



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

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

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

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

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

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

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

Comments - Commentaires

Title - Sujet CCGS - MACH'RY CTRL ROOM HVAC UNIT	
Solicitation No. - N° de l'invitation F2599-165002/A	Date 2016-04-12
Client Reference No. - N° de référence du client F2599-165002	
GETS Reference No. - N° de référence de SEAG PW-\$\$ML-046-25815	
File No. - N° de dossier 046ml.F2599-165002	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-05-25	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Laprise, J-F	Buyer Id - Id de l'acheteur 046ml
Telephone No. - N° de téléphone (819) 420-2902 ()	FAX No. - N° de FAX (819) 956-0897
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CCGS GRIFFON CANADIAN COAST GUARD 401 KING STREET WEST PRESCOTT, ON K0E 1T0	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Marine Machinery and Services / Machineries et services
maritimes
11 Laurier St. / 11, rue Laurier
6C2, Place du Portage
Gatineau
Québec
K1A 0S5

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

TITLE: Replacement of the Machinery Control Room (MCR) Heating, Ventilation and Air Conditioning (HVAC) unit on the CCGS Griffon

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PART 1 - GENERAL INFORMATION

1.1 Statement of Work

The Work to be performed is detailed under Article 6.2 of the resulting contract clauses.

1.2 Debriefings

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

1.3 Trade Agreements

The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA) and the Agreement on Internal Trade (AIT).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

SACC Manual Clause B3000T (2006-06-16), Equivalent Products

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

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

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

2.4 Applicable Laws

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

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

- Section I: Technical Bid (two (2) hard copies);
- Section II: Financial Bid (one (1) hard copy);
- Section III: Certifications (one (1) hard copy).

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

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

- (a) use 8.5 x 11 inch (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) (<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: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Exchange Rate Fluctuation

SACC Manual Clause [C3011T](#) (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

Annex "D", Mandatory Technical Criteria.

4.1.2 Financial Evaluation

SACC Manual Clause [A0222T](#) (2014-06-26), Evaluation of Price

4.2 Basis of Selection

4.2.1 Basis of Selection - Mandatory Technical Criteria

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

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politiquepolicy-eng.html>) the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – List of Names

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

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

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

There is no security requirement applicable to this Contract.

6.2 Statement of Work

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

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

[2010A](#) (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before _____. *(The delivery date(s) will be inserted at Contract Award)*

Canada's preferred delivery date is no later than 2016-06-30.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Jean-François Laprise
Title: Supply Specialist
Organization: Public Works and Government Services Canada
Acquisitions Branch
Directorate: Marine Systems Directorate
Address: Place du Portage, Phase III, 11 Laurier Street, Gatineau, Quebec, K1A 0S5
Telephone: 819-420-2902
Facsimile: 819-956-0897
E-mail address: jean-francois.laprise@tpsgc-pwgsc.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.

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6.5.2 Project Authority

The Project Authority for the Contract is:

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

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

(The Project Authority will be identified at Contract Award)

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

6.5.3 Contractor's Representative

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

(The Contractor's Representative will be identified at Contract Award)

6.6 Payment

6.6.1 Basis of Payment - Firm Price, Firm Unit Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price(s) as specified in Annex "B", Basis of Payment. Customs duties are included and Applicable Taxes are extra.

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

6.6.2 Single Payment

SACC Manual clause [H1000C](#) (2008-05-12), Single Payment

6.6.3 SACC Manual Clauses

SACC Manual clause [C2000C](#) (2007-11-30), Taxes - Foreign-based Contractor

6.7 Invoicing Instructions

6.7.1 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.

6.7.2 Invoices must be distributed as follows:

- a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
- b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.
- c. One (1) copy must be forwarded to the consignee.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____. (*The name of the province will be identified at Contract Award as specified by the Bidder in its bid, if applicable.*)

6.10 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 general conditions [2010A](#) (2016-04-04), Goods (Medium Complexity);
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Drawings; and
- (f) the Contractor's bid dated _____. (*The date of bid will be inserted at Contract Award*)

6.11 SACC Manual Clauses

SACC Manual clause [B1501C](#) (2006-06-16), Electrical Equipment

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ANNEX "A"
STATEMENT OF WORK
(Separately attached)

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ANNEX "B"

BASIS OF PAYMENT

Item	Quantity	Unit Price (\$)	Total Price (\$)
MRC HVAC Unit (with documentation and approval by class as per Annex A (SOW), Articles 1.7 and 1.8)	1		
		Total	

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ANNEX "C"

DRAWINGS

(Separately attached)

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ANNEX "D"

MANDATORY TECHNICAL CRITERIA

(Separately attached)

Annex “A”

Statement of Work (SOW)

MCR HVAC Unit Procurement

For the

CCGS Griffon

Specification No: 810.15
Date: 2016-01-14

Prepared by Marine Engineering
520 Exmouth Street
Sarnia ON
N7T 8B1

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1.0 CCGS GRIFFON MCR HVAC UNIT

1.1 Intent

The Canadian Coast Guard Ship Griffon is a light icebreaker buoy tender which primarily works in the St. Lawrence Seaway.

