

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
B3J 1T3  
Bid Fax: (902) 496-5016

**INVITATION TO TENDER**  
**APPEL D'OFFRES**

**Tender To: Public Works and Government Services  
Canada**

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

**Soumission aux: Travaux Publics et Services  
Gouvernementaux Canada**

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

**Comments - Commentaires**

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

**Issuing Office - Bureau de distribution**

Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
B3J 3C9

<b>Title - Sujet</b> CCGS SAMBRO REFIT	
<b>Solicitation No. - N° de l'invitation</b> F5561-132413/A	<b>Date</b> 2013-07-30
<b>Client Reference No. - N° de référence du client</b> F5561-13-2413	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$HAL-403-9048
<b>File No. - N° de dossier</b> HAL-3-71097 (403)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2013-08-20</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT	
<b>F.O.B. - F.A.B.</b>	
<b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Brow, Theresa	<b>Buyer Id - Id de l'acheteur</b> hal403
<b>Telephone No. - N° de téléphone</b> (902) 496-5166 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF FISHERIES AND OCEANS CCGS SAMBRO NS COAST GUARD CUTTER SAMBRO POST OFFICE SAMBRO NOVA SCOTIA B0J2Y0 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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## **PART 1 - GENERAL INFORMATION**

### **1. Introduction**

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

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, the Insurance Requirements, and any other annexes.

### **2. Summary**

The Contractor must:

- a. carry out the maintenance and alterations of the Department of Fisheries and Oceans vessel CCGS SAMBRO in accordance with the Requirement at Annex A.
- b. carry out any approved unscheduled work not covered in the above paragraph (a).

### **3. Debriefings**

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

## **PART 2 - BIDDER INSTRUCTIONS**

### **1. Standard Instructions, Clauses and Conditions**

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

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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 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements are incorporated by reference into and form part of the bid solicitation.

## **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.

## **3. Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than Five (5) 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 questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

## **4. Applicable Laws**

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

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.

## **5. Bidders' Conference**

N/A

## **6. Optional Vessel Visit**

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for a tour of the work site. The site visit will be held on August 13, 2013 at 1000 hrs local onboard the vessel at the Government Wharf, Sambro, NS. Bidders are requested to communicate with the Project Authority two (2) days (Friday, Aug 9th) before the scheduled visit to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders who do not attend or send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

A9038T (2006-06-16)

## 7. Work Period - Marine

Work must commence and be completed as follows:

Commence: 03 September 2013

Complete: 27 September 2013

By submitting a bid, the Bidder certifies that they have sufficient material and human resources allocated or available and that the above work period is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.

D6007T (2007-11-30)

## 8. Project Schedule

As part of its technical bid, the Bidder must propose its preliminary project schedule, in Gantt chart format. The project schedule must include the Bidder's work breakdown structure, the scheduling of main activities and milestone events, and any potential problem areas involved in completing the Work.

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

- a. Vessel Docking ;
- b. Vessel Undocking ;
- c. Sea Trials.

A0011T (2007-05-25)

## 9. Vessel Transfer Costs

**9.1** The evaluation price must include the cost for transferring the vessel from its home port to the shipyard/ship repair facility where the Work will be performed and the cost of transferring the vessel to its home port following completion of the Work, in accordance with the following:

a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause:

Proposed shipyard/ship repair facility: \_\_\_\_\_

Applicable vessel transfer cost: \_\_\_\_\_ .

b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least Five (5) calendar days before the bid closing date, of its proposed location for performing the Work.

The Contracting Authority will confirm to the Bidder, in writing, at least Three (3) calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

A bid that specifies a location for executing the Work which is not on the list of paragraph 2 of this clause, and for which a notification in writing has not been received by the Contracting Authority as required above, will be considered non-responsive.

## 9.2 List of shipyard/ship repair facilities and applicable vessel transfer costs

Vessel: CCGS SAMBRO

Home port: Dartmouth, Nova Scotia

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility.

Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

Transfer costs in the case of vessels transferred unmanned by either commercial towing, railway, highway or other suitable means of transportation must be:

- i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or
- ii) identified as the applicable vessel transfer cost, as given in the list below, in the case when Canada is responsible for the transfer.

Company	City	Transfer Cost
AF Theriault	Methegan, NS	\$2,553.00
Shelburne Ship Repair	Shelburne, NS	\$1,629.00
LIFE	Lunenburg, NS	\$814.00
Abco	Lunenburg, NS	\$814.00
CME Marine	Sambro, NS	\$0.00
Aecon Fabco	Pictou, NS	\$3,125.00
Samson Boats	Arichat, NS	\$2,103.00
Burry's Shipyard	Clareville, NL	\$9,184.00
Dawe's Welding	Harbour Grace, NL	\$8,734.00
NewDock Dockyard	St. John's, NL	\$8,196.00
Verreault Navigation	Les Méchins, QC	\$10,441.00
Halifax Shipyard	Halifax, NS	\$595.00

A2040T (2008-05-12)

## 10. Docking Facility Certification

Before contract award, the successful Bidder may be required to demonstrate to the satisfaction of Canada that the certified capacity of the docking facility, including any means or conveyance to remove the vessel from the water, is adequate for the anticipated loading in accordance with the related dry docking plans and other documents detailed in the Contract. The successful Bidder will be notified in

writing and will be allowed a reasonable period of time to provide detailed keel block load distribution sketches and blocking stability considerations, along with the supporting calculations to show the adequacy of the proposed docking arrangement.

Before contract award and within Five (5) calendar days of written notification by the Contracting Authority, the successful Bidder must provide current and valid certification of the capacity and condition of the docking facility to be used for the Work. The certification must be provided by a recognized consultant or classification society and must have been issued within the past two years.

Although a dry docking facility may have a total capacity greater than the vessel to be docked, the weight distribution of the vessel may cause individual block loading to be exceeded. Also, while the physical dimensions of a dry docking facility may indicate acceptability for docking of a specific vessel, other limitations such as spacing of rails on a marine railway, concrete piers of abutments adjoining the dry dock may, preclude the facility from being considered as a possible dry docking site and render the bid non-responsive.

B9006T (2008-05-12)

#### **11. Workers Compensation Certification- Letter of Good Standing**

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

The Bidder must provide, within Five (5) days following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

A0285T (2007-05-25)

#### **12. Welding Certification**

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

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

CSA W47.2-M1987(R2003), Certification of Companies for Fusion Welding of Aluminum (Minimum Division Level 2.1).

Before contract award and within Five (5) calendar days of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its certification to the welding standards.

B4075T (2008-05-12)

#### **13. SAAC Manual Clauses**

A7035T (2007-05-25) List of Proposed Sub-contractors

A9125T (2007-05-25) Valid Labour Agreement

### **PART 3 - BID PREPARATION INSTRUCTIONS**

## 1. Bid Preparation Instructions

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

Section I: Financial Bid (1 hard copy)

Section II: Certifications (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 (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

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

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

### Section I: Financial Bid

1.1 Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet in Annex "F". The total amount of Applicable Taxes must be shown separately, if applicable.

### 1.2 SACC Manual Clauses

C0414T (2008-05-12) Vessel Refit, Repair or Docking – Cost  
C0417T (2008-05-12) Unscheduled Work and Evaluation Price

### Section II: Certifications

Bidders must submit the certifications required under Part 5.

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

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## 2. Basis of Selection

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

A0069T (2007-05-25)

## 3. Public Bid Opening

A public bid opening will be held in the offices of Public Works and Government Services at 1713 Bedford Row in Halifax, Nova Scotia at 2:00 PM ADT on 20 August 2013

A0017T (2007-05-25)

## PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications, to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### 1. Mandatory Certifications Required Precedent to Contract Award

#### 1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true

#### 2. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, 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.

#### 2.1 Supporting Certifications and Technical Deliverable Requirements

- a. **Project Schedule**
- b. **Docking Facility Certification**

- c. **Workers Compensation Certification- Letter of Good Standing**
- d. **Welding Certification**
- e. **List of Proposed Sub-contractors**
- f. **Valid Labour Agreement**

## **PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS**

### **1. Security Requirement**

There is no security requirement associated with the requirement.

### **2. Financial Capability**

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

### **3. Insurance Requirements**

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

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.

G1007T (2011-05-16)

## **PART 7 - RESULTING CONTRACT CLAUSES**

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

### **1. Requirement**

The Contractor must:

- a. carry out the maintenance and alterations of the Department of Fisheries and Oceans vessel CCGS SAMBRO in accordance with the Requirement at Annex A
- b. carry out any approved unscheduled work not covered in the above paragraph (a).

### **2. Standard Clauses and Conditions**

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

#### **2.1 General Conditions**

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2030 (2013-03-21), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

## 2.2 Supplemental General Conditions

1029 (2010-08-16) Ship Repairs, apply to and form part of the Contract.

## 3. Term of Contract

### 3.1 Work Period - Marine

Work must commence and be completed as follows:

Commence: 03 Sept 2013

Complete: 27 Sept 2013

The Contractor certifies that they have sufficient material and human resources allocated or available and that the above work period is adequate to both complete the known work and absorb a reasonable amount of unscheduled work.

D6007C (2007-11-30)

## 4. Authorities

### 4.1 Contracting Authority

The Contracting Authority for the Contract is:

Theresa Brow

Supply Specialist

Public Works and Government Services Canada

Acquisitions, Marine

1713 Bedford Row,

Halifax, Nova Scotia

Telephone: (902) 496-5166

Facsimile: (902) 496-5016

E-mail address: Theresa.Brow@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.

### 4.2 Project Authority

The Technical Authority for the Contract is:

Dan Chipman

Canadian Coast Guard

Telephone: (902) 426-2798

E-mail Address: Todd.Smith@dfo-mpo.gc.ca

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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.

A1030C (2007-05-25)

## **5. Payment**

### **5.1 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 as specified in Annex "B". Customs duties are included and Goods and Services Tax or Harmonized Sales 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.

C0207C (2011-05-16)

### **5.2 Limitation of Price**

SACC Manual clause C6000C (2011-05-16) Limitation of Price

SACC Manual clause H1000C (2008-05-12) Single Payment

## **6. Invoicing Instructions**

The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed. Invoices are to be made out to:

Fisheries and Oceans  
Marine Engineering  
Maritime Regional Headquarters Building  
50 Discovery Drive, level 4  
Dartmouth, Nova Scotia  
B2Y 4A2

Attention: Diane McNair

The original invoice is to be forwarded for verification to:

Public Works and Government Services Canada  
Acquisitions, Marine  
P.O. Box 2247, 1713 Bedford Row  
Halifax, Nova Scotia  
B3J 3C9

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Attention: **Theresa Brow**

H5001C (2008-12-12)

## 7. Project Schedule

The Contractor must provide a detailed project schedule in Gantt chart format to the Contracting Authority and the Project Authority One (1) week after award of Contract. This schedule must highlight the specific dates for the events listed below and all items listed in the Pricing Data Sheet .

The Contractor's schedule must include target dates for each of the following significant events:

- a. Vessel Docking ;
- b. Vessel Undocking ;
- c. Sea Trials .

A0011C (2007-05-25)

## 8. Meetings

Progress meetings, chaired by the Contracting Authority, will take place at the Contractor's facility as and when required, generally once a month. Interim meetings may also be scheduled. Contractor's attendees at these meetings will, as a minimum, be its Contract (Project) Manager, Production Manager (Superintendent) and Quality Assurance Manager. Progress meetings will generally incorporate technical meetings to be chaired by the Technical Authority.

B9035C (2008-05-12)

## 9. Provision of Office Accommodation by the Contractor

For the period of the Contract, the Contractor must provide furnished office accommodation for authorized representatives of Canada as follows:

- a. provide high speed internet (wired or wireless)
- b. provide the temporary use of a black and white printer / scanner (USB)

The above office furnishings and accommodations are to be made available for one (1) representative of Canada only and may not be occupied at all times during the period of the Contract. During periods of inoccupancy the Contractor may make other uses of the office accommodations as required.

A9060C (2006-06-16)

## 10. Welding Certification

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 W47.1-03, Certification for Companies for Fusion Welding of Steel, minimum division level 2.1; and

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

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

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.

B4075C (2008-05-12)

#### **11. Inspection and Acceptance**

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

D5328C (2007-11-30)

#### **12. Outstanding Work and Acceptance**

The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the form PWGSC-TPSGC 1205, Acceptance. 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 that work is completed.

The Contractor must complete the above form in three (3) copies, which will be distributed by the Inspection Authority as follows:

- a. original to the Contracting Authority;
- b. one copy to the Technical Authority;
- c. one copy to the Contractor.

D5801C (2008-05-12)

#### **13. Vessel Warranty – Refit and Repair**

The warranty clause of the general conditions forming part of the Contract is deleted and replaced by the following:

"08 Warranty"

The Contractor, if requested by Canada, must replace or repair at its own expense any finished work, excluding Government Issue incorporated in the Work, which becomes defective or which fails to

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conform to contract requirements as a result of faulty or inefficient manufacture, material or workmanship.

Despite acceptance of the finished work, and without restricting any other term of the Contract or any condition, warranty or provision imposed by law, the Contractor warrants that the following will be free from all defects and will conform with the requirements of the Contract:

The painting of the underwater portion of the hull for a period of 365 days commencing from the date of undocking, except that the Contractor will only be liable to repair and/or replace to a value to be determined as follows:

Original cost to Canada of the underwater painting work, divided by 365 days and multiplied by the number of days remaining in the warranty period. The resultant sum would represent the "Dollar Credit" due to Canada from the Contractor.

All other painting work for a period of 365 days commencing from the date of acceptance of the Work;

All other items of work for a period of ninety (90) days commencing from the date of acceptance of the Work, except that:

the warranty on the work related to any system or equipment not immediately placed in continuous use or service will be for a period of ninety (90) days from the date of acceptance of the vessel;

for all outstanding defects, deviations, and work items listed on the Acceptance Document at Delivery, the warranty will be ninety (90) days from the subsequent date of acceptance for each item.

The Contractor agrees to pass to Canada, and exercise on behalf of Canada, all warranties on the materials supplied or held by the Contractor which exceed the periods indicated above.

Refer to Annex "D " for Warranty Defect Claim Procedures and forms.

K0027C (2010-08-16)

#### **14. Warranty – Contractor responsible for all costs**

Section 22 entitled Warranty of general conditions 2030 is amended by deleting subsections 3 and 4 in its entirety and replacing it with the following:

The Work or any part of the Work found to be defective or non-conforming will be returned to the Contractor's plant for replacement, repair or making good. However, when in the opinion of Canada it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant pursuant to subsection 3. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location directed by Canada.

All other provisions of the warranty section remain in effect.

K0030C (2012-07-16)

## 15. SAAC Manual Clauses

A0285C (2007-05-25)	Workers Compensation
A9047C (2008-05-12)	Title to Property – Vessel
A9006C (2012-07-16)	Defence Contract
B5007C (2010-01-11)	Procedures for Design Change or Additional Work
B9014C (2008-05-12)	Outstanding Work and Acceptance – Civilian
B9035C (2008-05-12)	Progress Meetings
A0032C (2011-05-06)	Vessel Manned Refits
A0290C (2008-05-12)	Hazardous Waste – Vessels
A9055C (2010-08-16)	Scrap and Waste Material
A9066C (2008-05-12)	Vessel – Access by Canada

## 16. Certifications

### 16.1 Compliance

Compliance with the certifications and related documentation 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, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

## 17. Applicable Laws

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

## 18. Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 1029 (2010-08-16);
- (c) the general conditions 2030 (2013-06-27);
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex F, Financial Bid Presentation Sheet;
- (g) Annex C, Insurance Requirements;
- (h) the Contractor's bid dated \_\_\_\_\_.

## 19. Insurance Requirements

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

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

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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.

G1001C (2008-05-12)

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Buyer ID - Id de l'acheteur

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## **ANNEX "A" - STATEMENT OF WORK**

The entire Statement of Work is a separate electronic document entitled:

Refit Specification - CCGS SAMBRO, Specification No. **13-S044-008-1 September 3, 2013**

## **ANNEX B - BASIS OF PAYMENT**

**Remark to Bidder: Annex B will form the Basis of Payment for the resulting contract and should not be filled in at the bid submission stage. Refer to Annex F "Financial Bid Presentation Sheet".**

### **1. Contract Price**

<b>a)</b>	<b>Known Work</b> For work as stated in Part 1, Specified in Annex "A" for a FIRM PRICE of:	\$ _____
<b>d)</b>	<b>Taxes</b>  Estimated at ( __% ) of Line a) only	\$ _____
<b>e)</b>	<b>Total Firm Price</b> Taxes Included:  For a FIRM PRICE of :	\$ _____

### **2. Unscheduled Work**

#### **2.1 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.

#### **2.2 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.

#### **2.3 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:

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, plus Goods and Services Tax or Harmonized Sales Tax, if applicable, calculated at 10% percent 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 term of the Contract and any subsequent amendments.

