permit.

3.4.3 The vessel must be equipped with a four (4) leg, webbing lifting bridle. The location and arrangement of lifting gear must be such that it does not pose a safety hazard to the operator or crew nor interfere with boat operation. All bridle lifting lugs must be reinforced and proof tested in accordance with CSA Tackle Regulations. Lifting points must not be located below the deck or within lockers or compartments. Lifting points must be located so that the bridle does not snag on the boat structure, outfit or machinery. Lifting slings provided must be webbing strap type certified to safely lift the vessel in the Normal Loaded condition. Test margin 200% for four straps, or per CSA if higher standard.

3.5 Beaching

3.5.1 The following defines the beaching capabilities of the vessel:

3.5.1.1 Capable of beaching on soft (sand, earth or clay) surfaces at speeds of up to 5 knots without damage to the hull;

3.5.1.2 Capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to the hull;

3.5.1.3 Capable of trimming up the engine completely out of the water; and

3.5.1.4 Capable of limited operation in forward or reverse with the engine partially trimmed up (shallow water operations).

4 PHYSICAL CHARACTERISTICS

4.1 Vessel Particulars

4.1.1 Length overall – between 5.3 and 5.5 metres

4.1.2 Breadth overall – maximized to 2.5 metres

4.1.3 Maximum draft (outboard motor lowered) - between 0.32 and 0.42 metres

4.1.4 Displacement (in lightship condition) - between 350kg and 550kg

4.1.5 Normal load condition:

4.1.5.1 Crew of 2 = 150 kg;

4.1.5.2 Fuel = 200 liters (156 kg);

4.1.5.3 Crew Equipment and Gear = 200 kg; and

4.1.5.4 Payload Capacity = Minimum 500kg in addition to full fuel

4.1.5.5 Vessel stern configured to accommodate – single LF175XCA Yamaha outboard engine with 25” shaft – Government Supplied Material (GSM) and installed by the Contractor.

4.2 Hull Form & Structure

4.2.1 The vessel must be a shallow or modified “V” style monohull, capable of operating in limited depths. The hull should have a reverse chine configuration.

4.2.2 Hull must incorporate a minimum of one substantial or two smaller spray strakes on the bottom, per side, which run out to the stem.

4.2.3 Deadrise must be 12 degrees at vessel transom.

4.2.4 Hull shape must not impede water flow to the propulsion units and must direct spray and waves away from onboard personnel.

4.2.5 Hull and side plate – minimum ¼” thick aluminum hull with side plates minimum 3/16”. Deck plate minimum 3/16” thick aluminum.

4.2.6 Hull design shall be such that a sufficient number of watertight compartments, including hull compartments and low smoke and flame spread floatation foam or fire retardant floatation, or floatation devices allow for adequate stability and positive buoyancy in a flooded condition. See references to boat certification, re: TP 1331/ ISO testing.

4.2.7 Weather tight stowage for small items of equipment must be provided in void spaces beneath seats, and where practicable, inside console(s). All exterior stowage compartments must be lockable, secured by positive means and operable by gloved or insensitive hands.

4.2.8 In plan view the boat must be squared athwart ships to the top of bulwark, this will maximise the internal working area and facilitate ease of boarding. Bulwarks should be of a material that will allow large items to be carried athwartships, they should be clear of any encumbrances or protrusions. Any railings or stanchions fitted must be completely removable.

4.2.9 Beaching Shoe:

4.2.9.1 A beaching shoe (aluminium doubler) is to extend from just above the forward waterline along the full length of the hull to the transom. Width must be 200mm. (See section 3.4 Operational Performance - Beaching).

5 VESSEL CONFIGURATION

5.1 General

5.1.1 The vessel must be a Monohull Aluminium Open Boat with Offset Console on the starboard side. The bow is to be U-shaped at top of bulwarks with an open deck accessible by side decks around the console maximising the forward working area at the bow. The center of the console must be amidships.

5.2 Deck Arrangement

5.2.1 Fully open boat with the length of entire deck space to be a minimum of 3.5 metres.

5.2.2 Offset helm console on starboard side of vessel with walk around access on deck on port side of the console.

5.2.3 A tubular aluminium leaning post with cushion must be provided for the operator in way of the console, suitable for stand up boat operations or as a back rest during seated operations.

5.2.3.1 The leaning post must be hinged, so as to pivot fore & aft dependent of the user's configuration.

5.2.3.2 Backrest must be able to fold down below side deck height.

5.2.3.3 A removable cushion with weather resistant cover is to be fitted along the horizontal axis of the leaning post.

5.3 Helm Console – Structure

5.3.1 Console must be oriented on the starboard side of the vessel and must be no wider than 30 inches.

5.3.2 The console must accommodate the gauge package, steering wheel, controls & electronics.

5.3.3 The forward side of the console must be located at approximately 30% of the overall length measured from the transom. It must be placed to allow ingress/egress from steering station, but as much as possible not encroach on the usable deck space forward.

5.3.4 Console must include one (1) forward facing windshield that is mounted as far forward as possible and also provides some side protection. Windshield must be ISO Category B certified and sized to maximize visibility.

5.3.5 The height of the console and windshield must be suitable for stand up or seated operations.

5.3.6 A grab rail must be incorporated into the outboard side console for the passengers and operator. The rail must be able to utilized around the perimeter of the console and provide protection of the windshield at its highest point.

5.3.7 A lockable top stowage box will be incorporated into the console for ease of access by the operator during operations.

5.3.8 Console to be constructed to low weight, high strength specifications from aluminium to withstand the accelerations of the boat while in extreme service conditions. Successful construction methods presented include main console construction of 3/16” plate, broken at the corners, with tiered and/or sloped top surfaces for installation of controls and electronics. Alternate construction method using 2” schedule 40 pipe framing with plate panels filling the console and window faces is also commonly used. Weight and structural integrity are paramount concerns.

5.3.9 The operator console must have weather tight aft facing access hatch below the console dash. There must be a watertight hatch or door in the forward face of the main console to access the space below the console for electrical equipment and console electronics access.

5.3.10 Handholds of minimum ¾ ” sched 40 pipe must be positioned on the aft, top edge of the upper console and across the forward face above the electronics access door. In addition, pipe rails must run up the outboard edges of the forward window frame, tilted away from centre so as to provide minimal visual obstruction to forward operators.

5.3.11 The console must be fitted with a “weatherproof’ cover. The purpose of the cover is to protect the console electronics from moisture and spray when the boat is travelling or unattended.

5.3.12 Seating for console must incorporate a lockable storage compartment with weatherproof cushion. The leaning post/backrest shall be on a pivot so that it can be used in either configuration.

5.3.13 Foot Rests:

5.3.13.1 There must be pipe foot rest(s), servicing forward positions at the console, for use when standing while operating.

