



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

**REQUEST FOR PROPOSAL**  
**DEMANDE DE PROPOSITION**

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

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

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

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

**Comments - Commentaires**

<b>Title - Sujet</b> Nootka Tower - Design and Supply	
<b>Solicitation No. - N° de l'invitation</b> F1705-160063/A	<b>Date</b> 2016-11-03
<b>Client Reference No. - N° de référence du client</b> F1705-160063	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$VIC-251-7091	
<b>File No. - N° de dossier</b> VIC-6-39151 (251)	<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 2016-12-15</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Pacific Standard Time PST
<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> Fletcher, Erin	<b>Buyer Id - Id de l'acheteur</b> vic251
<b>Telephone No. - N° de téléphone</b> (250) 415-6020 ( )	<b>FAX No. - N° de FAX</b> (250) 363-0395
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF FISHERIES AND OCEANS 25 HURON ST VICTORIA British Columbia V8V4V9 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**

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

<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

### 1.1 Introduction

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

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

The Annexes include the Requirement, the Basis of Payment, the Requisition on Contract Form, the Electronic Payment Instruments, and any other annexes.

### 1.2 Summary

To design, fabricate and deliver one (1) 50 ft. self-supporting communications tower to the Department of Fisheries and Oceans (DFO), Canadian Coast Guard (CCG)'s Integrated Technical Services, Marine and Civil Infrastructure (MCI) of Victoria BC Canada in accordance with the requirement detailed herein.

Delivery must be completed by no later than March 31, 2017 (Mandatory) based on an estimated award date of January 6, 2017.

The Requisition on Contract (ROC) process detailed herein allows for adjustments to the firm pricing submitted e.g. due to minor design modification requests from DFO/CCG.

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

It is the responsibility of the Bidder to ensure that all addenda issued prior to solicitation closing have been obtained and addressed in the submitted bid.

Bidders intending to submit bids should obtain solicitation documents from the Government Electronic Tendering System (GETS) at <https://buyandsell.gc.ca/procurement-data/tenders>. Addenda, when issued, will be available on GETS. Bidders basing their submissions on solicitation documents obtained from other sources do so at their own risk.

For further information, please refer to the solicitation documents.

This PWGSC office provides procurement services to the public in English.

### 1.3 Debriefings

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

## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<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.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days  
Insert: 120 days

### 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 November 25, 2016 at 2:00 p.m. Pacific Standard Time (PST).** Enquiries received after that time may not be answered.

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

### 2.4 Applicable Laws

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

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

## 2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority **by no later than November 25, 2016 at 2:00 p.m. Pacific Standard Time (PST)**. Canada will have the right to accept or reject any or all suggestions.

## PART 3 - BID PREPARATION INSTRUCTIONS

### 3.1 Bid Preparation Instructions

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

- Section I: Technical Bid – One (1) hard copy + 1 soft copy in .PDF format on CD, DVD or USB Key
- Section II: Financial Bid – One (1) hard copy
- Section III: Certifications – One (1) hard copy

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft 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 demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

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The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria listed in Appendix A.1 at Annex A against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

## **Section II: Financial Bid**

**3.1.1** Bidders must submit their financial bid using the financial evaluation table provided in Annex B – Basis of Payment. The total amount of Applicable Taxes must be shown separately.

### **3.1.2 Electronic Payment of Invoices – Bid**

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex D - Electronic Payment Instruments, to identify which ones are accepted.

If Annex D - Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

### **3.1.3 Exchange Rate Fluctuation**

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

## **Section III: Certifications**

Bidders must submit the certifications and additional information required under Part 5.

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **4.1 Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical 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**

Mandatory technical evaluation criteria are included in Appendix A.1 at Annex A. Failure to meet any of these mandatory technical evaluation criteria will result in the Bidder's bid being declared non-responsive and given no further consideration.

#### **4.1.2 Financial Evaluation**

##### **4.1.2.1 Mandatory Financial Criteria**

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Mandatory technical evaluation criteria are included in Annex B – Basis of Payment. Failure to meet any of these mandatory financial criteria will result in the Bidder's bid being declared non-responsive and given no further consideration.

#### **4.1.2.2 Calculation of Evaluated Bid Price**

See Annex B – Basis of Payment – Table B.5

#### **4.1.2.3 Evaluation of Price – Bid**

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, Delivery Duty Paid (DDP) Destination, Canadian Customs duties and excise taxes included.

### **4.2 Basis of Selection**

#### **4.2.1 Mandatory Technical and Financial Evaluation Criteria**

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria and financial evaluation criteria to be declared responsive. The responsive bid with the lowest Evaluated Bid Price at Annex B 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. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

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

### **5.1 Certifications Required with the Bid**

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

#### **5.1.1 Integrity Provisions - Declaration of Convicted Offences**

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

### **5.2 Certifications Precedent to Contract Award and Additional Information**

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

#### **5.2.1 Integrity Provisions – Required Documentation**

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

## 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

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

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 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex A.

#### 6.1.1 Requisition on Contract (ROC)

The ROC process allows for adjustments to the firm pricing due to minor design modifications requests from DFO/CCG. The Work described in the ROC must be in accordance with the scope of the Contract.

##### 6.1.1.1 Requisition on Contract Process:

1. The Project Authority will provide the Contractor with a description of the requirement using the "Requisition on Contract" form (ROC) specified in Annex C.
2. The ROC will contain the details of the activities to be performed, a description of the deliverables, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The ROC will also include the applicable basis (bases) and methods of payment as specified in the Contract.
3. The Contractor must provide the Project Authority within seven (7) calendar days of its receipt, the proposed total estimated cost for performing the ROC and a detailed breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract.
4. The Contractor must not commence work until a ROC authorized by the Project Authority has been received by the Contractor. The Contractor acknowledges that any work performed and goods delivered before an authorized ROC has been received will be done at the Contractor's own risk.

##### 6.1.1.2 Requisition on Contract Limit

The DFO/CCG Project Authority may authorize individual ROCs up to a limit of **\$25,000.00**, Applicable Taxes included, inclusive of any revisions.

Any ROC to be issued in excess of that limit must be authorized by the PWGSC Contracting Authority before issuance.

### 6.1.1.3 Canada's Obligation - Portion of the Work – Requisition on Contract

Canada's obligation with respect to the portion of the Work under the Contract that is performed through Requisitions on Contract is limited to the total amount of actual tasks performed by the Contractor.

### 6.1.1.4 Usage Reports - Contracts with ROCs

The Contractor must compile and maintain records on its provision of goods and services to the federal government under ROC issued under the Contract.

The Contractor will provide usage reports within three (3) calendar days of the written request by the PWGSC Contracting Authority.