C0902C (2008-12-12)

### **3 Overtime**

No overtime work will be compensated for under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing such details as Canada may require with respect to the overtime work performed. Compensation for authorized overtime will be calculated by taking the

average hourly direct labour rate premiums, plus certified fringe benefit additives, plus profit of 7 1/2 percent on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract including all amendments and are subject to audit if deemed necessary by Canada.

**4 Daily Services Fee**

In the event of a delay in the performance of the Work that lengthens the Work Period beyond the date specified in this Contract, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

- (a) For a working day on the drydock \$ \_\_\_\_\_
- (b) For a non-working day on the drydock: \$ \_\_\_\_\_
- (c) For a working day at the berth: \$ \_\_\_\_\_
- (d) For a non-working day at the berth: \$ \_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for markup or profit.

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## **ANNEX C - INSURANCE REQUIREMENTS**

### **C1 Ship Repairers' Liability Insurance**

The Contractor must obtain Ship Repairer's 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 \$10,000,000 per accident or occurrence and in the annual aggregate.

The Ship Repairer's Liability insurance must include the following:

**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.

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

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

**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.

**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.

G5001C (2008-05-12)

### **C2 Commercial General Liability Insurance**

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.

The Commercial General Liability policy must include the following:

**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.

**Bodily Injury and Property Damage** to third parties arising out of the operations of the Contractor.

**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.

**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.

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**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.

**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.

Employees and, if applicable, Volunteers must be included as Additional Insured.

Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)

**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.

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

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

G2001C (2008-05-12)

### **C3 Limitation of Contractor's Liability for Damages to Canada**

This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees.

Whether the claim is based in contract, tort, or another cause of action, the Contractor's liability for all damages suffered by Canada caused by the Contractor's performance of or failure to perform the Contract is limited to \$10,000,000.00 . This limitation of the Contractor's liability does not apply to:

any infringement of intellectual property rights; or

any breach of warranty obligations.

Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.

N0001C (2008-05-12)

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## **ANNEX D– WARRANTY DEFECT CLAIM PROCEDURES AND FORMS**

### **Warranty Procedures**

#### **1. Scope**

a. The following are the procedures, which suit the particular requirements for warranty considerations for a vessel on completion of a refit.

#### **2. Definition**

There are a number of definitions of “warranty” most of which are intended to describe its force and effect in law. One such definition is offered as follows:

“A warranty is an agreement whereby the vendor’s or manufacturer’s responsibility for performance of its product is extended for a specific period of time beyond the date at which the title to the product passes to the buyer.”

#### **3. Warranty Conditions**

a. 2030 General Conditions - Higher Complexity - Goods are augmented by clauses incorporated into the subject Contract.

b. The warranty periods may be stated in more than one part:

i. 90 days commencing from the day the PWGSC 1205 Acceptance Document is signed for workmanship provided by the contractor for the refit work specified;

ii. 365 days from the date of acceptance for the specified areas of painting;

iii. 365 days commencing from the day the PWGSC 1205 Acceptance Document is signed for parts and material provided by the contractor for the refit work specified;

iv. Any other specific warranty periods that may be required in the contract or offered by the Contractor.

c. The foregoing does not cover the disposition of other deficiencies that will be directly related to Technical Authority problem areas of the following nature:

i. items becoming unserviceable that were not included in the refit specification;

ii. refit specifications or other related documentation requiring amendments or corrections to increase viability; and

iii. work performed that is directly related to the Technical Authority.

#### **4. Reporting Failures With Warranty Potential**

a. The initial purpose of a report of a failure is to facilitate the decision as to whether or not to involve warranty and to generate action to effect repairs. Therefore in addition to identification,

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location data, etc. the report must contain details of the defect. Warranty decisions as a general rule are to be made locally and the administrative process is to be in accordance with procedures as indicated.

b. These procedures are necessary as invoking a warranty does not simply mean that the warrantor will automatically proceed with repairs at his expense. A review of the defect may well result in a disclaimer of responsibility, therefore, it is imperative that during such a review the Department is directly represented by competent technical authority qualified to agree or disagree with the warrantor's assertions.

## 5. Procedures

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

i. The vessel advises the Technical Authority when a defect, which is considered to be directly associated the refit work, has occurred.

ii. On review of the Specification and the Acceptance Document, the Technical Authority in consort with Ship's Staff is to complete the Tombstone Data and section 1 of the Warranty Claim Form attached and forward the original to the Contractor for review with a copy to the PWGSC Contracting Authority. If the PWGSC Contracting or Inspection Authority is unable to support warranty action, the Defect Claim Form will be returned to the originator with a brief justification. (It is to be noted that in the latter instance PWGSC will inform the Contractor of its decision and no further action will be required of the Contractor.

Warranty defect claims may be forwarded in hard copy, by fax or by e-mail whichever format is the most convenient.

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

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

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

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

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## 6. Liability

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

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

ii. The Technical Authority accepts full responsibility for repair and overhaul of item concerned;  
or

iii. The Contractor and the Technical Authority agree to share responsibility for the costs to repair or overhaul the unserviceable item, in such cases the PWGSC Contracting Authority will negotiate the best possible sharing arrangement.

b. In the event of a disagreement as in paragraph 5c, PWGSC will take necessary action with the contractor while the Technical Authority informs its Senior Management including pertinent data and recommendations.

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

## 7. Alongside Period For Warranty Repairs and Checks

a. If at all possible, an alongside period for the vessel is to be arranged just before the expiration of the 90 day warranty period. This alongside period is to provide time for warranty repair and check by the contractor.

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**APPENDIX 1 to ANNEX D****Warranty Claim  
Réclamation De Garantie**

Vessel Name – Nom de navire	File No. - N° de dossier	Contract No. - N° de contrat
Customer Department – Ministère client	Warranty Claim Serial No. Numéro de série de réclamation de garantie	
Contractor – Entrepreneur	<b><u>Effect on Vessel Operations</u></b> <b><u>Effet sur des opérations de navire</u></b> Critical – Critique <input type="checkbox"/> Degraded – Dégradé <input type="checkbox"/> Operational - Opérationnel <input type="checkbox"/> Non-Operational - Non-opérationnel <input type="checkbox"/>	
<b>1. Description of Complaint – Description de plainte</b>		
Contact Information – information de contact  Name – Nom _____ Tel. No. - N° Tél _____ Signature – Signature _____ Date _____		
<b>2. Contractor's Investigative Report – Le rapport investigateur de l'entrepreneur</b>		
<b>3. Contractor's Corrective Action – La Modalité de reprise de l'entrepreneur</b>		
Contractor's Name and Signature - Nom et signature de l'entrepreneur _____		Date of Corrective Action - Date de modalité de reprise _____
Client Name and Signature – Nom et signature de client _____		Date _____

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**4. PWGSC Review of Warranty Claim Action – Examen d'action de réclamation de garantie par TPSGC**

\_\_\_\_\_  
Signature – Signature

\_\_\_\_\_  
Date

**5. Additional Information – Renseignements supplémentaires**



**ANNEX F - FINANCIAL BID PRESENTATION SHEET****Proposed Work Period Location:** \_\_\_\_\_**1. Evaluation of Price**

<b>a)</b>	<b>Known Work</b> For work as stated in Part 1, specified in Annex "A" and detailed in the attached Pricing Data Sheet for a FIRM PRICE of:	\$ _____
<b>b)</b>	<b>Unscheduled Work</b> Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit: 45 person hours X \$ _____ per hour for a PRICE of:	\$ _____
<b>c)</b>	<b>Daily Services Fees</b> i) Five (5) working days on drydock X \$ _____ = \$ _____ ii) two (2) non-working days on drydock X \$ _____ = \$ _____ iii) one (1) working day at berth X \$ _____ = \$ _____ (iv) one (1) non-working day at berth X \$ _____ = \$ _____	\$ _____
<b>d)</b>	<b>Vessel Transfer Cost</b> As stated in Part 2.	\$ _____
<b>e)</b>	<b>EVALUATION PRICE</b> Taxes Excluded, [a + b + c + d ]: For an EVALUATION PRICE of :	\$ _____

**2. Unscheduled Work****2.1 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.

**2.2 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.

**2.3 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:

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, plus Goods and Services Tax or Harmonized Sales Tax, if applicable, calculated at \_\_\_\_\_ percent 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 term of the Contract and any subsequent amendments.

C0902C (2008-12-12)

**3. Overtime**

No overtime work will be compensated for under the Contract unless authorized in advance and in writing by the Contracting Authority. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing such details as Canada may require with respect to the overtime work performed. Compensation for authorized overtime will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit additives, plus profit of 7 1/2 percent on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract including all amendments and are subject to audit if deemed necessary by Canada.

**4. Daily Services Fee**

In the event of a delay in the performance of the Work that lengthens the Work Period beyond the date specified in this Contract, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

- (a) For a working day on the drydock \$ \_\_\_\_\_
- (b) For a non-working day on the drydock: \$ \_\_\_\_\_
- (c) For a working day at the berth: \$ \_\_\_\_\_
- (d) For a non-working day at the berth: \$ \_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark-up or profit.

**APPENDIX 1 TO ANNEX "F"****PRICING DATA SHEET**

The Pricing Data sheet will be provided with the minutes of the bidders conference as a Solicitation Amendment and will be titled **Pricing Data Sheet**.

Spec#	Description	Material	Labour	Total
H-01	Services Electrical Power per Kwh \$ _____ Gangways per day \$ _____ Garbage Removal per day \$ _____ Shelter/Enclosure per day \$ _____ Sea Trail per hour \$ _____			
H-02	Anchorage/Mooring & Towing			
HD-01	Docking/Undocking			
HD-02	Hull Repair & Tank Inspection			
HD-03	Painting			
HD-04	Anodes			
HD-05	Pumps Survey			
HD-06	Steering Gear Inspection (Survey Item)			
HD-07	Propulsion Shafts			
HD-08	Trim Tabs			
HD-09	Protection Against Sea & Load Lines			
L-01	Alternator Overhaul			
L-02	Main Engine Starter			
L-03	Interior Lighting			
TOTAL COST				



Fisheries and Oceans  
Canada

Canadian Coast Guard

Pêches et Océans  
Canada

Garde côtière canadienne

## CANADIAN COAST GUARD



### REFIT SPECIFICATION

#### CCGC SAMBRO

**SPECIFICATION NO. 13-S044-008-1**

September 3, 2013

SAMBRO, NOVA SCOTIA



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## GENERAL NOTES

### 1. On-Site Coast Guard Technical Authority (CGTA):

All the specified work, as well as all work arising, shall be completed to the satisfaction of On-site CGTA. Unless otherwise advised, this will be the Vessel Maintenance Manager (VMM) of the vessel, or his designated representative. Upon completion of each item of the specification, the CGTA shall be notified so that he/she may inspect the work prior to the complete closing up of any work. Failure to give notification does not absolve Contractor of the responsibility of providing CGTA the opportunity to inspect any item. Inspection of any item by the CGTA does not substitute for any required inspection by Transport Canada Marine Safety Branch (TCMS), Public Works and Government Services Canada (PWGSC) or Health Canada (HC).

### 2. Safety:

There is a safety annex attached to this specification entitled "FLEET SAFETY MANUAL REQUIREMENTS". In addition to the detailed requirements within the specification, this annex contains excerpts from the "FLEET SAFETY MANUAL", Edition 4, version 1 that are applicable to contracted refit and dry-docking situations. If Contractors do not already have copies of this reference, they will be made available upon request.

It is noted in the annex, that all contracted work shall be conducted in compliance with the requirements of the Canada Labour Code, Part 2. Potential Contractors shall include with their bids the name of their Safety Manager or Supervisor who will ensure that these requirements for workplace safety are met.

### 3. Sub-Contractors:

All conditions, stipulations etc. listed in the General Notes apply to any Sub-Contractors employed by the Main Contractor to carry out work on any Specification Item.

### 4. Schedule:

At the Pre-Refit Meeting, the successful Contractor shall provide a Production Bar Chart or Schedule showing commencement and completion dates for each item in this specification. This document shall highlight any critical dates and be capable of showing the effects of late completion date of the work package. Contractor shall provide updated Production Schedules to the CGTA and PWGSC Contracting Authority whenever the schedule is revised.

## GENERAL NOTES (CONTINUED)

### 5. Daily Service Fee:

Contractor shall allow sufficient time to complete all the 'known' work described in this specification. Contractors shall bid the total price of their estimated daily service fees, plus a unit price for adjustment purposes. The Contractor shall provide sufficient personnel, materiel, and equipment resources to complete the specified work, including the allowance for arisings, within the period of the contract. Extra effort required due to the Contractor's failure to maintain his production schedule will not be paid for by CCG.

### 6. Chemist's Certificates:

Contractor shall supply CGTA with Marine Chemist's Certificates in accordance with TCMS TP 3177E before any cleaning, painting or hot work is commenced in confined spaces or machinery compartments. Certificates shall clearly state the type of work permitted, duration of certificate and the following air test information: toxic gas level in PPM, % LEL (percentage lower explosive limit) and % O<sub>2</sub> (percentage oxygen). Each certificate must be signed and dated by the marine chemist or qualified person carrying out the test. All certificates shall be renewed as required by the regulations. Contractor and his sub-Contractors are advised that any work carried out in confined spaces as defined by the Canada Labour Code (CLC) and relevant provincial legislation must fully comply with all provisions therein.

Contractor and his sub-contractors are advised that any work carried out in confined and / or enclosed spaces as defined by the Canadian Labour Code Part II (CLC), the Marine Occupational Health & Safety Regulations (MOSH) and the relevant provincial legislation shall be fully complied with.

<http://www.tc.gc.ca/media/documents/marinesafety/tp3177e.pdf>

Canadian Labour Code <http://laws.justice.gc.ca/en/L-2/index.html>

MOSH <http://laws.justice.gc.ca/en/L-2/SOR-87-183/index.html>

### 7. Welding:

Contractor shall be currently certified by the Canadian Welding Bureau in accordance with Standard W47.1-1983 "Certification of Companies for Fusion Welding of Steel Structures," Division 1, 2.1 or 2.2. Where welding is required on aluminium superstructure CCG specification for ALUMINIUM WELDING (TP 9415E) will apply and Contractor shall be qualified to CWB 47.2 for aluminium welding. All personnel performing welding shall be approved by the Canadian Welding Bureau. All sub-contractors shall be currently certified by CWB as above + Division 3. When a sub-contractor is certified to Division 3, then the primary Contractor shall have a certified Quality Assurance Program in place that introduces and maintains proper control of the sub-contractor's performance. Any welding near bearings or electronic equipment shall have its work locally grounded. No welding shall be undertaken on the vessel without the direct permission of the CGTA.

## GENERAL NOTES (CONTINUED)

### 8. Electrical:

All electrical installations or renewals shall be in accordance with the latest editions of the following Marine electrical standards:

TP 127E - Ship Safety Electrical Standards  
<http://www.tc.gc.ca/eng/marinesafety/tp-tp127-menu-263.htm>

IEEE Standard 45 - Recommended Practice for Electrical Installation on Shipboard. [http://standards.ieee.org/develop/wg/45\\_WG.html](http://standards.ieee.org/develop/wg/45_WG.html)

### 9. Hotwork Ventilation and Containment:

During all known work and work arisings that involve hotwork, Contractor shall ensure that all dust, debris, gas and smoke generated by the work is evacuated from the vessel by the most direct method.

Each item that involves hotwork shall have a defined zone which shall be kept sealed off from the rest of the vessel during the complete work period that involves the generation of welding gases, smoke, and grinding dust etc. These zones shall be indicated in the items contained within the known work package. All extra work arisings that involve hotwork shall have a zone determined using the same logic. The zone shall be limited to the space(s) where the hotwork is being done, boundary areas where fire watches are required, and the access routes between the zone and the exterior of the vessel for workers, welding and cutting equipment and ventilation ductwork.

In areas where occupied accommodations and or workplaces cannot be completely isolated from personal access a double sealed door (air lock) arrangement shall be erected to minimize ingress of the contaminants into occupied areas. A ventilation extraction point shall be located as near as practical to the inside door on the worksite side to reduce the egress into the air lock and subsequently the accommodations and/or workspaces.

All doorways within the affected area that are not being worked or require access for fire watch activities shall be sealed off to prevent all containments from getting in. Passageway branches that connect to the zone shall be sealed off. Contractor shall completely clean all surfaces and fabrics within a compartment that are not suitably protected.

## GENERAL NOTES (CONTINUED)

### 10. Protection:

Contractor shall provide adequate temporary protection for any equipment or areas affected by his work. Contractor shall take proper precautions to maintain in a proper state of preservation any machinery, equipment, fittings, stores or items of outfit (furnishings, linings, deck coverings, etc.) which might become damaged by exposure, movement of materials, paint, sand, grit or shot blasting, airborne particles from sand, grit or shot blasting, welding, grinding, burning, gouging and painting. Any damage shall be the responsibility of the Contractor to repair or renew.