5.3.14 Helm Station:

5.3.14.1 The throttle control station shall be on the starboard side of the console and mounted in such a fashion as to provide ergonomic comfort to the operator;

5.3.14.2 The helm shall incorporate a steering system, capable of handling the horsepower of the vessel, with manufacturers’ engine controls designed for the power unit;

5.3.14.3 All electronics shall be mounted in a fashion that they are clearly visible & can be easily operated from the helm position. See section 7.4 for equipment details;

5.3.14.3.1 All wiring, cabling, hoses must be routed through a watertight gland incorporated between the deck & console plate.

5.3.14.4 There must be a console mounted magnetic compass; and

5.3.14.5 All lights switches and breakers shall be within easy reach of the helmsmen.

5.4 Utility Lighting

5.4.1 All lighting is to be LED power management is critical due to the volume of electronics.

5.4.2 There must be two (2) flood lights fitted to the vessel.

5.4.2.1 One (1) flood light must face the aft deck.

5.4.2.2 One (1) flood light must face the forward deck.

5.4.2.3 These lights must be Hella model 1GB-998-541-001 or equal.

5.4.3 There must be a light to illuminate the console for the operator.

6 OUTFIT GENERAL

6.1 Hull Outfit

6.1.1 Vessel must be equipped with securing eyes fitted to the transom of the vessel used for trailer tie downs, and recessed bow eye for towing and trailer tie down.

6.1.1.1 Must be of sufficient strength to allow for towing the vessel at a speed of 20 knots in calm water in a normal loaded condition on an even keel without damaging the vessel or causing undue chafing of the towline.

6.1.1.2 Transom tie down points must be incorporated into the port and starboard sides.

6.1.1.3 The recessed bow eye must be reinforced with an aluminium doubler or stainless steel reinforcement plate.

6.1.2 The outboard side of the bulwark must be outfitted with 2” D-rubber to protect the hull from damage during docking. This must be included in the 2.4 metre overall breadth.

6.1.3 The port and starboard sides of the transom must be outfitted with an aluminium doubler type chafe plate.

6.1.4 The boat must be equipped with recessed cleats, three (3) on the port side and three (3) on the starboard side. Cleats should be of aluminium and of such size to accommodate 5/8” lines.

6.1.5 Sacrificial zincs attached to transom of hull in industry accepted fashion.

6.1.6 Bulwark:

6.1.6.1 Must be a minimum of 4” wide with rounded inside edges.

6.1.6.2 Any fairlead openings should be of sufficient size to pass 5/8” lines through to cleats and have no chafing corners.

6.1.6.3 Top of bulwarks around the vessel must be flat across their whole width.

6.1.7 Transom:

6.1.7.1 There must be an engine well on centerline that provides enough room for the engine to tilt up during trailering. Engine well must feature a draining point above the loaded waterline.

6.1.7.2 Two (2) partial swim platforms must be outfitted to the transom on either side of the engine. These platforms must be level with the opening of the engine well.

6.1.7.3 Surface finish of the swim platforms must be non-skid/non-slip.

6.2 Deck Outfit

6.2.1 There must be a minimum of four (4) recessed deck tie downs on the aft deck.

6.2.2 Surface finish of the entire weather exposed decking must be non-skid/non-slip with self-draining high-capacity non return freeing ports.

6.2.3 Certified lifting points must be recessed, proof tested and certified.

6.2.4 There must be an aft deck storage box having a minimum size of 1.2 by 0.38 metres that is lockable with a removable cushion.

6.2.5 A cruciform tow post must be fitted at the transom for emergency towing. Sized and certified with safe working load equivalent to 1.5 times the maximum hp of the vessel. The safe working load is to be permanently stamped and clearly identified on the top of the tow post. Removable bow rails must be supplied, suitable for ease of egress when boarding other boats or when loading large objects across the bulwarks.

6.2.6 Side rails must be welded aluminium pipe and removable. Rails to be secured with 316L grade stainless quick release pins complete with lanyards. Forward section is low to facilitate work over the side. Stern rail section must be elevated to provide ergonomic handhold for operators on deck.

6.2.7 Davit:

6.2.7.1 The boat must be equipped with a removable radial arm davit, complete with manual winch, block and hook.

6.2.7.2 The davit must be capable of extending 0.5 metres from gunwale and have a lifting point above the deck at 1.30 metres

6.2.7.3 Maximum lifting capacity of 110 kilograms.

6.2.7.4 It must be able to be locked into various positions, including stowed, where which it will not interfere with docking.

6.2.8 Anchor and Storage:

6.2.8.1 A locker for one (1) anchor (Fortress FX11 model or equivalent) with storage for chain and rope is to be incorporated into the bow of the vessel.

6.3 Lifesaving & Emergency Equipment

6.3.1 The following items must be provided with appropriate stowage / securing arrangements (as appropriate for each item). All fittings, contractor supplied, must be heavy duty, corrosion resistant 316 stainless steel fittings. All items must also be readily accessible:

6.3.1.1 Two (2) paddles;
6.3.1.2 One (1) life buoy with heaving line not less than 15 meters;
6.3.1.3 One (1) watertight flashlight;
6.3.1.4 One (1) Air horn;
6.3.1.5 One (1) re-boarding ladder;
6.3.1.6 One (1) buoyant safety knife;
6.3.1.7 One (1) Fire extinguisher (Class B1, marine type);
6.3.1.8 One (1) manual bilge pump (built in), for the hull, Whale Gusher type;
6.3.1.9 Pyrotechnics Type A Qty: 3, Type B or C Qty: 3;
6.3.1.10 One (1) First Aid Kit;
6.3.1.11 One (1) Boat hook, 8 feet long (retractable);
6.3.1.12 One (1) Transport Canada approved radar reflector;
6.3.1.13 Anchor (Fortress FX11 model or equivalent) with 200 feet of ¾ line and a 5 meter galvanized chain;
6.3.1.14 Two (2) 20’ long, ½” braided nylon mooring lines with eye spliced into one end.

7 SYSTEMS GENERAL

7.1 Propulsion

7.1.1 Outboard motor must be one (1) Government Supplied Materiel (GSM) LF175XCA Yamaha outboard engine with 25” shaft.

7.1.2 The Contractor must install the outboards, supply and install the controls for the outboards.

7.1.3 The engines must be installed, mounted and operated in accordance with the engine manufacturer’s recommendations by the Contractor. The Contractor must supply and install the engine manufacturer’s approved accessories and equipment. Equipment and components must not be used, or trials performed on the engines that would, in any way, void the engine manufacturer’s warranties.

7.1.4 Gauges:

7.1.4.1 Contractor shall supply and install equipment included in the manufacturers’ standard gauge package, and appropriate cables and harnesses, for the specified engine.

