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

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

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

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
Fabricate & Delivery 7m RIB

Solicitation No. - N° de l'invitation	**Date**
M2989-170194/A	2016-05-25

Client Reference No. - N° de référence du client
M2989-170194

GETS Reference No. - N° de référence de SEAG
PW-$XLV-166-6981

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
XLV-6-39022 (166)	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2016-06-22

Time Zone
Fuseau horaire
Pacific Daylight Saving Time PDT

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

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Castle, David G.	xlv166

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(250) 363-0110 ( )	( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
ROYAL CANADIAN MOUNTED POLICE
See herein

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée	**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
Public Works and Government Services Canada - Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Canada

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement associated with this bid solicitation.

1.2 Statement of Work

The Royal Canadian Mounted Police have a requirement for the supply and delivery of one (1), 7 Metre, Rigid hull Inflatable Boat with trailer in accordance with the Statement of Work at Annex A and inspection as per Annex C - Inspection/Quality Assurance /Quality Control. All deliverables are desired to be delivered on or before October 31, 2016. Delivery is to be made to RCMP Port Alberni in Port Alberni, BC.

There exists an option to acquire an additional one boat with trailer.

1.3 Debriefings

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

1.4 Trade Agreements

This requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

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-manua l) 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 *(2016-04-04)* 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

B3000T, 2006-06-16, Equivalent Products
A9125T, 2007-05-25, Valid Labour Agreement

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 4 calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 Applicable Laws

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

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

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 five (5) working 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

Canada requests that bidders provide their bid in separately bound sections as follows:
Section I: Technical Bid – Two (2) hard copies
Section II: Financial Bid – One (1) hard copy
Section III: Certifications - One (1) hard copy

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

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

(a) use 8.5 x 11 inch (216mm 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.

In order to demonstrate their capabilities, the bidders must use the **ANNEX H - TECHNICAL EVALUATION PLAN, using column B ONLY** in responding to the technical requirements of the solicitation..

The technical bid must demonstrate that the proposed crafts will be mechanically sound, completely seaworthy, and operable and fit in all respects for the purposes intended.

3.2.1 Bidder's Check List and Technical Confirmation

The Bidders must submit a fully completed **Annex G - BID PACKAGE CHECKLIST** as part of their Technical Bid.

3.2.2 Inspection and Test Plan (ITP)

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

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

3.2.3 Drawings and Other Documentation

Prescribed drawings format and documentation to be provided with the bid:

- A general arrangement.
- Structural Drawings showing Deck Plan, a Centerline profile.
- A detailed Lines Plan.

- A drawing of the fuel supply arrangement.
- A drawing of bilge pumping system
- Electrical one-line diagram.
- The lightship weight.
- Draft Stability Calculation of the proposed vessel
- A Project Plan (written description) of how the Bidder/Contractor will comply with the TSOR. The written description must address each main element of the TSOR and indicate how the Bidder/Contractor will comply with the intent of the TSOR and successfully deliver the vessel(s) to the performance standard(s) identified.
- A Preliminary Production Schedule which must verify the Bidder/Contractor's ability to deliver the vessel(s) in accordance with the requirements of the Solicitation.

3.2.4 Subcontractors

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

3.2.5 Vessel Construction Experience

The Bidder must provide objective evidence of experience in the construction of vessels of the size, type and complexity which are the subject of this RFP. To demonstrate this experience, the Bidder must provide

(a) detailed list of such vessels built pursuant to TP 1332, Construction Standards for Small Vessels, Non-pleasure craft latest edition, within the last 5 years;
(b) photographs of vessels of listed;
(c) (for listed TP 1332, non-pleasure craft sold within the last 5 years only) purchaser's name and contact information, and the date of sale.

The Bidder must also provide details on how the materials and equipment used in the construction, manufacture of the proposed vessel is suited to the operating and environmental conditions that the vessel may encounter.

3.2.6 Naval 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 qualified sub-contractor to provide marine drafting and engineering services. Qualified sub-contractor is defined as having the provided these services on similar vessel construction projects (same size, type and complexity).

3.2.7 Contractor's 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 which addresses the quality control elements below.

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

3. The Bidder must also provide a minimum of one (1) samples of completed quality records used on the most recent marine vessel construction at its facility.

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

   Quality Assurance Manual or Quality Assurance Program Descriptions
   Inspection and Test Plan
   Final Inspection
   Quality Records

3.2.8 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 *Part 6 - Resulting Contract, Clause 6.19.*

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

3.3 Section II - Financial Bid

Bidders must submit their financial bid in accordance with the **Detailed Financial Bid Presentation Sheet at Annex D.**

3.3.1 Exchange Rate Fluctuation

C3011T, 2013-11-06, Exchange Rate Fluctuation

3.3.2 Financial Capability

A9033T, 2012-07-16, Financial Capability

3.3.3 Unscheduled Work

Bidders must provide the information requested in Annex D, Article D-2.The unscheduled work rates will be included in the Basis of Payment but will not form part of the bid evaluation.

3.4 Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

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

(c) The evaluation team will determine first if there are two or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than two responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

In order to be compliant, the Bidder's proposal must, to the satisfaction of Canada:

a) Meet all requirements of the Annex A, SOW; and
b) Provide all information as requested in PART 3 - BID PREPARATION INSTRUCTIONS

4.1.2 Financial Evaluation

SACC Manual Clause A0222T (2013-04-25), Evaluation of Price.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive as per Annex H- Evaluation plan. 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

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Ineligibility and Suspension Policy *(*http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with its bid the required documentation, as applicable, 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 provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with 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 (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

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

5.2.3 Canadian Content Certification

This procurement is conditionally limited to Canadian goods and Canadian services.

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids with a certification that the goods and services offered are Canadian goods and Canadian services, as defined in clause A3050T, may be considered.

Failure to provide this certification completed with the bid will result in the goods and services offered being treated as non-Canadian goods and non-Canadian services.

The Bidder certifies that:

☐ a minimum of 80 percent of the total bid price consist of Canadian goods and Canadian services as defined in paragraph 5 of clause A3050T.

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6.(9), Example 2, of the Supply Manual.

5.2.3.1 SACC Manual clause A3050T (2014-11-27), Canadian Content Definition

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirement

There is no security requirement applicable to this Contract.

6.2 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

6.2.1 Optional Goods

The Contractor grants to Canada the irrevocable option to acquire up to one (1) additional boat with trailer, as described at Annex A of the Contract under the same conditions and at the prices stated in *Annex C* of the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option within twelve (12) months after contract award by sending a written notice to the Contractor.

6.3 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-manua l) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2030, (**2015-09-03)** Goods (Higher Complexity) apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

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

Conduct of Work. The Supplemental General Conditions 1028, Article 02 (2010-08-16) Conduct of Work, Paragraph 1. Canadian Labour is deleted in its entirety.

Warranty. The Supplemental General Conditions 1028, Article 12 (2010-08-16) – Warranty, Paragraph 3 is deleted and replaced with the following:

The warranty periods for the vessel, from the date of its delivery to and acceptance by Canada, are:

a) Twelve (12) months for the boat propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding Government Supplied Material).
b) Twenty four (24) months for the vessel hull and welding.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before _____.

6.4.2 Delivery Locations

Alberni RCMP
4444 Morton Street
Port Alberni, BC
V9Y 4M8

6.4.3 Shipping Instructions - Delivered Duty Paid

Goods must be consigned and delivered to the destination specified in the contract:
Incoterms 2000 "DDP Delivered Duty Paid" to the delivery locations listed under article 6.4.2.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Dave Castle
Title: Supply Specialist, Acquisitions, Marine
Public Works and Government Services Canada
Acquisitions Branch
Address: Suite 401 - 1230 Government Street, Victoria B.C. V8W 3X4
Telephone: 250-363-0110
Facsimile: 250-363-3960
E-mail address: david.castle@pwgsc-tpsgc.gc.ca

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

6.5.2 Technical Authority

The Technical Authority for the Contract is provided upon contract award

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

6.5.3 Inspection Authority

The Inspection Authority for the Contract is provided upon contract award

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

6.5.4 Contractor's Representative

Name and telephone numbers of the person responsible for:
General Enquiries:

Name: _____ Telephone Number: _____

Facsimile Number: _____ E-mail address: _____

Delivery Follow-up:

Name: _____ Telephone Number: _____

Facsimile Number: _____ E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm Price of $ _____. Customs duties and Goods and Services Tax or Harmonized Tax is extra, if applicable.

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.

6.6.2 Charge-out Labour Rate / Material Mark-up

The following rates are included in the Basis of Payment and must remain valid for the duration of the contract:

Charge-out Labour Rate: _____
Mark-up on Materials and Sub-Contracts: 10%

6.6.3 Unscheduled Work:

a) Price Breakdown:

The Contractor must, upon request, provide a price breakdown for all unscheduled work, by specific activities with trades, person-hours, material, subcontracts and services.

b) Pro-rated Prices:

Hours and prices for unscheduled work will be based on comparable historical data applicable to similar work at the same facility, or will be determined by pro-rating the quoted work costs in the Contract when in similar areas of the vessel.

c) Payment for Unscheduled Work:

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

6.6.3.1 Number of hours (to be negotiated) X $_____, being the Contractor's firm hourly charge-out labour rate which includes overhead and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, customs duties are included and applicable taxes are extra. The firm hourly charge-out labour rate and the material mark-up will remain firm for the term of the Contract and any subsequent amendments.

6.6.3.2 Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package. Elements of *Related Labour Costs* identified in 6.3.3.3, will not be negotiated, but will be compensated for in accordance with 6.3.3.3.

6.6.3.3 Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* set out in clause 6.6.2

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

6.6.4 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.

6.6.5 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.

6.6.6 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.

6.6.7 Payment – Basis of Payment – Firm Price. Firm Unit Price(s) or Firm Lot Price (s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as specified in Annex B. Customs duties are included and applicable taxes are extra.

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the information required in Section 13 of 2030 General Conditions Higher Complexity Goods, article 7.6.2 Method of Payment.

2. Invoices must be distributed as follows:

    a. The original and one (1) copy must be forwarded to the following address for certification and payment.
    Royal Canadian Mounted Police
    Regional Fleet Management
    1101 – 45337 Calais Crescent
    Chilliwack, BC V2R 0N6

    b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.7.1 Warranty Holdback
A warranty holdback of 3% will be applied to the claim(s) for payment. This holdback is payable by Canada upon the expiry of the warranty holdback period of 90 days applicable to the Work. Goods and Services Tax or Harmonized sale Tax (GST/HST), as appropriate, is to be calculated and paid on the total amount of the claim before the 3 percent holdback is applied. At the time that the holdback is released, there will be no GST/HST payable, as it was included in the previous payments.

6.7.2 Outstanding Work Holdback
In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until completion of the Work. Applicable Taxes will be calculated on this outstanding work holdback amount and paid at the time that the outstanding work holdback is released.

6.8 Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or 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.

6.8.1 Canadian Content Certification (if applicable)
SACC Manual clause A3060C (2008-05-12), Canadian Content Certification

6.9 Welding Certification – Contract

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

   (a) CSA W47.2-M1987 (R2003), Certification for Companies for Fusion Welding of Aluminum division 2.1.

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.

6.10 Project Schedule

1. The Contractor must provide a detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **5 days after award of Contract**. 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 certificates 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 must 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 SOW;
   (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.

2. 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.

6.11 Progress Reports

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:
   (a) 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 with a clarification.

   (b) 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) reasons for any variation from the schedule.

6.12 SACC Manual Clauses

B9035C - Progress Meetings	2008-05-12
B5007C - Procedures for Design Change or Additional Work	2010-01-11
D3015C - Dangerous Goods/Hazardous Products	2007-11-30
D0018C - Delivery and Unloading	2007-11-30
C0711C - Time Verification	2008-05-12

6.13 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.

6.14 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 must include, as a minimum:
   Quality Assurance Manual or Quality Assurance Program Descriptions
   Inspection and Test Plan
   Final Inspection
   Quality Records

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.

6.15 Post Contract Award/Pre-Production Meeting

Within three (3) 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 or via telephone or video conference. The Cost of holding such a 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 the Canada.

6.16 Manuals

1. The Contractor must obtain and deliver to the Technical Authority for approval, 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 must provide two (2) complete copies in accordance with and as specified in the **SOW, Section 5.0.**

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 whole or in part, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the SOW.

6.17 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 SOW and the **Annex E** - Inspection/Quality Assurance/Quality Control. The Inspection Authority must approve any additional testing not specified in the SOW.

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 (7) days after contract award for review and approval.

0. 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.

6.18 Government Supplied Material (GSM)

As per the Annex A – Statement of Work, **Article 18.0** the Contractor must install, as per the manufacturer's recommendations, the following GSM:

(a) Two (2) Yamaha, 150HP, 4-Stroke (one counter rotation), gasoline outboard motors.

6.19 Insurance Requirements

The Contractor must comply with the insurance requirements specified in **Articles 6.19.1** and **6.19.2** 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.

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. 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.

6.19.1 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $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'scompensation (WSIB) or similar program).

(i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.

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

(k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

(l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(m) 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.

6.19.2 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 Department of Fisheries and Oceans 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: 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.

6.20 Applicable Laws

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

6.21 Priority of Documents

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

1. The Articles of Agreement;
2. The Supplemental General Conditions **1028**, **2010-08-16**, Ship Construction - Firm Price;
3. The General Conditions **2030**, **2016-04-04**, Goods (Higher Complexity);
4. Annex A - Statement of Work;
5. Annex B – Question & Answer;
6. Annex C, Inspection/Quality Assurance/Quality Control;
7. Annex D, Basis of Payment;
8. The Contractor's bid dated _____.

6.22 Acceptance

1. The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the vessel's construction period. This list will form the annexes to the formal acceptance document for the vessel. A vessel acceptance meeting or telephone conference will be convened by the Inspection Authority on the work completion date of the vessel to review and sign off the form PWGSC-TPSGC 1105, Contractor's Certification.

