



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

Bid Receiving / Réception des soumissions
VISITOR'S CENTRE / CENTRE DES VISITEURS
73 Leikin Drive, Bldg., M1, Mailstop #15
Ottawa, Ontario K1A 0R2
Canada
Attn: Sylvie Niwe Mutuyeyezu (613-843-3798)

**REQUEST FOR
PROPOSAL**

**DEMANDE DE
PROPOSITION**

Proposal to: Royal Canadian Mounted Police

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 : Gendarmerie royale du 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 appendices ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments – Commentaries

Title – Sujet Replacement of 1 Communication Tower – Ptarmigan, NT		Date August 17, 2017
Solicitation No. – N° de l'invitation 201702812/C		
Client Reference No. - No. De Référence du Client 201702812/C		
Solicitation Closes – L'invitation prend fin		
At / à :	2:00 PM	EDT (Eastern Daylight Time) HAE (heure avancée de l'Est)
On / le :	August 22, 2017	
F.O.B. – F.A.B Destination	GST – TPS See herein — Voir aux présentes	Duty – Droits See herein — Voir aux présentes
Destination of Goods and Services – Destinations des biens et services See herein — Voir aux présentes		
Instructions See herein — Voir aux présentes		
Address Inquiries to – Adresser toute demande de renseignements à Clair Hinthier – Senior Procurement Officer		
Telephone No. – No. de téléphone 613-843-3806		Facsimile No. – No. de télécopieur 613-825-0082
Delivery Required – Livraison exigée See herein — Voir aux présentes		Delivery Offered – Livraison proposée
Vendor/Firm Name, Address and Representative – Raison sociale, adresse et représentant du fournisseur/de l'entrepreneur:		
Telephone No. – No. de téléphone		Facsimile No. – No. 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



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PART 1 - GENERAL INFORMATION

1.1 Instructions to Bidders/Contractors

This bid solicitation cancels and supersedes previous bid solicitation number 201702812 dated March 22, 2017 with a closing of May 1, 2017 at 2PM EDT and bid solicitation number 201702812/B dated June 30, 2017. A debriefing or feedback session will be provided upon request to bidders/offerors/suppliers who bid on the previous solicitations.

1.2 Introduction

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

Part 1 General Information: provides a general description of the requirement;

Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;

Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;

Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, Technical Evaluation Criteria, the Insurance Requirements and Certifications.

1.3 Summary

1.3.1 The Royal Canadian Mounted Police (RCMP) has a requirement for the replacement of one (1) communication tower located at Ptarmigan, YT. Bidders must be able to provide the services as per Annex A – Statement of Work.

1.3.2 The requirement is subject to the provisions of the Canada Free Trade Agreement (CFTA).

1.3.3 This procurement is subject to the following Comprehensive Land Claims Agreement(s):

- Tilcho Land Claims Agreement

1.4 Debriefings

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



1.5 Procurement Ombudsman

The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an independent avenue for suppliers to raise complaints regarding the award of contracts under \$25,000 for goods and under \$100,000 for services. You have the option of raising issues or concerns regarding the solicitation, or the award resulting from it, with the OPO by contacting them by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca. You can also obtain more information on the OPO services available to you at their website at www.opo-boa.gc.ca.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

Revision to Departmental Name: As this solicitation is issued by Royal Canadian Mounted Police (RCMP), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this solicitation, including any individual SACC clauses incorporated by reference, will be interpreted as reference to RCMP or its Minister.

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: 90 days

2.2 Submission of Bids

Bids must be submitted only to RCMP Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile or electronic mail to RCMP will not be accepted.

2.3 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.

2.4 Applicable Laws

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

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

2.5 Promotion of Direct Deposit Initiative

The following information is not related to the solicitation process:

An initiative within the Government of Canada called the Cheque Standardization Project has been established whereby eventually for all payments, cheque stubs will no longer be printed and, with few exceptions, will be processed via direct deposit. This option is only available when payment is made in Canadian dollars for deposit into a Canadian bank account. In an attempt to be proactive, RCMP Corporate Accounting is promoting the registration of RCMP suppliers for the upcoming change in the payment process.

If you are the successful bidder on this or any other RCMP requirement, you are encouraged to register with the RCMP for direct deposit. Please contact RCMP Corporate Accounting by email to receive a form entitled *Recipient Electronic Payment Registration Request* along with instructions for completion of the form.

Should you have any questions regarding the Cheque Standardization Project or if you want to register, please contact the following email: corporate_accounting@rcmp-grc.gc.ca

2.6 Improvement of Requirement during Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least five (5) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

2.7 No Substitute Products – B4024T (2006-08-15)

Bidders must provide products that are of the same description, brand name, model and/or part number as detailed in the item description of Appendix A of the Statement of Work. Bidders are advised that substitute products will not be considered.

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 (2 hard copies)

Section II: Financial Bid (1 hard copy)



Section III: Certifications (1 hard copy)

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

3.2 Format of Bids

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 and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria 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

Bidders must submit their financial bid in accordance with the Financial Bid Presentation Sheet detailed in Annex "B". The total amount of Applicable Taxes must be shown separately.

Bidders must submit two (2) distinct prices within their financial proposal; the first will provide a price for "option A" of the SOW and the second will provide a price for "option B" of the SOW (See SOW section 5.0 and 6.0)

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

In order to be considered responsive, bids must meet all technical evaluation criteria (see Annex C).

4.1.2 Financial Evaluation

(a) Evaluation of Price – A0220T (2014-06-26)

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

4.1.2.2 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation_

4.2 Basis of Selection

4.2.1 Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria (Annex C) to be declared responsive. The RCMP will first determine, at its discretion, which Option (A or B) will be chosen as the most appropriate for Canada. The responsive bid with the lowest evaluated price within the chosen option A or option B (SOW section 5.0 and 6.0) will be recommended for contract award.

PART 5 - CERTIFICATIONS

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. 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 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.

5.1.1 Integrity Provisions

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:

- Declaration of Convicted Offences (as applicable)



- Required Documentation

5.1.2 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).

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

5.1.3 Additional Certifications Precedent to Contract Award

5.1.3.1 Status and Availability of Resources

SACC Manual clause A3005T (2010-08-16) Status and Availability of Resources

5.1.3.2 Education and Experience

SACC Manual clause A3010T (2010-08-16) Education and Experience

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirement

There is no security requirement applicable to this Contract.

6.2 Insurance Requirements– G1007T (2016-01-28)

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

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

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Statement of Work

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



7.2 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.

Revision to Departmental Name: As this contract is issued by Royal Canadian Mounted Police (RCMP), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this contract, including any individual SACC clauses incorporated by reference, will be interpreted as reference to RCMP or its Minister.

7.2.1 General Conditions

2035 (2016-04-04), General Conditions - Higher Complexity - Services, apply to and form part of the Contract.

7.3 Security Requirement

There is no security requirement applicable to this Contract

7.4 Term of Contract

7.4.1 Period of the Contract

The period of the Contract is from date of contract award to March 7, 2018 inclusive.

7.4.2 Delivery Points

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

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Clair Hinthier
Title: Senior Procurement Officer
Royal Canadian Mounted Police
Procurement and Contracting Branch
Directorate: Corporate Management and Comptrollership
Address: 73 Leikin Drive

Telephone: 613-843-3806
Facsimile: 613-825-0082
E-mail address:clairhinther@yahoo.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.