7.1.4.2 Gauges shall be installed so that they are readily visible by the operator while operating the vessel.

7.1.4.3 The gauges package should include a minimum of the following:

- Tachometer
- Voltmeter
- Trim/tilt gauge
- Cooling water temp. gauge
- Water pressure gauge
- Fuel gauge
- Hour meter

7.2 Propeller(s)

7.2.1 Two (2) identical propellers (one (1) spare) must be provided by the contractor (CFM) for the vessel built.

7.2.2 Propeller(s) must be properly sized and contractor installed.

7.2.3 The Contractor must inform the Technical Authority of appropriate pitch and diameter to meet the Performance Requirements as determined by the contractor developed design check.

7.2.4 The propellers must be of stainless steel.

7.3 Controls

7.3.1 Propulsion control system installation must include a single binnacle engine control located on the starboard side of the helm console. The controls must conform to engine manufacturer's recommendations and must not interfere with any of the other controls.

7.3.2 Engine package must incorporate a lanyard style automatic shutdown feature (kill switch) for the engines, to be mounted near the ignition switch.

7.4 Alarms

7.4.1 Monitoring system for the engines must include the following alarms:

7.4.1.1 Oil level gauge, for the remote tank;

7.4.1.2 Coolant flow alarm, if applicable; and,

7.4.1.3 Engine overheat/high temperature alarm.

7.5 Verification of Installation

7.5.1 Installation of the motors, controls, lubrication and fuel systems, manometers, battery connections, are to be verified by an authorized technician. The motors are to be started by the authorized technician, who must provide a written report with a copy for the Technical Authority.

7.6 Engine Break-In

7.6.1 The Contractor is to respect the engine manufacturer's break-in procedures and must have the appropriate authorized technician present during the break in period to resolve any issues.

7.7 Steering

7.7.1 Steering system must be remote hydraulic with self-contained oil reservoir, and replaceable seals on the rams, unless propulsion system builder requires alternate steering arrangement.

7.7.2 Hydraulic hoses must be of sufficient size and length to prevent pulsing. Hoses must be suitable for use in an exposed marine environment complete with stainless steel fittings.

7.7.3 Steering systems must be hydraulic with a maximum of 4.0 turns from hard over to hard over. (The SeaStar® and / or DayStar steering systems, depending on vessel horsepower, from Teleflex meet this requirement).

7.7.4 All hydraulic steering hoses must be routed in such a manner that they are protected from physical damage and so that there are no pinch-points or chafing points on the hoses.

7.7.5 The wheel / console connection must be of robust construction, to eliminate fore and aft or lateral movement of wheel / steering shaft fixture.

7.7.6 The steering wheel must be stiff enough that during rough water operations there is no flexing of the wheel and the wheel must be padded to provide a comfortable non-slip surface for the operator to grip. Momo Marine steering wheels meet these requirements.

7.8 Protection of Controls

7.8.1 All control cables, electrical wiring for the motors and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (LOOM) or equal. These pipes are to be installed in such a manner as to ensure that no cable is immersed in water.

7.9 Fuel System

7.9.1 The complete fuel systems must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332 and ABYC specifications.

7.9.1.1 All fuel valves must be readily accessible and labeled as per TCMSB TP 1332.

7.9.1.2 Regardless of interpretation of TP 1332 requirements, below deck fuel tank compartment must have both passive and powered bow and stern ventilation system installed with clearly labelled switch at the helm.

7.9.2 System must include one (1) Racor filter/separator with see-thru bowls, suitable for fuel supply to the single gasoline outboard motors.

7.9.3 Locking fuel filler must be located in an accessible watertight / vented compartment designed to catch fuel from over filling or blow back so that the fuel does not enter the vessel.

7.9.4 Remote fuel shutoff maintenance valves are to be installed at filter/ manifold system and be easily accessible by vessel operators.

7.9.5 Shut-off valves must be installed in accordance with TP1332 and ABYC requirements, remote from the fuel tanks and engine compartments.

7.10 Fuel Tank

7.10.1 The vessel must be fitted with one (1) fuel tank(s) with baffles as necessary.

7.10.2 The tank(s) must be aluminum and fitted below the deck on the centerline.

7.10.3 The total fuel capacity of the fuel tank must be two hundred (200) liters.

7.10.4 There must be inspection hatches (8”) in the deck to allow access to the fuel pickups, vent, fill connections and tank level indicators.

7.10.5 Fuel tank vent pipes are to be equipped with a non-return check valve.

7.10.6 Fuel tank(s) must be hydrostatically tested, or air tested to 3.0 p.s.i. and be labelled per the requirements of TP1332.

7.10.7 Fuel tank(s) must be fitted with fuel level/capacity sender unit and a gauge on the dash of the console for the operator.

7.10.8 Fuel tank(s) is (are) to be equipped with anti-siphon valve(s) installed on motor inlet if flow rate meet the manufacturer’s requirement.

7.11 Electrical System

7.11.1 The electrical system design, component selection and installation must be in accordance with Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) “Standards for D.C. Electrical Installations on Boats”, and TP1332 and/or ABYC ‘E’ as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications.

7.11.2 Twelve Volt (12V) DC distribution system must be provided to power the engine starting and boat service loads including:

7.11.2.1 Navigation lights;
7.11.2.2 Exterior Lighting;
7.11.2.3 Navigational equipment;
7.11.2.4 Instrumentation;
7.11.2.5 Bilge Pumps;
7.11.2.6 Ancillary Items;
7.11.2.7 Electronics; and
7.11.2.8 Communications

7.11.3 All electrical equipment must be readily accessible for performing maintenance and incorporate a waterproof breaker panel with at least one (1) spare circuit.

7.11.3.1 Breaker panels to be appropriately sized for the equipment detailed in this TSOR.

7.11.4 Galvanic corrosion is to be controlled by installation of an effective bonding and grounding systems with galvanic isolation. Cathodic protection is to be effected by installation of sufficient anodes positioned so as to minimise cathodic currents per ABYC and TP1332.

7.11.5 Four (4) 12 V DC power points are required on the vessel:

7.11.5.1 One (1) near the transom tow post;

7.11.5.2 One (1) at the communication side of the console. This power point must include a 12V auxiliary power outlet and USB charging receptacle combo; and

7.11.5.3 One (1) on each forward face.

7.12 Batteries, Cables and Charging Systems

7.12.1 Two (2) dedicated starting batteries, type M30MF for the outboard motors. Dual-battery system, minimum 1000 cranking amps with dual-battery selector switch mounted in a recessed position that conforms to engine manufacturer's specifications.

7.12.2 Twelve (12) volt DC distribution system must be provided to power the engine starting and boat service loads including:

7.12.2.1 Navigation, interior, and exterior lighting;
7.12.2.2 Electrical equipment;
7.12.2.3 Instrumentation; and
7.12.2.4 Bilge pumps and alarms.