2. The Inspection Authority must complete the above form and obtain the signatures of the Contractor and the Contracting Authority. The form will then be distributed by the Inspection Authority as follows:
   a. one copy to the Contracting Authority;
   b. one copy to the Technical Authority;
   c. one copy to the Contractor.

ANNEX A - STATEMENT OF WORK

A1.VESSEL: **a. ALUMINIUM 6.9-7.4 m T-Top Aluminium RIB: RCMP**
b. The vessel configuration is a T-Top open RIB with bolster console seating and an open deck accessible forward by step over tube around a wide console.

A2. ABBREVIATIONS

ABYC	American Boat and Yacht Council
AC	Alternating Current
ASTM	American Society for Testing and Materials full width
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
UV	Ultraviolet
VHF	Very High Frequency

A3. 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 Craft – Stability and Buoyancy Assessment and Categorization
ISO 6185	Shipbuilding and Marine Structures – Inflatable Boats
Canada Shipping Act	Small Vessel Regulations
Canada Shipping Act	Collision Regulations (COLREGS)
ABYC	American Boat and Yacht Council Standards
Canadian Standards Association(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

A4. PWGSC SMALL CRAFT SOLICITATION INFORMATION

a. General Information: This vessel is intended to be built based on stock small working or commercial vessel hull forms with a minimum of customization as indicated herein. Prototype hulls will not be considered for this procurement. A number of proven hulls must be shown to have been produced and be in service for the Contractor to indicate suitability of the hull for this procurement. Bidders must submit brochures, photographs, references, builder's plates, hull identification numbers confirming multiple builds, etc. as applicable.

b. Annex A Section A5, TECHNICAL SPECIFICATION is divided into four parts:

Part 1	Article 1	General Description of Vessel Role and Function
Part 2	Article 2-9	Contractor Design and Construction Practices
Part 3	Articles 10-16	Vessel Particulars
Part 4	Articles 17-20	Outfitting and Equipment

Part 1 provides a brief description of the vessel's role and function. Part 2, Contractor Design and Construction Practices provides general information on a wide range of construction practices, standards, vessel shipping and packaging, etc. Part 3, Vessel Particulars, cover the next layer of vessel description, physical construction and arrangement. Part 4, Outfitting and Equipment, covers the vessel's fitted equipment such as electronics, propulsion, steering and trailer (if required).

A5. TECHNICAL SPECIFICATION

Table of Contents

Vessel Particulars

Outfitting And Equipment

1.0 General Description of Vessel Role and Functions

1.1 Mission Statement: Rigid Inflatable Boats (RIBs) are used extensively as law enforcement platforms including inspection / enforcement of the Canada Shipping Act as well as various other program related activities such as search and rescue within the province of British Columbia and its coastline.

1. The vessel is a 6.9 to 7.4 m. RIB configured with a T-Top with back bolster console seating, with an open deck accessible by side steps over the tube around the full width console. The vessel must have an all weather capability for Beaufort force 6. It is desirable that this vessel has a high-speed capability of at least 35 knots.

1.2 Utilization: The craft must be capable of being dock or shore-based: launched and recovered by ramp; These craft will be primarily shore-based and will be launched and recovered by a trailer or deployed from a shore facility dock.

CONTRACTOR DESIGN AND CONSTRUCTION PRACTICES

2.0 General Marine Construction Practises: As applies to Vessel's Specific Construction and equipment

2.0 Unless stated otherwise all components, equipment and material must be Contractor furnished material, (CFM).

2.2 Ergonomic Design – General

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.

Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort for a range of physiques for individuals from approx. 5 ft. to 6' 4" in height, wearing cold weather clothing and equipment which must be accessible for use, inspection, cleaning and maintenance per ASTM F1166-88.

2.3 Vibration

1. The boat 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. Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling.
3. Loosening of fasteners under vibration must be prevented by the use of self-locking fasteners, as applicable.

2.4 Equipment Protection: 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: 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): The Contractor must have a shop capable of maintaining temperature and humidity. It should be capable of maintaining temperature between 16°C and 25°C. It should be capable of maintaining relative humidity below 70 percent.

3.0 Material and Construction Technicalities

3.1 Structural Integrity - All structures and components (hull, deck, collar, console, seating, etc.) must

be of sufficient strength to withstand, when in a Maximum Load condition per **builders' plate**, the lateral and vertical impact loading that equates to the conditions of the operational profile and mission requirements.

3.2 Materials – General

1. Environmental Exposure; All materials must be corrosion resistant and suitable for use in a salt-water environment as detailed in the Environmental Conditions portion of the Performance Requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation.
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.
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. Transverse bulkheads or lightened plate frames may use type 5052 to facilitate braked tabs. Specialized use of type 6061 T6 plate in fresh water for high strength delta pads is allowed. 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.
4. Stainless Steel: Stainless steel plate type 316 must be used for all stainless steel applications except as noted. Alloy 316L must be used in welded underwater components. Many commercial components, some fasteners and rivets, use other acceptable grades of stainless steel such as types 18-8 and 304.
5. FRP and Resins - for FRP components, if any:

a. Minimum laminating material specification must include gel coats and skin-out of isopthalic resins with a barrier coat wash of the skin-out prior to main laminate and coring materials, which can be laid in GP resins. DCPD resins must not be used.
b. Fibre materials to be standard mat / rovings, or "stitch" combined materials, some of which may use Carbon or Kevlar strands. NO "chopper" materials to be used.
c. Coring materials to be vacuum bagged and to be designed for usage in these specified vessels. Suitable core materials such as 'Termanto', 'Klege-cell', and 'Core-cell' are acceptable and Balsa or wood, plywood, and non-structural foam materials must not be used, unless specifically required, for example, transom core.

3.3 Fasteners

1. All fasteners must be of corrosion resistant materials.
2. Cadmium plated parts and fasteners, including washers, must not be used.
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.
4. No fasteners must be directly threaded into aluminium alloys, except with adequate bolt or insert sizes, minimum ¼" diameter, tapped into a suitable alloy type, and thickness, such as1/4" 6061, with the use of thread adhesive type material. Aluminium or Stainless steel washers or backing plates must be used as appropriate.
5. Where nuts will become inaccessible after assembly of the vessel, nuts must be captured, or tapped inserts used, to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration, and adequate thread showing as required.
6. Fasteners in deck traffic areas must be flush-mounted, flat head or oval head, to eliminate tripping and snagging hazards.

3.4 Construction Procedures: Hulls must be fabricated as per the requirements quoted in Construction Standards and requirements of Vessel Particulars.

3.4.1 Main Hull and Appendages - Hull Form and flotation.

1. Hull shape must not impede water flow to the propulsion units and must direct spray and waves away from onboard personnel.
2. Watertight and Tank Bulkheads: The hull design must be such that a sufficient number of compartments, or amount of flotation, including hull compartments, and / or low smoke and flame spread flotation foam, or fire retardant flotation, or flotation devices, will allow for adequate stability and positive buoyancy in a flooded condition. See references to vessel certification, re: TP 1332 /

ISO testing.

3. **Stowage :** 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.

3.5 Painting and Preservation

1. Fibreglass components must have a coloured gel-coat finish on all exterior surfaces. Gelcoat to be applied at 20-22 mil thicknesses. Finish colour(s) as per Vessel Particulars.
2. Aluminium components must have a painted finish, or powdercoat, on all specified exterior and interior surfaces, comprised of suitable etch, primers, and topcoat per the Vessel Particulars. 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.
3. Prior to delivery the Contractor must ensure that all non-painted exposed aluminium is free of cosmetic blemishes, including all construction marks, scratches, gouges and stains.

3.6 Propulsion: Unless otherwise specified, propulsion motor(s) will be supplied and installed, per Outfitting section 18.

1. **Run-in operation:** The Engines must be installed and operated in accordance with the engine manufacturer's recommendations. The use of engine manufacturer's approved accessories and equipment is required except for outboard motor control cables (which must be heavy duty Morse 33C Supreme Red-Jacket ® cables, with manufacturer's cable ends installed, **or** manufacturer's best quality cable sets). Equipment and components must not be used, or trials performed on the engines that would, in any way, void the engine manufacturer's warranties. **See Section 7.3 also**.
2. **Warranty:** All components of the propulsion system must be warranted by the original equipment manufacturer for the standard term, sourced by GSM or as Contractor Furnished Material (CFM).
3. **Propellers/Impellers:** Unless otherwise specified, propeller(s)/impeller(s) must be as per Sec 18. Contractor must record in the trials report and equipment lists, the appropriate pitch and diameter to meet the Performance Requirements as determined by the Contractor developed design check, and trials. Propellers must be CFM.

3.6.5 Steering Systems

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 per Section 19.
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.

3.7.0 Electrical System

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", or ABYC 'E' as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications. AC systems will be called up in sec. 17, Outfitting.
2. 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.
3. 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.

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

1. Navigation, interior, and exterior lighting.
2. Electrical equipment.
3. Instrumentation.
4. Bilge Pumps.

3.7.2 Batteries and Switches

1. Batteries must be marine grade, 12 V, deep cycle maintenance free, and with the ability to cross connect for twin-engine start up of either engine from either battery. Some engine packages may require larger capacity for injection systems, see Sec.17, Outfitting.
2. Battery switch must be Certification Agency, (CE, CSA, USCG, etc.) approved and must be mounted

to prevent snagging or accidental switching.

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

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

3.7.4 Cabling Installation

1. Cables must be grouped into wiring harnesses wherever possible. All wiring harnesses must be routed below deck. All below deck cabling must be through conduit pipe. A rope leash will be added to each underdeck conduit pipe for ease of furture servicing and or additional cabling.
2. 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.
3. Cables and conductors must be supported with clamps or straps at least every 18 inches on horizontal runs and every 14 inches on vertical runs. No straps are to be used on cables or harness's within the underdeck conduit.
4. Cabling / conductors passing through structures without watertight glands, must be protected against chafing by the use of abrasive resistant grommets.

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

3.7.5 Control and Monitoring Systems: Gauges and Indicators: Dimensions and Mounting

1. Unless otherwise specified, gauges must be analogue-style, or Engine Manufacturers' digital equipment. Gauges must be sized and installed so they are readily visible by the operator while operating the boat.
2. All gauges must be backlit with an adjustable dimmer. Lighting for gauges and lighting for compass must use separate dimmers.
3. Propulsion control system installation must include single-lever combined engine control, for each engine, to be located at the operator's position on the starboard side of the control station. Controls must conform to engine manufacturer's recommendations for commercial use.
4. The Operator's position must be fitted with a lanyard style emergency shut down switch which is attached to the operator and must shut down the engine if the lanyard is pulled from the switch, as well as the following:
5. Bilge Pump operation/ indication for each compartment so equipped.
6. High water alarm for the engine installation space, which could be the 'pod' for outboards, and every other space serviced by a bilge pump.
7. Engine space heat rise for inboard installation, with required fire system alarm.
8. Allowance for at least one additional input, if a single integrated alarm panel used.

3.7.6 Piping Systems

1. Flexible Connections - Where flexible connections are required for steering and fuel systems, suitable hose with permanently crimped, detachable reusable type fittings must be used.
2. Fuel Tanks must be hydrostatically tested, or air tested to 3.0 p.s.i. and be labelled per the requirements of TP1332.
3. Fittings and clamps must be stainless steel. Bolts used in all fittings must be Type 316 stainless steel.
4. Each watertight Hull compartment is to have its own 12V DC bilge pump, plumbed to discharge overboard from the compartment, as per TP1332.

3.8 Reserved for Fire Suppression - Inboard Engine Configuration

3.9 Navigation Equipment (COLREGS)

ttp://www.tc.gc.ca/acts-regulations/GENERAL/C/csa/regulations/010/csa014/csa14.html

1. Navigation lighting fixtures must be of such a design as to resist the effects of vibration and moisture and must be provided with adequate protection from damage.
2. Particular COLREGS rules to note (vessels under 12 M.); Rules 22, 23, and Annex 1, rules 2, 9, and

10. (**NOTE:** The lights must be installed parallel to the "Normal Load" waterline that often may not be parallel to the deck.)
3. The navigation lights must be mounted so as not to interfere with vision of the operator.
4. The navigation lights must be permanently mounted.
5. The Contractor must supply and install an electric horn that ensures the requirements of the Collision Regulations, Rule 32 are met, i.e. with a standard small vessel 'horn' audible 0.5 NM. The horn must be installed on the vessel exterior with the 'horn' facing forward. (See Section 13.6.)
6. A Magnetic Compass must be mounted near the centreline of the helm station, in easy view of the operator when facing forward. Deviation card development is an Owner responsibility.
7. All vessel lights, navigational and otherwise must be LED

4.0 Warranty and Service Provisions:

4.1 Components and Equipment Support

All components and all mechanical, auxiliary, electronic and electrical equipment installed on the boat, with the exception of the collar, must be supportable by parts and service in Canada within 30 days. A collar, if any, must be supportable by parts and service in Canada within 30 days. All components and equipment must be current models.

4.2 Spare Parts

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.

4.3 Parts and Service Depot(s)

Contractor's parts depots must be capable of efficiently supplying all of the Client service area for this vessel, with spare parts for all components of the vessel and warranty service for all components of the vessel. It is recognized that many equipment items will have their own manufacturer's warranty cards for owner registration. Contractors must have a factory authorized service representative capable of call back response in all regions of Canada within **48** hours of receiving a service call.

5.0 Documentation

5.1 Technical Publications General: The Contractor must provide, upon delivery of the vessel, one (1) hard copy and one (1) USB electronic copy per vessel produced for the operator of the vessel, plus one (1) hard copy and one (1) USB electronic copy for the Technical Authority, shipped to the same address as identified for invoicing: of a comprehensive owner/operator manual that provides a physical and functional description of the craft, its machinery and equipment, as well as delivery testing and sea-trial result documentation. The manual should include but not be limited to sections such as: General Information, Technical Information, and an Initial Spare Parts List.
See also section 7.8 for the listing of Deliverables "with each completed vessel".

5.2 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. Operating procedures.
2. Basic operating characteristics (such as temperatures, pressures, flow rates, etc.)
3. Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step.
4. Recommended planned maintenance.
5. Complete troubleshooting procedures.