7.5.2 Project Authority

The Project Authority for the Contract is:



Name: (To be added at contract award)

Title:

Organization:

Address:

Telephone:

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.

7.5.3 Contractor's Representative

Name: _____ (To be added at contract award)

Title: _____

Organization: _____

Address: _____

Telephone: ____-____-_____

Facsimile: ____-____-_____

E-mail address: _____

7.6 Proactive Disclosure of Contracts with Former Public Servants (To be added if applicable)

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

7.7 Payment

7.7.1 Basis of Payment

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

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

7.7.2 Method of Payment – Milestone payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.7.2.1 Schedule of Milestone payments



Milestone No.	Description	Firm amount	Delivery Date
1	Demolition and Removal of Operational Tower	TBD	TBD
2	Erection of replacement tower	TBD	TBD
3	Project completion including delivery of final report	TBD	TBD

7.8 Invoicing Instructions – Milestone Payments

1. Each claim for payment must show:
 - a. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - b. a list of all expenses;
 - c. a separate line or invoice for any travel claims;
 - d. the description and value of the milestone claimed as detailed in the Contract.
 - e. Applicable taxes
2. Each Claim must be supported by:
 - a. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
3. The Contractor must prepare and certify one original and two (2) copies of the claim must be provided to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.
The Project Authority will then forward the original and two (2) copies of the claim onward to the Payment Office for the remaining certification and payment action.

7.9 Certifications

7.9.1 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.

7.10 Workers Compensation – A0285C (2007-05-25)

The Contractor must maintain its account in good standing with the applicable provincial or territorial Workers' Compensation Board for the duration of the Contract.

7.11 Applicable Laws



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

7.12 Priority of Documents

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

- a) the Articles of Agreement;
- b) the general conditions 2035 (2016-04-04), General Conditions - Higher Complexity – Services;
- c) Annex A, Statement of Work, including all appendices;
- d) Annex B, Basis of Payment;
- e) Annex D, Insurance Requirements;
- f) the Contractor's bid dated _____,

7.13 Procurement Ombudsman

7.13.1 Dispute Resolution Services

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request, and consent of the parties, to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term or condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute.

The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.

7.13.2 Contract Administration

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will review a complaint filed by [*the supplier or the contractor or the name of the entity awarded this contract*] respecting administration of this contract if the requirements of Subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute.

The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.

7.14 Foreign Nationals (Canadian Contractor OR Foreign Contractor)

SACC *Manual* clause A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)

7.15 Insurance - Specific Requirements

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

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



The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an Insurer with an A.M. Best Rating no less than "A-". The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.



Annex A

STATEMENT OF WORK (SOW)

Replace One (1) Communication Tower,

Ptarmigan, NT

Latitude: 62° 30' 15.6"

Longitude: -114° 16' 52.8"



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1.0 Title

Replace one (1) Communication Tower

2.0 Background

The Royal Canadian Mounted Police (RCMP) has legal obligations to ensure the safety of its members and general public under the Canadian Labor Code and the Canadian Occupational Health and Safety Regulations. As a result, the RCMP has initiated a national program to ensure that all its radio communication towers are compliant with applicable standards under Canadian Standards Association (CSA) S37-13.

These standards define the specification, construction and maintenance of communication towers and their accessories.

3.0 Objectives

The RCMP strives to meet the Canadian Labor Code (CLC) directive and to ensure the safe, serviceable condition of communication towers.

4.0 Scope

The Royal Canadian Mounted Police has a requirement to replace one (1) 320 ft. (97.5m) communication tower at the Ptarmingan site, near Yellowknife, NT.

The existing 320 foot self-support tower that is operational tower at the Ptarmingan site has been scheduled for replacement for a number of years. To effect that replacement, the RCMP purchased a used, 300 foot guyed tower from the Canadian Broadcasting Corporation (CBC). From here on, that tower will be referred to as the Tower A. Tower A was shipped to Yellowknife and has been stored on site. Due to the length of time in storage, the RCMP initiated a service contract in 2015 to have a Tower Engineering contractor inspect Tower A and create the necessary documentation to have it installed. The resulting documentation from that contract resides in Appendix E as Engineering Documentation.

As part of this requirement, the RCMP has decided to request costing for two separate options. The first option (A) will be a cost to erect Tower A that is on site. The second option would be to submit a cost to supply and erect a completely new 300 foot (91.44m) guyed tower in lieu of erecting the Tower A (herein this new tower will be referred to as "Tower B"). Tower B must meet or exceed all specifications and requirements indicated in this document. These two options will be evaluated by the RCMP to determine the most cost effective solution.

The RCMP Tower Standards and Guidelines for Communications Sites ENV1.2 2015-03 (Appendix A), the Canadian Standards Association CSA S37-13, CSA Z259-16 and CAN/CSA B72-M87 are reference documents that must be referred to when detailing the specific requirements of this Statement of Work.

5.0 Tasks/Technical Specifications

A) Option #A – Replacement using RCMP owned tower (Tower A)

- 5.1 Prior to the commencement of construction, the contractor is responsible for all underground utility locate services which must be performed in order to determine if any utility lines are in the area and are at risk due to the construction. The contractor is also responsible for obtaining and/or procuring all permits, authorizations or approvals needed to expedite this contract. This includes, but is not limited to permits, authorizations or approvals for building, digging, construction, electrical, road closures, demolitions, etc.



- 5.2 The contractor is responsible for the removal of the operational 320 ft. (97.5m) self-support tower and the installation of a 300 foot (91.44 m) guyed tower.
- 5.3 The removal and disposal of the 320 ft. (97.5m) Self Support tower and appurtenances that is currently operational must be completed in a safe and environmentally sound manner. Upon tower removal, the original on-site shelter must be moved to the new location identified in the engineering documentation found in Appendix E – Engineering Documentation and Section 12.9 - Site plan and Photos.
- 5.4 The demolition and removal of the operational self-support tower may present a unique challenge due the proximity to the new tower location, roadways and other possible obstacles. The contractor may be required to undertake a site visit in preparation for the installation and demolition. A documented plan is required for the removal, installation and safety processes. No additional funding will be provided for unforeseen obstacles, delays or transportation costs, should a site visit be required. It is the contractor's responsibility to restore the area to a natural landscape.
- 5.5 The contractor must submit to the RCMP Project Authority a detailed removal/restoration plan and schedule, 60 days prior to the tower decommissioning. The plan must be a detailed description of how the tower is to be collapsed, dismantled and removed. The removal plan must include details on how the contractor plans to restore the area to a natural landscape. The contractor must supply the name of any controlled demolition sub-contractor being used. The plan must identify any road closures needed, dismantle techniques etc. It is the contractor's responsibility to arrange for and supply any equipment, sub-contractors/trades people needed to facilitate the project. It is the contractor's responsibility to arrange for and supply any permits, road closures, Police or EMS crews needed during the removal process.
- 5.6 The 300 foot (91.44m) guyed Tower A must be installed at the location identified in the site plan found in Appendix E - Engineering Documentation. Any remedial repairs, modifications or alterations identified in Appendix E - Engineering Documentation must be completed by the contractor.
- 5.7 The construction of the Tower A must be completed in three phases:
- Phase one is a pre-installation stage, defined as the completion of sufficient preliminary on-site construction work and preparation such that the old tower can be decommissioned/removed and the new tower installed/commissioned within a 30 calendar day time period. It is imperative that the existing tower remains in service during the pre-installation stage
 - Phase two is the demolition and removal of the operational tower
 - Phase three is the installation and commissioning of the Tower A
- 5.8 The contractor must supply a detailed installation schedule 60 calendar days prior to the start of the pre-installation stage. The schedule must have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed in order to expedite the final commissioning of tower A into service.
- 5.9 In order to facilitate the installation, Tower A has been reviewed, analysed and pre-engineered based on CSA S37-13 and the specific loading identified in this document. A detailed set of stamped and sealed engineered drawings; documents and installation instructions can be found in Appendix E. The contractor must analyse, review and understand all documents prior to the installation. It is the contractor's responsibility to liaise directly with Engineering firm who created the documentation in order to acquire any missing or additional information.
- 5.10 The contractor is responsible for supplying missing, damaged or additional auxiliary components required to facilitate the installation of Tower A. The contractor is responsible for repairing any components as identified in the engineering documentation found in Appendix E. Any additional components supplied by the contractor must be all new hot-dipped galvanized in accordance with CSA S37-13 Standard.