7.12.3 Batteries must be marine grade, 12 V, deep cycle maintenance free glass mat or gel type (no custom batteries), and with the ability to cross connect for inboard or outboard start-up of either engine from either battery where the system has a house battery in addition to the start batteries, the house battery shall be able to be joined to the start batteries if necessary.

7.12.4 Battery switches must be Certification Agency, (CE, CSA, USCG, etc.) approved and must be mounted to prevent snagging or accidental switching.

7.12.5 Battery compartment must be weather tight and fitted with a suitable means of gas venting including for ‘sealed’ batteries.

7.12.6 Cables for all electrical distribution must be ample in size for the particular service, of marine grade tinned boat cable.

7.12.7 The electrical system design, component selection and installation must be in accordance with TP1332 and/or ABYC ‘E’ as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications.

7.12.8 All fitted electrical equipment must be capable of operating simultaneously with any other fitted electronics equipment without causing interference to any electronic equipment or to the magnetic compass.

7.12.9 All operation switches for equipment must be labelled.

7.13 Cabling Installation

7.13.1 Protection of Controls:

7.13.1.1 All control cables, electrical wiring for the motor and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (LOOM) or equal. These pipes are to be installed in such a manner as to ensure that no cable is immersed in water.

7.13.1.2 Cables for all electrical distribution must be ample in size for the particular service, of marine grade tinned boat cable.

7.13.1.3 Cables must be grouped into wiring harnesses wherever possible. All wiring harnesses must be routed through protective conduit pipe. Where impractical cables and conductors must be supported with clamps or straps at least every 18” on horizontal runs and every 14” on vertical runs.

7.13.1.4 Cabling / conductors passing through watertight boundaries, decks, bulkheads or other exposed surfaces must be installed to maintain watertight integrity of the structure. Cable entry into watertight enclosures must be through watertight marine glands of suitable size. All electrical equipment must be readily accessible for performing maintenance.

7.13.1.5 Cabling / conductors passing through structures without watertight glands must be protected against chafing by the use of abrasive resistant grommets.

7.13.1.6 Routing cables through foamed spaces must be avoided wherever possible. Cables that must be routed through foamed spaces must be run in PVC conduit pipe. The pipe must be arranged in a manner that prevents water from becoming entrapped in the pipe.

7.14 Navigation Lighting

7.14.1 LED lighting must be used where available

7.14.2 Navigation lights must be permanently fitted to boat with protected wiring and must be waterproof. All around mast /anchor light ratchet mast mounting is acceptable.

7.14.3 The fixtures must be of such a design as to resist the effects of vibration, moisture and must be provided with adequate protection from damage that may occur when lying alongside a vessel or a pier. The Hella NaviLED Series of lights, including the NaviLED 360 all–round light, and NaviLED side lights meet this requirement.

7.14.4 Non-white lighting must be wired together on a separate breaker of the 12 volt DC electrical system. All around Mast /Anchor light showing clear above the radar scanner as per TP 1332. One three way rocker switch, labelled “NAV” which turns on all Nav lights. When switched to the “ANC” side, only the anchor light is on.

7.14.5 The navigation lights must be mounted so as not to interfere with vision of the operator.

7.15 Electronic & Navigation Equipment

7.15.1 The Contractor must supply and install the following electronics. Any antennas must be mounted without causing interference to vessel operations. All cable penetrations must pass through a watertight gland:

7.15.1.1 One (1) Standard Horizon Quantum GX 5500S VHF radio with DSC capabilities, an antenna and double RF insulated cabling. Complete with loud hailer/intercom function plumbed to Radio. VHF must be connected to GPS via NMEA to complete DSC capabilities;

7.15.1.2 Antenna, specification is Comrod AV51P-4 and Shakespeare 4187 - HD SS ratchet mount and 408 stand-off bracket;

7.15.1.3 Simrad GO7 XSR with HDI transducer;

7.15.1.4 Navionics MSD/NAV+CAD chart card;

7.15.1.5 The Contractor must provide and install a direct read compass with light on the boat. The magnetic compass must be mounted on the centreline of the operator stations, in easy view of the operator when facing forward. Deviation card development is an Owner responsibility. (The Ritchie Explorer meets this requirement.); and

7.15.1.6 The Contractor must supply and install an electric horn that meets the requirements of the Canadian Standards Association (CSA) Collision Regulations. The horn must be operated by a spring-loaded switch located on the operator's console.

7.16 Drainage & Bilge Systems

7.16.1 Electric bilge pump with 2000 gph capacity must be fitted in the largest hull compartment as well as a fixed manual operated bilge pump of the diaphragm type. The bilge pump(s) must be located so that they take suction from the lowest point of the hull. Piping must be installed which must allow the bilge pump(s) to discharge directly overboard. Any additional watertight division of the hull must be serviced by a bilge pump of 1500 GPH capacity. The wire gauge for all bilge pumps must be a minimum of 10 gauge.

7.16.2 All bilge pumps must be wired direct to battery, so that it is constantly active as per TCMSB TP 1332 requirements.

7.16.3 An automatic level sensor control must be fitted that turns on the electric bilge pump (Non-Pedal type) when water is present in the bilge. The electric bilge pump control switch must be located on the operator's console, with settings for 'momentary on', 'off', and 'automatic' operation. An indicator light must be provided at the control that lights when the bilge pump is operating.

7.16.4 There must be a high water alarm installed for the engine installation space and every other space serviced by a bilge pump.

7.16.5 One (1) brass or stainless steel threaded plug must be installed in the lowest point to drain the hull when out of the water.

7.16.6 Valves and handles must be made of non-corroding materials and must be located where they are readily accessible for operation, maintenance or removal.

7.16.7 Any forward water retaining compartment without pump must have a piped drain to the aft bilge with a stainless steel ball valve. The valve must be readily accessible for testing or draining the forward bilge to the aft pump.

7.17 Painting & Corrosion Protection

7.17.1 Aluminium components not identified for paint must have a clear coat painted finish on all specified exterior and interior surfaces, comprised of suitable etch, primers, and topcoat.

7.17.2 Contractor must follow the preparation and application requirements defined by the paint supplier. Typical single coat paint systems can be applied in the 5 to 7-mil thickness range per coating set. Typical system components would be: a) etch-primer; b) two coats of primer; and c) minimum two topcoats.

7.17.3 The standard color of the console of each boat must be international F000, Mist grey. All upholstery must be black.

7.17.3.1 Hull above the water line and cabin: DFO Slate Grey (RAL7042).

7.17.4 Exterior Decks and top of bulwarks (around the perimeter of the boat): Anti-slip, Sure-Foot grey.

7.17.5 Underwater hull antifouling for Aluminium Trilux ll color: Black

7.17.6 Prior to delivery, the Contractor must ensure that all non-painted interior or exposed surfaces are free of cosmetic blemishes, including all construction marks, scratches, gouges and stains.

