

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

**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 RTTY ANTENNA	
Solicitation No. - N° de l'invitation F5502-126313/A	Date 2012-07-19
Client Reference No. - N° de référence du client F5502-12-6313	
GETS Reference No. - N° de référence de SEAG PW-\$HAL-218-8717	
File No. - N° de dossier HAL-2-69129 (218)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-08-08	
Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT	
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: Figueredo, Laila	Buyer Id - Id de l'acheteur hal218
Telephone No. - N° de téléphone (902) 496-5353 ()	FAX No. - N° de FAX (902) 496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF FISHERIES AND OCEANS TELECOM ENGINEERING WORKSHOP 2 MORRIS DRIVE DARTMOUTH NOVA SCOTIA B2Y3Z8 Canada	

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

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

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

Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM Destination	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	RTTY Antenna, support tower, and hardware Deliverables: Supply and Delivery of: a) one RTTY Antenna; b) tower support guy wires and anchors; and c) all assembly hardware.	F5502	F5502	1	Lot	\$ XXXXXXXXXXXXX		See Herein	

Title: RTTY Antenna

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION

1. Security Requirement
2. Requirement
3. Debriefings

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions
2. Submission of Bids
3. Enquiries - Bid Solicitation
4. Applicable Laws

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures
2. Basis of Selection

PART 5 - CERTIFICATIONS

1. Code of Conduct Certifications - Consent to a Criminal Record Verification
2. Certifications Precedent to Contract Award

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement
2. Requirement
3. Standard Clauses and Conditions
4. Term of Contract
5. Authorities
6. Payment
7. Invoicing Instructions
8. Certifications
9. Applicable Laws
10. Priority of Documents
11. Insurance
12. Excess Goods

List of Annex:

Annex A Requirement

PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The Requirement is detailed in Annex A - Requirement, herein.

3. Debriefings

After contract award, 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.

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 (2012-07-11) 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.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

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

Section I: Technical Bid - two hard copies
 Section II: Financial Bid - one hard copy
 Section III: Certifications - one 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 are encouraged to:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and/or 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

The Bidder must submit specifications and descriptive literature for the make and model of the products being offered in their proposal. Details stated in your specifications and descriptive literature must meet the requirements detailed in Annex A - Requirement.

It is incumbent upon the Bidder to submit a complete proposal showing that their items will meet the technical descriptions described in this solicitation in Annex A - Requirement. Failure to submit sufficient information to allow for a full evaluation will result in the proposal being declared non-responsive.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Line Item Detail, page 2 of the solicitation. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) is to be shown separately, if applicable.

Section III: 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 technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.
- (c) The evaluation team will determine first if there are three (3) or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than three responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

1.1 Technical Evaluation

The Bidder's proposal must comply with the Requirement, as detailed in Annex "A", hereto.

1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

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

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Canada will declare a bid non-responsive if the required certifications 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 or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

1. Code of Conduct Certifications - Consent to a Criminal Record Verification

1.1 Bidders must submit with their bid, by the bid solicitation closing date:

- (a) a complete list of names of all individuals who are currently directors of the Bidder;
- (b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

Bidder to complete:

() I have submitted the Code of Conduct Certification(s) with our Bid as detailed above.

Signature: _____ **Date:** _____

2. 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 Federal Contractors Program over \$25,000 and below \$200,000 - Certification

Suppliers who are subject to the Federal Contractors Program (FCP) and have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive federal government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture (***Bidder to complete***)

- (a) () is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- (b) () is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
- (c) () is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, having not bid on requirements of \$200,000 or more;
- (d) () has not been declared an ineligible contractor by HRSDC, and has a valid certificate number as follows: _____.

Further information on the FCP is available on the HRSDC Web site.

2.2 Canadian Content Certification

2.2.1 SACC Manual clause A3050T (2010-01-11) Canadian Content Definition

2.2.2 This procurement is conditionally limited to Canadian goods.

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

Failure to provide this certification completed with the bid will result in the good(s) offered being treated as non-Canadian goods.

The Bidder certifies that: **(Bidder to complete)**

() the good(s) offered are Canadian goods as defined in paragraph 1 of clause A3050T.

Bidder's Signature:

Date:

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

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The Contractor must provide the items detailed under the "Line Item Detail".