5.3 Technical Information Section: The technical manual should include 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. 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 specification the item appears.
2. Hull; including hull data, TEST and TRIAL results, serial or manufacturer's numbers, and equipment warranty cards.
3. Collar; including collar materials and glue materials, and procedures necessary for onboard repair of the collar.

4. Engine(s) and equipment: including engine and propulsion serial numbers.
5. Electronics, (if applicable): including model and serial numbers.
6. Regulatory and Stability information: as required per TP 1332, which references ISO12217 that further references ISO 6185 for RIBs.
7. Tonnage: Builder to fill out Simplified Method of Tonnage Measurement TC form 4a.

5.4 **Initial Spare Parts List:** The Technical manual must also include a list of recommended initial onboard spare parts to be stocked for the craft. At a minimum this list must include the following items (as applicable):

1. Propulsion: Propeller / impeller, filters, water pump impeller, starting battery, throttle and shift cables, any special engine tools.
2. Electrical: fuses, light bulbs, electrical panel breakers;
3. Boat Structures and Fittings: Miscellaneous commonly used fasteners.

6.0 **Quality Assurance**

The basic reference to ISO 900x compliance is as per the contract document.

7.0 **Test and Trials:**

7.1 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 boat:

1. Weight
2. Construction Quality
3. Lifting Gear
4. Propulsion Engines including Starting and Controls
5. Steering System
6. Fuel System
7. Electrical System
8. Electronics

7.2 **Sea Trials – General**

The Technical Authority must be notified no less than 48 hours prior to sea trials. The Technical Authority reserves the right to witness or decline attendance of sea trials, or to require the Inspector to attend. Absence of the Technical Authority, or Inspector at sea trials does not relieve the Contractor of its responsibility to conduct and record sea trials. Sea trial results must be forwarded to the Contract and Technical Authorities prior to delivery of the vessel. The Technical Authority will inform the Inspector of trials so they may attend.

7.3 **Sea trials** must be conducted by the Contractor to demonstrate the boat and its equipment conform to the requirements as stated in the Contract and the Performance Requirements. 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 vessel during sea trials. Residual fuel, if not drained for shipping, must be delivered in its tank with the boat.

1. All Sea Trial instrumentation and equipment must be furnished and operated by the Contractor. Trial instrumentation, where applicable, is not to replace the boat's instruments (e.g., engine tachometer, pressure gauges, thermometers). The Contractor must furnish all necessary hardware and fittings and must install the measuring devices. After satisfactory completion of the trials, all instrumentation must be removed and all systems restored. The Contractor must provide calibration data certifying the accuracy of the instrumentation for the tests.
2. The Contractor is required to run the vessel during builders' trials until the engine(s) have accumulated the operation hours sufficient for the initial engine service by the engine supplier, or for 10 hours, whichever is least, and to have a manufacturers' service agent perform the service and provide an initial service report.

7.4 **The Contractor must submit a Test & Trials Plan**, including a description of all of the acceptance trials to be performed. As a minimum, the following trials must be conducted: The vessel must operate in the Normal Loaded Condition, per Sec 10..

1. Speed Trials - The speed trials must be done over a course at least one nautical mile in length. Two runs must be made over the course, one in each direction with the speeds for the two runs averaged. The use of GPS data (averaged) is acceptable.
2. Endurance Trial - During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper installation. Fuel consumption can be calculated using manufacturers' data.
3. Astern Propulsion - The vessel 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 approximately 1/3 of the rated engine horsepower.
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 the boat meets the stated Basic Performance requirements, per Sec 11. Manoeuvring trials must be conducted in the Normal Operating Condition.
5. Lifting Gear Load Test; Vessel and bridle or lift frame may be tested at 150% of normal load condition, as specified in the Vessel Particulars; to lift and hold without deformation of the lift points or associated hull. Lift points to be recessed flush with deck, and certified for load.
6. Stern towing arrangement: Testing bollard pull to design capacity in a direct astern load. Data from previous test to same standard, for same post and construction accepted
7. At the conclusion of sea trials each boat must be thoroughly cleaned and inspected. Outboard engine cooling systems must be flushed through with fresh water. The Contractor must repair any damage to the vessel or ancillary equipment resulting from sea trials, to the satisfaction of the Inspection Authority.
8. For the purpose of the trials, Normal Loaded Condition is to be considered to be the basic boat, fitted with all normal equipment, full fuel, with complement and loads per Vessel Particulars, section 10.

7.5 Final Inspection and Acceptance (PWGSC Acceptance Document) for delivery;
Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The boat 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. The Contractor must document the results of the final inspection and submit these results to the Inspection Authority; a copy of the trial results must be shipped with the deliverables for each boat, per 7.6/ 7.7.

7.6 Stability examination per TP1332, from ISO standards 12217 which for RIBs delegates to ISO 6185, or by TP 7301, requires the Contractor to record all stability/ structural, calculation and trial results and provide a copy for each boat produced, to be placed in the technical manual. See Sec. 14 Standards. The trial of the first of a series of vessels can be used for all identical vessels.

7.7 Trial Records - The Contractor must maintain records of testing for each boat for a minimum of two years. The Contractor must prepare a trials check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the boat in Light Condition, per section 10. The check sheet must also indicate the Normal Loaded weight and the date for the 150% load lifting gear test, if required. This check sheet must be included with the deliverables of each vessel.

7.8 Standard Deliverables with each completed vessel, one manual per vessel delivered plus one for the client department TA:

1. A detailed operator manual must be provided for all equipment, and systems, per Sec 5.
2. Sea Trial results, and shop testing sheets, including fuel tank test report, per Sec 8.8.6.
3. Acceptance Certificates, and compliance sheets or certificates distributed with equipment i.e. life saving appliances, lifting appliances, engine test reports, calibration certificates, navlight certificates, fire suppression material certificates, flotation foam rating sheets (if any). The initial inspection of the vessel(s) after delivery, by Department Self Inspector,, will establish TP 1332 / ISO compliance. (SVMIP self inspection checklist.)
4. Stability information, including ISO calculation sheets or manufacturers flotation tests.
5. Ensure all labelling is in place as per the Small Vessel Regulations Section 5.19 including a decidated locker compartment for safety gear clearly marked **Safety Equipment**.

8.0 <u>Packaging and Shipping:</u> Shipping other than Towing on Trailer

8.1 Prior to shipping, the boat must be cleaned throughout, preserved and covered (shrink wrap), secured

	on the boat trailer if any, or chocked as required, in accordance with this section.
8.2	Bilges must be dry and free of oil and debris and the fuel tanks must be drained.
8.3	The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one year in an environment that will be subjected to freezing temperatures.
8.4	The battery must be disconnected.
8.5	A durable warning tag must be wire tied to the steering wheel indicating that the boat has been preserved for shipping and storage and should not be started until the propulsion machinery has been reactivated.
8.6	Lengthy shipping arrangements must protect the boat hull from deformation from road irregularities producing, due to repeated bouncing, dents in hulls supported on roller assemblies, by the insertion of a temporary bunk to distribute loads.
8.7	Towed Delivery on the boats' trailer: In local short haul trips in non-freezing weather, only the cleaning and covering provisions may be required, with the approval of the Inspection Authority.
9.0	**Trailer Information: IF required:** (See Solicitation Annex 'I' pricing sheet for requested pricing, if any, and section 20 at the end of Vessel Particulars for specific trailer information)

SPECIFICATION: VESSEL PARTICULARS

SPECIFICATION FOR ; 6.9-7.4 m. Open Console T-Top Aluminium RIB

10.0 Vessel Particulars

Length overall between 6.9 and 7.4 meters.

Breadth overall (collar inflated) from 2.8 to 3.0 meters (collar approx 0.55m / 22")

Draft (outboard motor lowered) 0.7 to 0.9 meters

Draft (outboard motor raised) 0.5 to 0.7 meters

Open style ; full beam self-draining deck between tube cradles

Open RIB with T-Top console, Back bolster standing or seating (two positions at console)

Normal Load conditions: Weight of empty vessel to be reported by bidder

- crew of 2 = 250 kg
- Fuel = 300 litres minimum in two tank(s), (240 kg)
- Equipment & supplies = 500 kg
- Normal payload capacity to be approx. 800 kg, / 1760 lb. in addition to full fuel

10.1 Vessel Tonnage Requirement: Vessel must be shown not to exceed 5 GRT, see sec5

11.0 Operational Performance

Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in salt water with Normal Load and complement. The craft 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 craft is expected to have a service life of at least 15 years, with an expected usage of between 250 and 500 hours per year.

1. Maximum speed: minimum 35 knots (at normal load condition).
2. Minimum speed: 20 knots in Beaufort Force 5 with 20 knot wind, in two meter seas.
3. Endurance: maximum speed for 2 hours.
4. Range: 200 nautical miles with 10% reserve at 20 knot minimum speed.
5. Capable of steering 15^{o} from heading, in Beaufort Force 5, with seas from any direction.
6. Steer and manoeuvre effectively at 3 knots in Beaufort Force 5.
7. Maintain course, made good over ground, when proceeding at 3 knots with relative cross wind of 27 knots (Beaufort 6).

11.1 Beaching

1. Capable of beaching on soft (sand, earth or clay) surfaces at a speed of up to 5 knots without damage to the hull.

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

11.2 Depth under Keel

1. Operate carefully in depths of 1 meter with outboard motor or outdrive lowered.
2. Basic manoeuvring in depths of 0.70 meters with outboard motor or outdrive in the partially raised position

12.0 Environmental Conditions: Capable of operating day or night in the following conditions:

1. Average ambient air temperature range: -10°C to + 30°C
2. Average water temperature: 0°C to +20°C.
3. Wave heights of up to 4 meters (Beaufort Force 6).
4. Wind speeds to 27 knots.
5. 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 6.

13.0 Open T-Top Vessel Configuration

13.1 General Deck Arrangement

1. There will be at least 3 tie up points along the side deck / transom. One cruciform tow post forward, 2 cleats aft, (transom corners).
2. A permanently mounted hand cranked towline recovery reel shall be installed, 100m of buoyant ¾ inch diameter towline. Tow Recovery Reel must have a cover made of marine grade weather resistant material that protects the tow rope from the elements when not in use. The hand crank shall be removable and have permanent storage pocket for the handle. There must be a screen protection barrier fitted on the transom to prevent aft egress and recoil of towing line. Tow reel must be of a height that ensures tow line when deployed clears the engines and engine guard in all applicable sea states.
3. A full width dual position console must be integrated into the T-Top structure with windshield, roof and with low profile top mounted equipment arch (see section 13.2)
4. One back bolster / console seating assembly for two with lockable stowage .See section 13.3. The bolster will be narrower than the console, allowing on deck passage aft around the bolster.
5. There must be a tow post fitted near the centre of the transom with triangulating braces to the transom, used for EMERGENCY towing, rated for 3000 lb. (1360 kg.), ahead of the thrust point of the craft.
6. Vessel must be fitted with aluminium protective pipe bracket, which extends around the outside of the outboard motors. This guard must be fabricated so as to be easily removed to facilitate the removal of the outboard engines
7. Vessel must be equipped with securing eyes fitted to the outside of the transom used for trailer tie downs, and bow eye for towing and trailer tie down.

13.2 Seated or Standing Console, with Windscreen and T-Top

1. T-Top console to be constructed to low weight, high strength specifications from aluminium to withstand the accelerations of the vessel while in extreme service conditions. Successful construction methods presented include main console construction of 3/16" plate, braked at the corners, with tiered and/or sloped top surfaces for installation of controls and electronics. Alternate construction method using 2" sched 40 pipe framing with plate panels filling the console and window faces is also commonly used. Weight and structural integrity are paramount concerns.
2. An overhead console must be fitted with space adequate for two VHF radios, which must not protrude into the headroom of operators standing ahead of the seating.
3. The console must have its sides very close to the tube cradle frame and have gusseted steps that are attached at the sides, laying over the tube to approximate centreline. There must be tube cradle height steps into the console seating area, and forward to the foredeck. The operator console must have a weather tight aft face 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.
4. 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 (outboard) from center so as to provide minimal visual obstruction to forward operators.
5. There must be a forward window and side windows on the console. The space on the console face must be sufficient in area to incorporate all required instrumentation including future installing of navigational screen (Raymarine C90W) and police radio**.** Forward window to be equipped with top mounted, wide sweep, pantograph wiper system. The aft sweeping forward corner frames must also be equipped with air dams to control air and water "wrap" of the window corners. Dams to continue aft and direct water to the aft corners of the T-top. Side and aft pipe handrails must be provided on the T-top roof frame to provide handholds when standing on tubes or aft deck. These handrails to integrate with the forward window frame corner rails.
6. The T-Top must be supported at forward corners of the console top, and possibly 2/3 aft along the roof, behind the forward operator seating, with overhang aft sufficient to cover aft bolster seating assembly.
7. T-Top to have incorporated arch and bracket(s) for mounting of radio antennas, nav. lights, blue strobes, deck lights, loud hailer, and mounting of Raydome (4kw). Arch to have mouse lines, inserted into arch framing for ease of future electronic installations.

13.3 Seating and Stand-up Operation

1 Bolster unit with fold down padded seating for two positions with incorporated storage locker underneath. Ergonomic considerations may require adjustable steering wheel and / or binnacle on console extension.

a. Seating bolster assembly to be positioned in such a way as to provide operator support with seating assembly folded down while driving in a standing position..

b. The bolster console mounting area to be suitably reinforced and framed to support the full G-load capability. A 4" recess or "kick" at the sides only of the bolster, up to 6" above deck, is required to ease access around the sides of the bolster when passing to and from the aft deck to control positions.

c. The bolster console to have incorporated lockable stowage compartment with access door top of aft face of assembly.