8 TRAILER

8.1 General

8.1.1 The Contractor must supply a tandem axle trailer to fit the boat, welded galvanized construction and be rated at least 20% over the anticipated 'Normal Load Condition' weight of the boat. The trailer must be certified commercial requirements in accordance with Department of Transport regulations for towing the vessel, and be constructed and equipped with the following:

8.1.1.1 Tandem axle trailer with a welded galvanized construction featuring a spare tire on rim (mounted to front of trailer), safety chains and positive pressure air tight bearing protection with grease nipples.

8.1.1.2 Trailer must feature bunks that the vessel will rest on.

8.1.1.3 Heavy-duty 'stand-on' diamond plate step fenders with mud flaps and hitch to accommodate a 2-5/16" ball;

8.1.1.4 Brake and turn signal submersible style LED lighting, with 7-prong flat wiring connector. (Note requirement for other connector if required for the equipment listed for trailer).

8.1.1.5 Stainless steel calipers, mounting brackets and rotors with appropriate brake pads.

8.1.1.6 Electric/Hydraulic, jurisdiction compliant braking system.

8.1.1.7 Manual two speed bow winch assembly with winch strap and non-corroding snap hook, bow chock, and swivel tongue jack, with wheel. The winch must be of adequate size to launch and recover the vessel and fitted with anti-reverse mechanism;

8.1.1.8 Bunks and wheel mounted spare tire and carrier, with lug wrench; and six removable attachment points. Bunks must be lined with a protector.

8.1.1.9 Trailer to be supplied with four (4) ratchet tie down straps with hooks securing boat to trailer aft. Turnbuckle to be provided for securing boat to trailer forward.

8.1.1.10 The trailer must be fitted with a drop leg, side wind jack with caster wheel with anti-reversing mechanism sized to meet the normal load condition of the vessel.

8.1.1.11 Class III weight distributing hitch compliant.

8.1.1.12 Radial tires approved for trailers on solid galvanized rims, with an equivalent sized spare on a high mount bracket. The tires must have a capacity equal or superior to the load capacity of the trailers.

8.1.2 The contractor must record the trailer sales and registration information and provide the information in each vessel manual.

9 TESTS & TRIALS

9.1 General

9.1.1 The Contractor must conduct their own inspections, tests and trials to verify successful completion of the Work in accordance with this TSOR and the proper operation of the vessel and all associated equipment. The requirements for inspections, tests and trials and associated deliverable documentation are defined in the Contract and Annexes to the contract including any test, trials or sample reports attached thereto. All discrepancies identified through the inspection, test and trials processes must be corrected prior to delivery.

9.1.2 The Contractor must inspect and test the following items, as a minimum, for adherence to the contract requirements and proper operation (proper operation means that the equipment can be started, operated, connected together and demonstrated to function in a normal fashion, as applicable). All discrepancies must be corrected prior to delivery. The required inspections and tests are minimums and are not intended to supplant any controls, examinations, inspections or tests normally employed by the Contractor to assure the quality of the boats:

9.1.2.1 Weight;
9.1.2.2 Construction Quality;
9.1.2.3 Lifting Gear;
9.1.2.4 Propulsion Engines, including starting;
9.1.2.5 Steering System;
9.1.2.6 Fuel System;
9.1.2.7 Electrical System; and
9.1.2.8 Electronics.

9.2 Sea Trials – General

9.2.1 Sea trials must be conducted by the Contractor to demonstrate the boats and their equipment conform to the requirements as stated in the contract. All expenses incident to the trials must be borne by the Contractor, including fuel unless otherwise specified. A crew provided by the Contractor must operate the boats during sea trials. The minimum acceptable sea trial is identified in Appendix A.

9.2.2 All Sea Trial instrumentation and equipment must be furnished and operated by the Contractor. Trial instrumentation, where applicable, must not replace the boat's instruments.

9.2.3 The Contractor must submit a Test & Trials Plan, including a description of all of the acceptance trials to be performed for each boat. The boats must operate in the Normal Loaded Condition. As a minimum, the following trials must be conducted for each boat:

9.2.3.1 Speed Trials - The speed trials must be done over a course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one (1) in each direction with the speeds for the two (2) runs averaged. The use of GPS data (averaged) is acceptable;

9.2.3.2 Endurance Trial -The boats must operate in the Normal Loaded Condition, at maximum speed for no more than the maximum time allowed if it has not operated for the minimum break-in period (typically five (5) hours);

9.2.3.3 Astern Propulsion - The boats must be operated and manoeuvred using astern propulsion to establish the astern performance. During the backing performance tests the throttles must be set to provide 1/3 of the rated engine horsepower; and

9.2.3.4 Steering Gear - Tests must be conducted on the steering gear to demonstrate the adequacy of the steering system under all operations. Manoeuvring tests must be performed to ensure that each boat meets the stated requirements. Manoeuvring trials must be conducted in the Normal Load Condition and repeated in the Full Load Condition.

9.2.4 The Contractor must provide a Tests & Trials Sheet, (Appendix A) for each boat and include this sheet in the technical publications (see SECTION 9.4).

9.2.5 The Contractor must notify the Contracting Authority and the Technical Authority Canada no less than two (2) weeks prior to sea trials. At a minimum, the Technical Authority must witness and attend the sea trials. Sea trial results must be forwarded to the Technical Authority prior to the delivery of the boats.

9.2.6 At the conclusion of sea trials, each boat must be thoroughly cleaned and inspected. Engine cooling systems must be flushed through with fresh water. The Contractor must repair any damage to the boats or ancillary equipment resulting from sea trials to the satisfaction of Canada.

9.2.7 For the purpose of the trials, Normal Loaded Condition must be considered to be the basic boat, fitted with all normal equipment, full fuel, with complement and loads per Boat Particulars, SECTION 4.1.

9.2.8 Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The boats must be ready for delivery in all respects, except for final preparation for shipment. The Contractor must provide personnel, as required, to resolve questions and to demonstrate equipment operation maintenance accessibility, removal and installation.

9.2.9 Stability examination per TP1332, with ISO Design Category “C” further must require the Contractor to record all stability calculations and assessment utilizing ISO 12217-1, ISO 11812 and ISO 12216 with all detailed calculation worksheets, providing a copy for each boat produced as per SECTION 9.4.1.

9.2.10 Final Inspection - Upon delivery, the Technical Authority, or a representative of the Technical Authority must conduct the final delivery inspection. The Contractor must document the results of the delivery and provide these results to the Technical Authority and the Contracting Authority for Acceptance as per the Contract. The Contractor must repair any damage to the boats/equipment resulting from shipping to the satisfaction of Canada.

10 DOCUMENTATION

10.1 General

10.1.1 All documentation to be included in the Technical Publications must be provided in both official languages (French and English).