### 11. Auxiliary Services:

Contractor shall include in quotation the costs of any and all transportation, rigging, staging, slinging, crange, removals, and installations of parts and equipment such as may be required to carry out work.

### 12. Enclosures and Heating:

Contractor shall provide all enclosures and heating required to carry out all the scheduled work, taking into account the nature of the work, the time of year the refit is, and the weather conditions for that time of year in Contractor's geographic area. Examples of where heating and enclosures could be required include but are not limited to painting, shaft withdrawal, and tank cleaning.

### 13. Service Conditions:

Unless specified otherwise, all components, materials and installations supplied by or carried out by the Contractor shall be adequate to meet the following service conditions:

In areas that are exposed to the elements:

- outside air temperature of minus (-) 400 C to plus (+) 350 C;
- wind velocity of 50 knots;
- water temperature of minus (-) 20 C to plus (+) 300 C;
- shock loading of 2.5g horizontal, 1.5g vertical.

All new components, materials and installations within the ship shall be adequate to withstand the specified shock loading accelerations.

## GENERAL NOTES (CONTINUED)

### 14. Hotwork & Fire Watches:

Any item of work involving the use of heat in its execution requires that the Contractor advise the CGTA prior to starting such heating and upon its completion. Contractor shall provide sufficient suitable fire extinguishers and a fire watch during any such heating and until the work has cooled. The fire watch shall be arranged such that all sides of surfaces being worked on are visible and accessible. Ship's extinguishers are not to be used except in an emergency. Should the Contractor have to use ship's extinguishers in an emergency they are to be recharged and re-certified by a local facility, of CCG's choice, at Contractor's cost. Contractor shall provide suitable fire retardant coverings to protect wire ways, cables, equipment and structure from welding slag, splatter etc.

### 15. Relocations:

Any piping, manholes, parts and/or equipment requiring temporary relocation to carry out specified work, or to gain access, shall be refitted upon completion with new jointing, anti-seize compound, clamps and brackets as applicable (Contractor supply - CFM). All equipment and systems, so disturbed, shall be tested to prove correct function and fluid integrity upon completion. Defects shall be corrected at Contractor's cost. Note: It shall be Contractor's responsibility to identify, to the CGTA, equipment and systems that are to be tested to verify correct function, prior to being disturbed for required work.

### 16. Lighting:

Temporary lighting and/or temporary ventilation required by Contractor to carry out any item of this specification shall be supplied, installed and maintained in safe working condition by the Contractor and removed on completion of the related work. Naked light bulbs or tubes shall not to be used as temporary lighting inside the vessel. All lights used in the vessel shall be supplied with approved guards.

### 17. Cleanup:

Contractor shall ensure that all spaces, compartments, and areas where work has been carried out, or Shipyard staff and Sub-Contractors has used for transit routes, are left in "as clean a condition as found" when the vessel commenced refit. This includes both internal and external areas of work, as well as any affected adjacent spaces outside the principle areas of work. All rags, debris, and associated garbage generated by the shipyard staff and Sub-Contractors while on board shall be removed to the garbage container(s) each day. Costs associated with the removal of dirt, debris, and garbage shall be included in the Contractor's quote.

## **GENERAL NOTES (CONTINUED)**

### **18. Inspection:**

Contractor shall be responsible for calling in the services of TCMS, and Health Canada Surveyors when and as required for survey and inspection items. All TCMS surveyors called in by the Contractor shall be asked to sign-off the CGTA's Inspection Log Book for all items surveyed. Where the approval of Environment Canada (EC) or any other authority is required by law or by work contained in this specification, Contractor shall be responsible for obtaining and keeping a record of these approvals. Two (2) copies of all approvals and records shall be given to the CGTA.

### **19. Painting:**

Unless specified otherwise, replacement and/or disturbed steelwork shall be given a minimum of two (2) coats of marine primer immediately upon completion of work. Contractor shall inform the CGTA of the area to be primed so the CGTA can advise the Contractor of the suitable primer to be used. Lead-based paints shall not be used. Prior to painting, all new and disturbed steelwork shall be power tool cleaned as a minimum standard of surface preparation. The Contractor shall arrange for the PWGSC Contracting Authority to be notified after the first coat of paint is fully cured so that it may be inspected prior to the application of the second coat. Failure to do so shall result in another coat being applied at the Contractor's expense.

### **20. Materials & Tools:**

All materials, unless otherwise specified, shall be supplied by the Contractor. Contractor is to supply all necessary tools and equipment to perform the specified work. Special ship-specific tools, as required, will be issued by and returned to the CGTA. Contractor shall be responsible for removing the tools from their stored location aboard the vessel, and returning them and securing them in place when finished. Otherwise, ship's tools and equipment will not be available for Contractor's use.

### **21. Reference Material:**

CGTA may have provided information in this specification and attachments (engineering drawings, pictures, etc.) as guidance information only. All drawings, pictures, dimensions, descriptions, locations, measurements, engineering values, materials, etc. listed or implied shall be verified by Contractor, prior to any work or fabrication commencing. All discrepancies shall be recorded and reported to the CGTA and Vessel Engineer as soon as possible. Any changes to the specified work, due to the above, shall be resolved between Contractor and CGTA prior to work starting.

The overhaul and installation of all machinery and equipment specified herein shall be as per the manufacturers' applicable instructions, drawings and specifications.

## GENERAL NOTES (CONTINUED)

### 22. Measurements:

All dimensional measurements shall be taken and recorded in inches. Unless otherwise specified, the dimensions shall be taken and reported in thousandths of an inch (0.000"). All measuring devices shall be described on the submitted reporting sheets. All reported dimensions shall be either typed or printed in a neat legible manner, and shall include the name of the person who took the readings. Contractor shall be responsible to ensure all testing and measurement equipment (mechanical or electronic) required to complete the specified work is calibrated and that calibration certificates for said devices shall be submitted to PWGSC Contracting Authority prior to final inspection or witnessing of tests.

All tests results, calibrations, measurements, trials and readings shall be properly tabulated, compiled and three (3) typewritten copies shall be provided; two copies to CCG Technical Services and one copy to the PWGSC Contracting Authority. All test and trials shall be performed to the satisfaction of the CGTA and TCMS inspector.

### 23. Co-operation:

During the period that the ship is in refit, members of the ship's complement, Coast Guard technical staff, and service specialists may be carrying out repairs to, maintenance of, or modifications of various ships' equipment not covered in this specification. The Contractor shall not deny access to the vessel to these persons. Every effort will be taken to ensure that this Coast Guard controlled work will not interfere or conflict with that being carried out by the Contractor.

### 24. Fire Safety Systems:

Whenever any work is being carried out involving the ship's firefighting or fire detecting system, it shall be done in such a way as to leave the vessel and all persons aboard with adequate protection against fire at all times. This may be accomplished by removal or disarming of only a portion of the system at a time, by replacement with spares while work is in progress, or by other reasonable means acceptable to CGTA.

Note: Contractor shall notify CGTA prior to deactivation and upon reactivation of fire fighting and/or fire detecting systems.

### 25. Smoking:

The Public Service Smoking Policy forbids smoking in Government ships in all areas inside the ship where shipyard personnel will be working. Contractor shall inform workers of this policy and ensure that it is complied with.

## **GENERAL NOTES (CONTINUED)**

### **26. Access:**

The vessel's washroom is out of bounds to Contractor's personnel except to perform work as required by the specifications. Contractors shall ensure that no workers bring meals onboard the ship.

## GENERAL NOTES (CONTINUED)

### Additional Information

1. The CCGC SAMBRO is a 52' "Arun Class" Coast Guard Search And Rescue (S.A.R.) lifeboat.
2. Vessel particulars are as follows:

Vessel Location	Sambro, Nova Scotia
Year Built	1996
Yard	Hike Metal Products Wheatley, Ont.
Length Overall	15.77 Metres
Breadth Molded	5.20 Metres
Draft	2.04 Metres
Engines	3408 Caterpillar 08rg0251 & 08rg0252
Plates 5mm and over	Aluminium 5086-H32 or 5083-
Plates under 5mm	Aluminium 5052-H32
Pipes and Extrusions	Aluminium 6061-T6 or 6351-T6
Stainless Steel (SS)	316
3. New or disturbed joints (i.e. flanged) shall be secured using new stainless steel (SS) bolts and new stainless steel locking nuts. All stainless steel flanges to be bonded through their bolting arrangement. Dissimilar metal flanges, piping, or valves shall be fully isolated from each other using a non conducting gasket material. When adding a dissimilar metal attachment between two similar metal flanges/piping, a bonding strip shall be attached between the two similar metals (do not bond to dissimilar metal). Bonding straps shall be made from the similar metal to which they are bonding to.
4. All disturbed gaskets are to be replaced with a new gasket made of equivalent material.
5. With the mast lowered, the vessel will have a height of 8.25 meters from the bottom of its keel to the highest point. The Contractor shall be responsible for identifying a suitable lifting point, on the mast, which is capable of supporting its weight, while it is being lowered and raised. The Contractor shall be responsible for any damages caused during the lifting and lowering of the mast.
6. Contractor shall take note that items in this specification are not detailed (i.e. piping, electrical, metal work, etc.) and require viewing in order to bid. Although not mandatory it is strongly recommended that the Contractor arrange a site visit to exam the CCGC SAMBRO located at the Canadian Coast Guard (CCG) SAR Station in Sambro, Nova Scotia prior to submitting a bid. Bidders who do not view the vessel in order to determine the scope of work will be evaluated as if they had attended the site visit and are fully aware of the vessels existing condition prior to the refit.

## H-01 SERVICES

Contractor is responsible for additional connections required when moving the vessel between dry-dock and alongside berth at their premises. Services are required for the full refit/dry-dock period.

The Contractor shall quote a global price and daily rates for all services supplied to the vessel during the dry-docking period for adjustment purposes.

### 1. Electrical Power

- 1.1 Shore power facilities shall be supplied and installed on the vessel using a single 100 amp source with CFM cables and fittings. The vessel requires one (1): 100 amp, 240 VAC, 60 hz connection. Contractor shall quote a 1000 Kilowatt hour (KWH) flat rate for power connection for the refit period. Contractor shall provide a unit cost per day for power connection for prorated adjustments.
- 1.2 A ground cable shall be attached to the vessel's hull and the Contractor shall ensure compliance as per the Transport Canada Marine Safety Bulletin – “Grounding Safety in Drydock”.

<http://www.tc.gc.ca/eng/marinesafety/bulletins-1989-06-eng.htm>

### 2. Gangways

- 2.1 Contractor shall supply and erect a gangway, complete with safety nets and guard rails as per Provincial regulations. Gangway to land on main deck aft and shall be illuminated during the dark hours when work is being conducted.

Reference web site;

<http://www.gov.ns.ca/lwd/healthandsafety/docs/FishSafe.pdf>

- 2.2 Any movement of the gangway for the convenience of the Contractor shall be at the expense of the Contractor.

## **H-01 SERVICES (CONTINUED)**

### **3. Garbage Removal**

- 3.1 All garbage containers (vessel's waste baskets or Contractor supplied containers) shall be emptied out on a daily basis. Contractor shall remove their own daily garbage from work areas of the vessel. Cost shall be included in quote.
- 3.2 Contractor to ensure all spaces, compartments and areas of the vessel, external and internal, are left in as clean a condition as found. Removing dirt, debris, and associated materials to be included in their bid.

### **4. Berthing**

- 4.1 Berthing and mooring facilities shall be provided in accordance to the Fleet Safety Manual as provided in the attached safety annex.
- 4.2 During refit, while not dry-docked; vessel shall be berthed at Contractor's wharf. There shall be sufficient water beneath the vessel that it shall not touch bottom at any time (upright and afloat).
- 4.3 Shipyard is responsible for all movements of the vessel during the refit period; including arrangements and costs of linehandlers, tugs, pilots, initial tying up, any movement of the vessel during refit and letting go of lines from Contractor's wharf on vessel departure from yard upon completion of refit.

### **5. Shelter / Enclosure**

- 5.1 The Contractor shall provide a protective shelter (enclosed heated building preferred) around the vessel prior to any work commencing, the shelter shall remain for the entire refit period. With the mast lowered, the vessel will have a height (bottom of keel to highest point) of approximately 8.3 meters. The shelter shall be heated and enclose all external work areas around the entire vessel including the superstructure and mast.
- 5.2 The shelter will provide full protection while work is performed during inclement weather. The shelter will also prevent unwanted debris, particles and/or materials (i.e. grinding debris, sponge blast, paint chips, etc) from leaving the immediate work area and provide the Contractor with the ability to recover the above and dispose of them in an approved manner.

## H-01 SERVICES (CONTINUED)

### 6. Sea Trial

- 6.1 Bidders shall include a “2-hour” sea trial in their bid price. The vessel will be operated by CCG personell under the Contractor’s direction. The aim of the sea trial shall be to prove the safe and correct function of all systems and equipment that have been worked on, added or disturbed as part of the refit.

### 7. Quality Control

- 7.1 Contractor shall have a proven quality assurance program in place or is presently working on a system that may meet CSA series of Quality assurance program standards. This requirement will provide the CGTA with a concise record of all pertinent information requested during the vessel refit.
- 7.2 Contractor shall provide a typewritten report of all test, trials, calibrations, measurements, etc. taken, whether identified or implied in this specification. Contractor shall compile the individual readings for each specification item into a report with copies of the workers original notes and provide a copy to the Vessel Maintenance Manager upon completion of the refit.  
VMM for CCGC Sambro is:  
Todd Smith  
(902) 426-2798  
todd.smith@dfo-mpo.gc.ca
- 7.3 The final report is not meant to be a formal document, but rather a concise record of all reading taken. If the specification item does not require any readings then a simple note saying so will suffice.

## **H-02 ANCHORAGE, MOORING & TOWING**

H-02-1      The capstain is to be inspected by a TCMS surveyor and CGTA. Any work raised by an unsatisfactory result is to be addressed via PWGSC 1379 action.

## HD-01 DOCKING / UNDOCKING

- HD-01-1 Contractor shall dock the vessel and allow sufficient service days to perform both the work described in this specification as well as a margin of time to cover work arising. Contractor shall quote a unit cost per service day. Contractor shall prepare blocks and necessary shoring to maintain true alignment of the vessel's hull and machinery throughout the dry-docking period. Upon completion of all specified work the Contractor shall undock the vessel.
- HD-01-2 A docking plan (Appendix A2) is available on board the vessel or from Integrated Technical Services, Marine Engineering. The Contractor is responsible for ensuring all loaned drawings are returned, in their original condition, upon completion of work.
- HD-01-3 Vessel Particulars:
- |                        |   |
|------------------------|---|
| Length O.A.            | 15.77 Metres  |
| Breadth Molded         | 5.18 Metres   |
| Draft                  | 2.05 Metres   |
| Operating Displacement | 35.5 Tonne  |
| Fuel Capacity          | 3178 Litres   |
| Hull construction      | Aluminum  |
| Electrical System      | 24 VDC, 12 VDC sub system<br>240 VAC Shore Connection |
- HD-01-4 The vessel shall be docked so that all docking plugs, transducers, anodes and sea inlet grids are clear and accessible. Contractor shall ensure adequate clearance below the keel for performing work specified and shall advise in their bid, the minimum clearance expected. If any hull fittings are covered, the Contractor is responsible for all labour and materials required for making alternative arrangements for draining tanks, removal of docking plugs, blasting/painting of hull and/or moving blocks to gain access to areas of specified work.

## HD-02 HULL REPAIRS & TANK INSPECTION

HD-02-1 Contractor shall contact the local TCMS office and request their inspector view the void spaces listed below. (See Appendix A3 for Tank Locations) Contractor is to provide TCMS office with a minimum 48 hours' notice prior to requiring them on site. Void spaces shall be inspected by TCMS and viewed upon completion of gas freeing. Any repairs indicated by TCMS and approved by the CGTA shall be through PWGSC 1379 action.

Name (According to Div.3)	Location (DWG 95004-45)	TC Item Reference (Div.3)
No.8 Double Bottom	#21 Port	3L009
No.9 Double Bottom	#21 Stbd	3L010
No.9 Double Bottom	#22 Port	3L011
No.17 Wing	#4 Port	3L022
No.18 Wing	#5 Stbd	3L023
No.18 Wing	#13 Port	3L024
No.19 Wing	#13 Stbd	3L025
No.20 Wing	#20 Port	3L027
No.21 Wing	#19 Stbd	3L031

HD-02-2 Contractor shall open the void spaces listed and remove strapping, dunnage bags, foam chips and gas free the internal areas. All void spaces listed in Division 3 report shall be certified gas free by a qualified person for entrance and hotwork when required. Three (3) copies of gas free certificate shall be supplied to CGTA before any inspection or repair work is started. Contractor shall remove all debris ashore. All work shall be completed to the satisfaction of the CGTA.