The Coast Guard has a requirement to replace the Machinery Control Room (MCR) Heating, Ventilation and Air Conditioning (HVAC) unit on the CCGS Griffon. The fitted HVAC unit is a ground source heat pump modified to work on the Griffon. Coast Guard wishes to use a split system type, having the condensing unit outside the MCR, and a small air handler inside the MCR to minimize the penetration through the bulkhead.

The new system must provide at least the same cooling capacity of the fitted system. The MCR does not require heating so this function is not required.

The intent is to purchase the new HVAC components to be delivered to the Coast Guard for installation in the vessel's maintenance period August 10 to November 2 2016.

The HVAC unit shall be new and of current manufacture, and shall have a spare parts and service availability of a minimum of 10 years.

1.2 References

Drawings

Drawing Number	Drawing Name
G05-MCRHVAC SH 1	MCR HVAC Unit Replacement
G05-MCRHVAC SH 2	MCR HVAC Unit Replacement
G05-MCRHVAC SH 3	MCR HVAC Unit Replacement
G05-MCRHVAC SH 4	MCR HVAC Unit Replacement

Regulations

- Transport Canada TP127E – Ships Electrical Standard (Latest Version);
- Canada Shipping Act – Marine Machinery Regulations (Latest Version).

Standards

- National Electrical Manufacturer's Association – Standard for NEMA Enclosures;
- ISO 7547 – Air-conditioning and ventilation of accommodation spaces on board ships – design conditions and basis of calculations, Latest edition
- ANSI/ASHRAE (Latest Edition) - American National Standards Institute Safety Standards for Refrigeration Systems.

-
- ANSI/ASHREA (Latest Edition) – Mechanical Refrigeration and Air-Conditioning Installations Aboard Ship, Standard 26-1996.

1.3 Details of existing equipment to be replaced

MCR HVAC Unit

Item	Description
Make	Carrier
Model	50VQD048LEC501
Nominal Cooling Capacity (BTU)	47500
Electric Heat (KW)	0
Fan Capacity	1700
Nominal Tons	4

The fitted unit is sea water cooled via 1" supply line and a water regulating valve. The exact water flow is not known as it is bled off a larger circuit. Pressure is approximately 40 psi minimum.

1.4 Technical

1.4.1 Electrical and Control

Condensing Unit

- The condensing unit shall be 460 VAC, 3 phase.
- The unit shall have a single electrical control panel mounted on the condensing unit frame.
- The compressor shall have its own definite purpose contactor.
- The compressor shall be protected by high and low-pressure controls with auto reset.
- A low voltage transformer with integral protection shall be provided to supply 24 VAC to the control circuit.
- Clearly labeled low voltage terminal strips shall be provided for field wiring of the system controls such as thermostats.
- Terminal blocks shall be provided in the electrical control box for power wiring.
- Ground lugs shall be affixed in the condenser control panel.
- Electrical control shall include phase-failure protection, on-off selector switch, power-available lights and an hour meter.
- All control circuits and components shall be housed in a NEMA 4 enclosure or mounted on the enclosure as appropriate.

1.4.2 Electrical and Control

Air Handling Unit

- The air handling unit shall be either three phase 240 VAC or 460 VAC, 60 Hz. Both power sources are available close to the unit location.
- Control is to be supplied with a thermostat compatible with the new air handler unit. This thermostat is to be supplied loose.

1.4.3 Condensing Unit

The new Condensing Unit shall have the following mechanical & electrical characteristics as a minimum:

- The condensing unit shall be designed for R407C or equivalent.
- The condensing unit shall be sized to supply 110% of the specified AHU cooling coil capacity.
- The condensing unit sizing shall assume a sea water of 30 degrees Celsius. (very common on the Great Lakes in the summer months).
- The components of the condensing unit shall be mounted on a rigid painted steel frame.
- The condensing unit shall not be enclosed in a cabinet.
- The condensing unit shall be coated for corrosion protection.
- The condensing unit shall have a maximum footprint of: 46" wide x 30" deep x 40" high.
- The compressor shall be semi-hermetic, 3 phase 460 VAC.
- The compressor shall be fitted with a low lube oil pressure shut down device.
- The compressor sump shall be fitted with an oil level sight glass.
- The compressor shall be internally protected from over-heating.
- The compressor shall be vibration isolated with external rubber mounting.
- The compressor suction and discharge lines shall be connected to the system piping with flexible vibration absorbing pipe sections. All other compressor connections (gauge, water regulator, oil return, control devices, etc.) shall use flexible refrigeration hose.
- The compressor shall be fitted with a crank case heater which shall switch on when the compressor is not running.
- The sea water cooled condenser shall be of shell and tube design and Cupro-Nickel (CuNi) construction.
- The condenser shall be selected to maintain low refrigerant operating pressure.
- A marine type Johnson Controls V46 water regulating valve or equivalent shall be provided by the Contractor to maintain refrigerant pressures.
- This valve is to be the same pipe size as the condenser inlet pipe.
- The high pressure connection for the water regulating valve shall be fitted with an isolation valve.
- The maximum operating water pressure for the 2-way "Sea Water Duty" regulating valve shall be 100 psi.