- 5.11 The contractor must supply, relocate, install and connect the electrical service utility to the relocated tower shelter. This includes but is not limited to removal, relocation and supply of any poles, wiring, and transformers in order to establish the electrical service at the new shelter location.
- 5.12 The contractor must supply all new guy wires and guy appurtenances for Tower A based on the engineering documentation (Appendix E) and the site specific requirements detailed in this document. The design guy tensions must be identified using a permanent metal tag to be located at the base of the tower.
- 5.13 The contractor must supply and install torsion resistor members, nose plate weldments and guy level 3 bottom weldment as per the engineering documentation in Appendix E.
- 5.14 The contractor is responsible for the supply and installation of Tower A and guy anchor foundations that must be manufactured to incorporate all antennas and lines shown in the Communication Structures Loading List (CSLL) detailed in the individual Site Specific Requirements (Section 12). Any additions or changes to the foundation installation documentation must be stamped and sealed by a Professional Engineer licensed to practice in the North West Territories. Any additions or changes to the foundation installation documentation must be approved by the RCMP Project Authority or designated representative.
- 5.15 The geotechnical report can be found in Appendix C of this document. The contractor is responsible for obtaining and procuring any additional geotechnical work, reports or investigations that may be needed to facilitate the execution of this contract. No additional funding will be provided for this.
- 5.16 The foundations must be specified and installed based on the supplied geotechnical reports (Appendix C), engineering documentation (Appendix E) and the site specific requirements detailed in Section 12 of this document. Concrete testing must be performed as per RCMP Tower Standards and Guidelines (Appendix A). The results of concrete testing must be supplied to the Acceptance Inspector and be included as part of the As-Built diagrams.
- 5.17 Tower A has been engineered with due consideration to the site specific wind and ice loading as well as the anticipated antenna loading. Environment Canada wind data in Appendix D is supplied as a reference. The antennas (Appendix B) and transmission lines are to be as defined in the CSLL (Communication Structure Load List - detailed in the individual Site Specific Requirements (section 12).
- 5.18 The contractor must supply and install new tower ground systems in accordance with the provided engineering documentation found in Appendix E and the RCMP Tower Standards and Guidelines (Appendix A). The new ground systems must consist of but not be limited to ground ring, individual leg grounding, vinyl coated continuous ground riser, bottom and top tinned coated copper buss bars and a lightning rod. The lightning rod must be installed in accordance to CSA S37-13 Standards and RCMP Tower Standards and Guidelines (Appendix A). The contractor must reference the Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013). The contractor must supply a detailed documentation to be approved by the RCMP Project Authority or designated representative.
- 5.19 All transmission lines must have grounding kits. The contractor must supply and install tower buss bars at the top and bottom of the tower. The contractor must supply and install an External Ground Bus (EGB) bar located below the Transmission line cable entrance point. The transmission lines must be grounded to the top and bottom tower buss bars and at EGB located below the cable entrance of the shelter. A 2/0 vinyl coated copper ground lead must be supplied and bonded to the EGB and must then be run downwards into the ground and connected to a new perimeter ground ring that is connected to the tower's base ring. A supplemental ground rod and 2/0 vinyl coated copper cable must be supplied and installed from the EGB to earth ground to ensure low impedance charge dispersion. It must be installed in with reference to Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013).
- 5.20 The contractor must supply and install a Radio Frequency (RF) Surge Suppressor Supplemental Ground Bar (SGB) near the RF cable entry port inside the Shelter as indicated in RCMP Tower Standards and Guidelines (Appendix A) and with reference to CSA-B72-M87 (R2013). Install RF Surge Suppressors for each coaxial and Ethernet cables. The SGB must be able to support an additional two Surge Suppressors



to allow for future expansion. The coaxial surge suppressors must be grounded to the SGB inside the shelter. The contractor may use the RF SGB to provide both a mounting platform and grounding point as indicated in RCMP Tower Standards and Guidelines (Appendix A). The contractor must connect the RF SGB to the Main Grounding Bar (MGB) inside the shelter using a #2 American Wire Gauge (AWG), or larger, insulated cable using two-hole lugs. The estimated cable length from the SGB to the MGB is less than 50 feet. This RF SGB must be located as close as possible to the RF entry port.

- 5.21 The contractor must supply and install a new panel anti-climb and CSA Certified fall arrest rail as per the engineering documentation in Appendix E. The contractor must supply a CSA certified rail trolley to be left on site as part of the installation. Components must be certified in accordance with Design of Active Fall Protection Systems CSA Z259-16. Site specific drawings of the Anti-Climb and Fall Arrest systems must be included on the final engineering stamped As-Built drawings
- 5.22 The contractor must design, supply and install a lightning protection system (LPS) in accordance with accordance with CSA-S37-13, the RCMP Tower Standards and Guidelines (Appendix A) and the Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013). The design must be submitted and approved by RCMP Project Authority 60 days prior to installation.
- 5.23 The contractor must design, supply and install a galvanic protection system for anchor shafts below grade to prevent corrosion in accordance with CSA S-37-13. The design must be submitted and approved by RCMP Project Authority 60 days prior to installation.
- 5.24 The contractor must design, supply and install a new Waveguide Bridge. The design must be completed based on the engineering documentation in Appendix E. The contractor must supply a detailed documentation to be approved by the RCMP Project Authority or designated representative prior to installation.
- 5.25 The contractor must supply and install new transmission line cables as per the Communications Structure Load (CSLL) and the Site/Tower/Antenna Requirements data sheets in Appendix A. The contractor is responsible for providing sufficient length of all specified transmission lines to accommodate the cable run to the terminating point inside the RCMP shelter building. The contractor must supply and install N-type and RJ 45 connectors for the transmission lines as required. The contractor is required to enter the shelter building in order to complete the connector installation inside the building. All transmission lines must be tagged with permanent tags to be located at the base of the tower and at the equipment end of the cable. These tags must clearly indicate type of line, antenna, antenna azimuth, etc.
- 5.26 The specified transmission lines must be routed across a waveguide bridge to the shelter entry port. The shelter is to be relocated from its existing position. Refer to the site plan and photos in Section 12.9 provided below for further details. The extended waveguide port conduit must be positioned in the center of the new tower base. The contractor must supply and install a rubber cable boot compatible with the conduit and specified transmission lines.
- 5.27 The contractor must supply the all antennas and antenna mounting hardware (Appendix B) and mounts as indicated on the Communications Structure Load List. These are defined in the CSLL detailed in the individual Site Specific Requirements (section 12).
- 5.28 The Contractor must complete antenna orientations, optimization, testing and commissioning, including a transmit sweep test. One hard copy of the sweep test must be left on site and a second copy electronic must be submitted to the Project authority.
- 5.29 All transmission line hangers must be heavy duty and constructed of material compatible with hot dip galvanized steel. Lines and feeders installed on antenna mounts are to be attached with line hangers.
- 5.30 The Aeronautical Assessment indicates that painting and lighting is required. The contractor must supply and install tower lighting as per the latest version of CAR 621 and with reference to the engineering documentation in Appendix E. The contractor must supply and install a Transport Canada approved