HD-02-3 There is a gouge, on the port side of the vessel. The gouge is roughly 3 metres in length, located outside voids 21-22 Port. Contractor is to quote separately but include with the overall bid, the infilling of the gouge. This solution is pending TCMS approval. Any additional expenses are to be completed via PWGSC 1379 action.

HD-02-4 At the time of viewing Contractors shall note all interferences (i.e. pipes, brackets, wires, paneling, etc.) in way of the manhole covers and include removal and re-installation in their quote.

HD-02-5 This is a priority item. Efforts are to be made to have inspections completed within first two weeks of contract start date. This is to allow time to address any deficiencies identified.

## HD-02 HULL REPAIRS & TANK INSPECTION (CONTINUED)

- HD-02-6 Contractor shall remove polystyrene chips and dunnage bags from the listed void spaces. Contractor shall identify on each bag the void spaces from which they were removed and record the total number of bags removed from individual void spaces. These bags are held in place by cargo webbing bolted to the frames of the void spaces. Some of these bags may have opened and the chips become loose in the space, these shall be recovered and resealed in the dunnage bags belonging to that void space. Contractors shall supply and install est. 6 new dunnage bags (6 mil plastic- 72 litres) in their bid.
- HD-02-7 Contractor shall inspect all manhole covers and renew missing and defective bolts. Contractor quote separately but include with the overall bid, on renewing ten (10) M8 stainless steel (SS) bolts 32mm long with SS washers and the removal and installation of 10 CFM helicoil inserts. Blind holes shall be visually examined for damage and repaired (i.e. fill by weld and re-tapped) where required through PWGSC 1379 action.
- HD-02-8 Contractor shall request a credit against the vessel's division 3 report from TCMS after their inspector has given approval for all internal void spaces.
- HD-02-9 After receiving inspection approval from TCMS, Contractor shall reinstall all dunnage bags in their proper location, as identified above in item number HD-02-6,. Prior to re-installing the dunnage bags the Contractor shall remove all foreign materials (i.e. debris, metal, welding rods, etc.) from the void spaces.
- HD-02-10 After CGTA completes a final inspection, contractor shall reinstall manhole covers to their original locations using new CFM gasket material and new CFM bolts where required.
- HD-02-11 Contractor quote separately but include with the overall bid, pressure testing the void spaces for TCMS, normal practice requires pressurizing the spaces to 2.5cm (confirm with TCMS) of water gauge and held for a period of time of at least one (1) hour. Contractor shall follow the recommendation of TCMS regarding system pressure and time required for acceptance. Contractor shall issue a credit if the above work is not required.
- HD-02-12 Acceptance shall be based on TCMS approval for this specification item. Acceptance shall also be based on the satisfaction of the CGTA.

## HD-03 PAINTING

### ARUN Class Vessel Square Areas

Wetted hull	85 m <sup>2</sup>
Above water line to deck	65 m <sup>2</sup>
Wheel house	43 m <sup>2</sup>
Flying bridge	10 m <sup>2</sup>
Main deck	42 m <sup>2</sup>

The contractor shall prepare and apply the coating system in accordance with the manufacturer's manuals and recommendations. As part of the Contractor's Q & A process, the following information shall be recorded for all painted areas:

- Provide a list of batch numbers with correspondent dates of manufacture.
- Record the quantity and type of any solvent added.
- Measure and record the ambient conditions.
- Record details of spray tips and pressures.
- WFT gauge readings to be taken on a regular basis during application.
- Using a calibrated DFT gauge, fifteen (15) measurements per 10 m<sup>2</sup>. are to be taken and recorded. Upon agreement of consistency with the CGTA, fifteen (15) measurements per 95 m<sup>2</sup>. are to be taken and recorded.
- All recorded information is to be typewritten and three (3) copies are to be given to the CGTA.



## HD-03-2 UNDERWATER HULL

1. All underwater hull surfaces including rudder, sea suction inlets, overboard outlets and sea bays are to be cleaned of all loose scale, salts, and marine growth. This work is to be carried out immediately on drydocking using a high pressure, fresh water wash. High pressure washing equipment shall be adjusted to not less than 3000 psi, and no greater than 5000 psi operating pressure, in accordance with Surface Preparation Standard SSPC.SP14.  
<http://www.sspc.org/market-place/standards/surface-preparation-sp/sspc-sp-14-nace-no-8-industrial-blast-cleaning.html/>.
2. Contractor shall assume that the wetted hull area is fouled with shell and weed growth. All such surface contaminants and spent antifoulant coating shall be removed with no undue or excessive damage to the underlying coating. Copies of invoices, detailing disposal, shall be provided to CGTA.
3. It is estimated that 10m<sup>2</sup> of the underwater hull-coating system has failed. These areas will here in after be referred to as “bare areas”. The total wetted hull surface from the keel to the water line, approx. 85 m<sup>2</sup> is to be prepared and coated as follows; all bare areas are to be solvent cleaned SSPC-SP-1 and surface to be etched chemically with C-prep B10-degreaser or suitable substitution. Edges to be feathered back (smooth finish) to sound existing coating. The CGTA shall witness the point at which sound existing coating is obtained. If satisfactory feathering can not be achieved by solvent cleaning and /or chemical etching, feathering is to be completed by other suitable means. The end result is to be tight and sound existing coating with no loose or lifting material around periphery of bare areas.
4. All bare areas, after proper preparation as witnessed by the CGTA, are to be coated with one coat of Intershield 300ENA300/A (Bronze) applied at 5.9 mils dry (9.8 mils wet). This is to be followed by one coat of Tie Coat Intergard 263 FAJ034/A (Light Grey) applied at 5.0 mils dry (8.8 mils wet) over the entire wetted hull. After coating has properly set (“thumb print soft), two coats of Trilux II (Red) Top Coat shall be applied at 2.0 mils dry (3.9 wet) each, to the entire wetted hull area. Initial Trilux II coating shall have a slight contrast to the final coat. Contractor shall paint all draft marks using white enamel paint. Dry coat thicknesses are cumulative. Contractor shall adhere to the manufacturer’s specifications and recommendations for applying the above coatings.
5. Inside of sea bays (sea wells) and underwater grids are to be treated as per underwater hull.

## **HD-03-2 UNDERWATER HULL (CONTINUED)**

6. The Contractor shall plug all deck openings and discharges as well as taking other measures necessary to prevent any liquids from contaminating areas being prepared or coated. The Contractor shall also take measures to ensure no damage, unnecessary cleaning or any repair results from either the hull preparation process or coating applications. Measures are also to be taken to ensure that surfaces and equipment other than those specified are not coated by over spray and that any inlets or discharges in the shell will not be blocked by the coating.
7. Deck machinery and other equipment susceptible to damage by coating material are to be protected. All portholes, hull doors, freeing ports, hull openings, anodes, transducers, propeller and shaft and rudder stocks are to be covered by suitable materials to prevent damage or entry of foreign materials when sandblasting, grinding or painting is in progress.

### **NOTE TO THE CONTRACTOR:**

Applicable to all coating systems within this specification; International paints (existing coatings) shall be used except where Ameron Non Skid coating is addressed in section #15 or approval for an alternative coating is obtained from the CGTA in writing. The Contractor is to strictly adhere to the manufacturer's instructions in regard to the application of each coating with relation to humidity, temperature, mixing and application.

## HD-04 ANODES

- HD-04-1 Contractor and CGTA shall identify the anodes requiring replacement as soon as possible once the vessel has been removed from the water and washed. Anodes required will be replaced with similar style as existing (see fig HD-04-Fig. 1 – HD-04-Fig. 4)
- HD-04-2 Contractor shall remove the required anodes and their securing straps and prepare the backing plates to receive the new anodes. Contractor shall prep and paint the hull and transom areas where the anodes were removed prior to installing the new anodes as per the paint spec HD-03
- HD-04-3 Contractor shall quote separately but include with the overall bid, to supply and install twelve (12) new bolt-on 10kg zinc anodes with aluminum securing straps, figure HD-04-Fig. 1. Contractor shall install the new anodes as per their existing arrangement on the vessel hull, transom and Trim tabs.
- HD-04-4 Contractor shall supply and install four (4) new collar type anodes as shown in figure HD-04-Fig. 2, two per shaft. Contractor shall install the new shaft anodes in the location identified by the CGTA.
- HD-04-5 Contractor shall supply and install two (2) new bolt on 2.25 kg zinc anodes, one per rudder figure HD-04-Fig. 3. All areas shall be prepared as identified in paragraph 1 above. Contractor shall cut one (1) 10kg anode in half and install one half on each trim tab as per existing arrangement, Figure HD-04-Fig. 4.
- HD-04-6 Any variance from number of anodes quoted versus number required shall be adjusted through PWGSC 1379 action

## HD-04 ANODES (CONTINUED)



Figure HD-04-Fig. 1 - 10 Kg Zinc Hull /Transom anode



Figure HD-04-Fig. 2 - Collar type shaft anode



Figure HD-04-Fig. 3 – Rudder/Trim Tab Anodes



HD-04-Fig. 4 – Stern view of vessel

## HD-05 PUMPS SURVEY

- HD-05-1 The intent of this specification item is to prove the correct operation of the pumps included in HD-05-2 and HD-05-3. Prior to commencing work, operation is to be confirmed, and current/insulation readings are to be provided (where applicable) before and after servicing. Testing of the fire pump requires the vessel to be in water.
- HD-05-2 The following pumps shall be disconnected, and laid out for inspection by TCMS. Contractor is to clean all fittings, remove all gaskets and seals and reinstall with new gaskets and seals.
- Jabsco Fire Pump
  - 2 X Jabsco 150/475 Engine Driven Bilge Pumps (Port and Stbd.).
- HD-05-3 The Rule 3700 Submersible Pumps (Port and Stbd.) are to be functionally tested. In the event they fail to operate, a new unit is to be fitted. This additional work will be funded via 1379 action.
- HD-05-4 Contractor shall notify the CGTA of the inspection date and time so that the vessel engineer can be on hand to operate the systems if required. Contractor shall, if the CGTA is not present, have the TCMS inspector sign off all inspection work in the vessel's blue book. Upon successful inspection a credit for four-year survey shall be obtained.
- HD-05-5 Any additional work or parts required to be viewed by the onsite engineer and any work or parts required will be rectified by PWGSC 1379 action. See pictures of fire pump below.
- HD-05-6 Acceptance for each pump shall be based on a successful function test, demonstrating the pump operating without restriction and to the satisfaction of the TCMS inspector and the CGTA.

**HD-05 PUMPS INSPECTION (CONTINUED)**



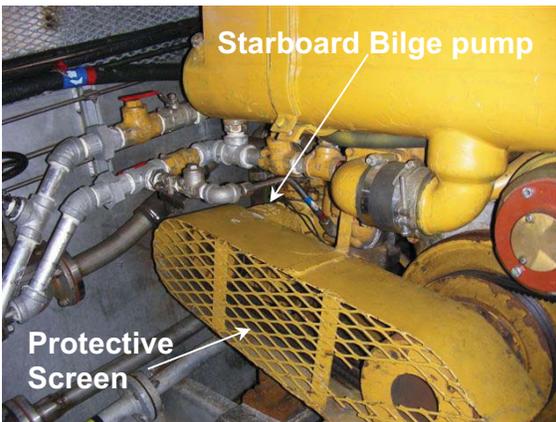
**HD-05-Fig. 1 – Fire Pump looking aft**



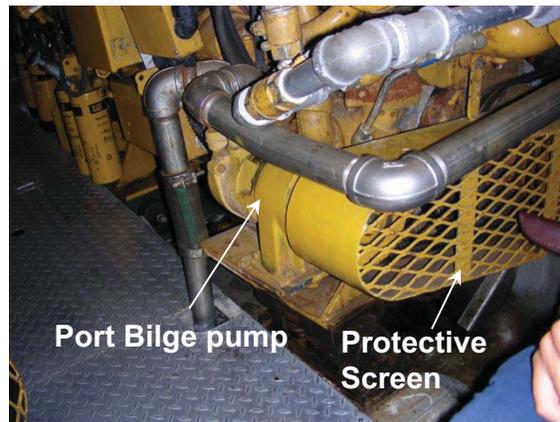
**HD-05-Fig. 2 – Fire Pump Piping**



**HD-05-Fig. 3&F4 – Engine Room Submersible Pumps (Port Left, Stbd Right)**



**HD-05-Fig. 5 - Starboard Main Engine**



**HD-05-Fig. 6 - Port Main Engine**

## HD-06 STEERING GEAR INSPECTION (SURVEY ITEM)

- HD-06-1 Contractor shall contact the local TCMS office and provide 48 hours' notice to arrange for their inspector to inspect the two rudders, rudder shafts and three shaft bearings as per the vessels Division 3 inspection report.
- HD-06-2 Contractor shall erect all necessary staging and rigging / rigging points necessary to work on both rudders. Upon completion of work identified below, contractor shall remove all staging and rigging.
- HD-06-3 Contractor shall visually inspect the port and starboard rudders for damage (dents, chips, paint flaking, etc.) in the presence of the CGTA prior to any repair work commencing. Contractor is responsible for all removals pertaining to the rudder repairs. Repairs to the rudders shall be through PWGSC 1379 action.
- HD-06-4 Contractor shall remove both rudders at their jumping collar. Contractor in consultation with the CGTA and TCMS inspector shall determine whether or not to remove the thordon bearings, based on the wear down reading. Contractor shall provide a cost in their quote for the thordon bearing removals and installation of CG supplied thordon bearings. Contractor shall follow manufacturer's recommendation for installation and verify all measurements before installing the new bearings. Completion of work is to be to the satisfaction of TCMS surveyor and CGTA.
- 1 Upper shaft bearing  
Dommel (2 3/4 inch x 3 3/8 inch) press fit with housing
  - 2 Rudder trunk bearing  
Hornad (3 1/4 inch x 4 1/4 inch) secured in trunk

### THORDON BEARINGS :

BEARINGS MACHINED TO FOLLOWING SPECIFICATIONS :

CODE NAME	SIZE, I.D. x O.D.	MACHINED SIZE, I.D. x O.D.	LENGTH
SXL (TOP)	2-3/4" x 3-3/8"	2.804"/2.809" x 3.394"/3.399"	100mm
SXL (BTM)	3-1/4" x 4-1/4"	3.315"/3.320" x 4.273"/4.278"	160mm

## HD-06 STEERING GEAR INSPECTION (CONTINUED)

HD-06-5 Contractor shall clearly identify each rudder's fitted bolts and nuts with respect to their original location prior to removal. Contractor shall prepare (cleaning, blasting, etching) both rudders for painting as per HD-03 Painting for Underwater Hull. Upon completion of all work identified in this section Contractor shall re-install both rudders. All fitted bolts and nuts shall be reinstalled to their original locations upon re-assembly. Contractor shall supply and spot weld stainless steel locking wire across the 4 sets of 3 fitted bolts to prevent the bolts from loosening after re-installation.

HD-06-6 Acceptance shall be based on the approval of TCMS inspector and to the satisfaction of the CGTA.



Figure HD-06-Fig. 1 Extended spindle for emergency steering.

## HD-06 STEERING GEAR INSPECTION (CONTINUED)



Figure HD-06-Fig. 2 Rudders with view of rudder stocks.