2 Foot Rests: There must be pipe foot rest(s), servicing each position at the console.

13.4 Console Utilities

1. This vessel must be equipped with a 3.0 kW power charger / inverter that connected s tied to one (1) deep cycle large capacity marine house battery and a start battery per engine.
2. There must be two (2) 110 VAC power receptacles in the main cabin area one located near each forward shock mitigating seat.
3. There must be a shore power 110v receptacle, 30-amp connection, exterior on aft bulkhead of house.
4. The cabin must be equipped with an interior diesel heater capable of heating the interior area of the vessel with a 20% reserve BTU rating; model 10DW Webasto or equal.

5. Outlets from the diesel furnace must be located in the cabin, at the navigation and helm positions near the deck, and the window supply plenum(s) port and starboard.
6. The front windshield defroster(s) must have a variable three-speed fan and be capable of clearing the entire front windshield area of the vessel. Heater switching and defrosting controls to be mounted on the dash, navigator's position.
7. The front windshield defroster must be capable of blowing both cold and heated air.
8. The cabin must have at least two variable speed fans capable of circulating the air in the cabin. A positive pressure intake fan with water exclusion intake protection must supply air to the cabin.
9. There must be a red chart lamp on the communications side of the console, for the navigator with switch, and dimmer.

13.5 Dash / Helm Station

1. The Helm station will be on the Port side of the console, with controls on centre.
2. The helm will incorporate a steering system, capable of handling the horsepower of the vessel, with manufacturers' engine controls designed for the power units.
3. There will be provision for an array of control gauges and electronic equipment at the helm position, see electronics section 17.2.
4. In addition, if not included with above gauge package, outboard trim gauges, and fuel level gauge(s) will be installed.
5. There will be a console mounted magnetic compass, see 13.6 following.
6. All lights switches and breakers must be within easy reach of the helmsmen.
7. In addition to the factory supplied individual propulsion leg trim controls there will be a SYNCRO trim switch to integrate the outboard controls on one switch.

13.6 Navigation Lighting and Equipment: LED options must be used where available

a. Two Blue strobe lights mounted port and starboard on the arch in such a way as to not interfere with future mounting of (4kw) Raydom,(The Aqua Signal Corporation, series 40 strobe light meets this requirement).
b. The Contractor must supply and install an electric horn that meets the requirements of the Collision Regulations. The horn must be operated by a spring-loaded switch located on the operators' console. The "Signaltone", or Ongaro electric horns meet this requirement.
c. Navigation lights must be permanently fitted to the T-Top with protected wiring and must be waterproof. The fitting of a combined navigation sidelight lantern on the inflatable collar will not be acceptable. All around mast /anchor light ratchet mast mounting is acceptable.
d. The fixtures must be of such a design as to resist the effects of vibration and must be provided with adequate protection from damage that may occur when lying along side 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.)
e. 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. Two switches to be provided, labelled: Nav masthead / anchor and Nav sidelights.
f. Magnetic Compass: The Contractor must provide and install a direct read compass, with light. (The Ritchie Helmsman 70 series meets this requirement.)

13.6.1 Utility Lighting:

a. Contractor must supply two (2) handheld search lights for the vessel. Each light must be 12 volt and must produce 1 million candela. Two 12V power points required, one each on forward face, and dash (communication side) of console
b. The deck flood lights (4 of) to be fitted on the T-Top of the vessel, 1 facing forward, 1 facing aft and one each facing outboard port and starboard three individual switched circuits….front, rear and sides.
c. An overhead light with red / white capability to be installed overhead under the T-Top for console illumination.

13.7 Exterior Equipment

1. Transom deck drainage scuppers will be of a size to allow sufficient drainage of forward and aft sections of exposed deck surfaces per TP 1332 and ISO.
2. All deck cleats, bollards, arch or fittings to be painted, or powder coated flat black..

3. Locking bilge access in open vessels' below deck stowage.
4. Locking fuel filler access, forward on bow box.

13.8 Paint and Finishing:

1. Hull and deck to be medium grey (RAL7042) except flat black specified areas or components, RAL9004.
2. Walking deck, including bow box top and portions of pod deck to be finished in dark grey non-skid paint.
3. The console of the vessel must be painted in a matt black in the interior, not including overhead, and medium grey on the exterior.
4. Collar to be grey, with black bombard, and protective belting cladding at step treads and standard under tube protection aft.

14.0 Construction Standards

1. Transport Canada Marine Safety Regulation **TP 1332** "Construction Standards for Small Vessels", which incorporate references to **ABYC** standards for equipment such as fuel tanks and fuel systems, as well as tank space ventilation, and **ISO** standards for stability, loading capacity, etc. as delegated to ISO 12217-1 and then to ISO 6185-3 for RIBs over 6 M. *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1332/tp1332e.htm*
2. **TP 1332 referenced ISO 6185-3 will require that full structural (drop tests), and stability testing must be arranged for this vessel (unless previously tested), as described in ISO 6185-3, near the completion of construction to verify compliance. Superior IMO testing certificates are acceptable substitutes.** *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1332/tp1332e.htm*
3. Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats **and ABYC 'E' electrical standards**".
4. Transport Canada Marine Safety Regulation TP 1324 "Coated Fabrics". *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1324/tp1324e.htm*

15.0 Construction Drawings and Data

1. The following, "As Fitted", dimensioned drawings must be produced for manuals to record the vessel particulars.
2. - Lines Plan with minimum 8 sections through hull, plus deadrise angles as indicated in 16.2.
   - General arrangement Plan and Profile, to record primary dimensions, and equipment.
   - Lifting arrangement profile to be shown as part of the GA profile.
   - Vessel midship structural profile and section showing the console / operating position in the deck.
   - Systems drawings presented on as many sheets as required for clarity covering Bilge, Fuel, Electrical, and Driveline or mechanical drawing as required.

16.0 Hull and Deck: Construction and Finish:

16.1 Hull and Deck: The hull, and deck, must be constructed of aluminium. Hull bottom plate to be ¼" and hull side and deck plate to be 3/16" pl, type 5086 alloy.

16.2 - The hull is to be a minimum 24 degree (transom) deadrise "V" style monohull with a reverse chine flat and hull bottom to incorporate minimum one substantial (~1.5" vertical, aft, located approx mid bottom panel) or two smaller spray strakes on the bottom, per side, which run out to the stem. Deadrise at 25% aft to hull transom from the main chine at stem must be minimum 32 degrees.

1. The hull and decks are to be transversely framed and longitudinally stringered.
2. Deck hatches to be arranged in way of fuel tanks and stowage, as well as quick accesses as required by TP1332 for utilities.

16.3 Deck: Deck wells must be self-draining, by means of non-return freeing ports in the transom, or aft end of the cockpit.

16.4 Windows are to be laminated safety glass, and carry the manufacturers' certification confirming construction. Forward windows are to be minimum 3/8". Smaller side windows can be minimum 1/4" thick laminated, safety glass, if supported in frames, or minimum 3/8" Lexan if not supported all around. A pipe handrail must shield the aft edge of lexan side windows so that operators cannot be thrown against the edge of the lexan.

16.5 Stowage, Lifting and Trailer Securing Points:

1. Arrangements must be provided for safe, secure and accessible stowage of an anchor and cable, and other equipment in bow / anchor locker.
2. **Tie Downs**: Port and Starboard trailering tie down points to be incorporated in transom.
3. **Lifting**: Not required for this contract.

16.6 Bow Eye - A system is to be designed and incorporated into the construction of the stem that allows for the bowline and or trailering hook to be attached to the bow and which must not protrude from the line of the stem. The fitting must be of a non-corrosive material and of sufficient strength to allow for towing the vessel at a speed of 20 knots in calm water in the normal loaded condition, on an even keel, without damaging the vessel or causing chafing of the towline.

16.7 Pumping and Drainage:

1. A marine grade electric bilge pump with 2000 gph capacity must be fitted in the main hull or largest hull compartment as well as a fixed manual operated bilge pump of the diaphragm type. The bilge pump must be located so that it takes suction from the lowest point of the compartment. Piping must be installed which will allow the bilge pump to discharge directly overboard aft. Any additional watertight division of the hull must be serviced by a bilge pump of min. 1500 GPH capacity. (The Rule® 1500 Model Submersible Bilge Pump, and Rule series pumps meet the electric bilge pump requirement)
2. The electric bilge pump control panel must be located visibly on the operator's console, with settings for 'on', 'off' and 'automatic' operation. An indicator light must be provided at the console that lights when the bilge pump is operating.
3. An automatic float switch control must be fitted that turns on the electric bilge pump when water is present in the bilge. (This" float switch" must be separate and independent of bilge assembly allowing operator to manually confirm bilge operation. An Ultra® Junior Model Float Switch meets this requirement.)
4. Bilge High Water Alarm for each compartment equipped with a pump as per TP1332 including the outboard engine pod, with alarm indicators at helm to be clearly visible by the operator.
5. Hull drainage - a non-corroding threaded plug must be provided in the lowest point to drain the aft compartments of the hull when out of the water
6. Any forward water retaining compartment without pump will have a piped drain to the aft bilge where a stainless steel ball valve must be located readily accessible for testing or draining the forward bilge to the aft pump.
7. A Manual pump such as Whale 'Gusher" is required as noted in lifesaving sec. 17.1

16.8 Arch / Self Righting System:

1. Arch – See section 13.2.7

16.9 Collars

1. Collar must be an inflatable type with at least 5 separate chambers of approximately equal volume, each fitted with a suitable inflation system and over-pressure relief valves calibrated to 3 psi. (the Halkey Roberts model 690BV inflation valve and the Mirada model B51019 3.5 psi over pressure relief valve, meet this requirement).
2. Inflatable collars fitted must be constructed of material that meets the criteria for strength, elasticity, resistance to wear and longevity as defined in TP 1324. (1650 / 1880 Decitex Neoprene / Hypalon coated nylon fabric meets this requirement) and must be Neptune grey in colour.
3. Inflatable collars must be attached to the hull using mechanical fasteners in such a manner that the collar can be easily removed for repair or replacement. The use of screws and lag bolts or glue-on type collars is not acceptable.
4. Collar to be supplied with two pair of step treads (EPDM or eq.) installed in way of the cockpit access and a transom tube tensioner.
5. Inflatable collars must be provided with minimum 5 protective Grey wear strips all around, of extruded neoprene rubber, or equivalent, rubbing strakes (minimum 75mm wide, 'Bombard' style) to be glued along the entire length of the outboard side of the collar to provide protection against abrasion and puncture. The bottom of the inflatable collar wetted surface of the tubes

must have a protective layer of material installed. (EPDM or eq.)

6. Grab lines of nylon braided rope construction ½" diameter, must be fitted along the collar on both the port and starboard sides to provide access from both within the boat and for persons in the water. Grab lines must be mounted on the centreline of the collar, by means of a lacing cuff (not by D-Ring attachment).
7. A repair kit must be provided for inflatable collars.
8. All seams are to be hand buffed and glued
9. Polyurethane sealant should be used on all interior seams and baffle edge.
10. Foot pump, with correct valve fitting to be supplied (bellows type, for collar)

17.0 Specification: OUTFITTING and EQUIPMENT

Lifesaving Emergency Equipment: The following items must be supplied and provided with stowage / securing arrangements (as appropriate for each item). All CFM fittings must be heavy duty, corrosion resistant stainless steel fittings. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker):

1. Fire extinguishers (Class B1, marine type; three of, 2 aft in cabin, one in the forward console area near the electrical systems.
2. Two (2 paddles of a useful length).
3. 'Danforth' style galvanised steel anchor of a size suitable with chain and rode.
4. One manual bilge pump, as specified elsewhere.
5. One heaving line not less than 15 meters, with life buoy or quoit,
6. One watertight flashlight.
7. Pyrotechnics Type A. Qty. three (3), and Type B or C Qty. three (3).
8. Re boarding device if vessel freeboard is above 0.5 meters.
9. Marine First Aid Kit as per Small Vessel regulations 2010 Section 8.1.

B. Additional Operator Safety Equipment

1. Fume (gas) detector in the bilge.
2. Carbon monoxide detector in the cabin.
3. Drogue sea anchor and 100 feet of 1/2 " braided nylon line.
4. Mooring lines, four (4) X 20 X 5/8" braided nylon line with eye spliced into one end.
5. Collar patch kit (for inflatable collar).
6. One EPIRB ACR Globalfix Category 1 with Hydro static housing mounted to the aft exterior of the cuddy cabin.
7. One telescopic boat hook

17.2 Navigation Electronics This vessel is to be equipped with the following integrated electronics navigation package, with displays located across the forward dash, in addition to the COLREGS required equipment. Both displays to be interconnected with navionics gold cartography included for Canada with VHF interfaced with the master chart plotter monitor.

1. One RAYMARINE C-97 Multifunction display at helm station
2. One RAYMARINE C-127 Multifunction display at the navigation station.
3. One RAYMARINE 24"4 KW Raydome Standard Definition Radar dome
4. One (1) ICOM Model 604 DSC VHF radio flush mount at navigators position.
5. One Airmar GH 2183 Electronic compass heading sensor.
6. One Morad VHF-156HD antenna with composite transition mounts.
7. One plastic through hull transducer.
8. One Comar AIS (receive only) with VHF splitter.
9. Builder to supply all inter-connect cables for above.
10. Contractor to supply and install antenna assemblies on T-Top arch and run coaxle

cabling for both police and VHF radios.
* Multiple antennas are to be mounted no closer than 24" from one another.
* Antennas are to be mounted no closer than 17" from any vertical mast, metal plate or object.
* All radio coaxle cabling to have separate designated underdeck conduit pipe routing.
* All antenna mounts are to be NMO and sealed underneath to prevent salt water corrosion.
* Radio kits will be GSM supplied and installed.

Note that adequate space on the console must be set aside for GSM install and supply of police radio.

18.0 Propulsion

1. Unless otherwise specified, propulsion must be by TWO of, Government Supplied (GSM) 150 HP Yamaha, (one counter rotation), 4-Stroke, gasoline outboard motor c/w 25" leg. All other engine equipment CFM.
2. Motors should be mounted in accordance with manufacturer's recommendations.
3. Engine package must incorporate an automatic shutdown feature (kill switch) for the engine to be mounted near the ignition switch.
4. Contractor to supply and install equipment included in the manufacturers' standard gauge package, and appropriate cables and harnesses, for the specified engine:
5. Propulsion controls to be OEM single lever per engine with trim switches and synchro
6. Separate analogue hour meter will be installed for each engine.