obstruction light fixtures as indicated in the Aeronautical Obstruction Form 26-0427 in Appendix E - Engineering Documentation. In lieu of tower marking, the contractor must supply and install a white flashing light system as per CAR 621 Section 3.7 – “Omission of Marking with the use of Lighting”. All lighting must be Low Voltage (12-48 VDC) dual light LED fixtures that are compliant to the most recent version of Canadian Aviation Regulations (CAR) 621. They must come with photo sensors and have a remote monitoring capability as per CAR 621. The lighting control module must be installed in the shelter at a location to be specified by the RCMP.

NOTE: For the lighting control module, there is no phone or network connection at this site. The contractor must supply detailed installation and product documentation that is be approved by the RCMP Project Authority or designated representative prior to installation.

- 5.31 The contractor must supply and install a new steel fence as per the latest version of Canadian General Standards Board (CGSB) CGSB-138.3 Installation of Chain Link Fence. The fence must be grounded to the site ground as per best industry practices.
- 5.32 The contractor must supply and install caution signs as identified in the RCMP Tower Standards and Guidelines (Appendix A) and CSA-S37-13. These signs must be provided in French and English.
- 5.33 Upon completion of the work the contractor must leave the site in a clean and tidy condition subject to the satisfaction of the RCMP Project Authority or his delegated representative.
- 5.34 The contractor must provide the RCMP Project Authority with the complete set of As-Built drawings, including the proposed tower profile and foundation specification.

Site specific drawings of the foundation, fall arrest, anti - climb and Wave Guide Bridge (WGB) must be included on the final engineering stamped As-Built drawings.

- 5.35 The contractor is required to return to the tower site between 12 and 14 months post installation in order to check guy tensions. Should the tensions be found to be out of the acceptable CSA S37-13 tolerances, the contractor must re-tension guys to design specifications. The post installation guy tensioning report must be submitted to the Project Authority once completed. The Post Inspection Guy Tensioning report must include guy tensions and verticality measurements pre and post adjustment.

B) Option #B – Replacement with brand new tower (Tower B) supplied by contractor

- 5.36 Prior to the commencement of construction, the contractor is responsible for all underground utility locate services which are required in order to determine any utility lines are in the area and at risk due to the construction. The contractor is also responsible for obtaining and/or procuring all permits, authorizations or approvals needed to expedite this contract. This includes, but is not limited to permits, authorizations or approvals for building, digging, construction, electrical, road closures, demolitions, etc.
- 5.37 The contractor is responsible for the removal of the operational 320 ft. (97.5m) self-support tower and the installation of a brand new 300 foot (91.44 m) guyed tower.
- 5.38 The removal and disposal of the 320 ft. (97.5m) Self Support tower and appurtenances that is currently operational must be completed in a safe and environmentally sound manner. Upon tower removal, the original on-site shelter must be moved to the new location identified in the engineering documentation found in Appendix E – Engineering Documentation and Section 12.9 - Site plan and Photos.
- 5.39 The demolition and removal of the operational self-support tower may present a unique challenge due the proximity to the new tower location, roadways and other possible obstacles. The contractor may be required to undertake a site visit in preparation for the installation and demolition. A documented plan is required for the removal, installation and safety processes. No additional funding will be provided for unforeseen obstacles, delays or transportation costs, should a site visit be required. It is the contractor's responsibility to restore the area to a natural landscape.



- 5.40 The contractor must submit to the RCMP Project Authority a detailed removal/restoration plan and schedule, 60 days prior to the tower decommissioning. The plan must be a detailed description of how the tower is to be collapsed, dismantled and removed. The removal plan must include details on how the contractor plans to restore the area to a natural landscape. The contractor must supply the name of any controlled demolition sub-contractor being used. The plan must identify any road closures needed, dismantle techniques etc. It is the contractor's responsibility to arrange for and supply any equipment, sub-contractors/trades people needed to facilitate the project. It is the contractor's responsibility to arrange for and supply any permits, road closures, Police or EMS crews needed during the removal process.
- 5.41 A brand new 300 foot (91.44m) guyed Tower must be installed at the location identified in the site plan found in Appendix E - Engineering Documentation.
- 5.42 The construction of the Tower must be completed in three phases:
- Phase one is a pre-installation stage, defined as the completion of sufficient preliminary on-site construction work and preparation such that the old tower can be decommissioned/removed and the new tower installed/commissioned within a 30 calendar day time period. It is imperative that the existing tower remains in service during the pre-installation stage
 - Phase two is the demolition and removal of the operational tower
 - Phase three is the installation and commissioning of the new Tower
- 5.43 The contractor must supply a detailed installation schedule 60 calendar days prior to the start of the pre-installation stage. The schedule must have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed in order to expedite the final commissioning of the tower into service.
- 5.44 The contractor is responsible for the supply and installation of all new hot-dipped galvanized tower and auxiliary components in accordance with CSA S37-13 Standard. The Structure must be a 300 foot all weld guyed tower with legs and diagonals built of solid rounds and bolted flange-type (foot-pad) section splice connections.
- 5.45 The structure must be specified for a minimum support wind pressure of based on the Environment Canada wind data in Appendix D and ice loading referenced in CSA-S37-13. The antennas (Appendix B) and transmission lines are to be as defined in the CSLL (Communication Structure Load List - detailed in the Section 12 - Site Specific Requirements.
- 5.46 Prior to tower fabrication, the contractor must provide the RCMP Project Authority with the complete set of stamped and sealed drawings by a Professional Engineer licensed to practice in the North West Territories. It must include the proposed tower profile and foundation specification and is required 60 calendar days prior to construction. Documentation is subject to final review and approval by the RCMP Project Authority or designated representative.
- 5.47 The contractor must supply, relocate, install and connect the electrical service utility to the relocated tower shelter. This includes but is not limited to removal, relocation and supply of any poles, wiring, and transformers in order to establish the electrical service at the new shelter location.
- 5.48 The contractor is responsible for the supply and installation of the new tower and guy anchor foundations that must be manufactured to incorporate all antennas and lines shown in the Communication Structures Loading List (CSLL) detailed in the individual Site Specific Requirements (Section 12). The foundation installation documentation must be stamped and sealed by a Professional Engineer licensed to practice in the North West Territories. The design guy tensions must be identified using a permanent metal tag to be located at the base of the tower. The contractor must supply detailed documentation to be approved by the RCMP Project Authority or designated representative prior to installation.