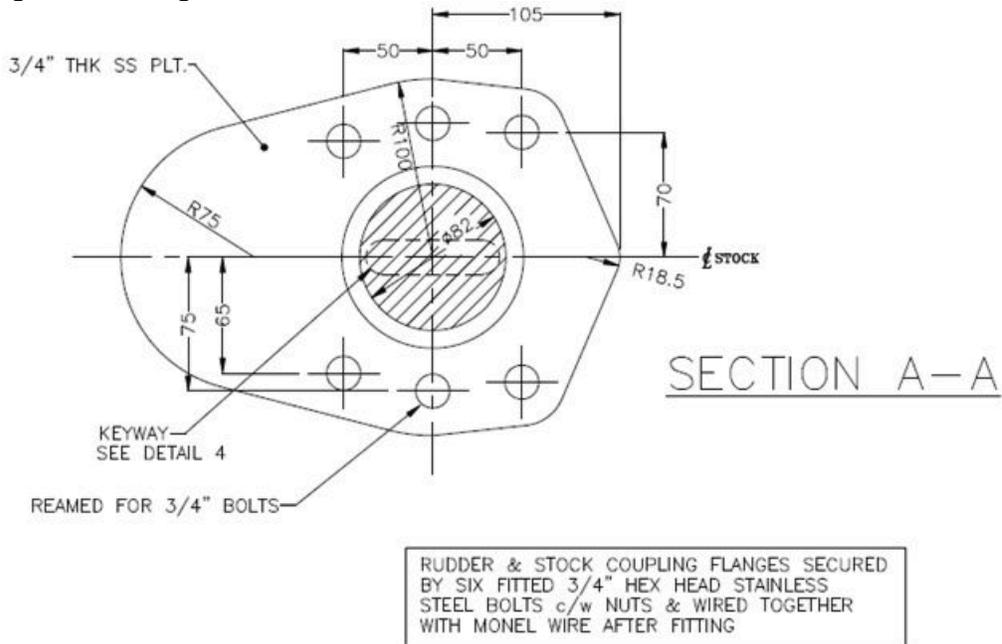
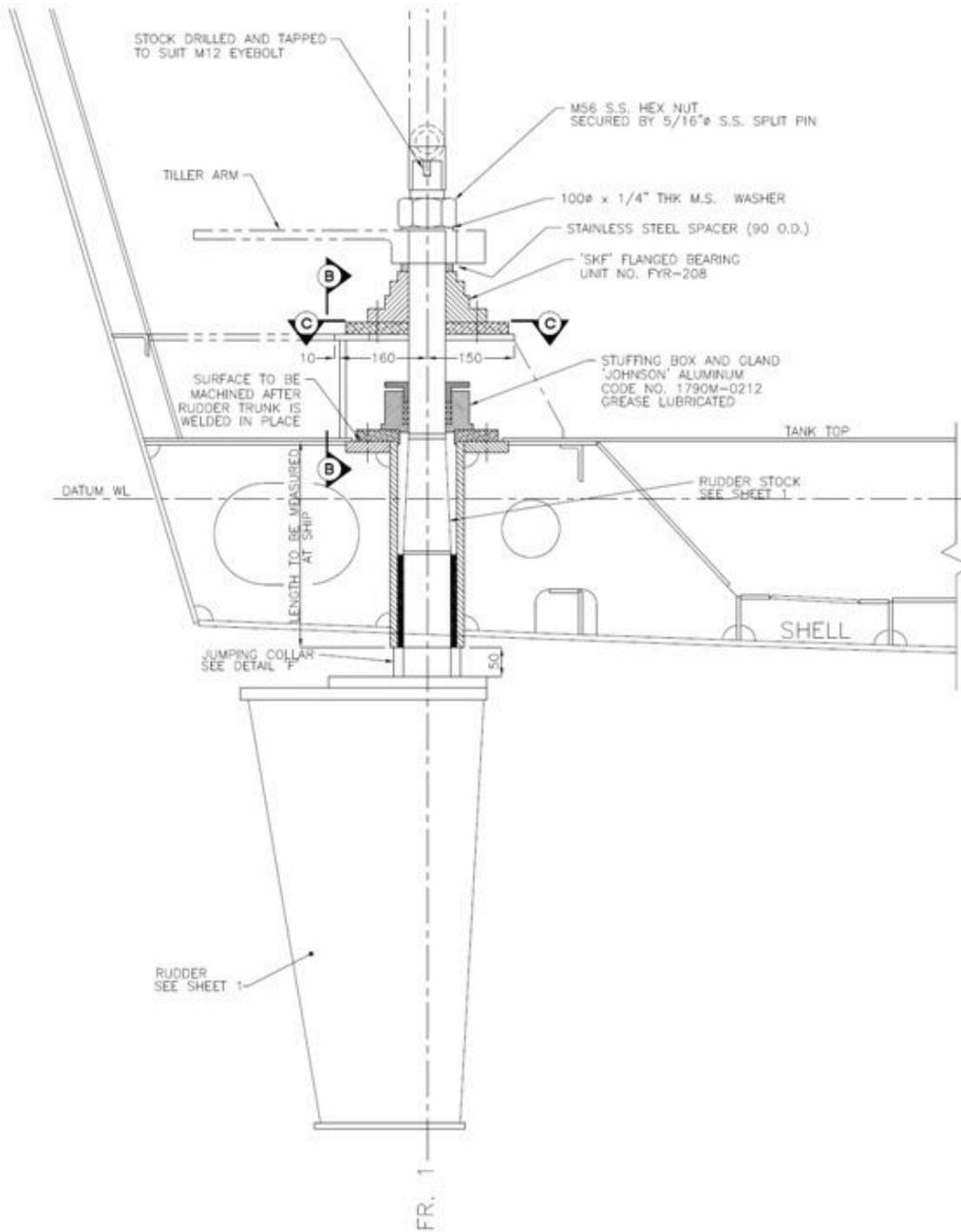


Figure HD-06-Fig. 3 – Rudder jumping collar flange drawing

## HD-06 STEERING GEAR INSPECTION (CONTINUED)

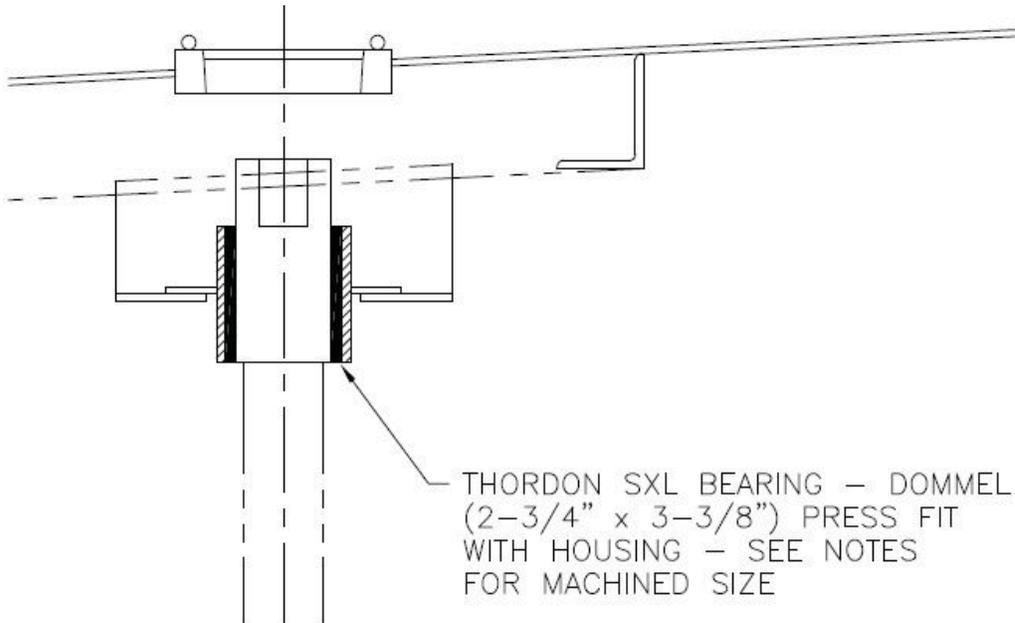


### ELEVATION

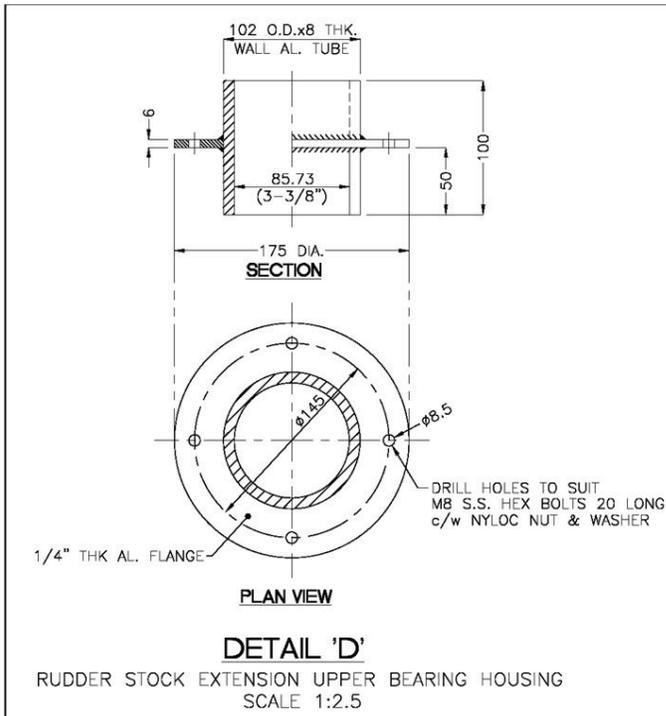
PORT SIDE LOOKING TO PORT  
STBD SIDE SIMILAR EXCEPT AS NOTED

Figure HD-06-Fig. 4 Rudder Drawing - Elevation

**HD-06 STEERING GEAR INSPECTION (CONTINUED)**



**Figure HD-06-Fig. 5 Rudder Drawing – Upper Bearing**



**Figure HD-06-6 Rudder Drawing – Upper Bearing Detail**



## HD-07 PROPULSION SHAFTS

- HD-07-1 Both propulsion shafts will be removed and replaced with new shafts provided by CCG. See Appendix A4 for Shaft Manufacturing Certificates, Appendix A5 for Shafting Arrangement.
- HD-07-2 Contractor shall quote on the removal of the two propellers, rope cutters, stern tubes, strut bearings (two per shaft), and packing gland material.
- HD-07-3 Contractor shall quote on machining and installing four new Thordon bearings (CCG Supplied), one per stern tube and one per strut. Contractor shall machine each of the four bearings as per manufacturer's requirements. Contractor may contact Thom Hofmann at Avalon Marine for correct machining measurements. Contractor shall provide the facility and ice required to shrink fit the bearings after machining. Contractor shall verify all measurements prior to machining and installing the new bearings. Completion of work shall be to the satisfaction of TCMSB. All measurements shall be recorded and a copy given to the CGTA.
- HD-07-4 Contractor shall install the two new shafts, stern tubes, and strut bearings. The original rope cutters shall be installed to the new shaft, pending approval of CGTA. Any additional work or parts required shall be adjusted through PWGSC 1379 action.
- HD-07-5 The shafts will be reconnected to the original drive saver couplings upon completion of the specified work and after TCMSB approval.
- HD-07-6 CGTA shall inspect the removed propellers. Pending approval, contractor is to fit each propeller to the new shafts. Contractor's bid is to allow for three (3) fits. Additional work required in this item shall be performed via PWGSC 1379 action.
- HD-07-7 Contractor shall supply and install new Garlock impregnated packing gland materials for both shafts and adjust as per normal operating procedure. Contractor shall verify the actual size and length required prior to ordering. Contractor shall quote a price for supplying and installing 12 feet of ½ inch Chesterton 329 stern-Lon packing material. Actual quantity and size used shall be adjusted through PWGSC 1379 action.
- HD-07-8 Acceptance shall be based on no visible or physical vibration through all RPM ranges from start to maximum load and both packing glands not leaking seawater into the vessel greater than what is acceptable to the Vessel Engineer. Acceptance shall also be to the satisfaction of the CGTA.
- HD-07-9 Contractor to measure length of shafts and size and dimensions of nuts and length of thread size and supply written report to CGTA
- HD-07-10 Contractor is responsible for disposal of old shafts.

## HD-08 TRIM TABS

- HD-08-1 Contractor shall functionally test the port and starboard trim tabs prior to drydocking in the presence of the Owner's Representative.
- HD-08-2 Contractor shall visually inspect the exterior areas of the port and starboard trim tabs for other mechanical wear (linkages, pins, indicator cables, etc.) when the vessel is drydocked, in the presence of the Owner's Representative.
- HD-08-3 Contractor shall prepare a typewritten report of their finding including all necessary repairs and associated costs. A copy shall be given to the Owner's Representative and the PWGSC Contracting Office. Repairs not addressed in this specification item shall be done through 1379 action.
- HD-08-4 Acceptance shall be based on the system functioning as per manufacturer's specification and to the satisfaction of the Owner's Representative.
- HD-08-5 Contractor shall remove all hydraulic fluid AW32 from the trim tab system, including the holding tank, lines hoses and valve blocks in the steering flat. The complete system shall be flushed with CFM hydraulic flush fluid and cleaned where accessible. Contractor to wipe clean the holding tank with lint free cloth. Note when full the system contains eight (8) litres Contractor to bid on replacing the 8 litres.



Figure HD-08-Fig. 1 Trim tab starboard side

## **HD-09 PROTECTION AGAINST SEA & LOAD LINES**

- HD-09-1 The following items are to be removed, and laid out for inspection by a TCMS surveyor:
- Port Forward 3" M/E Sea Water Outboard
  - Port Forward Camlock Inspection Cover
  - Starboard Forward 3" M/E Sea Water Outboard
  - Starboard Forward Camlock Inspection Cover
  - Port Aft 2.5" Fire Pump Inboard
- HD-09-2 The following valves are to be replaced with class approved equivalent:
- Port Forward 1.5" Recirculation Valve Forward
  - Port Forward 0.5" Vent Line, Top
  - Starboard Forward 1.5" Recirculation Valve Forward
  - Starboard Forward 0.5" Vent Line, Top
  - Port Aft 1" Vent Line Outboard
- HD-09-3 Any additional work raised by unsatisfactory inspection results is to be completed via PWGSC 1379 action. Any valves to be replaced shall be class approved.
- HD-09-4 After TCMS approval has been obtained, all removed items related to HD-09 are to be reinstalled and functionally tested.

## **L-01 ALTERNATOR OVERHAUL**

- L-01-1 The port and starboard alternators are to be disconnected and removed for service.
- L-01-2 Prior to removal, insulation testing is to be completed. A typewritten report of readings is to be submitted to CGTA.
- L-01-3 The alternators are to be cleaned, painted, and brushes/bearings are to be replaced.
- L-01-4 The alternators are to be reinstalled, with new belts (Belt specs: Caterpillar 4N-8218-DF X 2 per engine), and tested as per L-01-2.
- L-01-5 Acceptance shall be based on a type written report, including test results from before and after servicing. In addition, a successful function test shall be performed, demonstrating the generators operation without restriction and to the satisfaction of the vessel engineer.

## **L-02 MAIN ENGINE STARTER**

- L-02-1 The Stbd. Main Engine Starter is to be disconnected and removed for service.
- L-02-2 Prior to removal, peak cranking current, and insulation testing is to be completed. A typewritten report of readings is to be submitted to CCG VMM.
- L-02-3 The starters are to be cleaned, painted, and brushes/bearings are to be replaced. Any defects found during servicing will be considered unscheduled work and be covered by way of PWGSC 1379 action.
- L-02-4 The starters are to be reinstalled. Testing is to be completed as per L-02-2.
- L-02-5 Acceptance shall be based on a type written report including test results from before and after servicing. In addition, a successful function test demonstrating the starters operation without restriction shall be performed to the satisfaction of the vessel engineer.

### **L-03 INTERIOR LIGHTING**

- L-03-1 Contractor is to remove a total of twelve (12) existing lighting fixtures from the engine room the fwd & aft survivors space, and the engine room, to be returned to CCG onsite representative.
- L-03-2 Contractor is to install replacement CG supplied LED lamps in the location of each of the removed lights. See Appendix A6 for manufacturer's installation data.
- L-03-3 Of the twelve fixtures, the five (5) located in the survivors spaces require a 12" diameter round white plastic (or similar) backing plate to cover the outline of the previous fixtures. These backing plates are to be fabricated and installed by the contractor.
- L-03-4 All lamps shall be installed such that they may be rotated by 90 degrees if needed.
- L-03-5 Any additional work required shall be adjusted through PWGSC 1379 action.
- L-03-6 Acceptance shall be based on the satisfaction of the CGTA.

## **Appendix A**

### **1 – Division 3 Report, June 21, 2013**



550165941.pdf0.pdf

### **2 – Docking Plan**



20130704143950865  
.pdf

### **3 – Tank Capacities Plan**



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.pdf

### **4 – Shaft Manufacturing Certificates**



20130619104444568  
.pdf

### **5 – Shafting Arrangement**



20130704112048327  
.pdf

### **6 – Hella Dura 36 LED Rectangular Engine Room Lamps**



Acrobat Document

## Page 27

### THORDON BEARINGS:

BEARINGS MACHINED TO FOLLOWING SPECIFICATIONS:

CODE NAME

SIZE, I.D. x O.D.

MACHINED SIZE, I.D. x O.D.

LENGTH

SXL (TOP)

100 mm

SXL (BTM)

160 mm

## PAGE 29 – Figure H-06-Fig. 3

¾" THK SS PLT.

R100

Ø B2

☒ STOCK

R18.5

SECTION A-A

REAMED FOR ¾" BOLTS

KEYWAY SEE DETAIL 4

R75

RUDDER & STOCK COUPLING FLANGES SECURED BY SIX FITTE ¾" HEX HEAD STAINLESS STEEL BOLTS c/w NUTS & WIRED TOGETHER WITH MONEL WIRE AFTER FITTING

## Page 30 – Figure H-06-Fig. 4

M56 S.S. HEX NUT SECURED BY 5/16"Ø S.S. SPLIT PIN

100Ø x ¼" THK M.S. WASHER

STAINLESS STEEL SPACER (90 O.D.)