10.2 National Asset Code

10.2.1 The National asset code for this vessel is **XXXXX**. The Contractor must add this five (5) character code to the builder’s plate of the boat with the prefix ”National Asset Code”.

10.3 Builder’s Plate

10.3.1 A Builder’s plate must be affixed to the vessel and trailer in a readily visible location, e.g. for a boat, in way of the operator position, for a trailer on the left side of the tongue.

10.3.2 The plate must be made of a weather resistant material compatible with that to which it is affixed.

10.3.3 The dimensions of the plate must be not less than 200mm x 125mm.

10.3.4 The plate must contain the following information, permanently etched:
10.3.4.1 National Asset Code;
10.3.4.2 Builder;
10.3.4.3 Hull Number;
10.3.4.4 Year of Construction; and
10.3.4.5 Lightship Weight in kilograms.

10.4 Technical Publications

10.4.1 The Contractor must provide, upon delivery of the boats, complete set of technical publications of a comprehensive owner/operator manual that provides a physical and functional description of the boat, it's machinery and equipment, AC and DC electrical system schematics as well as delivery testing and sea trial results (Appendix A) including stability calculation documentation.

10.4.2 The Contractor is to provide copies of the technical publications as follows:
10.4.2.1 One (1) complete hard copy and one (1) electronic copy of technical publications to be delivered with the boat.
10.4.2.2 One (1) complete hard copy and one (1) electronic copy of technical publications to be delivered to the Technical Authority.

11 SHIPPING AND DELIVERY

11.1 General

11.1.1 Prior to shipping, the boat is to be cleaned, appropriately protected and covered in accordance with the instructions specified in this section.

11.1.2 Prior to shipping, the boat must be secured on their respective trailers, cleaned, preserved and covered in accordance with this section. All areas of the boat are to be cleaned prior to covering for shipping. Bilges are to be dry and free of oil and debris and the fuel tanks must be full with fuel stabilizer added.

11.1.3 The propulsion systems must be preserved in accordance with the manufacturer's recommendations for storage of up to one year in an environment that must be subjected to freezing temperatures.

11.1.4 The batteries are to be disconnected. A warning plate is to be tied to the steering wheel with a wire indicating that the boat has been protected for shipping and storage and must not be started until the propulsion machinery has been reactivated.

11.1.5 All contact points with the boat are to be padded. A shrink wrap cover is to be provided to protect the boat during shipping and storage.

11.1.6 Means of Delivery: The Contractor must deliver the vessel/trailer combination; the trailer supplied for the boat must not be utilized as means of delivery.

12 WARRANTY AND SERVICE PROVISIONS

12.1 Components and Equipment Support

12.1.1 All components and all mechanical, auxiliary, electronic and electrical equipment installed on the boat must be supportable by parts and service in Canada within 30 days.

12.2 Spare Parts

12.2.1 To facilitate replacement and inter-changeability of parts, as well as maintenance procedures and operator training wherever practicable the Contractor must standardize on selection of equipment, fittings and fabrication methods within all boats supplied.

APPENDIX A

SMALL BOAT / VESSEL TESTS & TRIALS SHEET

CONTRACT #F7044-170035

Small Boat / Vessel Builder:	
Small Boat / Vessel Description:	
Hull Identification Number:	
National Asset Code:	
Date of Trials:	

Personnel in Attendance:

Builder	
PWGSC	
DFO	
DFO	

Time: _____ hrs Departing from _____

Small Boat / Vessel Weights:	Dry Weight of Hull with cabin:		_____ lbs/ _____ kg
	Furnishings & Fittings:		_____ lbs/ _____ kg
	Engines & Equipment:		_____ lbs/ _____ kg
	Fuel: _____Imp gal	Fuel: _____Litres	_____ lbs/ _____ kg
	Total Weight of Small Boat/Vessel:		

		_____ **lbs/** _____ **kg**
	Number of Crew_____and operating equipment:	_____ lbs/ _____ kg
	Test Total Laden Weight:	_____ **lbs/** _____ **kg**
	Trailer weight:	_____ **lbs/** _____ **kg**
	Boat & Trailer weight:	_____ **lbs/** _____ **kg**
Motors: Starting - Operation **"IDENTIFY INBOARD/OUTBOARDS"**	**Port**	O **Immediate, Yes / No**
	Starboard	O **Immediate, Yes / No**
Propellers/Impellers	**Pitch**	_____
	Diameter	_____
	No. of Blades	_____
	Stainless Steel or Aluminum	O **S/S ___ AL**
Static Attitude & Trim:		
Weather Conditions: Refer to attached Beaufort Wind Scale. BWS No. _____		
Speed Trials	**Speed Required _____ - _____ knots**	
	Cruising Speed: measured mile 1 way	_____kts @ _____rpm
	Cruising Speed: measured mile return	_____kts @ _____rpm

	Averaged Cruising Speed:	_____**kts @ _____rpm**
	Maximum Speed: measured mile 1 way	_____kts @ _____rpm
	Maximum Speed: measured mile return	_____kts @ _____rpm
	Average Maximum Speed _____kts @ _____rpm	
Full Throttle	From dead stop to plane	_____ **seconds**
	From dead stop to 30 knots	_____ **seconds**
Astern Propulsion:	Straight line to 2000 rpm	O **Issues, Yes / No**
	Hard a-port	O **Issues, Yes / No**
	Hard a-starboard	O **Issues, Yes / No**
	Emergency stop	_____ **seconds**
Tubes (if applicable)	No. of Chambers	_____
	Semi-auto fill system	O **Yes / No**
	Time to fill all chambers	_____ **seconds**
Endurance Trials: **X = gallons or Litres**	**Fuel consumption**	
	Port & Starboard Motor: at cruise:	_____X/hr @_____rpm
	Port & Starboard Motor: at full throttle:	_____X/hr @_____rpm
Steering: Acceptable Y /N	Straight line	O **Yes / No**
	Hard-Port radius of turn. Full Throttle	_____ **feet**

	Hard-Starboard radius of turn. Full Throttle	_____ **feet**
	Lock to lock = 35 degrees pt. & starboard	O **Yes / No**
	Effective steering 0-5 knots	O **Yes / No**
	5-10 knots	O **Yes / No**
	20-30 knots	O **Yes / No**
	Full speed	O **Yes / No**
Outboard/Inboard Leg Trim Control:	From fully raised to fully lowered.	O **Acceptable Yes / No**
Trim Tab Operation:	Fully raised, fully lowered.	O **Acceptable Yes / No**
Engine Controls:	Start	O **Issues, Yes / No**
	Shift	O **Issues, Yes / No**
	Throttle	O **Acceptable Yes / No**
Engine Gauges:	Tachometer	O **Acceptable Yes / No**
	Fuel gauges	O **Acceptable Yes / No**
	Trim gauges	O **Acceptable Yes / No**
Engine Gauges:	Oil pressure	O **Acceptable Yes / No**
	Voltmeter	_____ **volts**
Cabin Sound Levels:	Cruising speed- door & windows closed	_____dbA @ _____rpm