- 5.49 The geotechnical report can be found in Appendix C of this document. The contractor is responsible for obtaining and procuring any additional geotechnical work, reports or investigations that may be needed to facilitate the execution of this contract. No additional funding will be provided for this.
- 5.50 The foundations must be specified and installed based on the supplied geotechnical reports (Appendix C), Engineering Documentation (Appendix E) and the site specific requirements detailed in Section 12 of this document. Concrete testing must be performed as per RCMP Tower Standards and Guidelines (Appendix A). The results of concrete testing must be supplied to the Acceptance Inspector and be included as part of the signed and sealed As-Built diagrams.
- 5.51 The contractor must supply and install new tower ground systems in accordance with the provided engineering documentation found in Appendix E, CSA S37-13 and the RCMP Tower Standards and Guidelines (Appendix A). The new ground systems must consist of but not be limited to ground ring, individual leg grounding, continuous ground riser, bottom and top tinned coated copper buss bars and a lightning rod. The lightning rod must be installed in accordance to CSA S37-13 Standards and RCMP Tower Standards and Guidelines (Appendix A). The contractor must reference the Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013). The contractor must supply detailed documentation to be approved by the RCMP Project Authority or designated representative.
- 5.52 All transmission lines must have grounding kits. The contractor must supply and install tower buss bars at the top and bottom of the tower. The contractor must supply and install an External Ground Bus (EGB) bar located below the Transmission line cable entrance point. The transmission lines must be grounded to the top and bottom tower buss bars and at EGB located below the cable entrance of the shelter. A 2/0 vinyl coated copper ground lead must be supplied and bonded to the EGB and must then be run downwards into the ground and connected to a new perimeter ground ring that is connected to the tower's base ring. A supplemental ground rod and 2/0 vinyl coated copper cable must be supplied and installed from the EGB to earth ground to ensure low impedance charge dispersion. It must be installed in with reference to Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013).
- 5.53 The contractor must supply and install a Radio Frequency (RF) Surge Suppressor Supplemental Ground Bar (SGB) near the RF cable entry port inside the Shelter as indicated in RCMP Tower Standards and Guidelines (Appendix A) and with reference to CSA-B72-M87 (R2013). Install RF Surge Suppressors for each coaxial and Ethernet cables. The SGB must be able to support an additional two Surge Suppressors to allow for future expansion. The coaxial surge suppressors must be grounded to the SGB inside the shelter. The contractor may use the RF SGB to provide both a mounting platform and grounding point as indicated in RCMP Tower Standards and Guidelines (Appendix A). The contractor must connect the RF SGB to the Main Grounding Bar (MGB) inside the shelter using a #2 American Wire Gauge (AWG), or larger, insulated cable using two-hole lugs. The estimated cable length from the SGB to the MGB is less than 50 feet. This RF SGB must be located as close as possible to the RF entry port.
- 5.54 The contractor must supply and install a new panel anti-climb and CSA Certified fall arrest rail as per the engineering documentation in Appendix E. The contractor must supply a CSA certified rail trolley to be left on site as part of the installation. Components must be certified in accordance with Design of Active Fall Protection Systems CSA Z259-16. Site specific drawings of the Anti-Climb and Fall Arrest systems must be included on the final engineering stamped As-Built drawings
- 5.55 The contractor must design, supply and install a lightning protection system (LPS) in accordance with accordance with CSA-S37-13, the RCMP Tower Standards and Guidelines (Appendix A) and the Installation Code for Lightning Protection Systems CAN/CSA-B72-M87 (R2013). The design must be submitted and approved by RCMP Project Authority 60 days prior to installation.
- 5.56 The contractor must design, supply and install a galvanic protection system for anchor shafts below grade to prevent corrosion in accordance with CSA S-37-13. The design must be submitted and approved by RCMP Project Authority 60 days prior to installation.



- 5.57 The contractor must design, supply and install a new Waveguide Bridge. The design must be completed based on CSA S37-13 and RCMP Tower Standards and Guidelines (Appendix A). The contractor must supply a detailed documentation to be approved by the RCMP Project Authority or designated representative prior to installation.
- 5.58 The contractor must supply and install new transmission line cables as per the Communications Structure Load (CSLL) and the Site/Tower/Antenna Requirements data sheets in Appendix A. The contractor is responsible for providing sufficient length of all specified transmission lines to accommodate the cable run to the terminating point inside the RCMP shelter building. The contractor must supply and install N-type and RJ 45 connectors for the transmission lines as required. The contractor is required to enter the shelter building in order to complete the connector installation inside the building. All transmission lines must be tagged with permanent tags to be located at the base of the tower and at the equipment end of the cable. These tags must clearly indicate type of line, antenna, antenna azimuth, etc.
- 5.59 The specified transmission lines must be routed across a waveguide bridge to the shelter entry port. The shelter is to be relocated from its existing position. Refer to the site plan and photos in Section 12.9 provided below for further details. The extended waveguide port conduit must be positioned in the centre of the new tower base. The contractor must supply and install a rubber cable boot compatible with the conduit and specified transmission lines.
- 5.60 The contractor must supply the all antennas and antenna mounting hardware (Appendix B) and mounts as indicated on the Communications Structure Load List. These are defined in the CSLL detailed in the individual Site Specific Requirements (section 12).
- 5.61 The Contractor must complete antenna orientations, optimization, testing and commissioning, including a transmit sweep test. One hard copy of the sweep test must be left on site and a second copy electronic must be submitted to the Project Authority.
- 5.62 All transmission line hangers must be heavy duty and constructed of material compatible with hot dip galvanized steel. Lines and feeders installed on antenna mounts are to be attached with line hangers.
- 5.63 The Aeronautical Assessment indicates that painting and lighting is required. The contractor must supply and install tower lighting as per the latest version of CAR 621 and with reference to the engineering documentation in Appendix E. The contractor must supply and install a Transport Canada approved obstruction light fixtures as indicated in the Aeronautical Obstruction Form 26-0427 in Appendix E - Engineering Documentation. In lieu of tower marking, the contractor must supply and install a white flashing light system as per CAR 621 Section 3.7 – “Omission of Marking with the use of Lighting”. All lighting must be Low Voltage (12-48 VDC) dual light LED fixtures that are compliant to the most recent version of Canadian Aviation Regulations (CAR) 621. They must come with photo sensors and have a remote monitoring capability as per CAR 621. The lighting control module must be installed in the shelter at a location to be specified by the RCMP.
- NOTE: For the lighting control module, there is no phone or network connection at this site. The contractor must supply detailed installation and product documentation that is be approved by the RCMP Project Authority or designated representative prior to installation.
- 5.64 The contractor must supply and install a new steel fence as per the latest version of Canadian General Standards Board (CGSB) CGSB-138.3 Installation of Chain Link Fence. The fence must be grounded to the site ground as per best industry practices.
- 5.65 The contractor must supply and install caution signs as identified in the RCMP Tower Standards and Guidelines (Appendix A) and CSA-S37-13. These signs must be provided in French and English.
- 5.66 Upon completion of the work the contractor must leave the site in a clean and tidy condition subject to the satisfaction of the RCMP Project Authority or his delegated representative.