'SKF' FLANGED BEARING UNIT NO. FYR-208

STUFFING BOX AND GLAND ' JOHNSON'

ALUMINUM CODE NO. 1790M-0212 GREASE LUBRICATED

TANK TOP

RUDDER STOCK SEE SHEET 1

SHELL

FR. 1

RUDDER SEE SHEET 1

## Page 30

### PALIER THORDON :

PALIER USINÉS CONFORMÉMENT AUX EXIGENCES SUIVANTES :

NOM DE CODE

TAILLE, D. int. x D. ext.

DIMENSIONS USINÉES, D. int. x D. ext.

LONGUEUR

SXL (SUPÉRIEUR)

100 mm

SXL (INFÉRIEUR)

160 mm

## PAGE 32 – Figure H-06-Fig. 3

PLAQUE INOX ¾ po D' ÉPAIS.

R100

Ø 82

AXE MÈCHE

R18,5

SECTION A-A

ALÉSÉ POUR BOULONS ¾ po

CHEMIN DE CLÉ VOIR DÉTAIL 4

R75

GOVERNAIL ET TOURTEAUX D'ACCOUPLMENT DE LA MÈCHE FIXÉS À L'AIDE DE SIX BOULONS À TÊTE HEXAGONALE EN INOX, ALÉSAGE ¾ PO AVEC ÉCROUS, RELIÉS PAR UN FIL EN MONEL À LA SUITE DE L'INSTALLATION

## Page 33 – Figure H-06-Fig. 4

ÉCROU HEXAGONAL M56 INOX FIXÉ PAR GOUPILLE FENDUR EN INOX 5/16 PO Ø

100RONDELLE ACIER DOUX 100 Ø x ¼ PO ÉPAIS.

ESPACEUR INOX (90 D. EXT.)

UNITÉ DE ROULEMENT À COLLERETTE SKF N° FYR-208

BOÎTE À GARNITURE ET FOULOIR JOHNSON

ALUMINUM N° DE CODE 1790M-0212 LUBRIFIÉS À LA GRAISSE

PLAFOND DE BALLAST

MÈCHE DE GOVERNAIL (VOIR FEUILLET 1)

COQUE

FR. 1

GOVERNAIL (VOIR FEUILLET 1)

JUMPING COLLAR SEE DETAIL 'F'  
LENGTH TO BE MEASURED AT SHIP  
DATUM WL  
SURFACE TO BE MACHINED AFTER RUDDER TRUNK  
IS WELDED IN PLACE  
TILLER ARM  
STOCK DIRLLED AND TAPPED TO SUIT M12  
EYEBOLT

**ELEVATION**

PORT SIDE LOOKING TO PORT STBD SIDE SIMILAR  
EXCEPT AS NOTED

**PAGE 31 – Figure HD-06-6**

THORDON SXL BEARING – DOMMEL (2-3/4" x 3-3/8") PRESS FIT WITH HOUSING – SEE NOTES FOR MACHINED SIZE

102 O.C. x 8 THK.  
WALL AL. TUBE  
175 DIA.  
SECTION  
DRILL HOLES TO SUIT M8 S.S. HEX BOLTS 20 LONG  
c/w NYLOC NUT & WASHER

¼" THK AL. FLANGE

**PLAN VIEW**

**DETAIL 'D'**

RUDDER STOCK EXTENSION UPPER BEARING  
HOUSING SCALE 1:2.5

**PAGE 32 – Figure HD-06-Fig. 7**

¾" THK SS PLT.  
R100  
Ø B2  
⊥ STOCK  
R18.5  
SECTION A-A  
REAMED FOR ¾" BOLTS  
KEYWAY SEE DETAIL 4  
R75  
RUDDER & STOCK COURPLING FLANGES SECURED  
BY SIX FITTE ¾" HEX HEAD STAINLESS STEEL BOLTS  
c/w NUTS & WIRED TOGETHER WITH MONEL WIRE

BRIDE DE TOURTEAU (VOIR DÉTAIL F)  
LONGUEUR MESURÉE SUR LE NAVIRE  
PLAN DE RÉFÉRENCE WL  
SURFACE USINÉE APRÈS SOUDAGE DE LA  
JAUMIÈRE  
ALLONGE DE BARRE  
MÈCHE PERCÉE ET TARAUDÉE POUR CONVENIR AU  
BOULON À OEIL M12

**ÉLÉVATION**

CÔTÉ BÂBORD VUE SUR LE CÔTÉ BÂBORD CÔTÉ  
TRIBORD SEMBLABLE SAUF INDICATIONS  
CONTRAIRES

**PAGE 34 – Figure HD-06-6**

PALIER THORDON SXL – AJUSTEMENT SERRÉ DU  
DOMMEL (2-3/4 PO x 3-3/8 PO) DANS SON  
LOGEMENT (VOIR REMARQUES POUR LES  
DIMENSIONS D'USINAGE)

102 D. EXT. x 8 ÉPAIS.  
TUBE D'ALUM. DE LA PAROI  
175 DIAM.  
SECTION  
PERCER DES TROUS POUR ACCUEILLIR DES  
BOULONS M8 INOX À TÊTE HEXAGONALE  
LONGUEUR 20 AVEC ÉCROU NYLOC ET RONDELLE  
BRIDE ALUM. ¼ PO ÉPAIS.

**VUE EN PLAN**

**DÉTAIL « D »**

BOÎTIER DU PALIER SUPÉRIEURE DE L'EXTENSION  
DE LA MÈCHE DU GOUVERNAIL, ÉCHELLE 1:2,5

**PAGE 35 – Figure HD-06-Fig. 7**

PLAQUE INOX ¾ po D'ÉPAIS.  
R100  
Ø 82  
AXEMÈCHE  
R18,5  
SECTION A-A  
ALÉSÉ POUR BOULONS ¾ po  
CHEMIN DE CLÉ VOIR DÉTAIL 4  
R75  
GOUVERNAIL ET TOURTEAUX D'ACCOUPLLEMENT  
DE LA MÈCHE FIXÉS À L'AIDE DE SIX BOULONS À  
TÊTE HEXAGONALE INOX, ALÉSAGE ¾ PO AVEC

AFTER FITTING

R13  
¾" THK M.S. PLT.  
R100  
Ø B2  
R25  
R12.7  
R18.5

ÉCROUS, RELIÉS PAR UN FIL EN MONEL À LA SUITE  
DE L'INSTALLATION

R13  
PLAQUE ACIER DOUX ¾ po D'ÉPAIS.  
R100  
Ø 82  
R25  
R12,7  
R18,5



**Division 3 Report**

Vessel Name	MV SAMBRO
File Number	16244
Official Number	819305
Builder	HIKE METAL PRODUCTS & SHIPBUILDING LTD.
IMO Number	
Dimensions: Length	15.77
Dimensions: Breadth	5.19
Dimensions: Depth	2.8
Registration Date	1998 08 18
Registration Expiry Date	2014 08 31
Builder	HIKE METAL PRODUCTS & SHIPBUILDING LTD.
Hull/Project Number	
Gross Tonnage	43
Registered Tonnage	32
Port of Registry	OTTAWA
Propulsion Power	1350
Last Inspection	Intermediate
Last Inspected Date	2013 02 15
Last Inspection Place	Sambro, Nova Scotia
Last inspected by	Muise, Andrew
Last inspection TCC	Atlantic Region (200)

Vessel Name: MV SAMBRO

File Number: 16244

<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
---------------------	---------------	-----------------------	--------------

**Section: 01 - General Information On Vessel**



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

Description

<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
---------------------	---------------	-----------------------	--------------

Periodic Inspection

2H0010	NR	1	Date: 2012 12 04 - 04
--------	----	---	-----------------------

MOSH inspection to be completed in SAMBRO

Place: Louisburg

**Section: 20 - Main Structure**

Underwater Hull Inspection

3LL040	NR	1	Date: 2009 07 21 - 04
--------	----	---	-----------------------

This vessel has been granted a two month extension on its underwater inspection, which is now due on or before September 21, 2013. Several other inspection items were granted an extension as identified within RDIMS documents 8201041 and 8074545. 15/02/2013. AJM  
Place: Sambro, NS.

**Section: 23 - Intact & Damaged Stability**

Lightship Survey (last)

3LL020	NR		Date: 1996 11 20 - 00
--------	----	--	-----------------------

Place: Wheatley, Ont.

**Section: 24 - Protection Against Sea & Load Lines**

Sea Connections Inspection

3LL110	01		Date: 2010 10 14 - 04
--------	----	--	-----------------------

Number: 01

Location: P.fwd 3"m/e Sea Wtr Outbd

	02		Date: 2010 10 14 - 04
--	----	--	-----------------------

Number: 01

Location: P.fwd 1.5" Recire Vv. Fwd

	03		Date: 2010 10 14 - 04
--	----	--	-----------------------

Number: 01

Location: P.fwd 0.5" Vent Line, Top

	04		Date: 2010 10 14 - 04
--	----	--	-----------------------

Number: 01



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

<u>Description</u>	<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
	04		Location: P.fwd Camlock Insp Cover	
	05		Date: 2010 10 14 - 04	
	05		Number: 01	
	05		Location: S.fwd 3"m/e Sea Wtr.outbd	
	06		Date: 2010 10 14 - 04	
	06		Number: 01	
	06		Location: S.fwd 1.5" Recirc Vv.fwd	
	07		Date: 2010 10 14 - 04	
	07		Number: 01	
	07		Location: S.fwd 0.5" Vent Line, Top	
	08		Date: 2010 10 14 - 04	
	08		Number: 01	
	08		Location: S.fwd Camlock Insp Cover	
	09		Date: 2009 08 06 - 04	
	09		Number: 01	
	09		Location: P.aft 2.5" Fire Pp. Inbd	
	10		Date: 2009 08 06 - 04	
	10		Number: 01	
	10		Location: P.aft 1" Vent Line Outbd	
	11		Date: 2009 08 06 - 04	
	11		Number: 02	
	11		Location: Stern trim tabs	
<b>Section: 26 - Steering &amp; Manoeuvrability</b>				
Steering Gear Components Inspection	3HH010	01	Date: 2009 07 21 - 04	
		2	Bearing cleaned on starboard rudder.	



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

<u>Description</u>	<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
			1	2005 02 16 PHC Port and Stbd rudder stocks fitted with new Thordon Bearings and new carrier bearings. Initials: JM TCC: Atlantic Region
<b>Section: 27 - Anchorage, Mooring &amp; Towing</b>				
Anchors Inspected	3LL120	01		Date: 2011 07 26 - 04 Place: Sambro, Nova Scotia
Cable or Chain Inspected	3LL140	01		Date: 2011 07 26 - 04 Place: Sambro, Nova Scotia
<b>Section: 31 - Screw, Screwshafts, Bearings</b>				
Port Tube or Tail Shaft Inspection	3FF010	NR		Date: 2012 11 20 - 04 Due to the fact that this shaft is at or near its minimum diameter when new, any amount of wear brings the shaft below the minimum allowable diameter. As there were signs of wear in relation to the packing gland, the shaft is to be replaced. 04/01/2013. AJM
			2	New Sterntube Installed in Harbour Grace During Fall 2012 Refit. Material Certificates and NDE Reports on File in St. John's, NL.
			1	shaft is undersize, ABYC and ABS recommend safety factor of 10, this is 7.5
Starboard Tube or Tail Shaft Inspection	3FF030	NR		SFV regs specify shaft size of 72.38 Shaft Diameter: 69 Date: 2012 11 20 - 04



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

<u>Description</u>	<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
	4			Due to the fact that this shaft is at or near its minimum diameter when new, any amount of wear brings the shaft below the minimum allowable diameter. As there were signs of wear in relation to the packing gland and the fwd Thordon Bearing, the shaft is to be replaced. 04/01/2013. AJM
	3			Starboard packing glade to be repaired upon arrival to Sambro. Gland to be monitored on trip from Louisbourg to Sambro.
	2			New Sterntube Installed in Harbour Grace During Fall 2012 Refit. Material Certificates and NDE Reports on File in St. John's, NL.
	1			shaft is undersize, ABYC and ABS recommend safety factor of 10, this is 7.5
Port Stern Bearing Inspection	3FF060	NR		SFV regs specify shaft size of 72.38 Shaft Diameter: 68.6 Date: 2012 11 20 - 04
	2			New Thordon Bearings installed in fwd tube and in strut. 04/01/2013. AJM
	1			New bearing Installed During Stern tube Renewal in Harbour Grace, NL. Wearown: 000
Starboard Stern Bearing Inspection	3FF080	NR		Date: 2012 11 20 - 04
	2			New Thordon Bearings installed in fwd tube and in strut. 04/01/2013. AJM
	1			New Bearing Installed during Stern Tube Renewal in Harbour Grace, NL. Wearown: 0000



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

Description

<u>Field Number</u>	<u>Occur.</u>	<u>Type / Rmk No.</u>	<u>Value</u>
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**Section: 50 - Lifesaving Equipment**

Buoyancy Test or Inspection of Lifeboat Medium

Date: 2005 12 30 - 04

1

Inflatable LifeRaft Serviced (oldest Date)

Date: 2012 08 31 - 01

Pyro-Distress Signals Manufactured(bridge)

Date: 2010 10 31 - 04

Line Throwing Device

Date Manufactured: 2010 07 31 - 04

**Section: 51 - Fire Detection, Alarms & Extinguisher Equipment**

Smothering Medium Cylinder Hydrostatic Test

Date: 2005 11 30 - 12

Location on Ship: Aft Of Main House To Stbd.

Smothering System Serviced

Date: 2012 12 31 - 01

Engine compartment fire suppression system distribution piping replaced in 12/2012. 04/01/2013. AJM

Vessel Name: MV SAMBRO

File Number: 16244

### Section: Continuous Survey Items

<u>Item</u>	<u>Description</u>	<u>Inspection Date</u>	<u>Test Date</u>	<u>Frequency</u>
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**3D - Diesel Engines**

3D001 Port Main Engine Cat 3408 Serial 8rg00251

2012 10 31

Heaton, Harvey G

5

3D002 Stbd Main Engine Cat 3408 Serial 8rg00252

2012 01 18

Kehoe, ED

5

**3G - Gearing**

3G001 Port Main Gearbox Twin Disc Mg514

2012 12 19

Cooper, Ches

5



Vessel Name: MV SAMBRO

File Number: 16244

Section: Continuous Survey Items

Item	Description	Inspection Date	Test Date	Frequency
3G002	Stbd Main Gearbox Twin Disc Mg514 #3x7289	2012 01 18 Kehoe, ED	Gearbox over hauled by Sealand Diesel, Baie Verte, NL. Report on file in Lewisporte office	5
		1	SI7: Port Gear Box inspection past due	5
		1	STBD engine main gear box completely overhauled by Caterpillar which included a marine performance annalysis report of which a copy can be found in vessel file	

3H - Auxiliaries Not Connected to Nor Driven By Main Engine

3H001	Port M/e Driven Bilge Pump Jabsco 150/475	2008 05 02 Munroe, James		5
3H002	Stbd M/e Driven Bilge Pump Jabsco 150/475	2008 05 02 Munroe, James		5
3H003	Port M/e Driven Fire Pump Gilkes 250/700	2008 05 02 Munroe, James		5
3H004	Port Submersible Bilge Pump, Rule 3700	2008 05 02 Munroe, James		5
3H005	Stbd Submersible Bilge Pump, Rule 3700	2008 05 02 Munroe, James		5
3H006	Bow Anchor Capstan	2008 05 02 Munroe, James		5

3L - Tanks

3L001	Forepeak Tank # 12	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L002	No.1 Db Centre Tank #10	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5



### Division 3 Report

Vessel Name: MV SAMBRO

File Number: 16244

#### Section: Continuous Survey Items

Item	Description	Inspection Date	Test Date	Frequency
3L003	No.2 Db Tank # 15 Port	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L004	No.3 Db Tank # 15 Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L005	No.4 Db Tank #16Port	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L006	Fr10 To Fr12 Tank # 16Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L007	No.7 Db Tank # 2 Stb F/O	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L008	No.8 Db Port Tank # 1 F/O	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L009	No.8 Db Stbd Tank # 21P	2009 07 21 Kastner, Hans J	2009 08 06 Munroe, James	5
3L010	No.9 Db Tank # 21 Stb.	2009 07 21 Kastner, Hans J	2009 08 06 Munroe, James	5
3L011	No.9 Db Tank # 22P	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L012	No10.db Tank # 22 Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L013	No.10 Db Tank # 24	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L014	No.11 Db Centre Tank # 11	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L015	No.12 Db Tank # 17 Port	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5