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>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2010A (2012-07-16), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

4. Term of Contract

4.1 Delivery Date

All the deliverables must be received on or before 31 January 2013.

It is understood and agreed that if awarded a Contract, the Contractor's best delivery date offered is _____ days from date of award. **(as specified by the Bidder)**

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Laila Figueredo
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch / SIPS
1713 Bedford Row
Halifax, Nova Scotia
B3J 3C9

Telephone: 902-496-5353
Facsimile: 902-496-5016
E-mail: laila.figueredo@pwgsc-tpsgc.gc.ca

Solicitation No. - N° de l'invitation

F5502-126313/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

hal218

Client Ref. No. - N° de réf. du client

F5502-12-6313

File No. - N° du dossier

HAL-2-69129

CCC No./N° CCC - FMS No/ N° VME

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.

5.2 Project Authority

The Project Authority for the Contract is: *(to be provided upon Contract award)*

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

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

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.

5.3 Contractor's Representative *(Bidder to complete)*

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

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

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price, as specified in the Contract under the Line Item Detail for a total cost of \$ _____ *(to be determined at contract award)*. Customs duties are excluded 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.

6.2 Method of Payment - Single Payment

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

7. Invoicing Instructions

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.

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.

8. Certifications

8.1 Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

8.2 Canadian Content Certification

1. The Contractor warrants that the certification of Canadian Content submitted by the Contractor is accurate and complete, and that the goods, services or both to be provided under the Contract are in accordance with the definition contained in clause A3050T.

2. The Contractor must keep proper records and documentation relating to the origin of the goods, services or both provided to Canada. The Contractor must not, without obtaining before the written consent of the Contracting Authority, dispose of any such records or documentation until the expiration of six (6) years after final payment under the Contract, or until settlement of all outstanding claims and disputes under the Contract, whichever is later. All such records and documentation must at all times during the retention period be open to audit, inspection and examination by the representatives of Canada, who may make copies and take extracts. The Contractor must provide all facilities for such audits, inspections and examinations, and must furnish all such information as the representatives of Canada may from time to time require with respect to such records and documentation.

3. Nothing in this clause must be interpreted as limiting the rights and remedies which Canada may otherwise have pursuant to the Contract.

9. Applicable Laws

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

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) 2010A (2012-03-02), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Requirement;
- (d) the Contractor's bid dated _____.

11. Insurance Requirements

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

12. Excess Goods

The quantity of goods to be delivered by the Contractor is specified in the Contract. The Contractor remains liable for any shipment in excess of that quantity whether the excess quantity is shipped voluntarily or as a result of an error by the Contractor. Canada will not make any payment to the Contractor for goods shipped in excess of the specified quantity. Canada will not return the said goods to the Contractor unless the Contractor agrees to pay for all the costs related to the return, including but not limited to administrative, shipping and handling costs. Canada will have the right to deduct such costs from any invoice submitted by the Contractor.

Solicitation No. - N° de l'invitation

F5502-126313/A

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HAL-2-69129

Buyer ID - Id de l'acheteur

hal218

CCC No./N° CCC - FMS No/ N° VME

F5502-12-6313

ANNEX "A"
REQUIREMENT

Please see Requirement attached to this document.

ANNEX "A"

Statement of Requirements for the Supply of HF Broadcast Antenna

Background:

The Canadian Coast Guard (CCG) in the Maritime Region operates a Marine Ship to shore safety communications service in the 3-30 MHz frequency band. The CCG RF transmitter is a multi-channel device capable of operating on one of several switched RF frequencies.

Requirement:

- 1) The CCG requires the supply only of an antenna to replace an existing operating antenna.
- 2) The antenna will meet or exceed the existing performance of the antenna now in use.
- 3) Polarization: Horizontal.
- 4) Characteristic Impedance: Normal 50 Ohms unbalanced.
- 5) Power rating: 10 kW Average/ 20 kW PEP
- 6) VSWR will be 2.5:1 maximum.
- 7) TOA value must meet or exceed the value of 60 deg at 200 miles.
- 8) The antenna power gain will meet or exceed 5.5 dBi at 30 MHz.
- 9) Radiation pattern Omni-Directional.
- 10) Frequency range 3-30 MHz.
- 11) Antenna will be fed with 7/8" Heliax, antenna coupler must adapt to this 50 Ohm cable.