### Reporting Requirement – Details

A detailed and current record of all authorized ROCs must be kept for each contract with a ROC process. The record must contain:

#### For each authorized ROC:

- i. the authorized ROC or ROC revision number(s);
- ii. a title or brief description of each authorized ROC;
- iii. the total estimated cost specified in the ROC, exclusive of Applicable Taxes;
- iv. the total amount, exclusive of Applicable Taxes, expended to date against each ROC;
- v. the start and completion date for each ROC; and
- vi. the active status of each ROC, as applicable.

#### For all authorized ROCs:

- i. the amount (exclusive of Applicable Taxes) specified in the contract (as last amended, as applicable) as Canada's total liability to the Contractor for all authorized ROCs; and
- ii. the total amount, exclusive of Applicable Taxes, expended to date against all authorized ROCs.

## 6.2 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)(<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

### 6.2.1 General Conditions

[2030](#) (2016-04-04), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

### 6.2.2 Warranty – Modification – General Conditions 2030

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:

3. The Work or any part of the Work found to be 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 in 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.

4. 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.

### **6.2.3 Supplemental General Conditions**

4006 (2010-08-16), Contractor to Own Intellectual Property Rights in Foreground Information, apply to and form part of the Contract.

### **6.3 Security Requirements**

**6.3.1** There is no security requirement applicable to the Contract.

### **6.4 Term of Contract**

#### **6.4.1 Delivery Date (Mandatory)**

All the deliverables must be received on or before **March 31, 2017**.

#### **6.4.2 Delivery Points**

Delivery of the requirement will be made to the delivery point specified at Annex A of the Contract.

### **6.5 Authorities**

#### **6.5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Erin Fletcher  
Supply Officer  
Public Works and Government Services Canada  
Acquisitions Branch  
Pacific Region  
1230 Government Street, Suite 401  
Victoria, British Columbia, Canada V8W 3X4  
Telephone: (250) 415-6020  
E-mail address: [erin.fletcher@pwgsc-tpsgc.gc.ca](mailto:erin.fletcher@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.

In the event that you are unable to contact the above noted Authority, please contact:  
PAC.VICCA@tpsgc-pwgsc.gc.ca

#### **6.5.2 Project Authority**

The DFO/CCG Project Authority for the Contract is: *(Inserted at time of contract award)*

Solicitation No. - N° de l'invitation  
F1705-160063/A  
Client Ref. No. - N° de réf. du client  
F1705-160063

Amd. No. - N° de la modif.  
File No. - N° du dossier  
VIC-6-39078

Buyer ID - Id de l'acheteur  
VIC 251  
CCC No./N° CCC - FMS No./N° VME

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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.

### 6.5.3 Contractor's Representative

The Contractor's Representative for the Contract is: *(As specified in the Bidder's bid)*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_

Facsimile: \_\_\_\_ - \_\_\_\_ - \_\_\_\_

E-mail address: \_\_\_\_\_

## 6.6 Payment

### 6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid firm lot prices, as specified in Annex B – Basis of Payment, for a cost of \$ \_\_\_\_\_ *(amount inserted at time of Contract award)*. 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 approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.6.2 Basis of Payment – Limitation of Expenditure – Requisitions on Contract (ROC)

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of

the Work specified in the ROC, as determined in accordance with the Basis of Payment in Annex B, to the limitation of expenditure specified in the authorized ROC.

Canada's liability to the Contractor under the authorized ROC must not exceed the limitation of expenditure specified in the authorized ROC. Customs duties are included and Applicable Taxes are extra.

No increase in the liability of Canada or in the price of the Work specified in the authorized ROC resulting from any design changes, modifications or interpretations of the Work will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been authorized, in writing, by the Contracting Authority before their incorporation into the Work.

### **6.6.3 Limitation of Expenditure - Cumulative Total of all Requisition on Contracts (ROC)**

1. Canada's total liability to the Contractor under the Contract for all authorized ROCs, inclusive of any revisions, must not exceed the sum of \$ \_\_\_\_\_ (*amount inserted at time of contract award*). Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada will be authorized or paid to the Contractor unless an increase has been approved, in writing, by the Contracting Authority.
3. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
  - a. when it is 75 percent committed, or
  - b. four (4) months before the contract expiry date, or
  - c. as soon as the Contractor considers that the sum is inadequate for the completion of the Work required in all authorized ROCs, inclusive of any revisions, whichever comes first.
4. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority, a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

### **6.6.4 SACC Manual Clauses**

A9117C (2007-11-30) T1204 – Direct Request by Customer Department

### **6.6.5 Single Payment**

SACC Manual Clause H1000C (2008-05-12), Single Payment

### **6.6.6 Electronic Payment of Invoices – Contract (As specified by the Bidder at Annex D – Electronic Payment Instruments)**

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

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### **6.6.7 Discretionary Audit – Commercial Goods and/or Services**

SACC *Manual* Clause C0100C (2010-01-11), Discretionary Audit – Commercial Goods and/or Services

### **6.6.8 Time and Contract Price Verification**

SACC *Manual* Clause C0710C (2007-11-30), Time and Contract Price Verification

### **6.7 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 identified under the section entitled “Authorities” of the Contract.

### **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 \_\_\_\_\_. (*Insert the name of the province or territory 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 supplemental general conditions 4006 (2010-08-16), Contractor to Own Intellectual Property Rights in Foreground Information;
- (c) the general conditions 2030 (2016-04-04) General Conditions – Higher Complexity – Goods, including the amendment to section 22 entitled Warranty of the general conditions 2030 as detailed under section 6.2.2;
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) the signed Requisitions on Contract (including all of its annexes, if any);
- (g) the Contractor's bid dated \_\_\_\_\_ (*inserted at time of contract award*)

## **6.11 Insurance – No Specific 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.

## **6.12 Shipping Instructions**

### **6.12.1 Shipping Instructions – Delivery at Destination**

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

- a. Delivered Duty Paid (DDP) to Destination Incoterms 2000 for shipments from a commercial contractor.

The Contractor is responsible for all delivery charges, administration, costs, and risks of transport and customs clearance, including the payment of customs duties and Applicable Taxes.

### **6.12.2 Delivery Appointment**

The Contractor must contact the DFO/CCG Project Authority at least three (3) calendar days prior to the mandatory delivery date stated under paragraph 6.4.1 to coordinate delivery.

### **6.12.3 Delivery and Unloading**

1. Delivery trucks must be equipped with an unloading device which will permit unloading at sites with no hydraulic, stationary or other type of unloading facility.
2. When making deliveries, sufficient personnel must be provided to permit unloading of any type of vehicle without the assistance of federal government personnel.
3. At some sites, the delivery truck must be unloaded while parked at the curb. When material is placed on the sidewalk, it must be placed in proximity to the designated entrance so as to be readily accessible to transport by mechanical handling equipment utilized by site personnel.

## **6.13 Inspection and Acceptance**

The Project 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 Requirement 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.