18.1 Fuel Systems:

1. Fuel systems must meet with all requirements of TP 1332 "Construction Standards for Small Vessels", which reference the ABYC standards. **Regardless of interpretation of TP 1332 requirements, below deck fuel tank compartment MUST have both passive and powered bow to stern ventilation system installed with clearly labelled switch at the helm.**
2. The vessel must be fitted with two (2) fuel tanks with baffles, to be located under the deck for a total capacity of not less than three hundred (300) litres.
3. There must be inspection hatches (8") in the deck, to allow access to the fuel pick ups, (with the required 'demand anti siphon' valve at the tank if flow rates meet the manufacturer's requirement), vent, and fill connections, and tank level indicators.
4. Arrangements must be provided for fuel tank and associated lines, vents, fills, and on / off valves, to be fitted to the boat.
5. Fuel lines from the required inboard shutoff valve or manifold to the outboard motor(s) to be protected against chafing and wear.
6. A fuel / water separator filter is to be mounted "in-line" to each engine with easy access to drain the sediment bowl.
7. Fuel shutoff maintenance valves are to be installed at filter/ manifold system and be easily accessible by vessel operators.
8. Fuel fills (lockable) and vents to be located at forward bow locker location.
9. Dual Racor fuel filter assembly required with see through bowl for easy inspection. Filter assembly must be located outside of any enclosed compartment designated to contain safety gear, electrical systems or any other fuel sensitive systems and or accessories.

19.0 Steering

1. Steering systems must be hydraulic with a maximum of 3.5 turns from hard over to hard over. (The SeaStar® and / or DayStar steering systems, depending on vessel horsepower, from Teleflex meet this requirement, as do Mercury steering pumps). Particular propulsion systems may have their own requirements for steering which must be adhered to, eg. Jet steering systems.
2. All hydraulic steering hoses must be routed below deck and all hoses must be routed so that there are no pinch or chafing points on the hoses.
3. The wheel / console connection must be of robust construction, to eliminate fore and aft or lateral movement of wheel / steering shaft fixture.
4. The Steering wheel must be stainless steel and may be rubber or plastic covered. or The Steering wheel must be stiff enough that during rough water operations there is no flexing of

the wheel and the wheel should be padded to provide a comfortable non-slip surface for the operator to grip. (Momo Marine steering wheels meet these requirements)

20.0 Trailer

1. The trailer must be rated approximately 20% over the anticipated 'wet' weight of the vessel having the following features:
   - welded galvanized modular steel or aluminum I Beam construction, tandem axle;
   - Vault Style axle hubs.
   - brake, running, turn signal, and backing lighting with seven (7) pin RV wiring connector
   - electric/hydraulic, jurisdiction compliant disc braking system;
   - bow winch assembly with winch strap and bow chock;
   - radial tires;
   - tongue jack, 2500 lb. with pad;
   - full size wheel mounted spare tire;
   - combination double bunks forward with aft rollers, and spare tire and carrier;
   - heavy duty 'stand-on' fenders and hitch to accommodate a two (2 5/16") inch ball.
2. The trailer shall be equipped with fenders and mudguards, which conform to Transport Canada Standards, and have required lighting using LED lights. The trailer must be provided with two 2 galvanized safety chains and shackles of suitable size and rating. All electrical connections are to be sealed from the atmosphere.
3. The trailer must be equipped with a two (2) speed manually operated winch of a suitable size and rating with a web strap cable with a hook rated for the trailer design load. Web strap length must be at least 914 cm, or 29 ft. 11 ¾". The sides of the trailer shall be fitted with two (2) eyes per side for shackles to secure the vessel to the trailer.
4. The Contractor must supply two (2) suitable adjustable hold down cables/straps. A galvanized safety chain and shackle must be provided on the front of the yoke assembly for securing the bow of the vessel.
5. The trailer must be adjusted for the vessel. The winch, stand and turnbuckles are to be capable of withstanding long journeys on rough terrain.

ANNEX B - QUESTION & ANSWER

Solicitation # M2989-170194/A

To be completed as required during the bid solicitation period.

Item	Spec-RFP description	Questions	Answers

ANNEX C - 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 SOW. 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 are 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.

ANNEX D - DETAILED FINANCIAL BID PRESENTATION SHEET

D-1 Proposed Work Location:
Contractor's Facility _____

D-2 Evaluation of Price
The price of the bid will be evaluated in Canadian dollars, customs duties are included and applicable taxes are extra, Incoterms 2000 Delivered Duty Paid (DDP) to destination.

a.	**Known Work – (1 boat, 1 Trailer)** **With included delivery Incoterms 2000 DDP to:** RCMP Port Alberni 444 Morton Street Port Alberni, BC V9Y 4M8	$_____
b.	**Option Unit – 1 boat, 1 Trailer** **With included delivery Incoterms 2000 DDP to:** RCMP - Fleet Management Unit 1101 Calais Crescent Chilliwack BC V2R 5S7	$_____
c.	**Unscheduled Work** *Labour Cost*: Estimated labour hours at a firm *Charge-out L*abor *Rate*, including overhead and profit: 25 person hours X $_____ per hour for a PRICE of: **See articles D-3 and D3.1 below.**	$_____
d.	**EVALUATION PRICE** [a + b +c] For an EVALUATION PRICE of: (customs duties are included and applicable taxes are excluded)	$_____

D-3 Unscheduled Work
Unscheduled work arising, as authorized by the Minister, will be calculated in the following manner:

"Number of hours (to be negotiated) X $ _____your firm hourly *Charge-out Labour Rate* which includes *Overhead* and profit, plus net laid-down cost of materials to which will be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour.

The firm hourly *Charge-out Labour Rate* and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

D-3.1 Notwithstanding definitions or usage elsewhere in this document, or in the Bidder's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of *Related Labour Costs* identified in D-3.2 will not be negotiated, but must be included within the *Charge-out Labour Rate*. It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

D-3.2 Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating must be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* entered in line D-2b and Article D-3 above.

D-3.3 A 10% mark-up rate will be allowed for materials and this rate will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Charge-out Labour Rate. A separate labour component for the purchase and handling of materials or subcontract administration is not allowable.

D-4 Boat Delivery Proposal

While the delivery of the boats and all deliverable to destination required by the Contract is desired for **October 31, 2016.**

The best delivery that could be offered is _____ weeks after Receipt of Order (ARO).

ANNEX E - SUBCONTRACTOR LIST

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

ANNEX F - INFORMATION REQUIRED FOR THE VERIFICATION OF INTEGRITY PROVISIONS

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

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

_____
_____
_____

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

_____
_____
_____

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

_____
_____
_____

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

_____
_____
_____

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

_____
_____
_____

ANNEX G – BID PACKAGE CHECKLIST

Instruction to Bidders: Table G-1 is a check list for self-verification purposes.

Table G-1 Bidder's Bid Package Check List

G1.1

Notwithstanding deliverable requirements specified anywhere else within this bid solicitation and its associated Technical Specifications, the following are the only mandatory deliverables that must be submitted with the Bid documents at the time of bid closing. The following are mandatory and the Bidder must be compliant on each item to be considered responsive.

No	Part	Article	Description	Condition	Document provided
Section I- Technical Bid					
1		Front page	Request for Proposal document part 1 page 1 completed and signed;	Mandatory with the bid	☐
2	3	3.2.1	Annex G - Bidder package Check list	Mandatory with the bid	☐
3	3	3.2.3	Drawing and other documentations	Mandatory with the bid	☐
4	3	3.2.5	Vessel construction experience	Mandatory with the bid	☐
5	Annex H	All	Technical Bid - Annex H Technical Evaluation Plan	Mandatory with the bid	☐
Section II- Financial Bid					
6	Annex D	All	Annex D- Detailed Financial Bid Presentation Sheet	Mandatory with the bid	☐

G1.2 Supporting Deliverable Requirements

If the following information which supports the bid is not submitted with the Bid; it will be requested by the Contracting Authority, and it must be provided within 48 hours (2 business days) of the written request:

No	Part	Article	Description	Condition	Document provided
Section I- Technical Bid					
1	3	3.2.2	Inspection and Test Plan	48 hrs of written request	☐
2	3	3.2.4	Subcontractor list	48 hrs of written request	☐
3	3	3.2.6	Marine Drafting and Engineering capability	48 hrs of written request	☐
4	3	3.2.7	Contractor Quality Management system	48 hrs of written request	☐
5	3	3.2.8	Insurance requirement	48 hrs of written request	☐
6	6	6.5.4	Contractor representative	48 hrs of written request	
Section III- Certification					

7	6	6.9	Welding certification	48 hrs of written request	☐
8	5	5.2.1	Annex F Information required for the Verification of Integrity Provisions	48 hrs of written request	☐
9	5	5.2.3	Canadian Content, completed	48 hrs of written request	☐
10	6	6.20	Applicable laws	48 hrs of written request	☐

G1.3 Contract Deliverable Requirements

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

No	Part	Article	Description	Condition	Document provided
Other documentation after contract award (Reminder)					
1	6	6.10	Project Schedule	5 days after contract award	
2	6	6.17	Inspection and Test Plan	7 days after contract award	
3	6	6.19	Insurance certificate	10 days after contract award	

ANNEX H –TECHNICAL EVALUATION PLAN

H-1.0 Technical Bid Format

The bidder is to respond to the RFP by using the **Table H-1 of this ANNEX - Column B ONLY**

This is a model for the bidder to use. Table's contents are fictional and represent a sample only.

STATEMENT OF WORK	BIDDER " NAME" RESPONSE
2.0 General	2.0 General
2.1 The seventeen foot vessel must be a cock pit design with stowage below the closed bow deck commonly referred as a "Cuddy" style	The proposed seventeen foot vessel features an open cockpit design with stowage below the closed bow deck, commonly referred in the industry as to a '"Cuddy" style vessel.
2.2 Not applicable	2.2 Not applicable
2.3 Not applicable	2.3 Not applicable
2.4 All components, equipment and material must be contractor supplied unless addressed as Government Supplied Material (GSM)	Unless stated otherwise, a;; components, equipment and material will be supplied by the **"Bidder names**"
4.0 Vessel particulars Seventeen foot	4.0 Vessel particulars Seventeen foot
4.1.1 Physical length a) Length- 6.0 to 6.2 M b) Breadth overall Min 2.4 M c) Dead rise Min 16 degrees d) Draft (Outboard down) max 0.9. M e) Draft (Outboard Up) Max 0.5 M f) Freeboard between 0.9. to 1.00 M	4.1.1 Physical length a) Length- 6.19 M b) Breadth overall Min 2.42 M c) Dead rise Min 18 degrees d) Draft (Outboard down) max 0.80. M e) Draft (Outboard Up) Max 0.42 M f) Freeboard between 0.95

H-1.1 Technical Evaluation

The bidder must use the Statement of requirement Annex "A" numbering sequence for the tables below.

The Bidder shall provide, as part of its Technical Proposal, all documents essential to demonstrate compliance with each technical mandatory requirement, including, without limitation, photographs, maps, drawings, calculations, Original Equipment Manufacturer (OEM) specifications, documents, purchase orders (less cost data), job or Quality Control or Quality Assurance record sheets, personnel resumes, current trade certificates and, other such evidence.

The Bidder itself must meet the requirements of each evaluation item listed below, except as otherwise expressly provided in the evaluation item. If an evaluation item expressly provides that it or any element of it may be met by a subcontractor to the Bidder, then the Bidder shall provide documented evidence of such compliance by its subcontractor. In that event, the Bidder shall also provide evidence that it has a binding commitment with that

subcontractor under which the subcontractor will perform services under subcontract with the Bidder under any contract issued pursuant to this RFP, and that such services are of the same type as are specified in the relevant evaluation item.

Lines annotated with the following symbol "◄ "requires drawing to demonstrate compliance with the requirement

(Table H-1- Column C- filled by the technical evaluators)

Table H-1 Mandatory Requirement

COLUMN A	COLUMN B	COLUMN C	
Description	**Bidder Proposal**	**Mandatory Requirement**	
		Bid Ref Page	**Pass / Fail**
CONTRACTOR DESIGN AND CONSTRUCTION PRACTICES			
2.0 General Marine Construction Practises: As applies to Vessel's Specific Construction and equipment			
2.1 Unless stated otherwise all components, equipment and material must be Contractor furnished material, (CFM).			
2.2 Ergonomic Design – General 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. Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort for a range of physiques for individuals from approx. 5 ft. to 6' 4" in height, wearing cold weather clothing and equipment which must be accessible for use, inspection, cleaning and maintenance per ASTM F1166-88.			
2.3 Vibration 1. The boat 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. Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling. 3. Loosening of fasteners under vibration must be prevented by the use of self-locking fasteners, as applicable.			