1.4.4 Air Handler Unit

The new Air Handler Unit shall have the following mechanical & electrical characteristics as a minimum:

- The air handler shall be compatible with the condensing unit.
- The air handler should be as compact as possible. Space available is a maximum 22" deep x 32" wide x 60" high.
- Air discharge must be out the top of the air handler and should be flanged to accept ducting.
- Inlet shall be at the front or side with a grill fitted.
- The evaporator shall be fed with a thermostatic expansion valve.
- The coil shall be constructed for the marine environment – copper tubes with aluminum fins minimum.
- A stainless steel condensate drip tray is to be fitted below the evaporator. This drip tray is to be a minimum 2" deep to allow for movement of the vessel.
- The drain from the condensate tray shall lead to the outside of the housing and shall be accessible once the housing is installed in the intended location.
- The air handler unit shall be fitted with disposable pleated type filters. The filters must be accessible with the HVAC unit in place.
- The air handler unit must be fitted with a fan which will supply the required air flow.

1.4.5 Refrigeration Circuit

The 407C Refrigeration Circuit shall include as a minimum:

- High and low side Schrader or equal access valves.
- Sight glass with integral moisture indicator.
- Filter-drier fitted with isolation valves.
- High/low pressure switches.
- Suction and discharge gauges panel mounted and fitted with isolation valves.
- The gauges shall be stainless steel construction and glycerin filled.
- A relief valve to prevent overpressure of the system.
- An oil separator.

1.5 Space Requirements, Routes and Restrictions

The HVAC unit may require disassembly in order to be transported into the compartments where the new HVAC components are to be installed. The contractor shall take note of the dimensions given below as well as refer to the vessels layout drawing G05-MCRHVAC SH 1-4 for details.

- The vessel main entrance is 27.5" wide by 5' high. No fixed lifting points. All routes to the ER go this way. From there, all the fire doors are 27" wide. To

get full use of the 27", the doors and hinges must be removed from the frames. The limit would be estimated to be 26", and the handles would be removed.

- Motor Room escape door is 27" wide by 6' tall, and the ladder way has a space about 27"x 27" to lower it down one deck. From there, through the 2 MCR doors (27" wide) to the upper E/R. The door into the transformer room is also 27" wide. No certified lifting point up there, but there is a 4" angle bar just off-centre.
- Engine Room Entrance. Doors are 27", but piping from the Main Engine Jacket Water header tanks sticks out a few inches at the frame. The stair rails would have to come off, and slide the unit down. Even then it's tight past the boiler.
- Workshop Escape – 24" door with welded rails narrowing to 21". It has an electric chain fall and can take the weight. Unfortunately, getting aft past the R/O unit is almost impossible.
- 500lbs or more is going to be hard to move through those spaces.

1.6 Spare Parts and Tools

The Contractor shall supply a complete parts list for all items being supplied. From this list the Contractor shall identify consumable parts and those that perform a critical function and which should be carried as critical spares. Items that are readily available and off the shelf should be identified as such on the list.

Pricing for parts shall be included as part of the deliverables for the spares parts list.

The contractor shall supply the following spares:

1. One spare set of air filters.
2. One spare fan motor.
3. One spare water regulating valve.
4. Two spare sets of belts if used.

1.7 Documentation (Reports/Drawings/Manuals)

The Contractor shall provide:

- Documentation shall be supplied in the following formats: 3 paper copies of all manuals and drawings. These shall be supplied on standard 8.5 by 11 inch letter format paper.
- The Contractor shall also supply this documentation in electronic format on CD-ROM media that is not password protected. All manuals shall be in Adobe PDF format and all drawings shall be in AutoCAD 2010 or later format.
- Product data including dimensions, weights, capacities, certifications, component performance, electrical characteristics, casing construction details, wiring interconnections, and finishes of materials.
- Electrical requirements for power supply wiring including wiring diagrams for interlock and control wiring, clearly indicating factory-installed and field-installed wiring.
- Manufacturer's recommended installation instructions.