## **6.14 SACC Manual Clauses**

A2000C (2006-06-16), Foreign Nationals (Canadian Contractor)  
A2000I (2006-06-16), Foreign Nationals (Foreign Contractor)  
A9051C (2014-03-01), Existing Technical Publications – Translation  
B7500C (2006-06-16), Excess Goods  
C2604C (2013-04-25), Customs Duties, Excise Taxes and Applicable Taxes – Non-resident  
D2025C (2013-11-06), Wood Packaging Materials  
D9002C (2007-11-30), Incomplete Assemblies

Solicitation No. - N° de l'invitation  
F1705-160063/A  
Client Ref. No. - N° de réf. du client  
F1705-160063

Amd. No. - N° de la modif.  
File No. - N° du dossier  
VIC-6-39078

Buyer ID - Id de l'acheteur  
VIC 251  
CCC No./N° CCC - FMS No./N° VME

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**ANNEX A - REQUIREMENT**

**Nootka – Design, Fabricate and Supply  
50 FT. Self Support Communication Tower**

**(starts on next page)**



## 1 DESCRIPTION OF WORK

- 1.2** As part of an ongoing replacement and refurbishment of the Canadian Coast Guards communication towers, the Coast Guard requires the design, fabrication and supply of one 50ft. self-supporting communications tower. Upon delivery of the tower CCG will be responsible for installation of this tower and its components.

## 2 SCHEDULE OF WORK

- .1 Mandatory submittals and schedule for submission are detailed below.

### 2.3 Data to supply with Tender

- .1 Design profile drawing of the proposed tower
- .2 Based on the CCG provided tower specifications.
- .1 The contractor must submit a design profile of their proposed tower. One (1) soft copy in PDF format for CCG review.
- .2 Include the following in the Design Profile Drawing;
- .1 Tower section type (as per 3.2.1)
- .2 Section splice detail (as per 3.2.2)
- .3 Section weight (as per 3.2.3)
- .4 Foundation loads
- .3 Dead line
- .1 Bid closing.

### 2.4 Data to supply after the contract is awarded

- .1 Draft Field Erection Drawings
- .1 Based on the CCG provided tower specifications.
- .2 The contractor must submit Draft Field Erection Drawings. One (1) soft copy in PDF format for CCG review.
- .2 Dead line
- .1 Within fourteen (14) calendar days of contract award.

### 2.5 Canadian Coast Guard review of Draft Field Erection Drawings

- .1 Allow seven (7) calendar days for the CCG review of the Draft Field Erection Drawings.
- .2 Once CCG have reviewed the Draft Field Erection Drawings they will return them to the contractor for sealing by a Professional Engineer.
- .3 Deadline
- .1 Within seven (7) calendar days from receipt of Draft Field Erection Drawings.



## 2.6 Submission of Final Sealed Field Erection Drawings

- .1 Final Field Erection Drawings - Sealed by a Professional Engineer
  - .1 The Contractor must submit Final Field Erection Drawings - one (1) soft copy in PDF format - stamped and certified by a qualified Professional Engineer registered in the province of BC for CCG approval.
  - .2 CCG assumes that all required changes from the Draft Field Erection Drawings must be incorporated at this time.
- .2 Dead line
  - .1 Within five (5) business days from date of receipt of CCG approved Draft Field Erection Drawings.

## 2.7 Contingency for Modifications - If applicable

## 2.8 Fabrication and delivery

- .1 Fabricate and deliver the tower to the CCG location stated below.
- .2 The delivery to CCG must be completed on or before **March 31<sup>st</sup> 2017**

## 3 DESIGN CRITERIA

### 3.2 GENERAL

- .1 One 50ft. galvanized self-supporting communications tower. The tower must be designed and fabricated for assembly in 10ft sections.
- .2 The tower sections must bolt together with splice pads.
- .3 Each section must weight no more than 1400lbs.
- .4 The tower must be capable of supporting all initial and future antenna loading requirements listed in section 3.3 of this specification.
- .5 The tower must comply with CAN/CSA S37-13 Antenna, Towers and Antenna Supporting Structures.
- .6 Designed for a wind load of Qh 683 Pa.
- .7 Designed for a radial ice load of + 25mm.
- .8 All tower steel, assemblies and antenna mounts are to be hot-dip galvanized (ASTM A123/A123M)
- .9 The operational requirements for maximum twist and tilt are -0.5°

### 3.3 INITIAL AND FUTURE ANTENNAE AND TRANSMISSION LINES

- .1 VHF Antenna and cable loading requirements.
  - .1 At 50' elevation there shall be installed one (1) SD214-SF2P2SNM(D00B-ABK) VHF dipole antenna. The transmission cable shall be (2) AVA5-50FX.



- .2 At 40' elevation there shall be installed one (1) SD212-SF2P4SNM(D00S-WABK) VHF dipole antenna. The transmission cable shall be (1) AVA5-50FX.
  - .3 At 30' elevation there shall be installed one (1) SD212-SF2P4SNM(D00S-WABK) VHF dipole antenna. The transmission cable shall be (1) AVA5-50FX.
  - .4 At 50' elevation there shall be installed one (1) SY206-HF7SNM(E-ABK). The transmission cable shall be (1) AVA5-50FX Azimuth 167° 16' 12"
- .2 Microwave antenna and cable loading requirements.
- .1 An **initial** 10 ft. standard parabolic microwave antenna facing Estevan Light station shall be installed at the 45 ft. elevation. The antenna will have a shield and hypalon and will operate at 7 GHz. The antenna will be mounted with an azimuth of 167° 16' 12" and the cable shall be EW77.
  - .2 A future 10 ft. standard parabolic microwave antenna facing Estevan Light station may be installed at the 25 ft. elevation. The antenna will have a shield and hypalon and will operate at 7 GHz. The antenna will be mounted with an azimuth of 167° 16' 12" True North and the cable shall be EW77.

### 3.4 TOWER ATTACHMENTS

The Contractor will be responsible for fabricating and supplying the following tower attachments:

- .1 An access ladder shall be built into one face of the tower, or constructed as a bolt on assembly that can accommodate a Trylon Cougar safety rail (supplied by others) or equivalent.
- .2 The tower must be supplied with transmission line brackets which are capable of fastening a total of 12 transmission lines. These transmission line brackets may be welded or bolted on to the tower face or ladder. The holes in the brackets must be able to accommodate standard 3/8-inch stainless steel hanger hardware.
- .3 Microwave dish mounts must be fabricated and supplied with this tower. There shall be one microwave dish mount supplied for the initial microwave dish at the specified elevation listed in section 3.3.2.1. The mounts must be face mounts which stand off the face of the tower to allow transmission lines to run behind the mount on the tower. The mounts must not impede the transmission lines. The antenna mounting pipe must be a 4 ½ inch, galvanised, schedule 80. These mounting arrangements must have the capability to accommodate the microwave dish as well as two side struts and one bottom strut.
- .4 A lightning rod must be supplied for the top of the tower.
- .5 Supply all connecting hardware for all tower attachments and structural connections.



- .6 Supply a foundation template.

#### 4 **STORAGE AND DELIVERY**

- 4.2 Prior to transportation, all tower steel and components must be appropriately protected and packaged to provide protection during transportation.