Applicable Standards;

CSA S37-01 Antennas, Towers and Antenna Supporting Structures

Environmental Considerations;

- 1) Soil condition report attached.
- 2) Ice and Wind loading attached.

Contractor Deliverables;

- 1) Supply aluminium support tower complete with;
 - A) Antenna.
 - B) Tower support guy wires and anchors.
 - C) All assembly hardware.
- 2) Documentation showing the mechanical details, electrical, grounding, and lightning protection and installation drawings and requirements.
- 3) All drawings are to be provided in the following mediums; one electronic copy of AutoCAD drawings and two paper copies of all drawings.

Notes:

The antenna and all deliverables must be supplied no later than January 31, 2013.

Delivery shall be at the Coast Guard Stores at 13 Akerley Boulevard - Door 1A, Dartmouth, Nova Scotia, Canada B3B-1J6

One week's notice shall be given to Murdock MacKinnon at 902 426-8395 to arrange for acceptance of the delivery.

Site Specific Hourly Wind Pressure Documentation Sheet

Site Information:

Name: Sambro, NS
 Latitude: 44° 28' 19.81" N
 Longitude: 63° 37' 3.54" W
 Tower Height (m): 30.5
 Elevation MSL (m): 15.7

UTM Coordinates:

Zone: 20
 Easting (m): 450875
 Northing (m): 4924503

Results:

Q_e (Pa): 574
 Uncertainty of Q_e : [20%, -25%]
 Q_{nbc} (Pa): 520
 Icing: As per CAN/CSA S37-01
 Return Period: 30

Wind Pressure Formula (for z in metres and result in Pa):

For $Z \leq 20.2$ metres: $Q_h = 0.12919 \{ [0.0000 e^{(-0.0000z)} + 1.2681 \ln(z/0.0500) / \ln(z/0.0100)] 67.48 \}^2 (z/10)^{0.2}$
 For $Z > 20.2$ metres: $Q_h = 0.12919 \{ [1 + 0.0000 e^{(-0.0000z)}] 67.48 \}^2 (z/10)^{0.2}$

Profile Formula General Form:

$$Q_h = 0.12919 \{ [a_1 e^{(-a_2z)} + a_3 \ln(z/z_h) / \ln(z/z_{o1})] v_{o1} \}^2 (z/10)^{0.2}$$

Site Values of Coefficients:

For $Z \leq 20.2$ metres: $a_1 = 0.0000$, $a_2 = 0.0000$, $a_3 = 1.2681$, $z_h = 0.0500$, $z_{o1} = 0.0100$, $v_{o1} = 67.48$ mph
 For $Z > 20.2$ metres: $a_1 = 0.0000$, $a_2 = 0.0000$, $a_3 = 1.0000$, $z_h = 0.0100$, $z_{o1} = 0.0100$, $v_{o1} = 67.48$ mph

Definitions

Tower Height: Height of the tower from ground level at the base of the tower to the top of the structure.

Q_e : "Site Specific Equivalent Wind Pressure at 10 m" => the wind pressure which, when using the 2/10 power law yields the same average wind pressure over the height of the tower as the Wind Pressure Profile Formula.

Q_{nbc} : 30-year return period regionally representative reference wind pressure at 10 m in the format of the National Building Code of Canada. As per the November 17, 1988 meeting of the CSA Antenna Tower Technical Committee, the Q_{nbc} value profiled with the 2/10 power law should comprise the minimum hourly average wind pressure at all heights above ground.

Wind Pressure Profile Formula: Formula for the 30-year return period design wind pressure as a function of height.