	Cruising speed- door & windows open	_____dbA @ _____rpm
	Full speed- door & windows closed	_____dbA @ _____rpm
	Full speed- door and windows open	_____dbA @ _____rpm
Outboard/Inboard engine operation:	Starting	O **Acceptable Yes / No**
	Shifting	O **Acceptable Yes / No**
	Throttle	O **Acceptable Yes / No**
	Raise	O **Acceptable Yes / No**
	Lower	O **Acceptable Yes / No**
Loaded Vessel Drop Test:	**If applicable**	O **Acceptable Yes / No**
Lifting Bridle Certified:	**If applicable**	O **Acceptable Yes / No**
Rollover test	**If applicable**	O **Acceptable Yes / No**

Notes:

Beaufort Wind Scale Identifier

Force	Wind Speed		Descriptive Term	Effects Observed at Sea	Effects Observed on Land
	Km/h	Knots			
0	Less than 1	Less than 1	Calm	Sea surface like a mirror, but not necessarily flat.	Smoke rises vertically.
1	1 - 5	1 - 3	Light air	Ripples with the appearance of scales are formed, but without foam crests.	Direction of wind shown by smoke drift, but not wind vanes.
2	6 - 11	4 - 6	Light breeze	Small wavelets, still short but more pronounced. Crests do not break. When visibility good, horizon line always very clear.	Wind felt on face. Leaves rustle. Ordinary vane moved by wind.
3	12 - 19	7 - 10	Gentle breeze	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered whitecaps.	Leaves and small twigs in constant motion. Wind extends light flag.
4	20 - 28	11 - 16	Moderate breeze	Small waves, becoming longer. Fairly frequent whitecaps.	Raises dust and loose paper. Small branches are moved.
5	29 - 38	17 - 21	Fresh breeze	Moderate waves, taking a more pronounced long form. Many whitecaps are formed. Chance of some spray.	Small trees with leaves begin to sway. Crested wavelets form on inland waters.
6	39 - 49	22 - 27	Strong breeze	Large waves begin to form. The white foam crests are more extensive everywhere. Probably some spray.	Large branches in motion. Whistling heard in telephone wires. Umbrellas used with difficulty.
7	50 - 61	28 - 33	Near gale	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Whole trees in motion. Inconvenience felt in walking against wind.
8	62 - 74	34 - 40	Gale	Moderately high waves of greater length. Edges of crests begin to break into the spindrift. The foam is blown in well-marked streaks along the direction of the wind.	Breaks twigs off trees. Generally impedes progress. Walking into wind almost impossible.
9	75 - 88	41 - 47	Strong gale	High waves. Dense streaks of foam along the direction of the wind. Crests of waves	Slight structural damage occurs, e.g. roofing

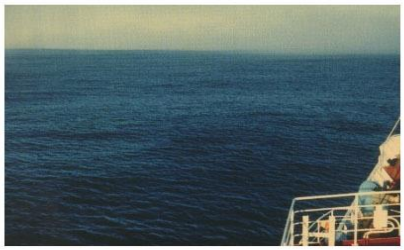
Force	Wind Speed		Descriptive Term	Effects Observed at Sea	Effects Observed on Land
	Km/h	Knots			
				begin to topple, tumble and roll over. Spray may affect visibility.	shingles may become loose or blow off.
10	89 - 102	48 - 55	Storm	Very high waves with long overhanging crests. Dense white streaks of foam. Surface of the sea takes a white appearance. The tumbling of the sea becomes heavy and shock-like. Visibility affected.	Trees uprooted. Considerable structural damage occurs.
11	103 - 117	56 - 63	Violent storm	Exceptionally high waves. Sea completely covered with long white patches of foam. Visibility affected.	Widespread damage.
12	118 - 133	64 - 71	Hurricane	Air filled with foam and spray. Sea entirely white with foam. Visibility seriously impaired.	Rare. Severe widespread damage to vegetation and significant structural damage possible.

BEAUFORT FORCE 0
WIND SPEED: LESS THAN 1 KNOT

SEA: SEA LIKE A MIRROR

BEAUFORT FORCE 1
WIND SPEED: 1-3 KNOTS

SEA: WAVE HEIGHT .1M (.25FT), RIPPLES WITH THE APPEARANCE OF SCALES, BUT WITHOUT FOAM CRESTS

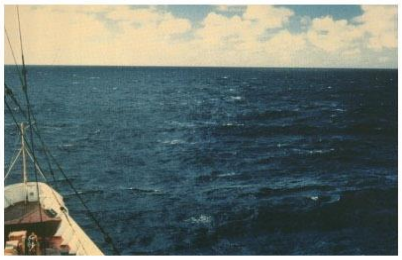


BEAUFORT FORCE 2
WIND SPEED: 4-6 KNOTS

SEA: WAVE HEIGHT .2-.3M (.5-1FT), SMALL WAVELETS, CRESTS HAVE A GLASSY APPEARANCE AND DO NOT BREAK

BEAUFORT FORCE 4
WIND SPEED: 11-16 KNOTS

SEA: WAVE HEIGHT 1-1.5M (3.5-5FT), SMALL WAVES BECOMING LONGER, FAIRLY FREQUENT WHITE HORSES



BEAUFORT FORCE 5
WIND SPEED: 17-21 KNOTS

SEA: WAVE HEIGHT 2-2.5M (6-8FT), MODERATE WAVES TAKING MORE PRONOUNCED LONG FORM, MANY WHITE HORSES, CHANCE OF SOME SPRAY

BEAUFORT FORCE 6
WIND SPEED: 22-27 KNOTS

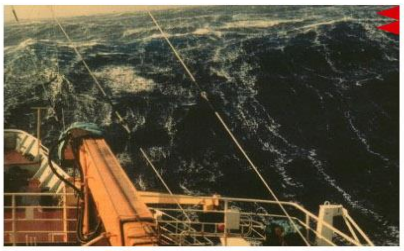
SEA: WAVE HEIGHT 3-4M (9.5-13 FT), LARGER WAVES BEGIN TO FORM, SPRAY IS PRESENT, WHITE FOAM CRESTS ARE EVERYWHERE

BEAUFORT FORCE 7
WIND SPEED: 28-33 KNOTS

SEA: WAVE HEIGHT 4-5.5M (13.5-19 FT), SEA HEAPS UP, WHITE FOAM FROM BREAKING WAVES BEGINS TO BE BLOWN IN STREAKS ALONG THE WIND DIRECTION

BEAUFORT FORCE 8
WIND SPEED: 34-40 KNOTS

SEA: WAVE HEIGHT 5.5-7.5M (18-25FT), MODERATELY HIGH WAVES OF GREATER LENGTH, EDGES OF CREST BEGIN TO BREAK INTO THE SPINDRIFT, FOAM BLOWN IN WELL MARKED STREAKS ALONG WIND DIRECTION.