- .1 The contractor must transport and deliver the tower to the following Canadian Coast Guard staging location. Access outside of regular business hours will be at the discretion of the CCG.

- .2 Staging locations:

- .1 CCG Victoria Base, 25 Huron St, Victoria, BC
- .2 Regular Shipping/ Receiving hours: Monday through Friday, 9:00AM to 3:00PM.

#### 5 **CODES AND STANDARDS**

Work under this section must be undertaken in strict conformance with all listed references, in the case of any conflict or discrepancy the more stringent requirements will apply.

- 5.2 Canada Labour Code Part II, 2008
- 5.3 CAN/CSA S37-13 Antenna, Towers and Antenna-Supporting Structures
- 5.4 B33.4-1973---Galvanized Steel Tower Bolts and Nuts.
- 5.5 G164-M1981---Hot Dip Galvanizing of Irregularly Shaped Articles
- 5.6 CAN/CSA W59-2013---Welded Steel Construction
- 5.7 CAN/CSA W47.1 Fusion Welding of Steel Company Certification

#### 6 **REFERENCE DOCUMENTS**

The following documents have been provided for reference only and should serve as a guide when designing the tower;

- 6.2 Site-Specific Wind Pressure Report - March 10, 2016
- 6.3 CCG supplied antenna layout and specifications drawing WM – 498 – 1000
- 6.4 CCG supplied site plan WM – 498 - 1000

**APPENDIX A.1 TO ANNEX A – MANDATORY TECHNICAL EVALUATION CRITERIA**

A bid must comply with the requirements of the Solicitation and meet all mandatory technical evaluation criteria listed below to be declared responsive and given further consideration in the evaluation process.

In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings.

<b>A.1 Mandatory Technical Evaluation Criteria</b>	<b>Complies</b>	<b>Does not comply</b>
<p><b>Bidders must submit the following technical information <u>with their bid</u>.</b></p> <p><b>Failure to provide this information with the bid will render the bid non-responsive.</b></p>		
<p>a) <b><u>Draft Schedule of Work</u></b></p> <p>Bidders must submit with their bid a draft Schedule of Work in accordance with section 2 of the Requirement at Annex A which demonstrates the Bidder's ability to meet delivery at destination by no later than <b>March 31, 2017</b> based on an estimated award date of January 6, 2017.</p>		
<p>b) <b><u>Tower Design Profile Drawing</u></b></p> <p>Based on the CCG provided tower specifications.</p> <p>Bidders must submit a design profile of their proposed tower. One (1) soft copy in PDF format for CCG review.</p> <p>Include the following in the Design Profile Drawing:</p> <ol style="list-style-type: none"> <li>1. Tower section type (as per Annex A, 3.2.1)</li> <li>2. Section splice detail (as per Annex A, 3.2.2)</li> <li>3. Section weight (as per Annex A, 3.2.3)</li> <li>4. Foundation loads</li> </ol>		
<p><b>If not submitted with their bid, Bidders must be prepared to submit the following additional information within three (3) calendar days of the written request by the PWGSC Contracting Authority:</b></p> <p><b>Failure to provide this information within the timeframe specified will render the bid non-responsive.</b></p>		

<b>A.1 Mandatory Technical Evaluation Criteria</b>		<b>Complies</b>	<b>Does not comply</b>
c)	<p><b><u>Corporate Experience</u></b></p> <p>Bidders must provide details of three (3) contracts completed within the last five (5) years, which are similar in scope and value to the Nootka Tower requirement detailed in Annex A.</p> <p>Each contract reference should include the following details:</p>		
c.1	<p><b><u>Contract Reference No. 1</u></b></p> <ul style="list-style-type: none"> <li>• Contract Description</li> <li>• Start Date</li> <li>• End Date</li> <li>• Description of design services provided</li> <li>• Description of fabrication services provided</li> <li>• Contract value \$ _____</li> <li>• Client/Company name and contact information whom Canada may contact directly to verify the information provided, if required.</li> </ul>		
c.2	<p><b><u>Contract Reference No. 2</u></b></p> <ul style="list-style-type: none"> <li>• Contract Description</li> <li>• Start Date</li> <li>• End Date</li> <li>• Description of design services provided</li> <li>• Description of fabrication services provided</li> <li>• Contract value \$ _____</li> <li>• Client/Company name and contact information whom Canada may contact directly to verify the information provided, if required.</li> </ul>		
c.3	<p><b><u>Contract Reference No. 3</u></b></p> <ul style="list-style-type: none"> <li>• Contract Description</li> <li>• Start Date</li> <li>• End Date</li> <li>• Description of design services provided</li> <li>• Description of fabrication services provided</li> <li>• Contract value \$ _____</li> <li>• Client/Company name and contact information whom Canada may contact directly to verify the information provided, if required.</li> </ul>		

Solicitation No. - N° de l'invitation  
F1705-160063/A  
Client Ref. No. - N° de réf. du client  
F1705-160063

Amd. No. - N° de la modif.  
File No. - N° du dossier  
VIC-6-39078

Buyer ID - Id de l'acheteur  
VIC 251  
CCC No./N° CCC - FMS No./N° VME

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## **APPENDIX A.2 TO ANNEX A – CCG RELATED DOCUMENTS**

### **Related Documents:**

WM-498-1000 – SITE PLAN

WM-498-1000 – ANTENNA LAYOUT AND SPECIFICATIONS

Site-Specific 10-yr. Wind Pressure Report (6 pages)





# Site-Specific 10-yr. Wind Pressure Report (V2.1 2016-01-04 Format)

## Site Information:

Name: Nootka, BC  
 Latitude: 49° 35' 33.6" N  
 Longitude: 126° 36' 55.25" W  
 Tower Height (m): 10  
 Elevation MSL (m): 14

## Results:

**Note:** Following direction from the S37 Committee,  $Q_e$  can no longer be provided.

$Q_{nbc}$ (Pa): 530	$Q_{nbc} = 530(Z/10)^{0.2}$	$V_{nbc} = 64.05$ mph
Icing: As per CAN/CSA S37-13		
$Q_{Min}$ (Pa): 250	$Q_{Min} = 250(Z/10)^{0.2}$	$V_{Min} = 43.99$ mph

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

For  $Z \leq 2.4$  metres:  $Q_h = 0.12919 \{ [0.0000 e^{(-0.0000 z)} + 2.4813 \ln(z/0.5000) / \ln(z/0.0500)] 63.90 \}^2 (z/10)^{0.200}$

For  $Z > 2.4$  metres:  $Q_h = 0.12919 \{ [1 + 0.0000 e^{(-0.0000 z)}] 63.90 \}^2 (z/10)^{0.200}$

## Profile Formula General Form:

$$Q_h = 0.12919 \{ [a_1 e^{(-a_2 z)} + a_3 \ln(z/z_h) / \ln(z/z_{01})] v_{01} \}^2 (z/10)^{0.200}$$

## Site Values of Coefficients:

For  $Z \leq 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 2.4813$ ,  $z_h = 0.5000$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 63.90$  mph

For  $Z > 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 1.0000$ ,  $z_h = 0.0500$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 63.90$  mph

## Definitions

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

$Q_{nbc}$ : Regionally representative reference wind pressure at 10 m in the format of the National Building Code of Canada and the  $Q_{nbc}$  value is profiled with the  $z/10$  power law.