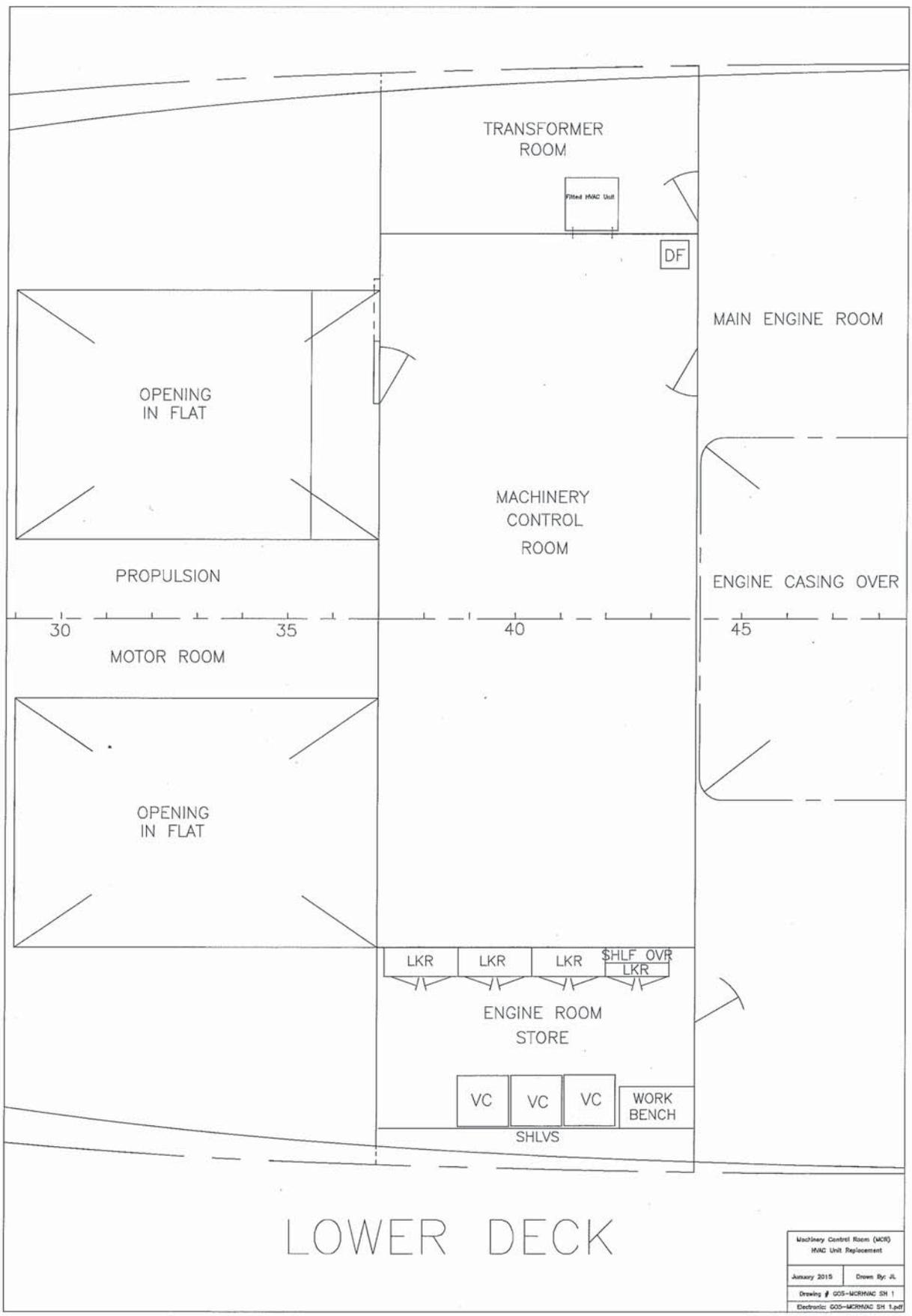
- Operation and maintenance manual, troubleshooting manual and parts breakdown list.