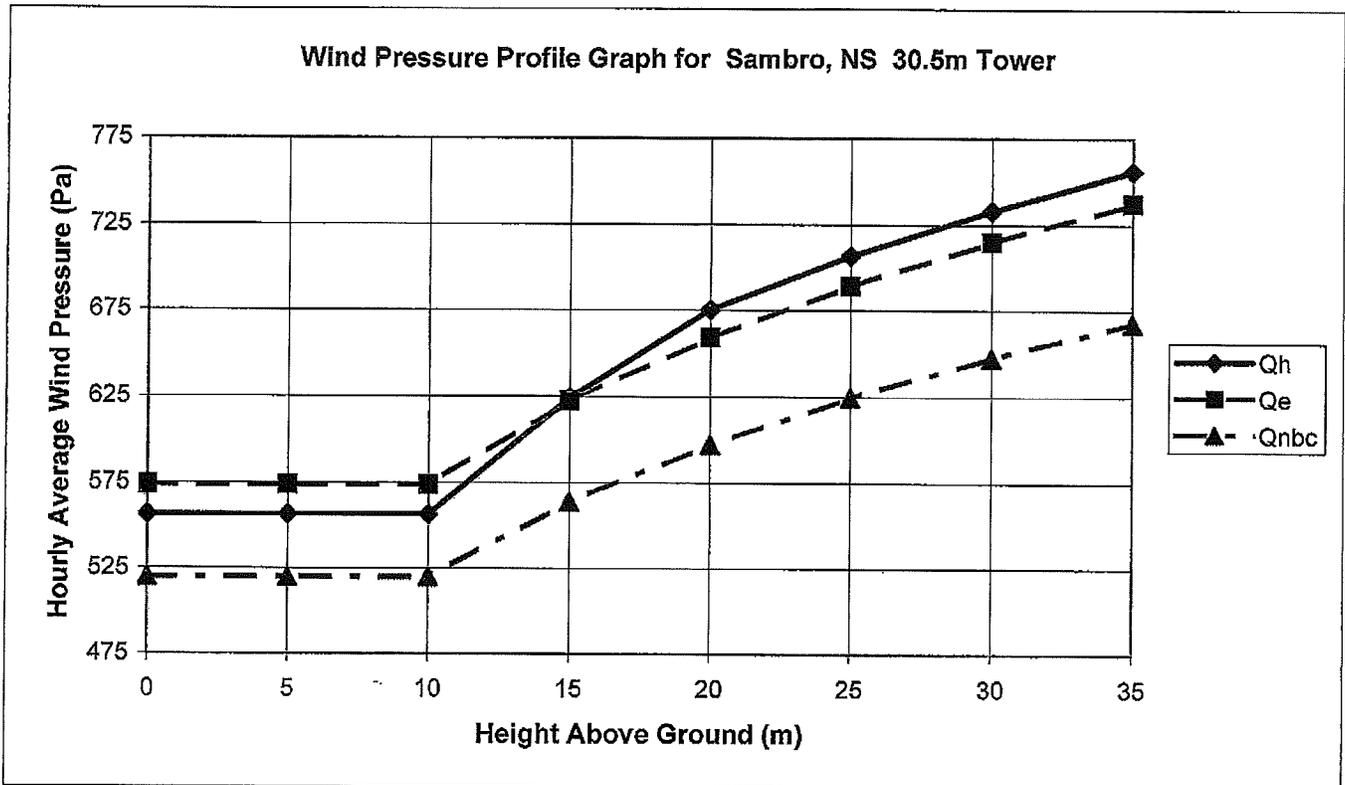
Height: the vertical distance (m) above ground level at the base of the tower.

Notes:

n.b. No wind pressure value less than 90% of the value at 10 m should be used for heights less than 10 m above ground.

- These wind pressures were evaluated using a version of the methods described by Taylor and Lee (1984) "Simple Guidelines for Estimating Wind Speed Variations Due to Small Scale Topographic Features", Climatological Bulletin 18 2, using the Boyd (1969) analysis of thirty year return period wind speeds (which is also used for the National Building Code of Canada), modified by a technique described by Wieringa (1980) "Representativeness of Wind Observations at Airports" Bulletin of the American Meteorological Society, 61 9, as input data. The uncertainty in NBCC regionally representative reference wind pressures is about [+15%, -15%].
- Environment Canada has not made and does not make any representations or warranties, either expressed or implied, arising by law or otherwise, respecting the accuracy of recommended climatic information. In no event will Environment Canada be responsible for any prejudice, loss or damages which may occur as a result of the use of design wind pressure recommendations.

Sambro, NS 30.5m Tower



Qe profile = Qe (the site-specific equivalent reference wind pressure) with the 2/10 power law profile.

Qh = site specific wind pressure directly from Taylor and Lee (1984) simple guidelines.