$Q_{Min}$ : Minimum reference wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law as per Section 5.4.1 of S37-13.

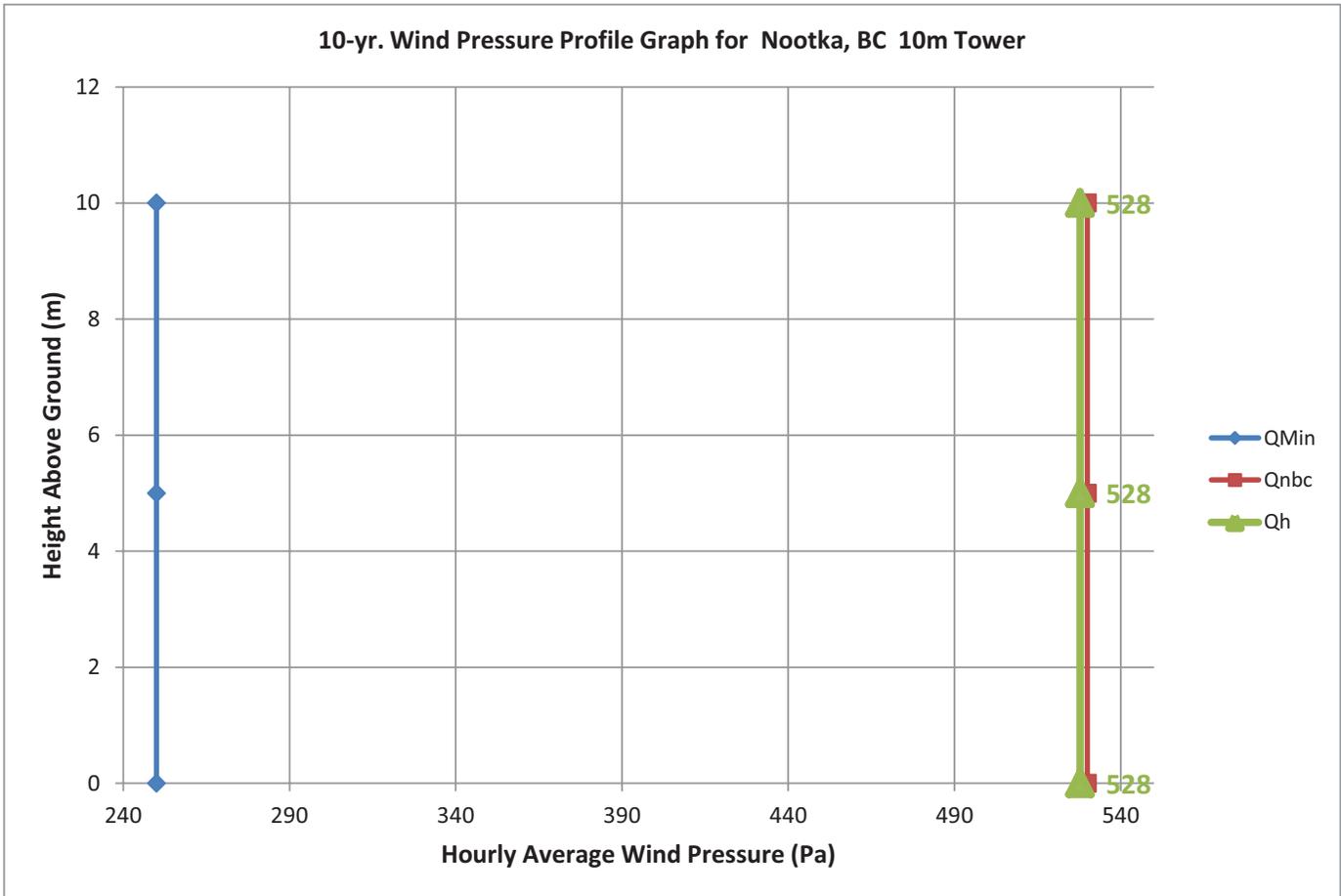
**Wind Pressure Formula:** Formula for the design wind pressure as a function of height. (Ref.: S37-13, 5.3.1)

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

**Note:** No wind pressure value less than 90% of the value at 10 m should be used for heights less than 10 m a.g.l.

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.



Q<sub>nbc</sub> Profile: Regionally representative reference wind profiled with the  $z/10$  power law.

Q<sub>Min</sub> Profile: Minimum site-specific wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law.

Q<sub>h</sub> Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

**Explanatory notes regarding the new report format and changes to calculation methods.**

1. The most significant change from the previous versions of the reports is that the exponent used in the  $Q_h$  equation is no longer fixed at 0.2. The exponent now varies continuously from 0.2 for open terrain to 0.32 for closed terrain.
2. A new  $Q_{min}$  profile has been added to the graphs and it represents the minimum acceptable reference wind pressure profile. It starts with the minimum 10-metre reference wind pressure of 320 Pa for a 50-year return period as per section 5.4.1 of S37-13 and then uses the same  $z/10$  power law formulation as the  $Q_{NBC}$  profile to generate the curve. The corresponding 10-metre reference wind pressures for the 10-year and 30-year return periods are 250 Pa and 300 Pa respectively.
3.  $Q_h$  will always be plotted even when they are less than  $Q_{Min}$ . This will allow designers to see how  $Q_h$  varies over the height of the tower. Also, in rough terrain and for taller towers, the  $Q_h$  profile might cross the  $Q_{Min}$  profile.
4. The coefficients for the  $Q_h$  equation will now always be given regardless of the  $Q_{NBC}$  or  $Q_{Min}$  values.
5. The wind speeds will be given for each of the 4 equations ( $Q_h$ ,  $Q_{NBC}$ , or  $Q_{Min}$ ) too.