- 5.67 The contractor must provide the RCMP Project Authority with the complete set of As-Built drawings, including the proposed tower profile and foundation specification.

Site specific drawings of the foundation, fall arrest, anti - climb and Wave Guide Bridge (WGB) must be included on the final engineering stamped As-Built drawings.

- 5.68 The contractor is required to return to the tower site between 12 and 14 months post installation in order to check guy tensions. Should the tensions be found to be out of the acceptable CSA S37-13 tolerances, the contractor must re-tension guys to design specifications. The post installation guy tensioning report must be submitted to the Project Authority once completed. The Post Inspection Guy Tensioning report must include guy tensions and verticality measurements pre and post adjustment.



6.0 Deliverables

6.1 Tower A - Option #A

Number	Title	Date Required	Comments	Format
1	Documented Removal and Restoration Plan	At least 60 days prior to the start of construction Phases that are identified in Section 12.6 Clause 2.	Document must include the dismantling procedure for the safe removal of the specified tower and have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed. The document must be approved by the Project Authority prior to the start of any work	Microsoft Word or Adobe pdf format acceptable
2	Proposed tower profile, foundation specification and complete set of stamped drawings	At least 60 days prior to the start of the work.	Must include foundation specification and complete set of stamped drawings for the foundation.	Microsoft Word or Adobe pdf format acceptable
3	Proposed systems report	At least 60 days prior to the start of construction Phases that are identified in Section 12.6 Clause 2.	Detailed drawings/documentation/design of the proposed lighting & monitoring/lightening protection system and galvanic protection system. The document must have sufficient detail and information to establish how the system will meet the requirement as detailed in the statement of work. The document must be approved by the Project Authority prior to the start of any work	Microsoft Word or Adobe pdf format acceptable
4	Installation schedule	At least 60 days prior to the start of construction Phases that are identified in Section 12.6 Clause 2.	Schedule must have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed. The document must be approved by the Project Authority prior to the start of any work	Microsoft Word or Adobe pdf format acceptable



5	Antenna orientations, optimization, testing and commissioning, including transmit sweep test results.	Required upon completion of tower erection, prior to Acceptance inspection	One copy of the results is to be left at site and one copy is to be provided to the RCMP Project Authority	Microsoft Word or Adobe pdf format acceptable
6	"As Built" Drawings for the completed towers and foundations	No more than 10 business days following completion of tower erection	To be created as per RCMP Tower Standards and Guidelines (Appendix A).	Microsoft Word or Adobe pdf format acceptable
7	A copy of the contractor's Safety Program	If and when requested by RCMP Project Authority		To be determined
8	An overall summary report.	No more than 10 days following completion of tower erection	Soft copy of report including all pertinent details. For tower removal, digital photos of the site after removal must be included. The digital photos must be of a resolution that is sufficient enough to provide the Project Authority with a clear narrative of the work completed.	Microsoft Word or Adobe pdf format acceptable
9	Post Installation Guy Tension Report	No more than 10 business days following completion of Post Installation inspection	A soft copy of the report is required to be sent to the Project Authority and must include: any pertinent details, The digital photos must be of a resolution that is sufficient enough to provide the Project Authority with a clear narrative of the work completed..	Microsoft Word or Adobe pdf format acceptable



Number	Title	Date Required	Comments	Format
1	Documented Removal and Restoration Plan	At least 60 days prior to the start of the Phases that are identified in Section 12.6 Clauses 19.	Document must include the dismantling procedure for the safe removal of the specified tower and have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed. Document to be approved by the Project Authority prior to the start of any work.	Microsoft Word or Adobe pdf format acceptable
2	Proposed tower profile and foundation	At least 60 days prior to the start of the Phases that are identified in Section 12.6 Clauses 19.	Must include foundation specifications and complete set of stamped drawings for tower and foundation specific to the requirement as detailed in the statement of work	Microsoft Word or Adobe pdf format acceptable
3	Proposed systems report	At least 60 days prior to the start of construction Phases that are identified in Section 12.6 Clauses 19.	Detailed drawings/documentation/design of the proposed lighting & monitoring/lightening protection system and galvanic protection system. The document must provide detail how the system will meet the requirement as detailed in the statement of work The document must be approved by the Project Authority prior to the start of any work	Microsoft Word or Adobe pdf format acceptable
4	Installation schedule.	At least 60 days prior to the start of construction Phases that are identified in Section 12.6 Clause 19.	Schedule must have sufficient detail and timelines to allow the reader to establish how and when all site work is to be performed. The document must be approved by the Project Authority prior to the start of any work.	Microsoft Word or Adobe pdf format acceptable
5	Antenna orientations, optimization, testing and commissioning, including transmit sweep test results.	No more than 5 business days following completion of tower erection	One copy of the results is to be left at site and one copy is to be provided to the RCMP Project Authority	Microsoft Word or Adobe pdf format acceptable -
6	"As Built" Drawings for the completed towers and foundations	No more than 10 business days following completion of tower erection	To be created as per RCMP Tower Standards and Guidelines (Appendix A).	Microsoft Word or Adobe pdf format acceptable



7	A copy of the contractor's Safety Program	If and when requested by RCMP Project Authority	Must be pre-reviewed by the provincial and federal authorities with jurisdiction	To be determined
8	An overall summary report.	Required upon completion of tower erection, prior to final Acceptance inspection	Soft copy of report including all pertinent details. For tower removal, digital photos of the site after removal must be included. The digital photos must be of a resolution that is sufficient enough to provide the Project Authority with a clear narrative of the work completed.	Microsoft Word or Adobe pdf format acceptable
9	Post Installation Guy Tension Report	No more than 10 business days following completion of Post Installation inspection	A soft copy of the report is required to be sent to the Project Authority and must include: any pertinent details, digital photos of a resolution that is sufficient enough to provide the Project Authority with a clear narrative of the work completed.	Microsoft Word or Adobe pdf format acceptable



7.0 Location of Work

Replace One (1) Communication Tower,

Ptarmigan, NT

Latitude: 62° 30' 15.6"

Longitude: -114° 16' 52.8"

8.0 Constraints

8.1 All on site contractor personnel must be trained with regard to safe climbing and working techniques and must be trained with regard to tower rescue techniques. CSA approved safety equipment must be utilized at all times.

8.2 The contractor must safeguard existing antennas, transmission lines, and other tower attachments, as well as the tower members and connections and not alter or otherwise impair the performance of any of these items during the course of work without the written approval of the RCMP.

The tower that is currently operational must remain in operation during initial site development and foundation construction of the newly installed tower. This is imperative to minimize the down time of radio communications in the area. Once all preparation work has been completed, a maximum thirty day window will be allowed for removal of the current tower and installation and commissioning of the new tower. The contractor must submit to the RCMP Project Authority a detailed plan and schedule 60 days prior to the commencement of the on-site construction work

8.3 No additional funding will be provided to compensate for work being concluded in inclement environmental conditions or for site access.