2 Corriasion exists and must be addressed-Scope of work to be submitted prior to carrying out repairs

1 Corriasion found in lower ends of tank-to be addressed.

1 Corriasion exists and must be addressed-Scope of work to be submitted prior to carrying out repairs



Vessel Name: MV SAMBRO

File Number: 16244

Section: Continuous Survey Items

<u>Item</u>	<u>Description</u>	<u>Inspection Date</u>	<u>Test Date</u>	<u>Frequency</u>
3L016	No.12 Db Stbd. Tank # 17 Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
		1	Corrosion exists and must be addressed-Scope of work to be submitted prior to carrying out repairs	
3L017	No.13db Centre Tank # 9	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L018	No.14 Db Tank # 25	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
		1	Localized Pitting in Longitudinal Bhd. (Inboard-Stbd. E/R)of Subject Tank. Pitted Area Ground to Sound Metal and Filled as per Weld Procedure on File St. John's, NL. Area to be Monitored for Future Corrosion/Pitting.	
3L019	No.14 Db Tank # 8 centre	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L020	No.15 Db Tank # 14 Port	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
		3	Corrosion found in lower ends of tank-to be addressed. Scope of work to be submitted prior to work being carried out.	
		2	Inspected by Ed Kehoe Oct 31, 2011 - as per CG Survey Record Book on board	
		1	Inspected by Ed Kehoe Oct 31, 2011 - as per CG Survey Record Book on board.	
3L021	No.17 Wing Tank # 14Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
		1	Corrosion exists and must be addressed-Scope of work to be submitted prior to carrying out repairs	
3L022	No.17 Wing Tank # 5 Port	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5



Vessel Name: MV SAMBRO

File Number: 16244

Section: Continuous Survey Items

Item	Description	Inspection Date	Test Date	Frequency
3L023	No.18 Wing Tank # 4 Stb.	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5
3L024	No.18 Wing Tank # 13 Port	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5
3L025	No.19 Wing Tank # 13 Stb.	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5
3L026	No.19 Tank # 3 F/O	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L027	No.20 Wing Port Tank # 20 Port	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5
3L028	No.20 Wing Tank # 20 Stb.	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L029	No.21 Tank # 7	2012 11 20 Currie, Jeffrey	2012 11 20 Currie, Jeffrey	5
3L031	No.21 Wing Tank # 19 Stb.	2009 07 21 Munroe, James	2009 08 06 Munroe, James	5
3L032	Tank # 23	2011 10 31 Kehoe, ED	2011 10 31 Kehoe, ED	5
3L033	Tank # 6	2012 11 20 Currie, Jeffrey	2012 11 20 Currie, Jeffrey	5

SI7: Two holes in the longitudinal bulkhead in the E/R. There is also an arc mark on the hull inside of the tank. Holes and arc to be repaired. (Date Rectified: 2009 08 06)

SI7: There is pitting in the longitudinal bulkhead from the bottom of the tank up to 20 cm. There is also some pitting on the transverse web frames and frames. This is to be cropped and a new insert. (Date Rectified: 2009 08 06)

Subject Tank Tops were Cropped and Renewed to Allow for Stern Tube Replacement. Voids were Air Tested and NDE Tested upon Repair. Mil Certificates and NDE Reports on File in St. John's, NL.



Vessel Name: MV SAMBRO

File Number: 16244

Section: Continuous Survey Items

Item	Description	Inspection Date	Test Date	Frequency
		1	Air Tests Revealed Pitting and Holes on Stbd. Side Top. Top Plate Renewed. Mil Certificates and NDE Reports on File St. John's, NL. Tank Retested with Air and Found to be Satisfactory.	
3L034	Tank # 10 Port	2012 11 20 Currie, Jeffrey	2012 11 20 Currie, Jeffrey	5
3L035	Tank # 18 Stb.	2012 11 20 Currie, Jeffrey	2012 11 20 Currie, Jeffrey	5
3L036	3L030 Tank # 19 Port.	2012 11 20 Currie, Jeffrey	2012 11 20 Currie, Jeffrey	5

Vessel Name: MV SAMBRO

File Number: 16244

Section: Certificates List

Non-Passenger Vessel < 150 Tons

SIC Number: 85-0433 Maximum Endorsements:3 Document No.:2012-043-202

Initial Issue	Issued / Endorsed	Extens. Date	Expiry Date	Short Term	Surveyor Init/TCC
	2012 12 04		2012 12 11	X	Mackenzie, Douglas J Sydney
Extension	2013 01 04	7	S17: AS per SI-07 items 2013 12 11	X	Muise, Andrew Atlantic Region
8 Vessel's short termed inspection certificate extended for one year to allow owner to manufacture and install two new propulsion shafts. 04/01/2013. AJM					



### Division 3 Report

Record of Safety Equipment for a Vessel Operating on Non-Convention Voyages SIC Number: 85-0138 Maximum Endorsements:0 Document No.:2012-043-202

Initial Issue	Issued / <u>Endorsed</u> Date	Extens. <u>Date</u>	Expiry <u>Date</u>	Short <u>Term</u>	Surveyor <u>Init/TCC</u>
	2012 12 04		2016 12 03		Mackenzie, Douglas J Sydney

#### S17 Notes

1 IB0020 Coast Guard has requested an extension for the 10 000 hour overhaul on one of the engines. CAT has given their approval of this issue and we have granted our approval. Letter is under RDIMS # 697984. (Date Rectified: 2013 01 04)

1 IB0130 Hatch alarm system wiring to be terminated properly (Date Rectified: 2013 01 04)

1 2H0010 MOSH inspection to be completed in SAMBRO (Date Rectified: 2013 01 10)

3 3FF010 Due to the fact that this shaft is at or near its minimum diameter when new, any amount of wear brings the shaft below the minimum allowable diameter. As there were signs of wear in relation to the packing gland, the shaft is to be replaced. 04/01/2013. AJM

1 3FF010 shaft is undersize, ABYC and ABS recommend safety factor of 10, this is 7.5 (Date Rectified: 2007 05 02)

1 3FF010 (Date Rectified: 2007 05 02)

4 3FF010 SFV regs specify shaft size of 72.38 (Date Rectified: 2007 05 02)

4 3FF030 Due to the fact that this shaft is at or near its minimum diameter when new, any amount of wear brings the shaft below the minimum allowable diameter. As there were signs of wear in relation to the packing gland and the fwd Thordon Bearing, the shaft is to be replaced. 04/01/2013. AJM

3 3FF030 Starboard packing glade to be repaired upon arrival to Sambro. Gland to be monitored on trip from Louisbourg to Sambro. (Date Rectified: 2013 01 04)

1 3FF030 shaft is undersize, ABYC and ABS recommend safety factor of 10, this is 7.5 (Date Rectified: 2007 05 02)

1 3FF030 (Date Rectified: 2007 05 02)

1 3FF030 SFV regs specify shaft size of 72.38 (Date Rectified: 2007 05 02)

1 3LL110 All bushings and damaged pins are to be replaced. (Date Rectified: 2009 08 06)

1 3LL110 Valve to be replaced. (Date Rectified: 2009 08 06)

1 3LL110 Valve to be replaced. (Date Rectified: 2009 08 06)

1 3N0010 To Be sited at the Rescue Station (Date Rectified: 2013 01 10)

1 560030 To Be sited at Rescue Station (Date Rectified: 2013 01 10)

1 3G001 Port Gear Box inspection past due



Transport  
Canada

Transports  
Canada

### Division 3 Report

Page 13/13

3L025

1

Two holes in the longitudinal bulkhead in the E/R. There is also an arc mark on the hull inside of the tank. Holes and arc to be repaired. (Date Rectified: 2009 08 06)

2013 06 21

No.	Reference Drawings	Drawing No.
1.	GENERAL ARRANGEMENT	95004-1
2.	PROFILE AND DECK	95004-2
3.	CONSTRUCTION SECTIONS	95004-3
4.	WATERLOUGH STRUCTURE	95004-4
5.	WATERLOUGH STRUCTURE	95004-5
6.	FLYING BRIDGE	95004-19
7.	BLUDDER & BLOCK DETAILS	95004-49

**PRINCIPAL PARTICULARS**

LENGTH, OVERALL	15.773m
LENGTH, BETWEEN PERPENDICULARS	14.020m
BEAM, MOULDED	5.200m
DEPTH, MOULDED	2.045m
DRAFT	1.356m
COMPLEMENT	5
SPEED	18 knots
SURVIVORS	20

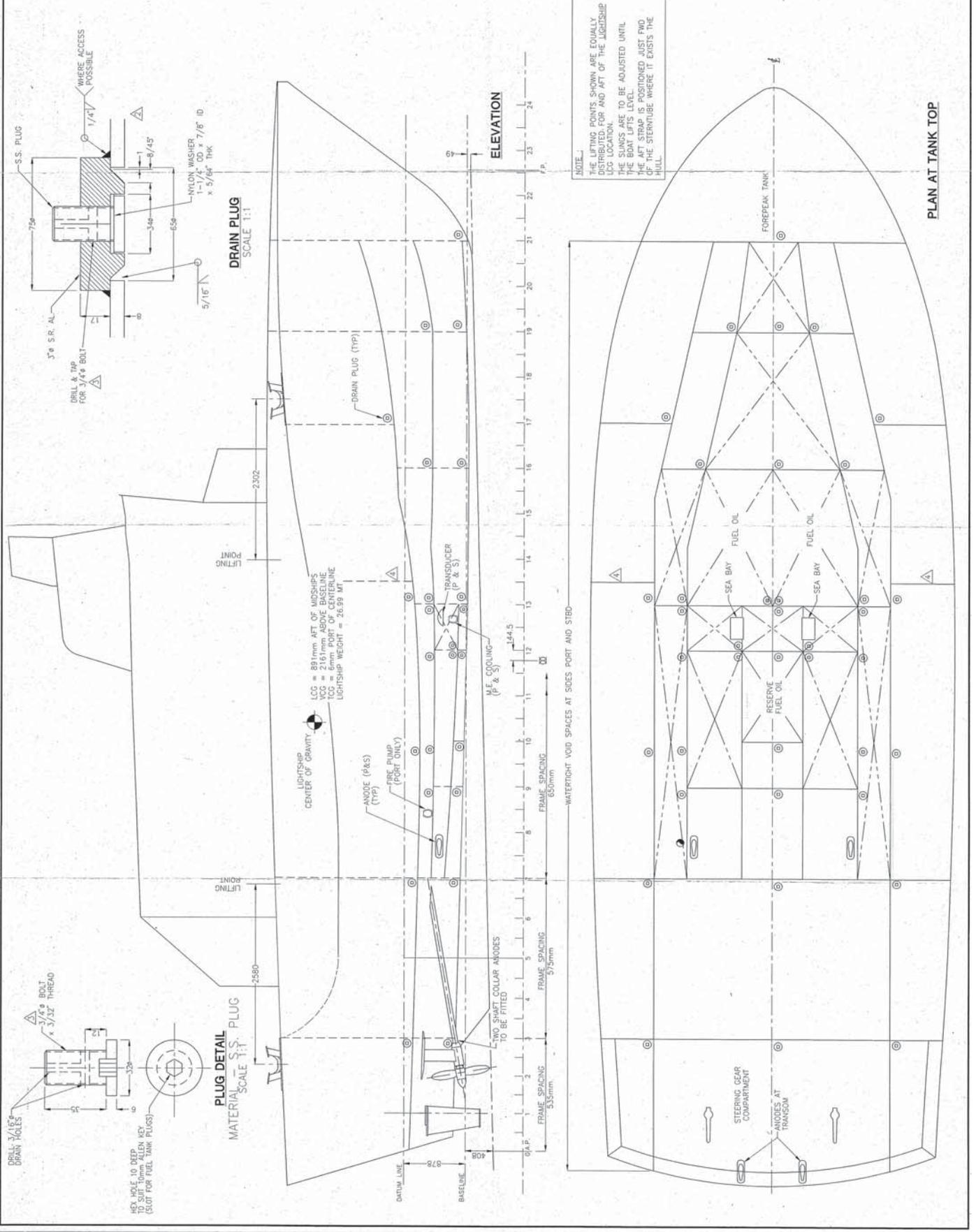
3. AS FITTED	24. APR. 95
4. LIGHTSHIP WEIGHT AND CG ADDED	24. APR. 95
5. DIMENSIONS REVISIONS	
6. WEIRD AT PIVOTS CORRECTED	
7. DIMENSIONS REVISIONS	
8. DIMENSIONS REVISIONS	
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**E.Y.E. MARINE CONSULTANTS**  
 DARTMOUTH, N.S.  
 ST. JOHN'S, N.F.L.D.

Project: ARJUN CLASS LIFEBOAT  
 Client: HMK METAL PRODUCTS  
 Title: DOCKING PLAN

Scale: 1:25 U.A.O.  
 Date: 21 NOV 95  
 C.C.G. Approval: \_\_\_\_\_  
 Classification Society Approval: \_\_\_\_\_

Drawn	Checked	Project	Drawing No.	Rev. No.
G. PEET	T. THOMPSON	95004	1	5



NOTE: THE LISTING POINTS SHOWN ARE EQUALLY DISTRIBUTED FOR AND AFT OF THE LIGHTSHIP LCG LOCATION. THE SHINGS ARE TO BE ADJUSTED UNTIL THE BOAT LIFTS LEVEL. THE AFT STRAP IS POSITIONED JUST FWD OF THE STERN TUBE WHERE IT EXISTS THE HULL.

PLAN AT TANK TOP

ELEVATION

DRAIN PLUG SCALE 1:1

PLUG DETAIL MATERIAL S.S. PLUG SCALE 1:1

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HEX HOLE TO KEEP TO SPLIT 10mm ALLEN KEY (CUT FOR FUEL TANK PLUGS)

3/4\"/>

DRILL 3/16\"/>

3/4\"/>

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3/4\"/>

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3/4\"/>

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3/4\"/>

DRILL 3/16\"/>

3/4\"/>

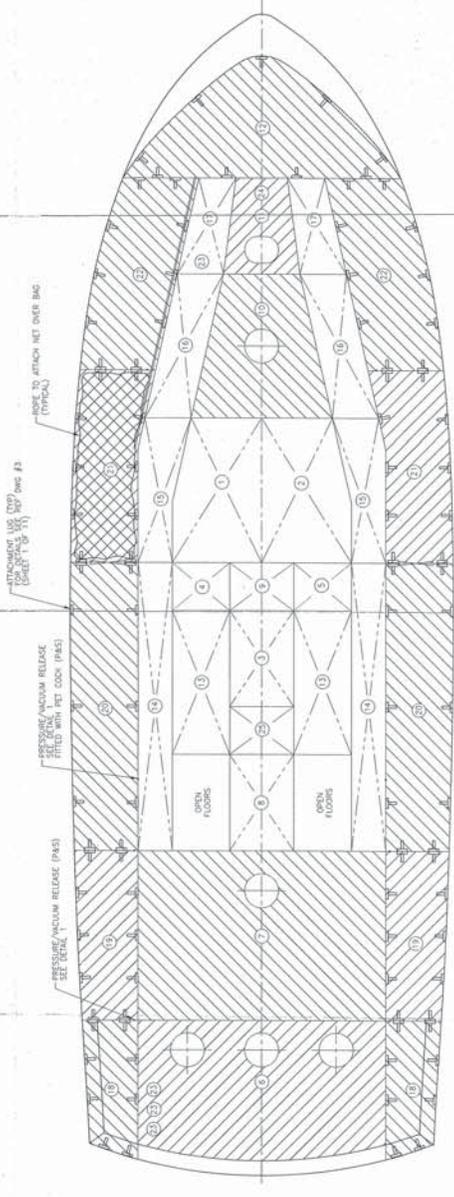
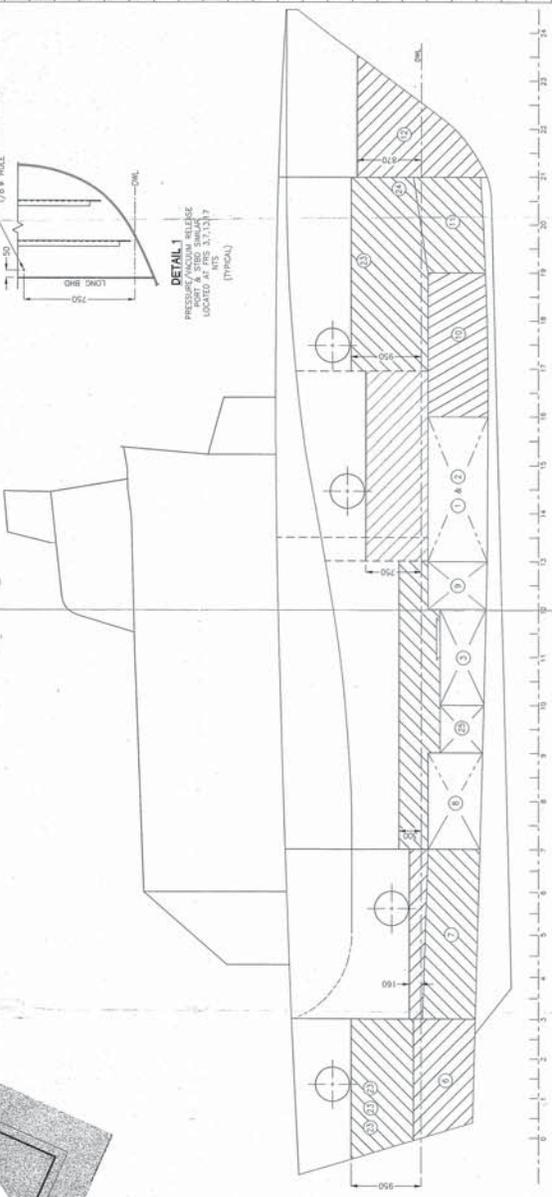
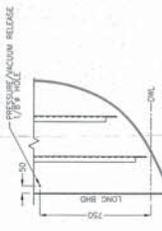
HEX HOLE TO KEEP TO SPLIT 10mm ALLEN KEY (CUT FOR FUEL TANK PLUGS)