1.8 Approvals

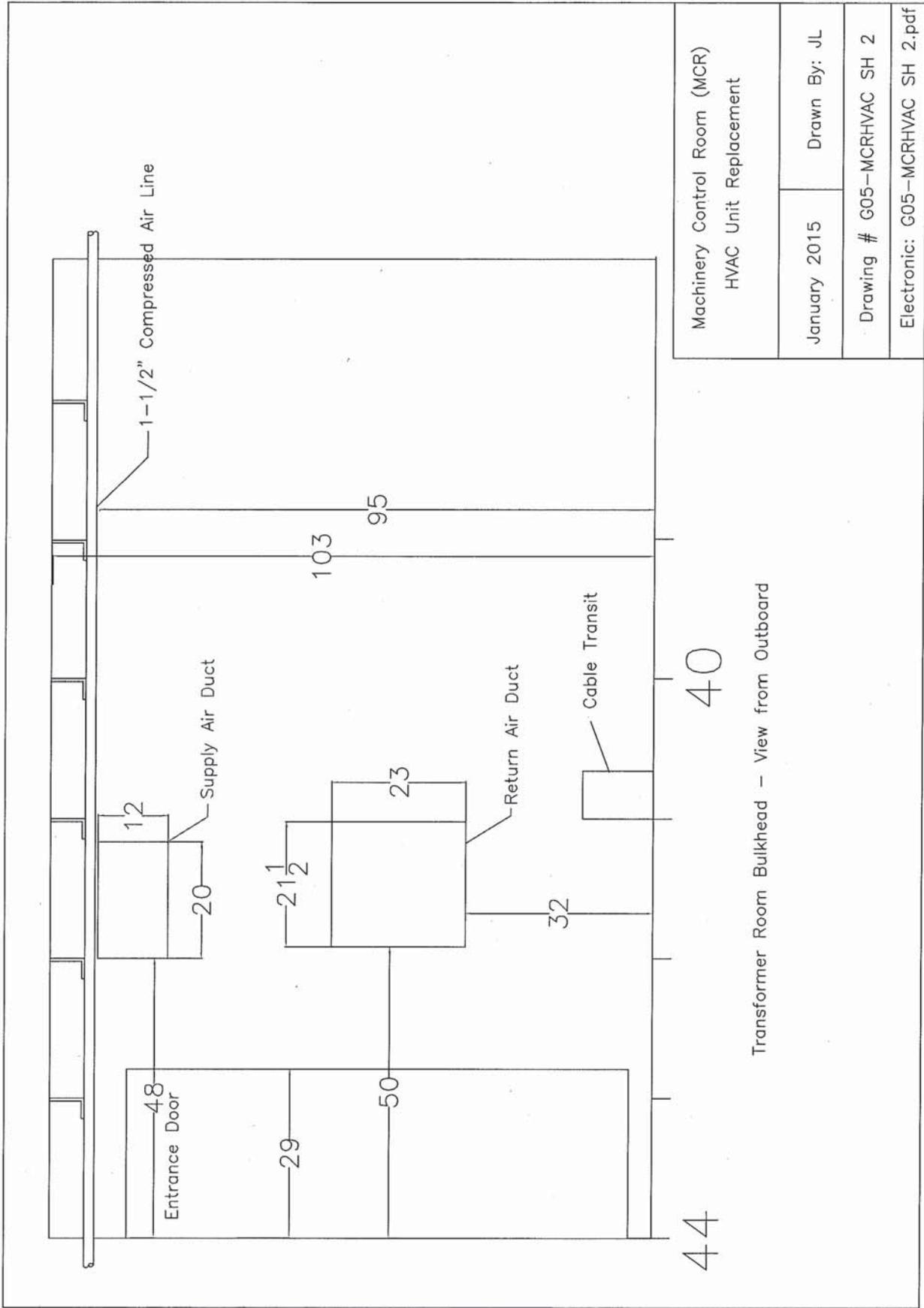
The Contactor shall provide proof of certification of the various components in the structure as required by the specification. Specific attention shall be given to the requirements for plan approval drawings as required under the various Schedules of the Machinery Construction and Inspection Regulations of the Canada Shipping Act.

1.9 Delivery

The equipment shall be shipped from the factory with the components sealed and filled with nitrogen.