2.4	**Equipment Protection:** 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:** 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):** The Contractor must have a shop capable of maintaining temperature and humidity. It should be capable of maintaining temperature between 16°C and 25°C. It should be capable of maintaining relative humidity below 70 percent.			
3.0	**Material and Construction Technicalities**			
3.1	**Structural Integrity -** All structures and components (hull, deck, collar, console, seating, etc.) must be of sufficient strength to withstand, when in a Maximum Load condition per **builders' plate**, the lateral and vertical impact loading that equates to the conditions of the operational profile and mission requirements.			
	3.2 Materials – General 1. Environmental Exposure; All materials must be corrosion resistant and suitable for use in a salt-water environment as detailed in the Environmental Conditions portion of the Performance Requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation. 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. 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. Transverse bulkheads or lightened plate frames may use type 5052 to facilitate braked tabs. Specialized use of type 6061 T6 plate in fresh water for high strength delta pads is allowed. 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. 4. Stainless Steel: Stainless steel plate type 316 must be used for all stainless steel applications except as noted. Alloy 316L must be used in welded underwater components. Many commercial components, some fasteners and rivets, use other acceptable grades of stainless steel such as types 18-8 and 304. 5. FRP and Resins - for FRP components, if any: a. Minimum laminating material specification must include gel coats and skin-out of isopthalic resins with a barrier coat wash of the skin-out prior to main laminate and coring materials, which can be laid in GP resins. DCPD resins must not be used. b. Fibre materials to be standard mat / rovings, or “stitch” combined materials, some of which may use Carbon or Kevlar strands. NO “chopper” materials to be used. c. Coring materials to be vacuum bagged and to be designed for usage in these specified vessels. Suitable core materials such as ‘Termanto’, ‘Klege-cell’, and ‘Core-cell’ are acceptable and Balsa or wood, plywood, and non-structural foam materials must not be used, unless specifically required, for example, transom core.			
3.3 Fasteners 1. All fasteners must be of corrosion resistant materials. 2. Cadmium plated parts and fasteners, including washers, must not be used. 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. 4. No fasteners must be directly threaded into aluminium alloys, except with adequate bolt or insert sizes, minimum ¼” diameter, tapped into a suitable alloy type, and thickness, such as1/4” 6061, with the use of thread adhesive type material. Aluminium or Stainless steel washers or backing plates must be used as appropriate. 5. Where nuts will become inaccessible after assembly of the vessel, nuts must be captured, or tapped inserts used, to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration, and adequate thread showing as required. 6. Fasteners in deck traffic areas must be flush-mounted, flat head or oval head, to eliminate tripping and snagging hazards.			

3.4 Construction Procedures: Hulls must be fabricated as per the requirements quoted in Construction Standards and requirements of Vessel Particulars.			
3.4.1 Main Hull and Appendages - Hull Form and flotation. 1.Hull shape must not impede water flow to the propulsion units and must direct spray and waves away from onboard personnel. 2.Watertight and Tank Bulkheads: The hull design must be such that a sufficient number of compartments, or amount of flotation, including hull compartments, and / or low smoke and flame spread flotation foam, or fire retardant flotation, or flotation devices, will allow for adequate stability and positive buoyancy in a flooded condition. See references to vessel certification, re: TP 1332 / ISO testing. **3. Stowage :** 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.			
3.5 Painting and Preservation 1.Fibreglass components must have a coloured gel-coat finish on all exterior surfaces. Gelcoat to be applied at 20-22 mil thicknesses. Finish colour(s) as per Vessel Particulars. 2.Aluminium components must have a painted finish, or powdercoat, on all specified exterior and interior surfaces, comprised of suitable etch, primers, and topcoat per the Vessel Particulars. 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. 3.Prior to delivery the Contractor must ensure that all non-painted exposed aluminium is free of cosmetic blemishes, including all construction marks, scratches, gouges and stains.			
3.6 Propulsion: Unless otherwise specified, propulsion motor(s) will be supplied and installed, per Outfitting section 18.			
1. **Run-in operation:** The Engines must be installed and operated in accordance with the engine manufacturer's recommendations. The use of engine manufacturer's approved accessories and equipment is required except for outboard motor control cables (which must be heavy duty Morse 33C Supreme Red-Jacket ® cables, with manufacturer's cable ends installed, **or** manufacturer's best quality cable sets). Equipment and components must not be used, or trials performed on the engines that would, in any way, void the engine manufacturer's warranties. **See Section 7.3 also**. 2. **Warranty:** All components of the propulsion system must be			

warranted by the original equipment manufacturer for the standard term, sourced by GSM or as Contractor Furnished Material (CFM). 3. **Propellers/Impellers:** Unless otherwise specified, propeller(s)/impeller(s) must be as per Sec 18. Contractor must record in the trials report and equipment lists, the appropriate pitch and diameter to meet the Performance Requirements as determined by the Contractor developed design check, and trials. Propellers must be CFM.			
3.6.5 Steering Systems 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 per Section 19. 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.			
3.7.0 Electrical System 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”, or ABYC ‘E’ as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications. AC systems will be called up in sec. 17, Outfitting. 2. 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. 3. 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.			
3.7.1 Twelve (12) volt DC distribution system must be provided to power the engine starting and boat service loads including: 1. Navigation, interior, and exterior lighting. 2. Electrical equipment. 3. Instrumentation. 4. Bilge Pumps.			
3.7.2 Batteries and Switches 1. Batteries must be marine grade, 12 V, deep cycle maintenance free, and with the ability to cross connect for twin-engine start up of either engine from either battery. Some engine packages may require larger capacity for injection systems, see Sec.17, Outfitting. 2. Battery switch must be Certification Agency, (CE, CSA, USCG, etc.)			

approved and must be mounted to prevent snagging or accidental switching. 3. Battery compartment must be weather tight and fitted with a suitable means of gas venting including for 'sealed' batteries.			
3.7.3 Power Distribution: Cables for all electrical distribution must be ample in size for the particular service, of marine grade tinned boat cable.			
3.7.4 Cabling Installation 1. Cables must be grouped into wiring harnesses wherever possible. All wiring harnesses must be routed below deck. All below deck cabling must be through conduit pipe. A rope leash will be added to each underdeck conduit pipe for ease of furture servicing and or additional cabling. 2. 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. 3. Cables and conductors must be supported with clamps or straps at least every 18 inches on horizontal runs and every 14 inches on vertical runs. No straps are to be used on cables or harness's within the underdeck conduit. 4. Cabling / conductors passing through structures without watertight glands, must be protected against chafing by the use of abrasive resistant grommets. 5. 5. 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. Cabling / conductors passing through structures without watertight glands, must be protected against chafing by the use of abrasive resistant grommets.			
3.7.5 Control and Monitoring Systems: Gauges and Indicators: Dimensions and Mounting 1. Unless otherwise specified, gauges must be analogue-style, or Engine Manufacturers' digital equipment. Gauges must be sized and installed so they are readily visible by the operator while operating the boat. 2. All gauges must be backlit with an adjustable dimmer. Lighting for gauges and lighting for compass must use separate dimmers. 3. Propulsion control system installation must include single-lever			

combined engine control, for each engine, to be located at the operator's position on the starboard side of the control station. Controls must conform to engine manufacturer's recommendations for commercial use. 4. The Operator's position must be fitted with a lanyard style emergency shut down switch which is attached to the operator and must shut down the engine if the lanyard is pulled from the switch, as well as the following: 5. Bilge Pump operation/ indication for each compartment so equipped. 6. High water alarm for the engine installation space, which could be the 'pod' for outboards, and every other space serviced by a bilge pump. 7. Engine space heat rise for inboard installation, with required fire system alarm. 8. Allowance for at least one additional input, if a single integrated alarm panel used.			
3.7.6 Piping Systems 1. Flexible Connections - Where flexible connections are required for steering and fuel systems, suitable hose with permanently crimped, detachable reusable type fittings must be used. 2. Fuel Tanks must be hydrostatically tested, or air tested to 3.0 p.s.i. and be labelled per the requirements of TP1332. 3. Fittings and clamps must be stainless steel. Bolts used in all fittings must be Type 316 stainless steel. 4. Each watertight Hull compartment is to have its own 12V DC bilge pump, plumbed to discharge overboard from the compartment, as per TP1332.			
3.8 Reserved for Fire Suppression - Inboard Engine Configuration			
3.9 Navigation Equipment (COLREGS) *ttp://www.tc.gc.ca/acts-regulations/GENERAL/C/csa/regulations/010/csa014/csa14.html* 1. Navigation lighting fixtures must be of such a design as to resist the effects of vibration and moisture and must be provided with adequate protection from damage. 2. Particular COLREGS rules to note (vessels under 12 M.); Rules 22, 23, and Annex 1, rules 2, 9, and 10. (**NOTE:** The lights must be installed parallel to the "Normal Load" waterline that often may not be parallel to the deck.) 3. The navigation lights must be mounted so as not to interfere with vision of the operator. 4. The navigation lights must be permanently mounted.			

5. The Contractor must supply and install an electric horn that ensures the requirements of the Collision Regulations, Rule 32 are met, i.e. with a standard small vessel 'horn' audible 0.5 NM. The horn must be installed on the vessel exterior with the 'horn' facing forward. (See Section 13.6.) 6. A Magnetic Compass must be mounted near the centreline of the helm station, in easy view of the operator when facing forward. Deviation card development is an Owner responsibility. 7. All vessel lights, navigational and otherwise must be LED			
4.0 Warranty and Service Provisions:			
4.1 Components and Equipment Support All components and all mechanical, auxiliary, electronic and electrical equipment installed on the boat, with the exception of the collar, must be supportable by parts and service in Canada within 30 days. A collar, if any, must be supportable by parts and service in Canada within 30 days. All components and equipment must be current models.			
4.2 Spare Parts 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.			
4.3 Parts and Service Depot(s) Contractor's parts depots must be capable of efficiently supplying all of the Client service area for this vessel, with spare parts for all components of the vessel and warranty service for all components of the vessel. It is recognized that many equipment items will have their own manufacturer's warranty cards for owner registration. Contractors must have a factory authorized service representative capable of call back response in all regions of Canada within **48** hours of receiving a service call.			
5.0 Documentation			
5.1 Technical Publications General: The Contractor must provide, upon delivery of the vessel, one (1) hard copy and one (1) USB electronic copy per vessel produced for the operator of the vessel, plus one (1) hard copy and one (1) USB electronic copy for the Technical Authority, shipped to the same address as identified for invoicing: of a comprehensive owner/operator manual that provides a physical and functional description of the craft, its machinery and equipment, as well			

as delivery testing and sea-trial result documentation. The manual should include but not be limited to sections such as: General Information, Technical Information, and an Initial Spare Parts List. See also section 7.8 for the listing of Deliverables "with each completed vessel".			
5.2 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. Operating procedures. 2. Basic operating characteristics (such as temperatures, pressures, flow rates, etc.) 3. Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step. 4. Recommended planned maintenance. 5. Complete troubleshooting procedures.			
5.3 Technical Information Section: The technical manual should include 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. 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 specification the item appears. 2. Hull; including hull data, TEST and TRIAL results, serial or manufacturer's numbers, and equipment warranty cards. 3. Collar; including collar materials and glue materials, and procedures necessary for onboard repair of the collar. 4. Engine(s) and equipment: including engine and propulsion serial numbers. 5. Electronics, (if applicable): including model and serial numbers. 6. Regulatory and Stability information: as required per TP 1332, which references ISO12217 that further references ISO 6185 for RIBs. 7. Tonnage: Builder to fill out Simplified Method of Tonnage Measurement TC form 4a.			
5.4 Initial Spare Parts List: The Technical manual must also include a list of recommended initial onboard spare parts to be stocked for the craft. At a minimum this list must include the following items (as applicable): 4. Propulsion: Propeller / impeller, filters, water pump impeller, starting battery, throttle and shift cables, any special engine tools.			

5. Electrical: fuses, light bulbs, electrical panel breakers; 6. Boat Structures and Fittings: Miscellaneous commonly used fasteners.			
6.0 **Quality Assurance** The basic reference to ISO 900x compliance is as per the contract document.			
7.0 **Test and Trials:**			
7.1 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 boat: 1. Weight 2. Construction Quality 3. Lifting Gear 4. Propulsion Engines including Starting and Controls 5. Steering System 6. Fuel System 7. Electrical System 8. Electronics			
7.2 **Sea Trials – General** The Technical Authority must be notified no less than 48 hours prior to sea trials. The Technical Authority reserves the right to witness or decline attendance of sea trials, or to require the Inspector to attend. Absence of the Technical Authority, or Inspector at sea trials does not relieve the Contractor of its responsibility to conduct and record sea trials. Sea trial results must be forwarded to the Contract and Technical Authorities prior to delivery of the vessel. The Technical Authority will inform the Inspector of trials so they may attend.			
7.3 **Sea trials** must be conducted by the Contractor to demonstrate the boat and its equipment conform to the requirements as stated in the Contract and the Performance Requirements. 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 vessel during sea trials. Residual fuel, if not drained for shipping, must be delivered in its tank with the boat.			