# Site-Specific 30-yr. Wind Pressure Report (V2.1 2016-01-04 Format)

## Site Information:

Name: Nootka, BC  
 Latitude: 49° 35' 33.6" N  
 Longitude: 126° 36' 55.25" W  
 Tower Height (m): 10  
 Elevation MSL (m): 14

## Results:

**Note:** Following direction from the S37 Committee,  $Q_e$  can no longer be provided.

$Q_{nbc}$ (Pa): 630	$Q_{nbc} = 630(Z/10)^{0.2}$	$V_{nbc} = 69.83$ mph
Icing: As per CAN/CSA S37-13		
$Q_{Min}$ (Pa): 300	$Q_{Min} = 300(Z/10)^{0.2}$	$V_{Min} = 48.19$ mph

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

For  $Z \leq 2.4$  metres:  $Q_h = 0.12919 \{ [0.0000 e^{(-0.0000 z)} + 2.4813 \ln(z/0.5000) / \ln(z/0.0500)] 69.94 \}^2 (z/10)^{0.200}$

For  $Z > 2.4$  metres:  $Q_h = 0.12919 \{ [1 + 0.0000 e^{(-0.0000 z)}] 69.94 \}^2 (z/10)^{0.200}$

## Profile Formula General Form:

$$Q_h = 0.12919 \{ [a_1 e^{(-a_2 z)} + a_3 \ln(z/z_h) / \ln(z/z_{01})] v_{01} \}^2 (z/10)^{0.200}$$

## Site Values of Coefficients:

For  $Z \leq 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 2.4813$ ,  $z_h = 0.5000$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 69.94$  mph

For  $Z > 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 1.0000$ ,  $z_h = 0.0500$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 69.94$  mph

## Definitions

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

$Q_{nbc}$ : Regionally representative reference wind pressure at 10 m in the format of the National Building Code of Canada and the  $Q_{nbc}$  value is profiled with the  $z/10$  power law.

$Q_{Min}$ : Minimum reference wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law as per Section 5.4.1 of S37-13.

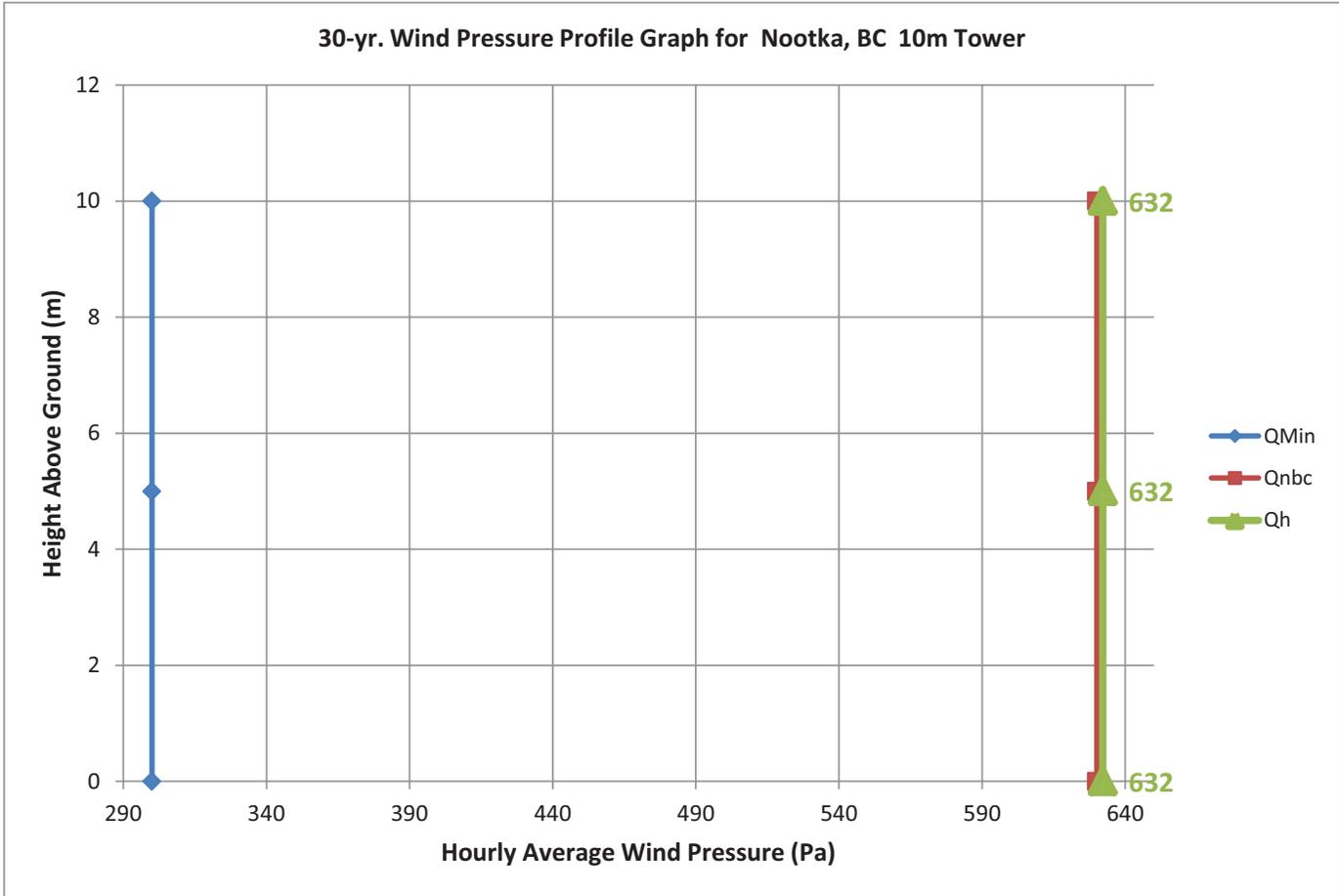
**Wind Pressure Formula:** Formula for the design wind pressure as a function of height. (Ref.: S37-13, 5.3.1)

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

**Note:** No wind pressure value less than 90% of the value at 10 m should be used for heights less than 10 m a.g.l.

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.



$Q_{nbc}$  Profile: Regionally representative reference wind profiled with the  $z/10$  power law.

$Q_{Min}$  Profile: Minimum site-specific wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law.

$Q_h$  Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

**Explanatory notes regarding the new report format and changes to calculation methods.**

1. The most significant change from the previous versions of the reports is that the exponent used in the  $Q_h$  equation is no longer fixed at 0.2. The exponent now varies continuously from 0.2 for open terrain to 0.32 for closed terrain.
2. A new  $Q_{min}$  profile has been added to the graphs and it represents the minimum acceptable reference wind pressure profile. It starts with the minimum 10-metre reference wind pressure of 320 Pa for a 50-year return period as per section 5.4.1 of S37-13 and then uses the same  $z/10$  power law formulation as the  $Q_{NBC}$  profile to generate the curve. The corresponding 10-metre reference wind pressures for the 10-year and 30-year return periods are 250 Pa and 300 Pa respectively.
3.  $Q_h$  will always be plotted even when they are less than  $Q_{Min}$ . This will allow designers to see how  $Q_h$  varies over the height of the tower. Also, in rough terrain and for taller towers, the  $Q_h$  profile might cross the  $Q_{Min}$  profile.
4. The coefficients for the  $Q_h$  equation will now always be given regardless of the  $Q_{NBC}$  or  $Q_{Min}$  values.
5. The wind speeds will be given for each of the 4 equations ( $Q_h$ ,  $Q_{NBC}$ , or  $Q_{Min}$ ) too.