BEAUFORT FORCE 9
WIND SPEED: 41-47 KNOTS

SEA: WAVE HEIGHT 7-10M (23-32FT), HIGH WAVES, DENSE STREAKS OF FOAM ALONG DIRECTION OF THE WIND, WAVE CRESTS BEGIN TO TOPPLE, TUMBLE, AND ROLL OVER. SPRAY MAY AFFECT VISIBILITY.

BEAUFORT FORCE 10
WIND SPEED: 48-55 KNOTS

SEA: WAVE HEIGHT 9-12.5M (29-41FT), VERY HIGH WAVES WITH LONG OVERHANGING CRESTS, THE RESULTING FOAM, IN GREAT PATCHES, IS BLOWN IN DENSE WHITE STREAKS ALONG WIND DIRECTION. ON THE WHOLE, SEA SURFACE TAKES A WHITE APPEARANCE, TUMBLING OF THE SEA IS HEAVY AND SHOCK-LIKE. VISIBILITY AFFECTED.

BEAUFORT FORCE 11
WIND SPEED: 56-63 KNOTS

SEA: WAVE HEIGHT 11.5-16M (37-52FT), EXCEPTIONALLY HIGH WAVES, SMALL-MEDIUM SIZED SHIPS MAY BE LOST TO VIEW BEHIND THE WAVES. SEA COMPLETELY COVERED WITH LONG WHITE PATCHES OF FOAM LYING ALONG WIND DIRECTION. EVERYWHERE, THE EDGES OF WAVE CRESTS ARE BLOWN INTO FROTH.

BEAUFORT FORCE 12
WIND SPEED: 64 KNOTS

SEA: SEA COMPLETELY WHITE WITH DRIVING SPRAY, VISIBILITY VERY SERIOUSLY AFFECTED. THE AIR IS FILLED WITH FOAM AND SPRAY

APPENDIX B
Final Deliverable Data Package

The Final Data Package which must be delivered to Canada is as defined in the Contract, but must include, as a minimum the technical publications identified in this appendix.

1.0 Comprehensive Owner/Operator Manuals

1.1 Deliverables

1.1.1 One (1) complete hard copy and one (1) complete USB stick electronic copy set of the manuals per vessel delivered for the operator of each vessel, to be delivered with the vessel.

1.1.2 One (1) complete hard copy and one (1) complete USB stick electronic copy set of the manuals per vessel delivered for the Technical Authority, to be delivered to the same address identified for invoices.

1.2 Content

The manuals must provide a physical and functional description of the craft, it's machinery and equipment, as well as delivery testing and sea trial result documentation. The manuals must include as a minimum the following three sections and as detailed below:

- General Information
- Technical Information
- Spare Parts List

1.2.1 GENERAL INFORMATION SECTION

The General Information Section must include a description of the arrangement and function of all structures, systems, fittings and accessories that comprise the boat, with illustrations as appropriate:

1.2.1.1 Operating procedures;

1.2.1.2 Basic operating characteristics (such as temperatures, pressures, flow rates)

1.2.1.3 Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step;

1.2.1.4 Recommended planned maintenance; and

1.2.1.5 Complete troubleshooting procedures.

1.2.2 TECHNICAL INFORMATION SECTION

The Technical Information Section a complete set of detailed owner / operator instructions, drawings (Section 15), parts lists and supplemental data for all components of the boat (whether acquired from external sources or custom-manufactured).

1.2.2.1 "As Fitted", dimensioned drawings must be produced for manuals to record the vessel particulars:

1.2.2.1.1 Calculated lightship weight;

1.2.2.1.2 General arrangement, Plan Profile section views;
1.2.2.1.3 Structural drawings showing deck plan, a centerline profile and frame station construction details;
1.2.2.1.4 Detailed lines plan;
1.2.2.1.5 Drawing of the fuel and propulsion supply arrangement; and,
1.2.2.1.6 Drawing of the electrical supply and functions of the vessel.

1.2.2.2 Parts list must include the name, part number and serial number if applicable of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of this part, equipment or component and in which part of the specification the item appears.

1.2.2.3 Hull Serial Number (HIN), copy of builders plate, TEST and TRIAL results as per completed Attachment 1 of Appendix II, serial or manufacturer's numbers, and equipment warranty cards.

1.2.2.4 Engine(s) and equipment: including engine and propulsion serial numbers.

1.2.2.5 If applicable, collars; including collar material and glue materials and procedures necessary for onboard repair of the collar.

1.2.2.6 Acceptance Certificates, and compliance sheets or certificates distributed with equipment i.e. life-saving appliances, lifting appliances, engine test reports, calibration certificates, Nav light certificates, Fire suppression material certificates, flotation foam rating sheets

1.2.2.7 Pre-trial shop Testing Check Sheet.

1.2.2.8 Electronics, (if applicable): including model and serial numbers.

1.2.2.9 Regulatory and Stability documentation: as required per TP 1332, which, references ISO12217 or ISO 6185 for RIBs (if applicable).

1.2.3 SPARE PARTS LIST SECTION

The Spare Parts List section must include a list of recommended initial onboard spare parts to be stocked for the vessel. The list must include the name, part number and serial number if applicable of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of this part, equipment or component and in which part of the TSOR the item appears. At a minimum this list must include the following items (as applicable):

1.2.3.1 Propulsion: Propellers, filters, water pump impeller, batteries, throttle and shift cables, special engine tools.

1.2.3.2 Electrical: panel breakers, fuses, light bulbs;

1.2.3.3 Boat Structures and Fittings: Miscellaneous commonly used fasteners.

2.0 ADDITIONAL DELIVERABLE DOCUMENTATION

2.1.1 The following additional documentation must be supplied in both sets of Technical publication manuals delivered (defined in 8.4.2):

2.1.1.1 Tonnage Registration Certificate in accordance with TP 13430 - http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm ;

2.1.1.2 Registration to the Small Vessel Compliance Program (SVCP) Website: http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm ;

2.1.1.3 Two (2) Bill of Sales, one (1) for the vessel and one (1) for the trailer;

2.1.1.4 Test & Trial results as required by Appendix A;

2.1.1.5 Acceptance Certificates, i.e. life-saving appliances, lifting appliances, engine test reports, calibration certificates, extinguishers, etc;

2.1.1.6 A valid Motor Vehicle Registration Certificate for the relevant Province, for the trailer; and

2.1.1.7 All testing check sheets created and completed by the builder.