Qnbc profile = regionally representative wind pressure in the National Building Code format with the 2/10 power law profile

All are for a thirty year return period.

May 29, 2012

Mr. Murdock MacKinnon
 Canadian Coast Guard
 2 Morris Drive
 Dartmouth, NS B3B 1S7
 (Email: mackinnonmu@mar.dfo-mpo.gc.ca)

Subject: Geotechnical Investigation, Communications Tower, Sambro, NS
 Preliminary Recommendations and Test Pit Logs –
 Our ref.: 14579

Mr. MacKinnon:

Fieldwork for the above referenced site has been completed. For your preliminary design requirements the following data may be of value.

The subsurface stratigraphy, as encountered at the test pits at the site, consists of grass / topsoil overlying glacial till. Copies of preliminary test pit logs and site sketch showing their location are attached for your reference.

Groundwater measurements were made during the field investigation through open-hole measurements at the test pit locations. Groundwater was encountered in only one test pit TP 4 during the investigation at a depth of 3.0 metres below ground surface. Seasonal fluctuations in groundwater levels can be expected. A groundwater depth of 2.0 metres is recommended for use in design.

The following typical soil parameters may be used:

Recommended Soil Design Parameters	
Parameter	Till
Angle of internal friction	33°
Total unit weight of soil	22 kN/m ³
Effective unit weight of soil	12 kN/m ³
Coefficient of active earth pressure Ka	0.29
Coefficient of passive earth pressure Kp	3.4

Subject : Geotechnical Investigation – Communications Tower, Sambro, NS

May 28, 2012

Geotechnical conditions at this site are considered to be good. The most efficient anchoring system for the proposed tower may consist of deadman concrete block anchors for the guy support wires.

Foundations for the tower pad/piers, supporting the structures, etc., may be set directly on site-native till. For design purposes an allowable bearing pressure of 200 kPa (4.0 ksf) may be used for structures set on undisturbed glacial till.

We trust that the enclosed information meets with your satisfaction. If, however, additional information should be required, please contact the undersigned.

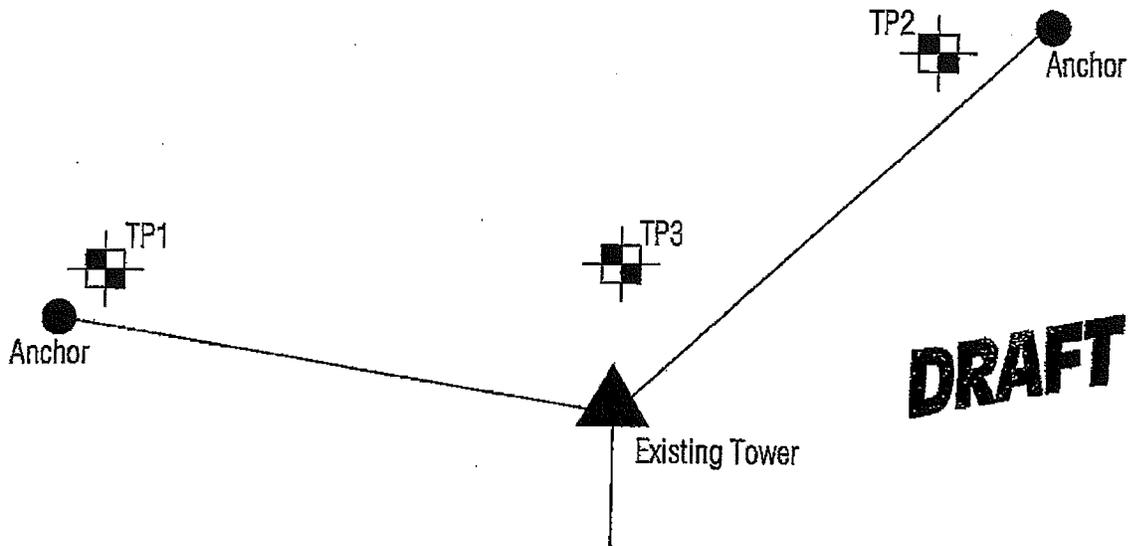
Yours very truly,
LVM Maritime Testing Limited



T. Kenneth Marvin, P.Eng.

Encl.