# Site-Specific 50-yr. Wind Pressure Report (V2.1 2016-01-04 Format)

## Site Information:

Name: Nootka, BC  
 Latitude: 49° 35' 33.6" N  
 Longitude: 126° 36' 55.25" W  
 Tower Height (m): 10  
 Elevation MSL (m): 14

## Results:

**Note:** Following direction from the S37 Committee,  $Q_e$  can no longer be provided.

$Q_{nbc}$ (Pa): 680	$Q_{nbc} = 680(Z/10)^{0.2}$	$V_{nbc} = 72.55$ mph
Icing: As per CAN/CSA S37-13		
$Q_{Min}$ (Pa): 320	$Q_{Min} = 320(Z/10)^{0.2}$	$V_{Min} = 49.77$ mph

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

For  $Z \leq 2.4$  metres:  $Q_h = 0.12919 \{ [0.0000 e^{(-0.0000 z)} + 2.4813 \ln(z/0.5000) / \ln(z/0.0500)] 72.70 \}^2 (z/10)^{0.200}$

For  $Z > 2.4$  metres:  $Q_h = 0.12919 \{ [1 + 0.0000 e^{(-0.0000 z)}] 72.70 \}^2 (z/10)^{0.200}$

## Profile Formula General Form:

$$Q_h = 0.12919 \{ [a_1 e^{(-a_2 z)} + a_3 \ln(z/z_h) / \ln(z/z_{01})] v_{01} \}^2 (z/10)^{0.200}$$

## Site Values of Coefficients:

For  $Z \leq 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 2.4813$ ,  $z_h = 0.5000$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 72.70$  mph

For  $Z > 2.4$  metres:  $a_1 = 0.0000$ ,  $a_2 = 0.0000$ ,  $a_3 = 1.0000$ ,  $z_h = 0.0500$ ,  $z_{01} = 0.0500$ ,  $v_{01} = 72.70$  mph

## Definitions

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

$Q_{nbc}$ : Regionally representative reference wind pressure at 10 m in the format of the National Building Code of Canada and the  $Q_{nbc}$  value is profiled with the  $z/10$  power law.

$Q_{Min}$ : Minimum reference wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law as per Section 5.4.1 of S37-13.

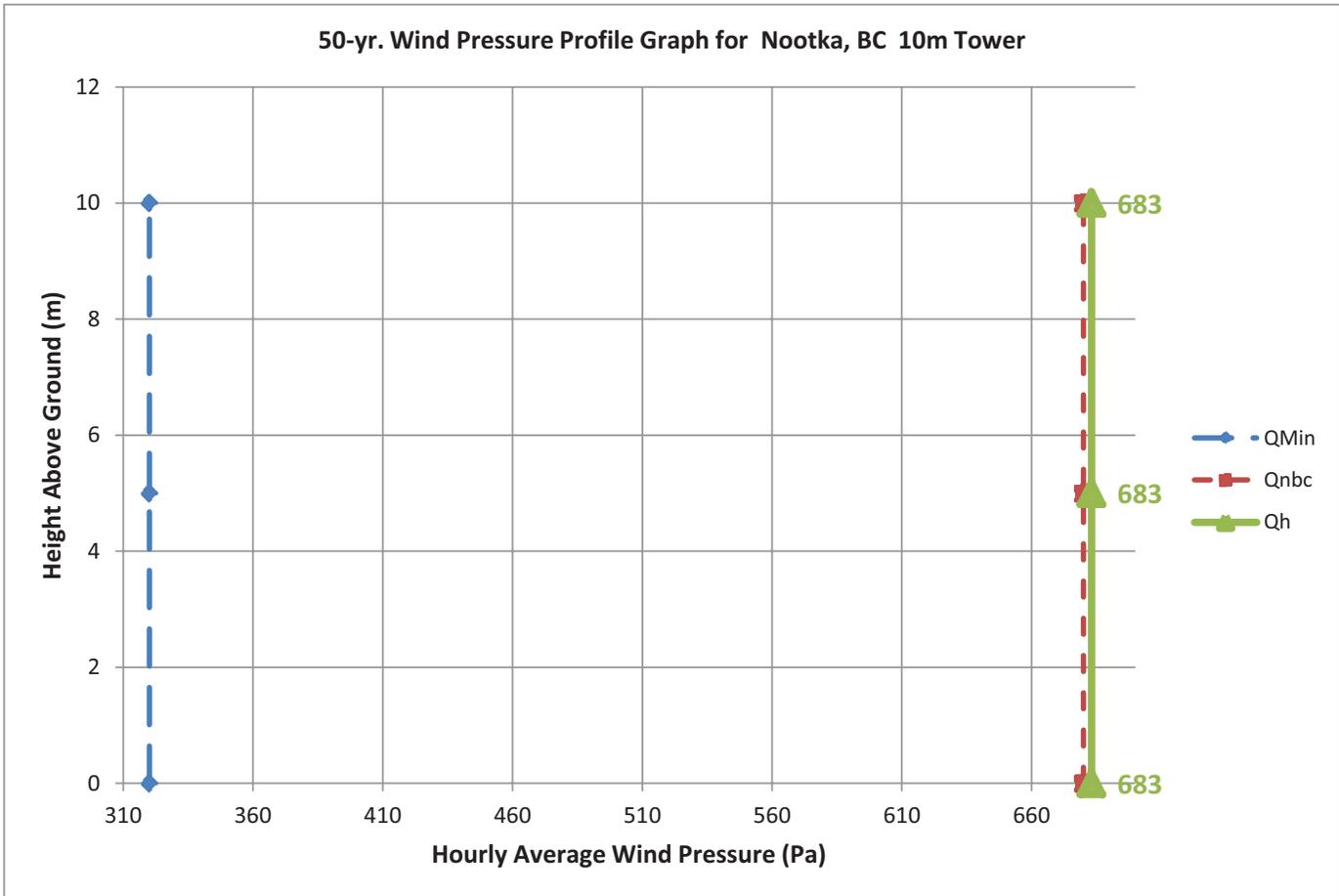
**Wind Pressure Formula:** Formula for the design wind pressure as a function of height. (Ref.: S37-13, 5.3.1)

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

**Note:** No wind pressure value less than 90% of the value at 10 m should be used for heights less than 10 m a.g.l.

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.



$Q_{nbc}$  Profile: Regionally representative reference wind profiled with the  $z/10$  power law.

$Q_{Min}$  Profile: Minimum site-specific wind pressure (320 Pa, 300 Pa, and 250 Pa for the 50-year, 30-year, and 10-year return periods respectively) profiled with the  $z/10$  power law.

$Q_h$  Profile: The site-specific wind pressure profile directly from the Taylor and Lee (1984) simple guidelines.