8.4 All contractor supplied components must be new CSA Grade steel, hot dipped and galvanized, and must comply with CSA S37-13.

8.5 The contractor is responsible for the review and implementation of all safety regulations under the Canada Labor Code, all RCMP safety regulations, those safety requirements of the Workers Compensation Commission, Canada Labor Code, CSA Standards, and other applicable Provincial and Federal Regulations.

9.0 Travel Arrangement

The arrangement of transportation of all personnel, materials and equipment to and from the sites is the responsibility of the contractor.

10.0 Additional Work

10.1 In the event of additional work within the scope of the Statement of Work, the procedure given below must be adhered to.

- a. The Contractor must submit in writing to the contracting authority and the project authority the requirement giving sufficient details.
- b. The contractor must submit an estimate of cost and materials to the contract authority and project authority.
- c. The contractor must not proceed with any additional work without written authorization of the contracting authority. Any work taken in hand without the contracting authority will be considered to be work carried outside the scope of work and no extra payment will be made for any such work.



11.0 RCMP Inspection

- 11.1 Workmanship will be subject to inspections at any time by the RCMP Project Authority or designated representative. The contractor must work with the RCMP Project Authority or designated representative to establish an estimated time for inspections.
- 11.2 A final Acceptance Inspection will be conducted by an RCMP designated representative. The purpose of the acceptance inspection is to confirm compliance of the installation with the site specific specifications and all related documents as detailed in the Statement of Work. All efforts will be made to have the inspection in conjunction with the completion of work at the site. All required tasks as detailed in the statement of work must be completed at the time of the final Acceptance Inspection.
- 11.3 Any deficiencies or remedial work identified in the inspections must be completed by the contractor at the contractor's own expense and to the satisfaction of the RCMP Project Authority



12.0 Site Specific Details

12.1 Ptarmigan RCMP Tower Replacement

Objective:

Remove the existing 320 ft. (97.5m) self-support tower and replace with a 300 foot (91.44m) guyed tower at the RCMP Ptarmigan repeater site in Yellowknife, NT.





12.2 General Site Details

Name: Ptarmigan Repeater Site

Location:

Yellowknife, NT

Latitude: 62° 30' 15.6" N

Longitude: 114° 16' 52.8" W

Base Elevation: 594 ft. (181 m)

Site Access: two wheel drive

Existing Structure:

Type: Square Self-support

Height: 320 ft. (97.5m)