1. All Sea Trial instrumentation and equipment must be furnished and operated by the Contractor. Trial instrumentation, where applicable, is not to replace the boat's instruments (e.g., engine tachometer, pressure gauges, thermometers). The Contractor must furnish all necessary hardware and fittings and must install the measuring devices. After satisfactory completion of the trials, all instrumentation must be removed and all systems restored. The Contractor must provide calibration data certifying the accuracy of the instrumentation for the tests. 2. The Contractor is required to run the vessel during builders' trials until the engine(s) have accumulated the operation hours sufficient for the initial engine service by the engine supplier, or for 10 hours, whichever is least, and to have a manufacturers' service agent perform the service and provide an initial service report.			
7.4 The Contractor must submit a Test & Trials Plan, including a description of all of the acceptance trials to be performed. As a minimum, the following trials must be conducted: The vessel must operate in the Normal Loaded Condition, per Sec 10.. 1. Speed Trials - The speed trials must be done over a course at least one nautical mile in length. Two runs must be made over the course, one in each direction with the speeds for the two runs averaged. The use of GPS data (averaged) is acceptable. 2. Endurance Trial - During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper installation. Fuel consumption can be calculated using manufacturers' data. 3. Astern Propulsion - The vessel 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 approximately 1/3 of the rated engine horsepower. 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 the boat meets the stated Basic Performance requirements, per Sec 11. Manoeuvring trials must be conducted in the Normal Operating Condition. 5. Lifting Gear Load Test; Vessel and bridle or lift frame may be tested at 150% of normal load condition, as specified in the Vessel Particulars; to lift and hold without deformation of the lift points or associated hull. Lift points to be recessed flush with deck, and certified for load. 6. Stern towing arrangement: Testing bollard pull to design capacity in a direct astern load. Data from previous test to same standard, for same post and construction accepted			

7. At the conclusion of sea trials each boat must be thoroughly cleaned and inspected. Outboard engine cooling systems must be flushed through with fresh water. The Contractor must repair any damage to the vessel or ancillary equipment resulting from sea trials, to the satisfaction of the Inspection Authority. 8. For the purpose of the trials, Normal Loaded Condition is to be considered to be the basic boat, fitted with all normal equipment, full fuel, with complement and loads per Vessel Particulars, section 10.			
7.5 Final Inspection and Acceptance (PWGSC Acceptance Document) for delivery; Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The boat 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. The Contractor must document the results of the final inspection and submit these results to the Inspection Authority; a copy of the trial results must be shipped with the deliverables for each boat, per 7.6/ 7.7.			
7.6 Stability examination per TP1332, from ISO standards 12217 which for RIBs delegates to ISO 6185, or by TP 7301, requires the Contractor to record all stability/ structural, calculation and trial results and provide a copy for each boat produced, to be placed in the technical manual. See Sec. 14 Standards. The trial of the first of a series of vessels can be used for all identical vessels.			
7.7 Trial Records - The Contractor must maintain records of testing for each boat for a minimum of two years. The Contractor must prepare a trials check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the boat in Light Condition, per section 10. The check sheet must also indicate the Normal Loaded weight and the date for the 150% load lifting gear test, if required. This check sheet must be included with the deliverables of each vessel.			
7.8 Standard Deliverables with each completed vessel, one manual per vessel delivered plus one for the client department TA: 1. A detailed operator manual must be provided for all equipment, and systems, per Sec 5. 2. Sea Trial results, and shop testing sheets, including fuel tank test report, per Sec 8.8.6. 3. Acceptance Certificates, and compliance sheets or certificates distributed with equipment i.e. life saving appliances, lifting appliances, engine test reports, calibration certificates, navlight certificates, fire			

suppression material certificates, flotation foam rating sheets (if any). The initial inspection of the vessel(s) after delivery, by Department Self Inspector,, will establish TP 1332 / ISO compliance. (SVMIP self inspection checklist.) 4. Stability information, including ISO calculation sheets or manufacturers flotation tests. 5. Ensure all labelling is in place as per the Small Vessel Regulations Section 5.19 including a decidated locker compartment for safety gear clearly marked **Safety Equipment**.			
8.0 **Packaging and Shipping:** Shipping other than Towing on Trailer			
8.1 Prior to shipping, the boat must be cleaned throughout, preserved and covered (shrink wrap), secured on the boat trailer if any, or chocked as required, in accordance with this section.			
8.2 Bilges must be dry and free of oil and debris and the fuel tanks must be drained.			
8.3 The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one year in an environment that will be subjected to freezing temperatures.			
8.4 The battery must be disconnected.			
8.5 A durable warning tag must be wire tied to the steering wheel indicating that the boat has been preserved for shipping and storage and should not be started until the propulsion machinery has been reactivated.			
8.6 Lengthy shipping arrangements must protect the boat hull from deformation from road irregularities producing, due to repeated bouncing, dents in hulls supported on roller assemblies, by the insertion of a temporary bunk to distribute loads.			
8.7 Towed Delivery on the boats' trailer: In local short haul trips in non-freezing weather, only the cleaning and covering provisions may be required, with the approval of the Inspection Authority.			
9.0 **Trailer Information: IF required:** (See Solicitation Annex 'I' pricing sheet for requested pricing, if any, and section 20 at the end of Vessel Particulars for specific trailer information)			
SPECIFICATION: VESSEL PARTICULARS			
SPECIFICATION FOR ; 6.9-7.4 m. Open Console T-Top Aluminium RIB			
10.0 Vessel Particulars			
Length overall between 6.9 and 7.4 meters.			
Breadth overall (collar inflated) from 2.8 to 3.0 meters (collar approx 0.55m / 22")			

Draft (outboard motor lowered) 0.7 to 0.9 meters			
Draft (outboard motor raised) 0.5 to 0.7 meters			
Open style ; full beam self-draining deck between tube cradles			
Open RIB with T-Top console, Back bolster standing or seating (two positions at console)			
Normal Load conditions: Weight of empty vessel to be reported by bidder - crew of 2 = 250 kg - Fuel = 300 litres minimum in two tank(s), (240 kg) - Equipment & supplies = 500 kg - Normal payload capacity to be approx. 800 kg, / 1760 lb. in addition to full fuel			
10.1 Vessel Tonnage Requirement: Vessel must be shown not to exceed 5 GRT, see sec 5			
11.0 Operational Performance Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in salt water with Normal Load and complement. The craft 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 craft is expected to have a service life of at least 15 years, with an expected usage of between 250 and 500 hours per year. 1. Maximum speed: minimum 35 knots (at normal load condition). 2. Minimum speed: 20 knots in Beaufort Force 5 with 20 knot wind, in two meter seas. 3. Endurance: maximum speed for 2 hours. 4. Range: 200 nautical miles with 10% reserve at 20 knot minimum speed. 5. Capable of steering 15° from heading, in Beaufort Force 5, with seas from any direction. 6. Steer and manoeuvre effectively at 3 knots in Beaufort Force 5. 7. Maintain course, made good over ground, when proceeding at 3 knots with relative cross wind of 27 knots (Beaufort 6).			
11.1 Beaching 1. Capable of beaching on soft (sand, earth or clay) surfaces at a speed of up to 5 knots without damage to the hull. 2. Capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to the hull.			
11.2 Depth under Keel			

1. Operate carefully in depths of 1 meter with outboard motor or outdrive lowered. 2. Basic manoeuvring in depths of 0.70 meters with outboard motor or outdrive in the partially raised position			
12.0 Environmental Conditions: Capable of operating day or night in the following conditions: 1. Average ambient air temperature range: -10°C to + 30°C 2. Average water temperature: 0°C to +20°C. 3. Wave heights of up to 4 meters (Beaufort Force 6). 4. Wind speeds to 27 knots. 5. 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 6.			
13.0 Open T-Top Vessel Configuration			
13.1 General Deck Arrangement 1. There will be at least 3 tie up points along the side deck / transom. One cruciform tow post forward, 2 cleats aft, (transom corners). 2. A permanently mounted hand cranked towline recovery reel shall be installed,100m of buoyant ¾ inch diameter towline. Tow Recovery Reel must have a cover made of marine grade weather resistant material that protects the tow rope from the elements when not in use. The hand crank shall be removable and have permanent storage pocket for the handle. There must be a screen protection barrier fitted on the transom to prevent aft egress and recoil of towing line. Tow reel must be of a height that ensures tow line when deployed clears the engines and engine guard in all applicable sea states. 3. A full width dual position console must be integrated into the T-Top structure with windshield, roof and with low profile top mounted equipment arch (see section 13.2) 4. One back bolster / console seating assembly for two with lockable stowage .See section 13.3. The bolster will be narrower than the console, allowing on deck passage aft around the bolster. 5. There must be a tow post fitted near the centre of the transom with triangulating braces to the transom, used for EMERGENCY towing, rated for 3000 lb. (1360 kg.), ahead of the thrust point of the craft. 6. Vessel must be fitted with aluminium protective pipe bracket, which extends around the outside of the outboard motors. This guard must be fabricated so as to be easily removed to facilitate the removal of the			

outboard engines **7.** Vessel must be equipped with securing eyes fitted to the outside of the transom used for trailer tie downs, and bow eye for towing and trailer tie down.			

13.2 Seated or Standing Console, with Windscreen and T-Top 1. T-Top console to be constructed to low weight, high strength specifications from aluminium to withstand the accelerations of the vessel while in extreme service conditions. Successful construction methods presented include main console construction of 3/16" plate, braked at the corners, with tiered and/or sloped top surfaces for installation of controls and electronics. Alternate construction method using 2" sched 40 pipe framing with plate panels filling the console and window faces is also commonly used. Weight and structural integrity are paramount concerns. 2. An overhead console must be fitted with space adequate for two VHF radios, which must not protrude into the headroom of operators standing ahead of the seating. 3. The console must have its sides very close to the tube cradle frame and have gusseted steps that are attached at the sides, laying over the tube to approximate centreline. There must be tube cradle height steps into the console seating area, and forward to the foredeck. The operator console must have a weather tight aft face 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. 4. 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 (outboard) from center so as to provide minimal visual obstruction to forward operators. 5. There must be a forward window and side windows on the console. The space on the console face must be sufficient in area to incorporate all required instrumentation including future installing of navigational screen (Raymarine C90W) and police radio. Forward window to be equipped with top mounted, wide sweep, pantograph wiper system. The aft sweeping forward corner frames must also be equipped with air dams to control air and water "wrap" of the window corners. Dams to continue aft and direct water to the aft corners of the T-top. Side and aft pipe handrails must be provided on the T-top roof frame to provide handholds when standing on tubes or aft deck. These handrails to integrate with the forward window frame corner rails. 6. The T-Top must be supported at forward corners of the console top, and possibly 2/3 aft along the roof, behind the forward operator seating, with overhang aft sufficient to cover aft bolster seating assembly. 7. T-Top to have incorporated arch and bracket(s) for mounting of radio			

antennas, nav. lights, blue strobes, deck lights, loud hailer, and mounting of Raydome (4kw). Arch to have mouse lines, inserted into arch framing for ease of future electronic installations.			
13.3 Seating and Stand-up Operation			
1. Bolster unit with fold down padded seating for two positions with incorporated storage locker underneath. Ergonomic considerations may require adjustable steering wheel and / or binnacle on console extension. a..Seating bolster assembly to be positioned in such a way as to provide operator support with seating assembly folded down while driving in a standing position.. b. The bolster console mounting area to be suitably reinforced and framed to support the full G-load capability. A 4" recess or "kick" at the sides only of the bolster, up to 6" above deck, is required to ease access around the sides of the bolster when passing to and from the aft deck to control positions. c. The bolster console to have incorporated lockable stowage compartment with access door top of aft face of assembly. 2 Foot Rests: There must be pipe foot rest(s), servicing each position at the console.			
13.4 Console Utilities 1. This vessel must be equipped with a 3.0 kW power charger / inverter that connected s tied to one (1) deep cycle large capacity marine house battery and a start battery per engine. 2. There must be two (2) 110 VAC power receptacles in the main cabin area one located near each forward shock mitigating seat. 3. There must be a shore power 110v receptacle, 30-amp connection, exterior on aft bulkhead of house. 4. The cabin must be equipped with an interior diesel heater capable of heating the interior area of the vessel with a 20% reserve BTU rating; model 10DW Webasto or equal. 5. Outlets from the diesel furnace must be located in the cabin, at the navigation and helm positions near the deck, and the window supply plenum(s) port and starboard. 6. The front windshield defroster(s) must have a variable three-speed fan and be capable of clearing the entire front windshield area of the vessel. Heater switching and defrosting controls to be mounted on the dash, navigator's position. 7. The front windshield defroster must be capable of blowing both cold and heated air. 8. The cabin must have at least two variable speed fans capable of circulating the air in the cabin. A positive pressure intake fan with water exclusion intake protection must supply air to the cabin.			

9. There must be a red chart lamp on the communications side of the console, for the navigator with switch, and dimmer.			
13.5 Dash / Helm Station 1. The Helm station will be on the Port side of the console, with controls on centre. 2. The helm will incorporate a steering system, capable of handling the horsepower of the vessel, with manufacturers' engine controls designed for the power units. 3. There will be provision for an array of control gauges and electronic equipment at the helm position, see electronics section 17.2. 4. In addition, if not included with above gauge package, outboard trim gauges, and fuel level gauge(s) will be installed. 5. There will be a console mounted magnetic compass, see 13.6 following. 6. All lights switches and breakers must be within easy reach of the helmsmen. 7. In addition to the factory supplied individual propulsion leg trim controls there will be a SYNCRO trim switch to integrate the outboard controls on one switch.			
13.6 Navigation Lighting and Equipment: LED options must be used where available			
a. Two Blue strobe lights mounted port and starboard on the arch in such a way as to not interfere with future mounting of (4kw) Raydom,(The Aqua Signal Corporation, series 40 strobe light meets this requirement). b. The Contractor must supply and install an electric horn that meets the requirements of the Collision Regulations. The horn must be operated by a spring-loaded switch located on the operators' console. The "Signaltone", or Ongaro electric horns meet this requirement. c. Navigation lights must be permanently fitted to the T-Top with protected wiring and must be waterproof. The fitting of a combined navigation sidelight lantern on the inflatable collar will not be acceptable. All around mast /anchor light ratchet mast mounting is acceptable. d. The fixtures must be of such a design as to resist the effects of vibration and must be provided with adequate protection from damage that may occur when lying along side 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.) e. 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. Two switches to be provided, labelled: Nav masthead / anchor and Nav sidelights. f. Magnetic Compass: The Contractor must provide and install a direct read compass, with light. (The Ritchie Helmsman 70 series meets this requirement.)			
13.6.1 Utility Lighting: a. Contractor must supply two (2) handheld search lights for the vessel. Each light must be 12 volt and must produce 1 million candela. Two 12V power points required, one each on forward face, and dash (communication side) of console b. The deck flood lights (4 of) to be fitted on the T-Top of the vessel, 1 facing forward, 1 facing aft and one each facing outboard port and starboard three individual switched circuits….front, rear and sides. c. An overhead light with red / white capability to be installed overhead under the T-Top for console illumination.			
13.7 Exterior Equipment 1. Transom deck drainage scuppers will be of a size to allow sufficient drainage of forward and aft sections of exposed deck surfaces per TP 1332 and ISO. 2. All deck cleats, bollards, arch or fittings to be painted, or powder coated flat black.. 3. Locking bilge access in open vessels' below deck stowage. 4. Locking fuel filler access, forward on bow box.			
13.8 Paint and Finishing: 1. Hull and deck to be medium grey (RAL7042) except flat black specified areas or components, RAL9004. 2. Walking deck, including bow box top and portions of pod deck to be finished in dark grey non-skid paint. 3. The console of the vessel must be painted in a matt black in the interior, not including overhead, and medium grey on the exterior. 4. Collar to be grey, with black bombard, and protective belting cladding at step treads and standard under tube protection aft.			
14.0 Construction Standards			
1. Transport Canada Marine Safety Regulation **TP 1332** "Construction Standards for Small Vessels", which incorporate references to **ABYC** standards for equipment such as fuel tanks and fuel systems, as well			