document 14841-1



*These sketches
were not available
in an edittable
program so they
were not translated.*

Susan

LEGEND:



- Test Pit Location

LVM

MARITIME TESTING

Site Sketch Showing Test Pit Locations
Proposed New Communication Tower
Canada Coast Guard, Sambro, Nova Scotia

DATE: May 2012

SCALE: NTS

DRAWN BY: JJ

CKD BY: BM

JOB No. 14579

FIGURE 1

TEST PIT LOG

PROJECT
Geotechnical Investigation -
Proposed communications Tower, CCG, Sambro, NS

LOGGED/DWN. BAM		CKD. TKM		DATE OF INVEST. 18/05/12		JOB NO. 14579		TEST PIT TP 1			
WC % 10 20 30 40 50		DEPTH ft m		MODIFIED USCS	SOIL SYMBOL	SOIL DESCRIPTION		SOIL SAMPLE		BACKHOE TYPE	
wp-□ w-● wl-△						DATUM existing ground surface		COND.	TYPE	POCKET PENE.	Excavator
						SURFACE ELEVATION					
		1				Grass / Topsoil					
		2				TILL : sandy gravel, trace silt, some cobbles and small boulders, compact, moist, light brown.					
		3									
		4									
		5									
		6									
		7									
		8									
		9									
		10									
		11									
		12									
		13				End of Test Pit at 3.6 metres in Till, Test Pit dry upon completion.					
		14									
		15									
		16									

DRAFT

TEST PIT LOG

PROJECT

Geotechnical Investigation -
Proposed communications Tower, CCG, Sambro, NS

LOGGED/DWN. BAM

CKD. TKM

DATE OF INVEST. 18/05/12

JOB NO. 14579

TEST PIT TP 2

WC % wp-□ w-● wl-△
10 20 30 40 50

DEPTH
ft m

MODIFIED
USCS

SOIL
SYMBOL

SOIL DESCRIPTION

SOIL SAMPLE

BACKHOE TYPE

DATUM existing ground surface

COND.

TYPE

POCKET
PENET.

Excavator

SURFACE ELEVATION

OTHER TESTS

Grass / Topsoil

TILL : sandy gravel, trace silt, some
cobbles and small boulders,
compact, moist, light brown.

DRAFT

End of Test Pit at 3.6 metres in Till.

Test Pit dry upon completion.

TEST PIT LOG

PROJECT

Geotechnical Investigation -
Proposed communications Tower, CCG, Sambro, NS

LOGGED/DWN. BAM

CKD. TKM

DATE OF INVEST. 18/05/12

JOB NO. 14579

TEST PIT TP 3

WC % wp-□ w-● wl-△
10 20 30 40 50

DEPTH
ft m

MODIFIED
USCS

SOIL
SYMBOL

SOIL DESCRIPTION

SOIL SAMPLE

BACKHOE TYPE

DATUM existing ground surface

COND.

TYPE

POCKET
PENE.

Excavator

SURFACE ELEVATION

OTHER TESTS

Grass / Topsoil

TILL : sandy gravel, trace silt, some
cobbles and small / large boulders,
compact, moist, light brown.

DRAFT

End of Test Pit at 2.1 metres in Till.

Excavator bucket refusal on large
boulder.

Test Pit dry upon completion.

TEST PIT LOG

PROJECT
Geotechnical Investigation -
Proposed communications Tower, CCG, Sambro, NS

LOGGED/DWN. BAM	CKD. TKM	DATE OF INVEST. 18/05/12	JOB NO. 14579	TEST PIT TP 4	
		SOIL DESCRIPTION	SOIL SAMPLE		BACKHOE TYPE
		DATUM existing ground surface	COND.	TYPE	POCKET PENE.
		SURFACE ELEVATION			
WC % wp-□ w-● wl-△ 10 20 30 40 50		MODIFIED USCS SOIL SYMBOL	SOIL DESCRIPTION DATUM existing ground surface SURFACE ELEVATION Grass / Topsoil		Excavator
DEPTH ft m					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
5					
		TILL : sandy gravel, trace silt, some cobbles and small boulders, compact, moist, light brown.			
		End of Test Pit at 3.6 metres in Till. Test Pit dry upon completion.			