**Explanatory notes regarding the new report format and changes to calculation methods.**

1. The most significant change from the previous versions of the reports is that the exponent used in the  $Q_h$  equation is no longer fixed at 0.2. The exponent now varies continuously from 0.2 for open terrain to 0.32 for closed terrain.
2. A new  $Q_{min}$  profile has been added to the graphs and it represents the minimum acceptable reference wind pressure profile. It starts with the minimum 10-metre reference wind pressure of 320 Pa for a 50-year return period as per section 5.4.1 of S37-13 and then uses the same  $z/10$  power law formulation as the  $Q_{NBC}$  profile to generate the curve. The corresponding 10-metre reference wind pressures for the 10-year and 30-year return periods are 250 Pa and 300 Pa respectively.
3.  $Q_h$  will always be plotted even when they are less than  $Q_{Min}$ . This will allow designers to see how  $Q_h$  varies over the height of the tower. Also, in rough terrain and for taller towers, the  $Q_h$  profile might cross the  $Q_{Min}$  profile.
4. The coefficients for the  $Q_h$  equation will now always be given regardless of the  $Q_{NBC}$  or  $Q_{Min}$  values.
5. The wind speeds will be given for each of the 4 equations ( $Q_h$ ,  $Q_{NBC}$ , or  $Q_{Min}$ ) too.

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## ANNEX B – BASIS OF PAYMENT AND FINANCIAL BID

### B.1 – General and Mandatory Financial Evaluation Criteria

Bidders must submit their financial bid using the financial evaluation table provided in section B.5 of this Annex. The total amount of Applicable Taxes must be shown separately.

All prices must be in **Canadian Funds** and remain firm for the specified period of the Contract.

A Bid addressing only a portion of the requirement detailed in the financial evaluation table will be declared non-responsive and given no further consideration in the process.

Failure to comply with any of the instructions provided in this Annex will render the financial bid non-responsive.

All charges must be authorized in writing before their incorporation into the Work.

### B.2 – Draft Field Erection Drawing Modifications

If the requirement for modifications is requested by the Contractor (e.g. Contractor proposes an alternate design or substitution), then the Contractor must provide such new or modified field erection drawings at its own cost.

If the requirement for modification is requested by the CCG Project Authority (including modification for future code changes) then CCG and Contractor will negotiate a price in accordance with the labour rate set out in item 2.1.

Labour rate must include all necessary labour, tools, equipment, materials, supervision, and profit required to complete the requested field erection drawing modifications.

### B.3 – Fabrication Modifications

Additional productive labour required to the fabrication costs set out in item 1.2 as a result of modifications requested by CCG will be paid in accordance with the firm labour rate set out in 2.2.

Labour rate must be for productive labour only i.e. excludes all materials costs.

Labour rate must include all labour, tools, supervision, and profit.

No rental charges shall be paid for tools or equipment incidental to the trade.

### B.4 – Miscellaneous Materials & Replacement Parts

Materials and replacement parts (except free issue) not included in the initial fabrication costs submitted under item 1.2 will be paid at the laid down cost (which includes invoice cost, transportation costs, exchange, custom and brokerage charges) plus a firm mark-up as specified below (which includes purchasing expenses, internal handling, General and Administrative Expenses, and profit) upon submission of an itemized statement supported by receipt vouchers.

**B.5 – Financial evaluation table (Bidder must complete and submit this table with their bid)**

Item #	Description	Qty.	Unit of Issue	Unit Price in Canadian funds GST/HST extra	Extended Price in Canadian funds GST/HST extra
<b>1. FIRM REQUIREMENT</b>					
<b>One (1) 50' Self Supporting Communications Tower to be delivered to destination by no later than March 31, 2017 based on an estimated contract award date of January 6, 2017 in accordance with the requirement detailed in Annex A.</b>					
1.1	One-time all-inclusive price for Field Erection Drawing bearing the stamp and signature of a qualified Professional Engineer registered in the province of BC	1	Lot	\$ _____	\$ _____
1.2	Firm Lot price for labour charges to design and fabricate one (1) 50' Self Supporting Communications Tower	1	Lot	\$ _____	\$ _____
1.3	Firm Lot price for delivery of one (1) 50' Self Supporting Communications Tower Delivered Duty Paid (DDP) to CCG location Victoria Base, 25 Huron St, Victoria, BC	1	Lot	\$ _____	\$ _____
<b>Total Firm Price of Firm Requirement – Item 1</b>					\$ _____
<b>2. MISCELLANEOUS GOODS AND SERVICES (Requisition on Contract)</b>					
2.1	Firm Labour Rate for modifications of Field Erection Drawing requested by CCG by qualified Engineer registered in the province of BC	Est. 5 hrs	Hour	\$ _____/hour	\$ _____
2.2	Labour rate for additional fabrication services	Est. 20 hrs	Hour	\$ _____/hour	\$ _____

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2.3	Materials and replacement parts (except free issue) at laid down cost (which includes invoice cost, transportation costs, exchange, custom and brokerage charges) plus a firm mark-up of:	Est. \$5,000	\$ CAD	+% ____ mark-up	\$ _____
<b>Total Estimated Cost – Item 2</b>					\$ _____
<b>EVALUATED BID PRICE (Item 1 + Item 2) (*)</b>					\$ _____
(*) Refer to section 4.2 of RFP for more details regarding Basis of Selection.					

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**ANNEX C – REQUISITION ON CONTRACT FORM**

<b>Contract No.:</b> xxxxxxx/xxx/VIC			Contractor's Name and Address:		
<b>ROC No.:</b>					
Total Estimated Cost of ROC (Duties and Applicable Taxes excluded):					
Delivery Date Required:			Telephone:		
Delivery Location:			Facsimile:		
			Email:		
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>UNIT OF ISSUE</b>	<b>UNIT PRICE</b> <i>In CDN Funds</i>	<b>QUANTITY</b>	<b>EXTENDED PRICE</b> <i>In CDN Funds</i>
Sub-Total					
GST/HST (if applicable)					
TOTAL					
By signing this ROC, the DFO/CCG Project Authority and (or) the PWGSC Contracting Authority certify(ies) that the content of this ROC is in accordance with the conditions of the Contract. The DFO/CCG Project Authority's authorization limit is defined in the Contract. When the value of a ROC or its revisions is in excess of this limit, the ROC must be forwarded to the PWGSC Contracting Authority for authorization.					
<b>DFO/CCG Project Authority:</b>					
_____	_____	_____	_____	_____	_____
Name (Print)	Title (Print)	Signature	Date		
<b>PWGSC Contracting Authority:</b>					
_____	_____	_____	_____	_____	_____
Name (Print)	Title (Print)	Signature	Date		
<b>Individual authorized to sign for the Contractor:</b>					
_____	_____	_____	_____	_____	_____
Name (Print)	Title (Print)	Signature	Date		

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## ANNEX D to PART 3 OF THE BID SOLICITATION

### ELECTRONIC PAYMENT INSTRUMENTS

*As indicated in Part 3, clause 3.1.2, the Bidder must complete the information requested below, to identify which electronic payment instruments are accepted for the payment of invoices.*

The Bidder accepts to be paid by any of the following Electronic Payment Instrument(s):

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)