10	REFERENCES DRAWING	55001-1
11	LINKS PLAN	55001-2
12	PROFILES AND DECK	55001-3
13	WATERLOOSE STRUCTURE	55001-8
14	PLATING	55001-10
15	PLATING	55001-11
16	PLATING	55001-12
17	PLATING	55001-13
18	PLATING	55001-14
19	PLATING	55001-15
20	PLATING	55001-16
21	PLATING	55001-17
22	PLATING	55001-18
23	PLATING	55001-19

NO.	COMPARTMENT	CAPACITY (LITERS)	LOCATION	TANK NAME	REMARKS
1	MAIN FUEL OIL	1228	1070	11-18	FILLED WITH FUEL
2	MAIN FUEL OIL	1228	1070	11-18	FILLED WITH FUEL
3	RESERVE FUEL OIL CENTER	576	500	10-12	FILLED WITH FUEL
4	SEA BAY PORT	---	---	12-13	EMPTY
5	SEA BAY STBD	---	---	12-13	EMPTY
6	VOID SPACE	---	---	12-13	FILLED WITH POLYETHYLENE
7	VOID SPACE CENTER	---	---	13-17	FILLED WITH POLYETHYLENE
8	VOID SPACE CENTER	---	---	7-9	EMPTY
9	VOID SPACE CENTER	---	---	12-13	EMPTY
10	VOID SPACE CENTER	---	---	16-19	FILLED WITH POLYETHYLENE
11	VOID SPACE CENTER	---	---	16-19	FILLED WITH POLYETHYLENE
12	FOREPEAK	---	---	21-22M	FILLED WITH POLYETHYLENE
13	VOID SPACE PORT & STBD	---	---	2-3	EMPTY
14	VOID SPACE PORT & STBD	---	---	7-13	EMPTY
15	VOID SPACE PORT & STBD	---	---	13-18	EMPTY
16	VOID SPACE PORT & STBD	---	---	14-19	EMPTY
17	VOID SPACE PORT & STBD	---	---	19-21	EMPTY
18	VOID SPACE PORT & STBD	---	---	19-21	FILLED WITH POLYETHYLENE
19	VOID SPACE PORT & STBD	---	---	3-7	FILLED WITH POLYETHYLENE
20	VOID SPACE PORT & STBD	---	---	10-12	FILLED WITH POLYETHYLENE
21	VOID SPACE PORT & STBD	---	---	13-17	FILLED WITH POLYETHYLENE
22	VOID SPACE PORT & STBD	---	---	19-21	FILLED WITH POLYETHYLENE
23	FRESH WATER	---	---	3-21	PORTABLE WATER
24	SEWAGE	---	---	20-21	PORTABLE WATER
25	VOID SPACE CENTER	---	---	16-19	EMPTY

**NOTES:**

- SPACES FITTED WITH ATTACHMENT LUGS TO BE FITTED WITH POLYETHYLENE BAGS.
- POLYETHYLENE BAGS TO BE SEALED WHEN
- ATTACHMENT LUGS TO BE FITTED 300mm BELOW TOP OF POLYETHYLENE BAGS EXCEPT AT TANK AS POSSIBLE.
- CARGO WEARING SURFACES SEALED TO VESSEL'S STRUCTURE BY STAMP AND SET TO BE PROVIDED POLYETHYLENE BAGS TO BE PROVIDED EACH SPACE.



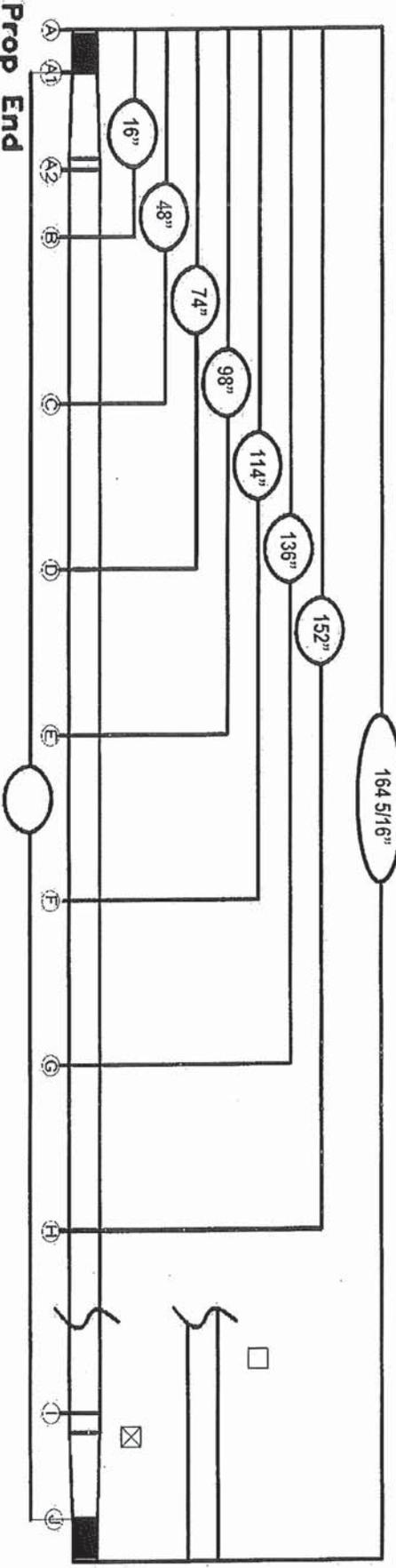
**EYE MARINE CONSULTANTS**  
 Durrheim & Co. Pty. Ltd.  
 Project: 'MIRIN CLASS LIFEBOAT'  
 Client: IHS METAL PRODUCTS  
 Title: TANK CAPACITIES PLAN AND BOWDOCK MATERIAL LAYOUT  
 Scale: A1:5  
 Client Approval: 13 Dec 98  
 C.C.C. Approval: 18 Dec 98  
 Classification Society Approval: 18 Dec 98  
 Drawing No.: 55001-19  
 Rev. No.: 2



SHAFT STRAIGHTENING SHEET

Document ID	Revision
Q8	0

Vessel Name: CCG Spare Shaft #1      Hull/Job Number: J4891      Shaft Size: 2 3/4"      Performed By: Earl Comeau      Date: Feb 25, 2013



Location	Reading Before Straightening	Reading After Straightening
A		
A1		
A2		
B	0.001	0.000
C	0.005	0.001
D	0.009	0.001
E	0.010	0.002
F	0.006	0.001
G	0.005	0.001
H	0.002	0.001
I		
J		

All dimensions/Readings are in Inches

Shaft Material  Stainless Steel  Aquamet/Aqualoy  Other: \_\_\_\_\_

Shaft Location  Spare Shaft

Notes

This is a new shaft machined Feb 2013.

Shaft Material is Aqualoy 22 (Initially XM-19 which is treated to meet Aqualoy 22 specs). Aqualoy 22 is equivalent to Aquamet 22 in terms of chemical composition and material properties. Refer to mill cert for shaft material.

SHAFT STRAIGHTENING SHEET

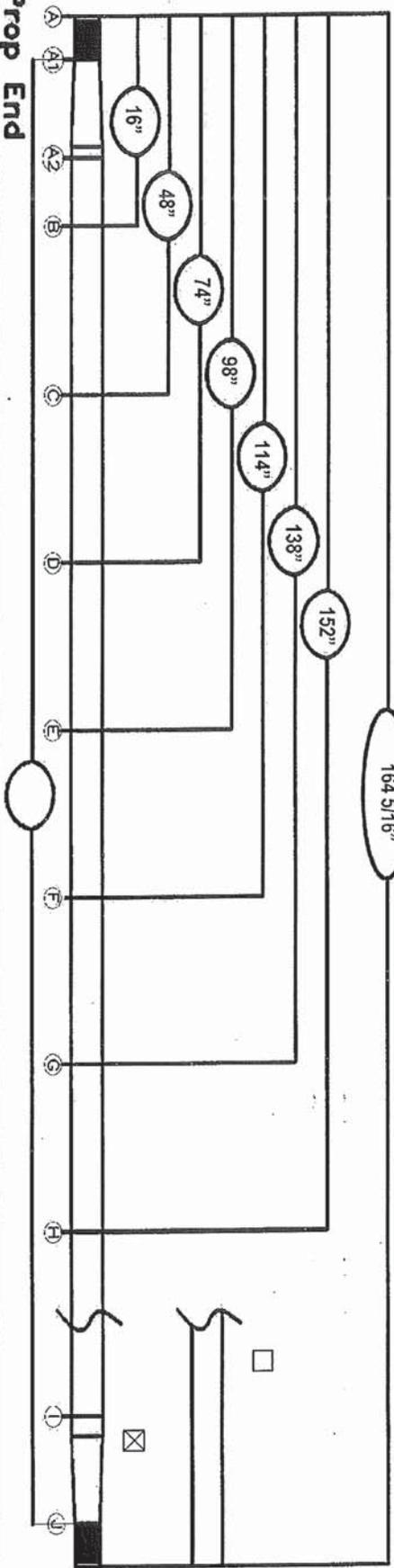
Document ID

Q8

Revision

0

Vessel Name: CCG Spare Shaft #2      Hull/Job Number: 14891      Shaft Size: 2 3/4"      Performed By: Earl Comeau      Date: Feb 25, 2013



Location	Reading Before Straightening	Reading After Straightening
A		
A1		
A2		
B	0.002	0.000
C	0.006	0.000
D	0.010	0.000
E	0.010	0.001
F	0.008	0.001
G	0.004	0.000
H	0.002	0.000
I		
J		

All dimensions/Readings are in Inches

Shaft Material  Stainless Steel  Aquamet/Aqualoy  Other: \_\_\_\_\_

Shaft Location  Spare Shaft

Notes

This is a new shaft machined Feb 2013.

Shaft Material is Aqualoy 22 (Initially XM-19 which is treated to meet Aqualoy 22 specs). Aqualoy 22 is equivalent to Aquamet 22 in terms of chemical composition and material properties. Refer to mill cert for shaft material.

SHAFT STRAIGHTENING SHEET

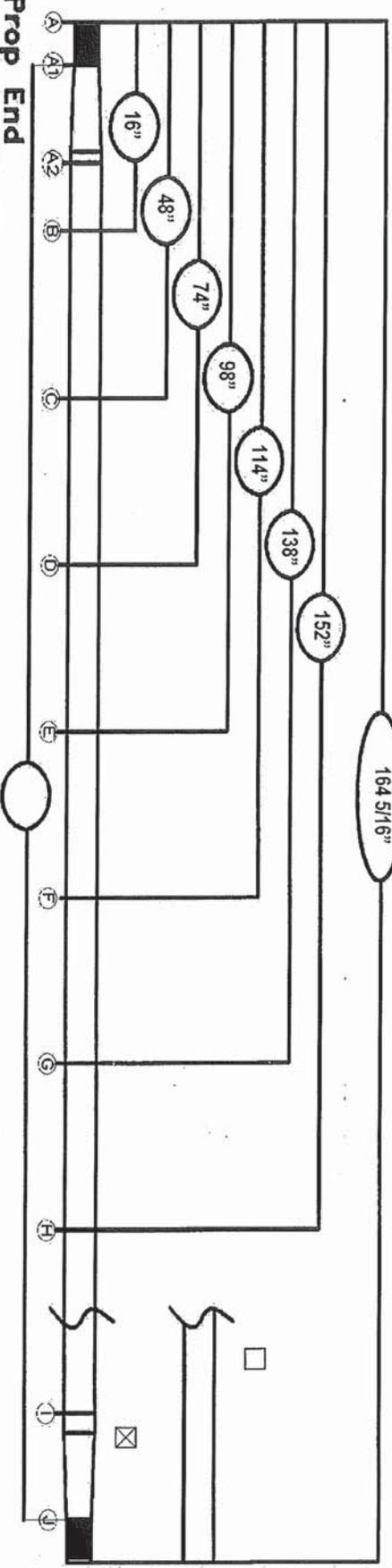
Document ID

Q8

Revision

0

Vessel Name: CCG Spare Shaft #3      Hull/Job Number: J4891      Shaft Size: 2 3/4"      Performed By: Earl Corneau      Date: Feb 25, 2013



Location	Reading Before Straightening	Reading After Straightening
A		
A1		
A2		
B	0.003	0.001
C	0.013	0.002
D	0.014	0.003
E	0.015	0.003
F	0.011	0.003
G	0.008	0.002
H	0.003	0.002
I		
J		

All dimensions/Readings are in Inches

Shaft Material  Stainless Steel  Aquamet/Aqualoy  Other: \_\_\_\_\_

Shaft Location  Spare Shaft

Notes

This is a new shaft machined Feb 2013.

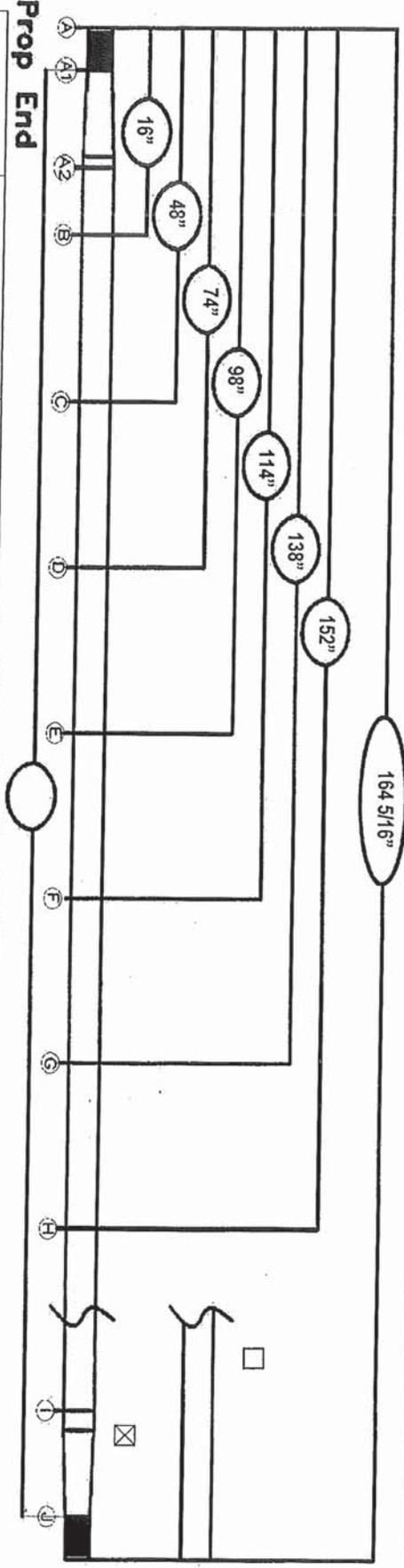
Shaft Material is Aqualoy 22 (Initially XM-19 which is treated to meet Aqualoy 22 specs). Aqualoy 22 is equivalent to Aquamet 22 in terms of chemical composition and material properties. Refer to mill cert for shaft material.



## SHAFT STRAIGHTENING SHEET

Document ID: Q8      Revision: 0

Vessel Name: CCG Spare Shaft #4	Hull/Job Number: J4891	Shaft Size: 2 3/4"	Performed By: Earl Corneau
		Date: Feb 25, 2013	



Location	Reading Before Straightening	Reading After Straightening
A		
A1		
A2		
B	0.002	0.002
C	0.005	0.003
D	0.010	0.004
E	0.010	0.003
F	0.006	0.002
G	0.003	0.002
H	0.001	0.001
I		
J		

All dimensions/Readings are in Inches

Shaft Material	<input type="checkbox"/> Stainless Steel <input checked="" type="checkbox"/> Aquamet/Aqualoy <input type="checkbox"/> Other: _____
Shaft Location	Spare Shaft
Notes	
<p>This is a new shaft machined Feb 2013.</p> <p>Shaft Material is Aqualoy 22 (Initially XM-19 which is treated to meet Aqualoy 22 specs). Aqualoy 22 is equivalent to Aquamet 22 in terms of chemical composition and material properties. Refer to mill cert for shaft material.</p>	