as tank space ventilation, and **ISO** standards for stability, loading capacity, etc. as delegated to ISO 12217-1 and then to ISO 6185-3 for RIBs over 6 M. *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1332/tp1332e.htm* **2. TP 1332 referenced ISO 6185-3 will require that full structural (drop tests), and stability testing must be arranged for this vessel (unless previously tested), as described in ISO 6185-3, near the completion of construction to verify compliance. Superior IMO testing certificates are acceptable substitutes.** *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1332/tp1332e.htm* 3. Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats **and ABYC 'E' electrical standards**". 4. Transport Canada Marine Safety Regulation TP 1324 "Coated Fabrics". *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1324/tp1324e.htm*			
15.0 Construction Drawings and Data			
1. The following, "As Fitted", dimensioned drawings must be produced for manuals to record the vessel particulars. 2. - Lines Plan with minimum 8 sections through hull, plus deadrise angles as indicated in 16.2. - General arrangement Plan and Profile, to record primary dimensions, and equipment. - Lifting arrangement profile to be shown as part of the GA profile. - Vessel midship structural profile and section showing the console / operating position in the deck. - Systems drawings presented on as many sheets as required for clarity covering Bilge, Fuel, Electrical, and Driveline or mechanical drawing as required.			
16.0 Hull and Deck: Construction and Finish:			
16.1 Hull and Deck: The hull, and deck, must be constructed of aluminium. Hull bottom plate to be ¼" and hull side and deck plate to be 3/16" pl, type 5086 alloy.			
16.2 - The hull is to be a minimum 24 degree (transom) deadrise "V" style monohull with a reverse chine flat and hull bottom to incorporate minimum one substantial (~1.5" vertical, aft, located approx mid bottom panel) or two smaller spray strakes on the bottom, per side, which run			

out to the stem. Deadrise at 25% aft to hull transom from the main chine at stem must be minimum 32 degrees. 1. The hull and decks are to be transversely framed and longitudinally stringered. 2. Deck hatches to be arranged in way of fuel tanks and stowage, as well as quick accesses as required by TP1332 for utilities.			
16.3 Deck: Deck wells must be self-draining, by means of non-return freeing ports in the transom, or aft end of the cockpit.			
16.4 Windows are to be laminated safety glass, and carry the manufacturers' certification confirming construction. Forward windows are to be minimum 3/8". Smaller side windows can be minimum 1/4" thick laminated, safety glass, if supported in frames, or minimum 3/8" Lexan if not supported all around. A pipe handrail must shield the aft edge of lexan side windows so that operators cannot be thrown against the edge of the lexan.			
16.5 Stowage, Lifting and Trailer Securing Points: 1. Arrangements must be provided for safe, secure and accessible stowage of an anchor and cable, and other equipment in bow / anchor locker. 2. **Tie Downs**: Port and Starboard trailering tie down points to be incorporated in transom. **3.** 3. **Lifting**: Not required for this contract.			
16.6 Bow Eye - A system is to be designed and incorporated into the construction of the stem that allows for the bowline and or trailering hook to be attached to the bow and which must not protrude from the line of the stem. The fitting must be of a non-corrosive material and of sufficient strength to allow for towing the vessel at a speed of 20 knots in calm water in the normal loaded condition, on an even keel, without damaging the vessel or causing chafing of the towline.			
16.7 Pumping and Drainage: 1. A marine grade electric bilge pump with 2000 gph capacity must be fitted in the main hull or largest hull compartment as well as a fixed manual operated bilge pump of the diaphragm type. The bilge pump must be located so that it takes suction from the lowest point of the compartment. Piping must be installed which will allow the bilge pump to discharge directly overboard aft. Any additional watertight division of the hull must be serviced by a bilge pump of min. 1500 GPH capacity. (The Rule® 1500 Model Submersible Bilge Pump, and Rule series pumps meet the electric bilge pump requirement)			

2. The electric bilge pump control panel must be located visibly on the operator's console, with settings for 'on', 'off' and 'automatic' operation. An indicator light must be provided at the console that lights when the bilge pump is operating. 3. An automatic float switch control must be fitted that turns on the electric bilge pump when water is present in the bilge. (This" float switch" must be separate and independent of bilge assembly allowing operator to manually confirm bilge operation. An Ultra® Junior Model Float Switch meets this requirement.) 4. Bilge High Water Alarm for each compartment equipped with a pump as per TP1332 including the outboard engine pod, with alarm indicators at helm to be clearly visible by the operator. 5. Hull drainage - a non-corroding threaded plug must be provided in the lowest point to drain the aft compartments of the hull when out of the water 6. Any forward water retaining compartment without pump will have a piped drain to the aft bilge where a stainless steel ball valve must be located readily accessible for testing or draining the forward bilge to the aft pump. 7. 7. A Manual pump such as Whale 'Gusher" is required as noted in lifesaving sec. 17.1			
16.8 Arch / Self Righting System: 1. Arch – See section 13.2.7			
16.9 Collars			
1. Collar must be an inflatable type with at least 5 separate chambers of approximately equal volume, each fitted with a suitable inflation system and over-pressure relief valves calibrated to 3 psi. (the Halkey Roberts model 690BV inflation valve and the Mirada model B51019 3.5 psi over pressure relief valve, meet this requirement). 2. Inflatable collars fitted must be constructed of material that meets the criteria for strength, elasticity, resistance to wear and longevity as defined in TP 1324. (1650 / 1880 Decitex Neoprene / Hypalon coated nylon fabric meets this requirement) and must be Neptune grey in colour. 3. Inflatable collars must be attached to the hull using mechanical fasteners in such a manner that the collar can be easily removed for repair or replacement. The use of screws and lag bolts or glue-on type collars is not acceptable. 4. Collar to be supplied with two pair of step treads (EPDM or eq.) installed in way of the cockpit access and a transom tube tensioner.			

5. Inflatable collars must be provided with minimum 5 protective Grey wear strips all around, of extruded neoprene rubber, or equivalent, rubbing strakes (minimum 75mm wide, 'Bombard' style) to be glued along the entire length of the outboard side of the collar to provide protection against abrasion and puncture. The bottom of the inflatable collar wetted surface of the tubes must have a protective layer of material installed. (EPDM or eq.) 6. Grab lines of nylon braided rope construction ½" diameter, must be fitted along the collar on both the port and starboard sides to provide access from both within the boat and for persons in the water. Grab lines must be mounted on the centreline of the collar, by means of a lacing cuff (not by D-Ring attachment). 7. A repair kit must be provided for inflatable collars. 8. All seams are to be hand buffed and glued 9. Polyurethane sealant should be used on all interior seams and baffle edge. 10. Foot pump, with correct valve fitting to be supplied (bellows type, for collar)			
17.0 Specification: OUTFITTING and EQUIPMENT			

Lifesaving Emergency Equipment: The following items must be supplied and provided with stowage / securing arrangements (as appropriate for each item). All CFM fittings must be heavy duty, corrosion resistant stainless steel fittings. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker): 1. Fire extinguishers (Class B1, marine type; three of, 2 aft in cabin, one in the forward console area near the electrical systems. 2. Two (2 paddles of a useful length). 3. 'Danforth' style galvanised steel anchor of a size suitable with chain and rode. 4. One manual bilge pump, as specified elsewhere. 5. One heaving line not less than 15 meters, with life buoy or quoit, 6. One watertight flashlight. 7. Pyrotechnics Type A. Qty. three (3), and Type B or C Qty. three (3). 8. Re boarding device if vessel freeboard is above 0.5 meters. 9. Marine First Aid Kit as per Small Vessel regulations 2010 Section 8.1. **B. Additional Operator Safety Equipment** 1. Fume (gas) detector in the bilge. 2. Carbon monoxide detector in the cabin. 3. Drogue sea anchor and 100 feet of 1/2 " braided nylon line. 4. Mooring lines, four (4) X 20 X 5/8" braided nylon line with eye spliced into one end. 5. Collar patch kit (for inflatable collar). 6. One EPIRB ACR Globalfix Category 1 with Hydro static housing mounted to the aft exterior of the cuddy cabin. 7. One telescopic boat hook			
17.2 Navigation Electronics This vessel is to be equipped with the following integrated electronics navigation package, with displays located across the forward dash, in addition to the COLREGS required equipment. Both displays to be interconnected with navionics gold cartography included for Canada with VHF interfaced with the master chart plotter monitor. 1. One RAYMARINE C-97 Multifunction display at helm station 2. One RAYMARINE C-127 Multifunction display at the navigation			

station. 3. One RAYMARINE 24"4 KW Raydome Standard Definition Radar dome 4. One (1) ICOM Model 604 DSC VHF radio flush mount at navigators position. 5. One Airmar GH 2183 Electronic compass heading sensor. 6. One Morad VHF-156HD antenna with composite transition mounts. 7. One plastic through hull transducer. 8. One Comar AIS (receive only) with VHF splitter. 9. Builder to supply all inter-connect cables for above. 10. Contractor to supply and install antenna assemblies on T-Top arch and run coaxle cabling for both police and VHF radios. * Multiple antennas are to be mounted no closer than 24" from one another. * Antennas are to be mounted no closer than 17" from any vertical mast, metal plate or object. * All radio coaxle cabling to have separate designated underdeck conduit pipe routing. * All antenna mounts are to be NMO and sealed underneath to prevent salt water corrosion. * Radio kits will be GSM supplied and installed. Note that adequate space on the console must be set aside for GSM install and supply of police radio.			
18.0 Propulsion			
1. Unless otherwise specified, propulsion must be by TWO of, Government Supplied (GSM) 150 HP Yamaha, (one counter rotation), 4-Stroke, gasoline outboard motor c/w 25" leg. All other engine equipment CFM. 2. Motors should be mounted in accordance with manufacturer's recommendations. 3. Engine package must incorporate an automatic shutdown feature (kill switch) for the engine to be mounted near the ignition switch. 4. Contractor to supply and install equipment included in the manufacturers' standard gauge package, and appropriate cables and			

harnesses, for the specified engine: 5. Propulsion controls to be OEM single lever per engine with trim switches and synchro 6. Separate analogue hour meter will be installed for each engine.			
18.1 Fuel Systems:			
1. Fuel systems must meet with all requirements of TP 1332 “Construction Standards for Small Vessels”, which reference the ABYC standards. **Regardless of interpretation of TP 1332 requirements, below deck fuel tank compartment MUST have both passive and powered bow to stern ventilation system installed with clearly labelled switch at the helm.** 2. The vessel must be fitted with two (2) fuel tanks with baffles, to be located under the deck for a total capacity of not less than three hundred (300) litres. 3. There must be inspection hatches (8”) in the deck, to allow access to the fuel pick ups, (with the required ‘demand anti siphon’ valve at the tank if flow rates meet the manufacturer’s requirement), vent, and fill connections, and tank level indicators. 4. Arrangements must be provided for fuel tank and associated lines, vents, fills, and on / off valves, to be fitted to the boat. 5. Fuel lines from the required inboard shutoff valve or manifold to the outboard motor(s) to be protected against chafing and wear. 6. A fuel / water separator filter is to be mounted “in-line” to each engine with easy access to drain the sediment bowl. 7. Fuel shutoff maintenance valves are to be installed at filter/ manifold system and be easily accessible by vessel operators. 8. Fuel fills (lockable) and vents to be located at forward bow locker location. 9. Dual Racor fuel filter assembly required with see through bowl for easy inspection. Filter assembly must be located outside of any enclosed compartment designated to contain safety gear, electrical systems or any other fuel sensitive systems and or accessories.			
19.0 Steering			
1. Steering systems must be hydraulic with a maximum of 3.5 turns from hard over to hard over. (The SeaStar® and / or DayStar steering systems, depending on vessel horsepower, from Teleflex meet this requirement, as do Mercury steering pumps). Particular propulsion systems may have their own requirements for steering which must be adhered to, eg. Jet steering systems. 2. All hydraulic steering hoses must be routed below deck and all hoses must be routed so that there are no pinch or chafing points on the			

hoses. 3. The wheel / console connection must be of robust construction, to eliminate fore and aft or lateral movement of wheel / steering shaft fixture. 4. The Steering wheel must be stainless steel and may be rubber or plastic covered. or The Steering wheel must be stiff enough that during rough water operations there is no flexing of the wheel and the wheel should be padded to provide a comfortable non-slip surface for the operator to grip. (Momo Marine steering wheels meet these requirements)			
20.0 Trailer			
1. The trailer must be rated approximately 20% over the anticipated 'wet' weight of the vessel having the following features: - welded galvanized modular steel or aluminum I Beam construction, tandem axle; - Vault Style axle hubs. - brake, running, turn signal, and backing lighting with seven (7) pin RV wiring connector - electric/hydraulic, jurisdiction compliant disc braking system; - bow winch assembly with winch strap and bow chock; - radial tires; - tongue jack, 2500 lb. with pad; - full size wheel mounted spare tire; - combination double bunks forward with aft rollers, and spare tire and carrier; - heavy duty 'stand-on' fenders and hitch to accommodate a two (2 5/16") inch ball. 2. The trailer shall be equipped with fenders and mudguards, which conform to Transport Canada Standards, and have required lighting using LED lights. The trailer must be provided with two 2 galvanized safety chains and shackles of suitable size and rating. All electrical connections are to be sealed from the atmosphere. 3. The trailer must be equipped with a two (2) speed manually operated winch of a suitable size and rating with a web strap cable with a hook rated for the trailer design load. Web strap length must be at least 914 cm, or 29 ft. 11 ¾". The sides of the trailer shall be fitted with two (2) eyes per side for shackles to secure the vessel to the trailer. 4. The Contractor must supply two (2) suitable adjustable hold down cables/straps. A galvanized safety chain and shackle must be provided			

on the front of the yoke assembly for securing the bow of the vessel. 5. The trailer must be adjusted for the vessel. The winch, stand and turnbuckles are to be capable of withstanding long journeys on rough terrain.			

Evaluator's Certification

print name	signature	date
print name	signature	date
print name	signature	date