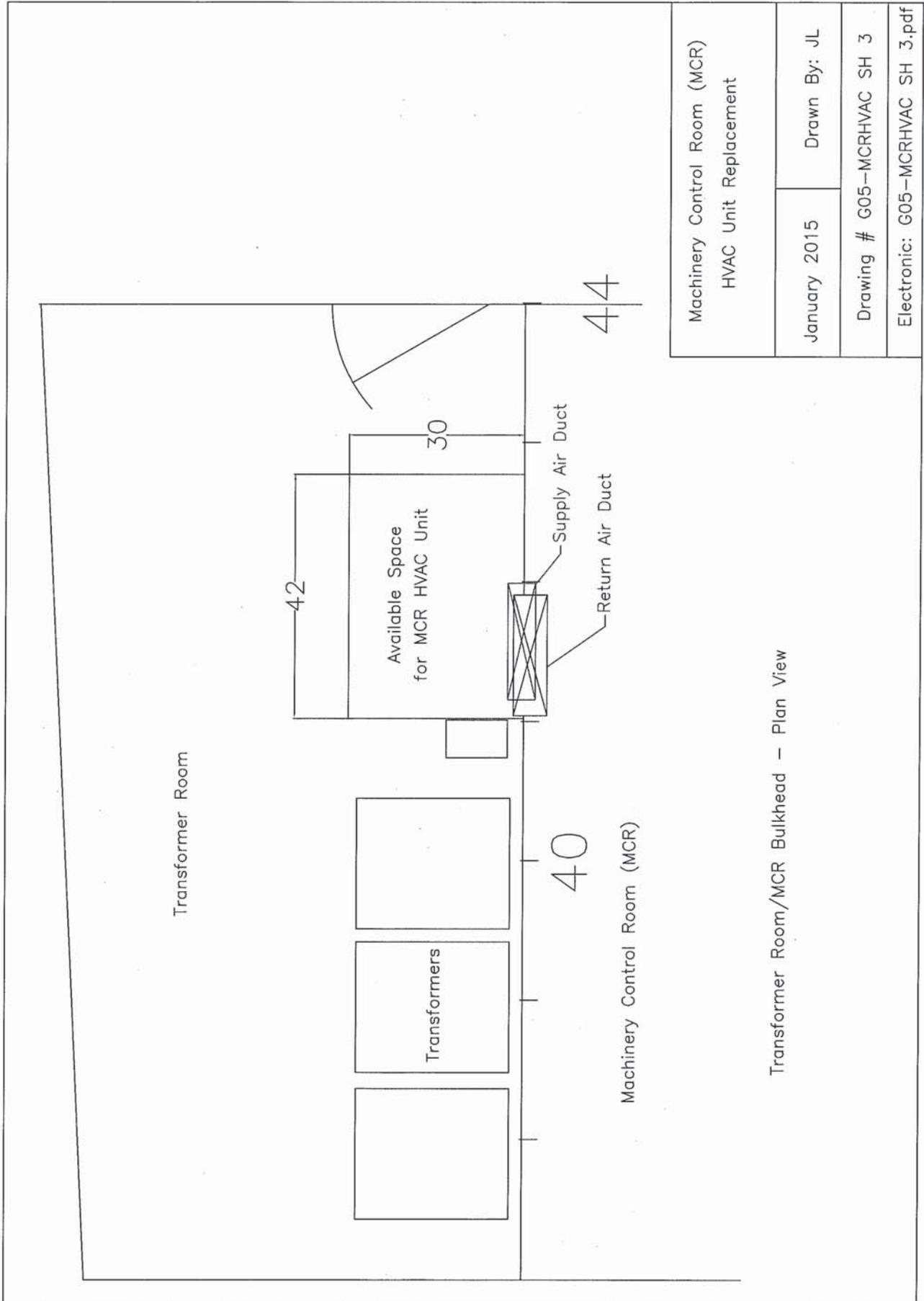


Machinery Control Room (MCR)	
MNC Unit Replacement	
January 2015	Drawn By: JL
Drawing # 005-MCR/MNC SH 1	
Electronic: 005-MCR/MNC SH 1.pdf	



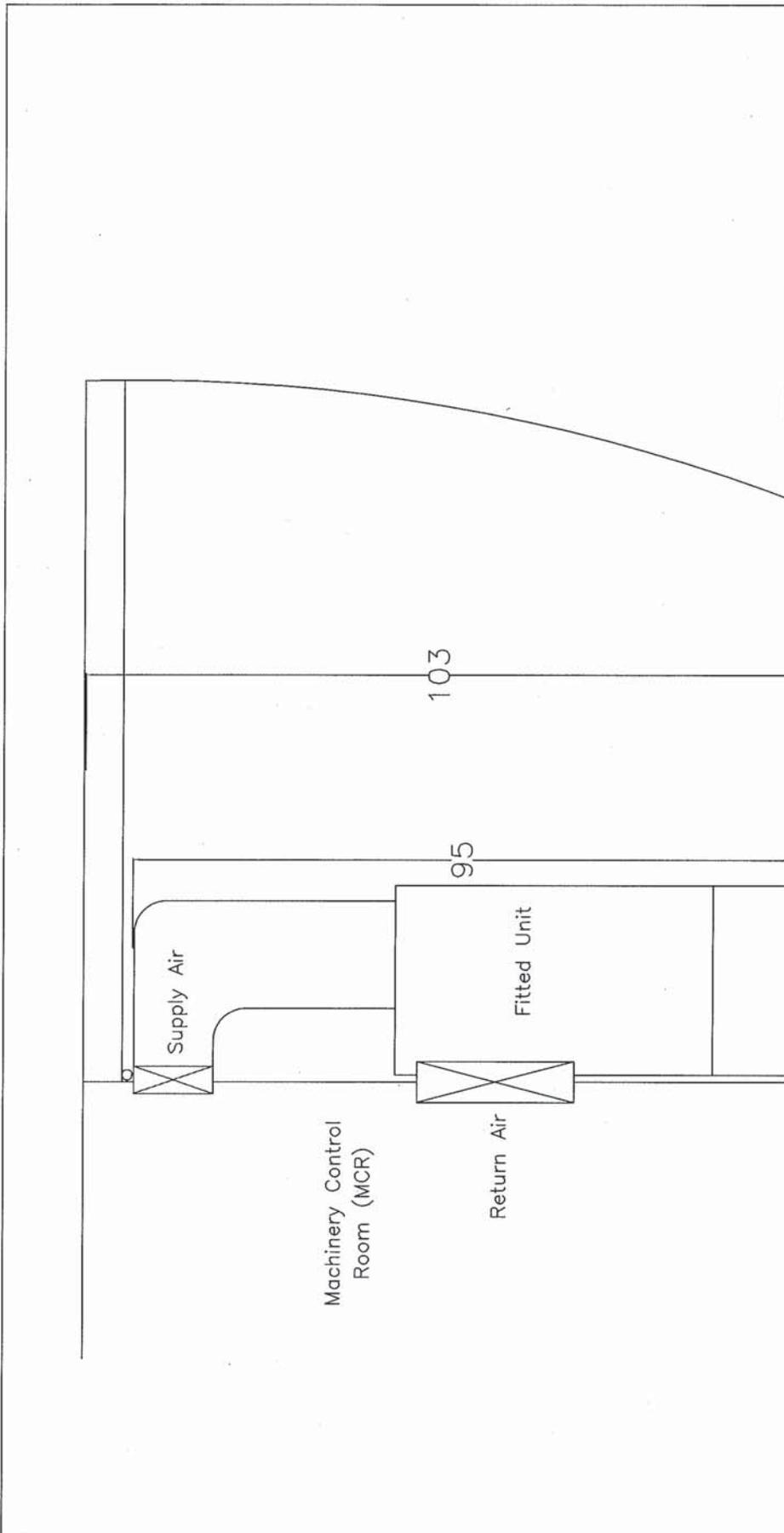
Transformer Room Bulkhead - View from Outboard

Machinery Control Room (MCR) HVAC Unit Replacement	
January 2015	Drawn By: JL
Drawing # G05-MCRHVAC SH 2	
Electronic: G05-MCRHVAC SH 2.pdf	



Machinery Control Room (MCR) HVAC Unit Replacement	
January 2015	Drawn By: JL
Drawing # G05-MCRHVAC SH 3	
Electronic: G05-MCRHVAC SH 3.pdf	

Transformer Room/MCR Bulkhead - Plan View



Machinery Control Room (MCR) HVAC Unit Replacement	
January 2015	Drawn By: JL
Drawing # G05-MCRHVAC SH 4	
Electronic: G05-MCRHVAC SH 4.pdf	

Transformer Room - From Forward

ANNEX D – Mandatory Technical Criteria

CCGS Griffon HVAC unit purchase

Sl No.	Mandatory items	Meets requirement – Y/N	Description (How the Bidder demonstrates compliance with the criterion (when applicable))	Proposal Reference
	1.4.1 Electrical and Control			
	Condensing Unit			
1	The condensing unit shall be 460 VAC, 3 phase, 60Hz.			
2	The unit shall have a single electrical control panel mounted on the condensing unit frame.			
3	The compressor shall have its own definite purpose contactor.			
4	The compressor shall be protected by high and low-pressure controls with auto reset.			
5	A low voltage transformer with integral protection shall be provided to supply 24 VAC to the control circuit.			
6	Clearly labeled low voltage terminal strips shall be provided for field wiring of the system controls such as thermostats.			
7	Terminal blocks shall be provided in the electrical control box for power wiring.			
8	Ground lugs shall be affixed in the condenser control panel.			

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CCGS Griffon HVAC unit purchase

9	Electrical control shall include phase-failure protection, on-off selector switch, power-available lights and an hour meter.			
10	All control circuits and components shall be housed in a NEMA 4 enclosure or mounted on the enclosure as appropriate.			
	1.4.2 Electrical and Control			
	Air Handling Unit			
11	The air handling unit shall be either three phase 240 VAC or 460 VAC, 60 Hz. Both power sources are available close to the unit location.			
12	Control is to be supplied with a thermostat compatible with the new air handler unit. This thermostat is to be supplied loose.			
	1.4.3 Condensing Unit			
13	The condensing unit shall be designed for R407C or equivalent.			
14	The condensing unit shall be sized to supply 110% of the specified AHU cooling coil capacity.			
15	The condensing unit sizing shall assume a sea water of 30 degrees Celsius. (very common on the Great Lakes in the summer months).			
16	The components of the condensing unit shall be mounted on a rigid painted steel frame.			

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17	The condensing unit shall not be enclosed in a cabinet.				
18	The condensing unit shall be coated for corrosion protection.				
19	The condensing unit shall have a maximum footprint of: 46" wide x 30" deep x 40" high.				
20	The compressor shall be semi-hermetic, 3 phase 460 VAC.				
21	The compressor shall be fitted with a low lube oil pressure shut down device.				
22	The compressor sump shall be fitted with an oil level sight glass.				
23	The compressor shall be internally protected from over-heating.				
24	The compressor shall be vibration isolated with external rubber mounting.				
25	The compressor suction and discharge lines shall be connected to the system piping with flexible vibration absorbing pipe sections. All other compressor connections (gauge, water regulator, oil return, control devices, etc.) shall use flexible refrigeration hose.				
26	The compressor shall be fitted with a crank case heater which shall switch on when the compressor is not running.				
27	The sea water cooled condenser shall be of shell and tube design and Cupro-Nickel (CuNi) construction.				

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28	The condenser shall be selected to maintain low refrigerant operating pressure.			
29	A marine type Johnson Controls V46 water regulating valve or equivalent shall be provided by the Contractor to maintain refrigerant pressures.			
30	This valve is to be the same pipe size as the condenser inlet pipe.			
31	The high pressure connection for the water regulating valve shall be fitted with an isolation valve.			
32	The maximum operating water pressure for the 2-way "Sea Water Duty" regulating valve shall be 100 psi.			
	1.4.4 Air Handler Unit			
33	The air handler shall be compatible with the condensing unit.			
34	The air handler should be as compact as possible. Space available is a maximum 22" deep x 32" wide x 60" high.			
35	Air discharge must be out the top of the air handler and should be flanged to accept ducting.			
36	Inlet shall be at the front or side with a grill fitted.			
37	The evaporator shall be fed with a thermostatic expansion valve.			

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38	The coil shall be constructed for the marine environment – copper tubes with aluminum fins minimum.			
39	A stainless steel condensate drip tray is to be fitted below the evaporator. This drip tray is to be a minimum 2” deep to allow for movement of the vessel.			
40	The drain from the condensate tray shall lead to the outside of the housing and shall be accessible once the housing is installed in the intended location.			
41	The air handler unit shall be fitted with disposable pleated type filters. The filters must be accessible with the HVAC unit in place.			
42	The air handler unit must be fitted with a fan which will supply the required air flow.			
	1.4.5 Refrigeration Circuit			
43	The Refrigeration Circuit shall include as a minimum high and low side Schrader or equal access valves.			
44	The Refrigeration Circuit shall include as a minimum sight glass with integral moisture indicator.			
45	The Refrigeration Circuit shall include as a minimum filter-drier fitted with isolation valves.			
46	The Refrigeration Circuit shall include as a minimum high/low pressure switches.			
47	The Refrigeration Circuit shall include as a minimum suction and discharge gauges panel mounted and fitted with isolation valves.			
48	The gauges shall be stainless steel construction and glycerin filled.			

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49	The Refrigeration Circuit shall include as a minimum a relief valve to prevent overpressure of the system.				
50	The Refrigeration Circuit shall include as a minimum an oil separator.				
	1.5 Space Requirements, Routes and Restrictions				
51	The Bidder shall provide a unit that can be disassembled if required in order to fit through an opening of 26" wide x 26" tall.				
52	The Bidder shall provide a unit that is under 500lbs.				
	1.6 Spare Parts and Tools				
53	The Bidder shall supply a complete parts list for all items being supplied. From this list the Bidder shall identify consumable parts and those that perform a critical function and which should be carried as critical spares. Items that are readily available and off the shelf should be identified as such on the list.				
	1.7 Documentation				
54	The Bidder shall accept to provide documentation in the following formats: 3 paper copies of all manuals and drawings. These shall be supplied on standard 8.5 by 11 inch letter format paper.				
55	The Bidder shall also accept to supply this documentation in electronic format on CD-ROM media that is not password protected. All manuals shall be in Adobe PDF format and all drawings shall be in AutoCAD 2010 or later format.				
56	The Bidder shall provide product data including dimensions, weights, capacities, certifications,				

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CCGS Griffon HVAC unit purchase

	component performance, electrical characteristics, casing construction details, wiring interconnections, and finishes of materials.			
57	The Bidder shall accept to provide electrical requirements for power supply wiring including wiring diagrams for interlock and control wiring, clearly indicating factory-installed and field-installed wiring.			
58	The Bidder shall accept to provide Manufacturer’s recommended installation instructions.			
59	The Bidder shall accept to provide operation and maintenance manual, troubleshooting manual and parts breakdown list.			
	1.8 Approvals			
60	The Bidder shall accept to provide proof of certification of the various components in the structure as required by the specification. Specific attention shall be given to the requirements for plan approval drawings as required under the various Schedules of the Machinery Construction and Inspection Regulations of the Canada Shipping Act.			
	1.9 Delivery			
61	The Bidder shall accept to ship the equipment from the factory with the components sealed and filled with nitrogen.			