Manufacturer: Unknown

Fall Arrest Facility: Yes





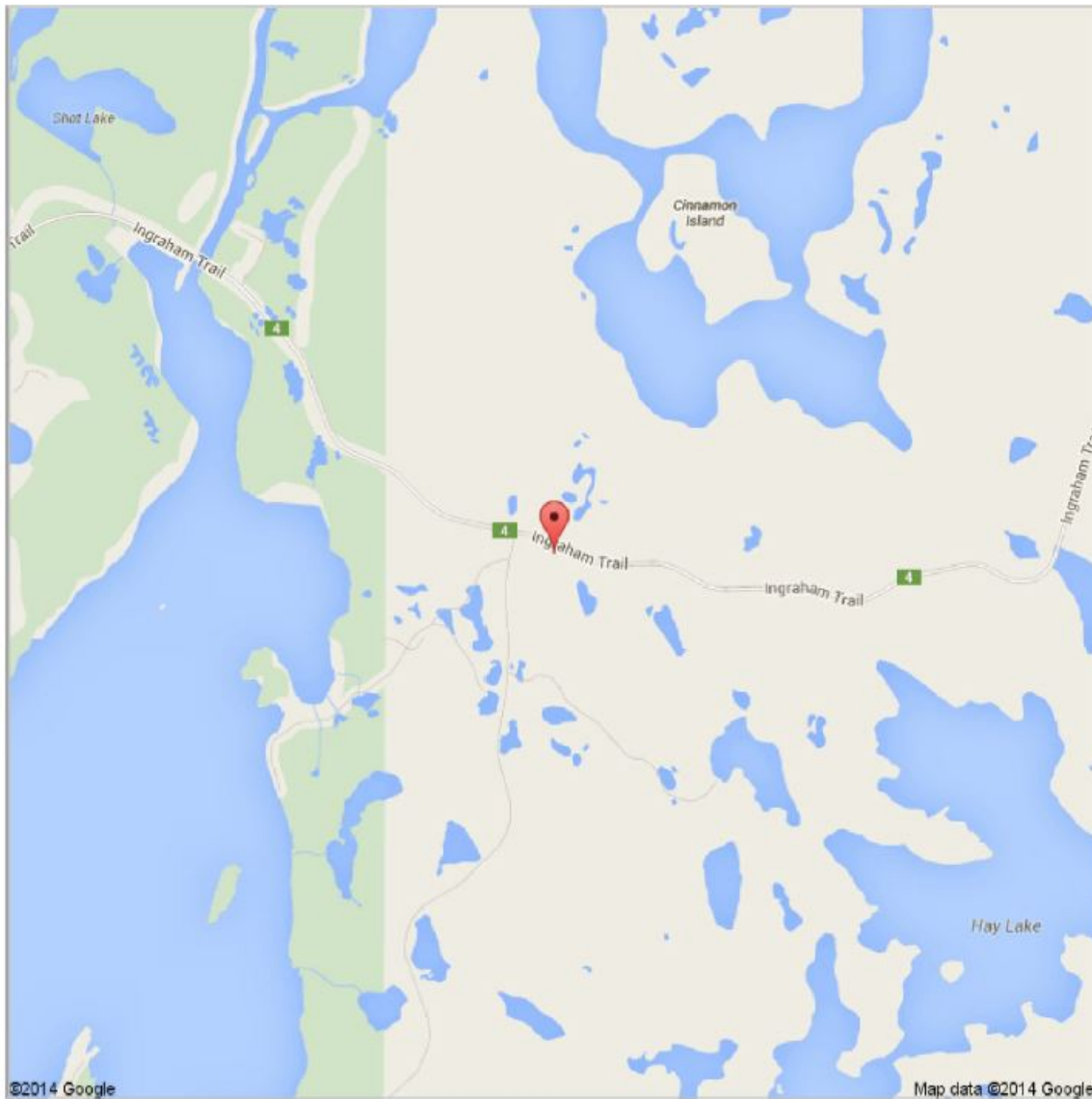
12.3 Google Maps

62 30 15.6N 114 16 52.8W - Google Maps



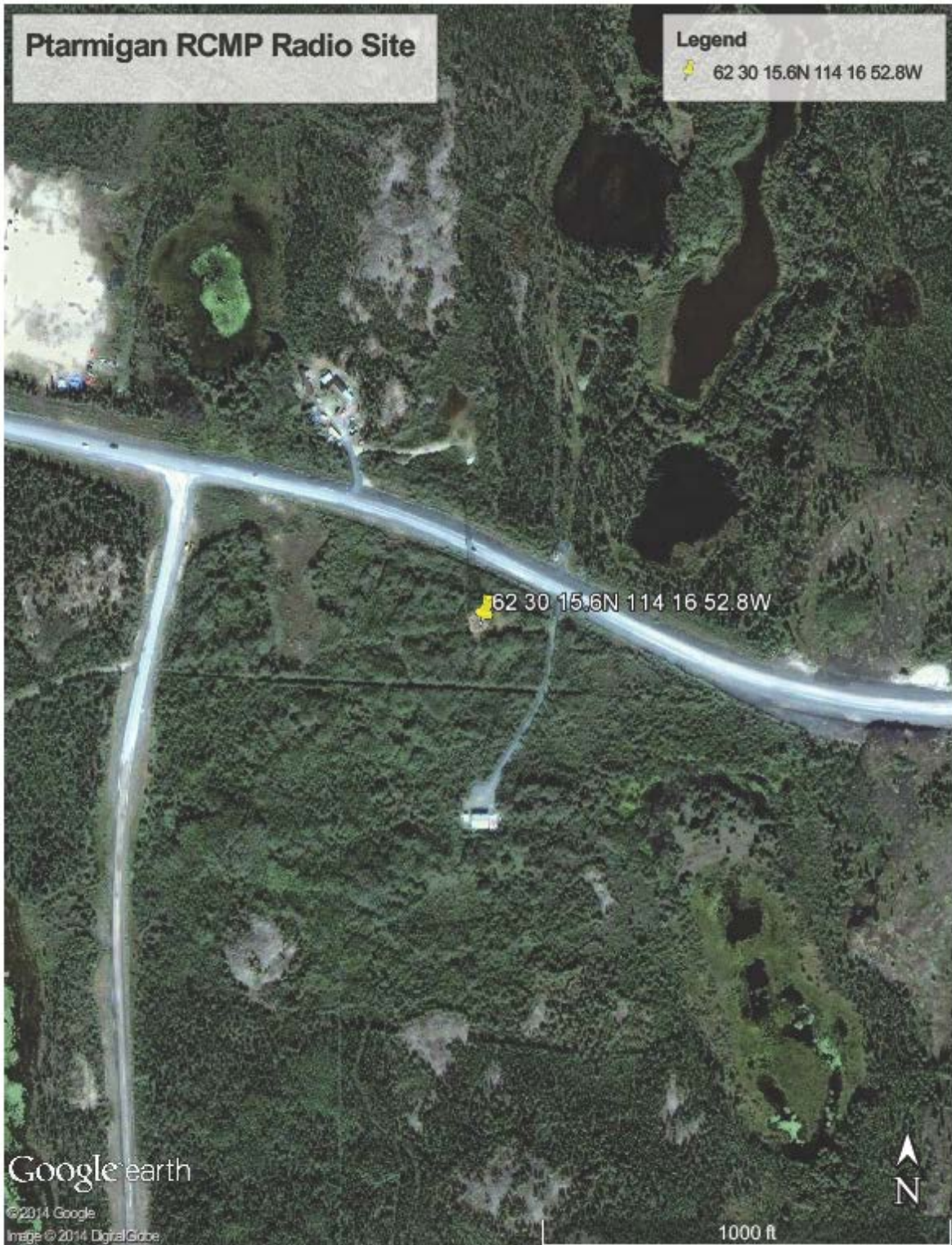
Address **Northwest Territories
Canada**

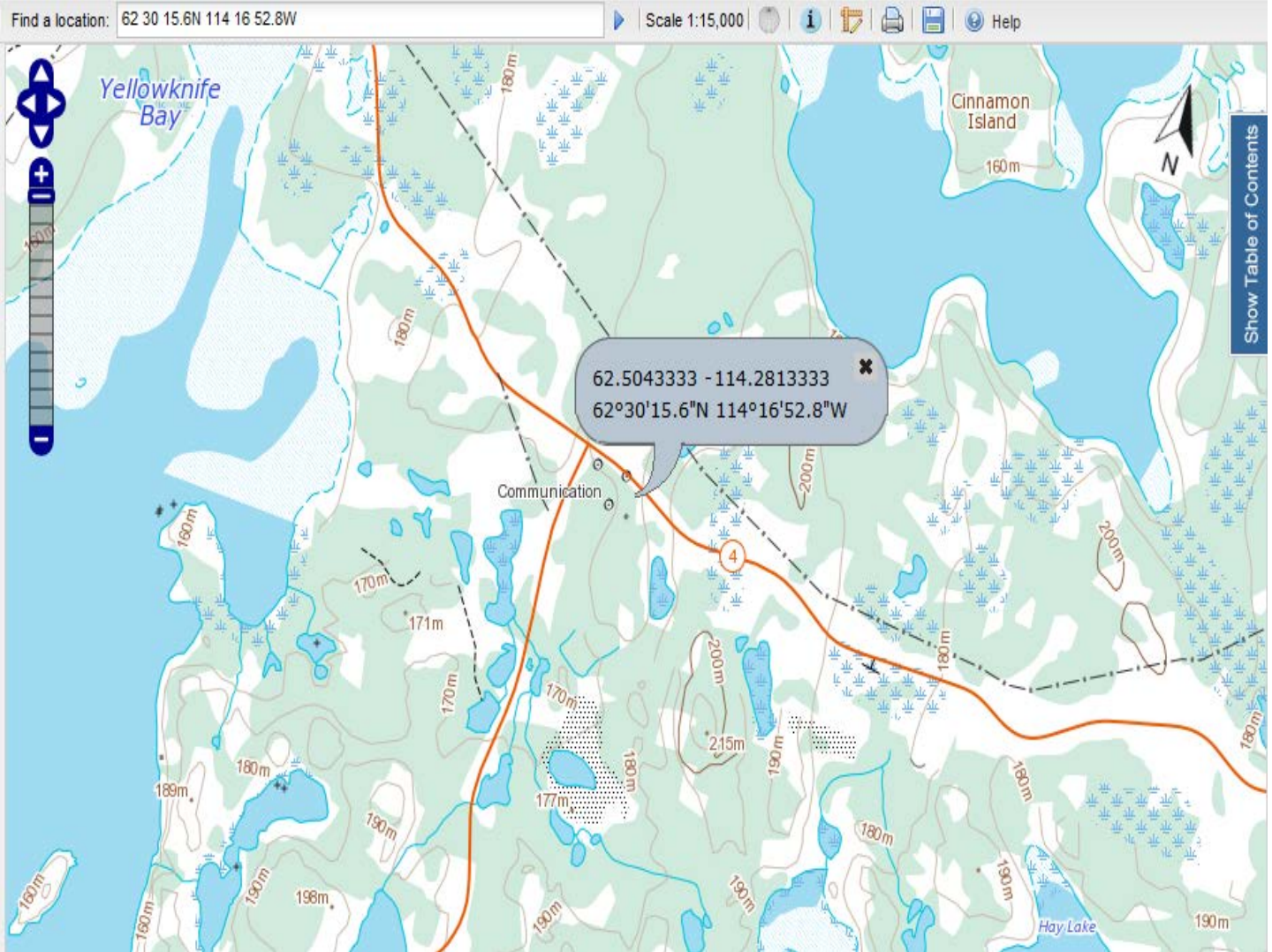
Ptarmigan RCMP Radio Site





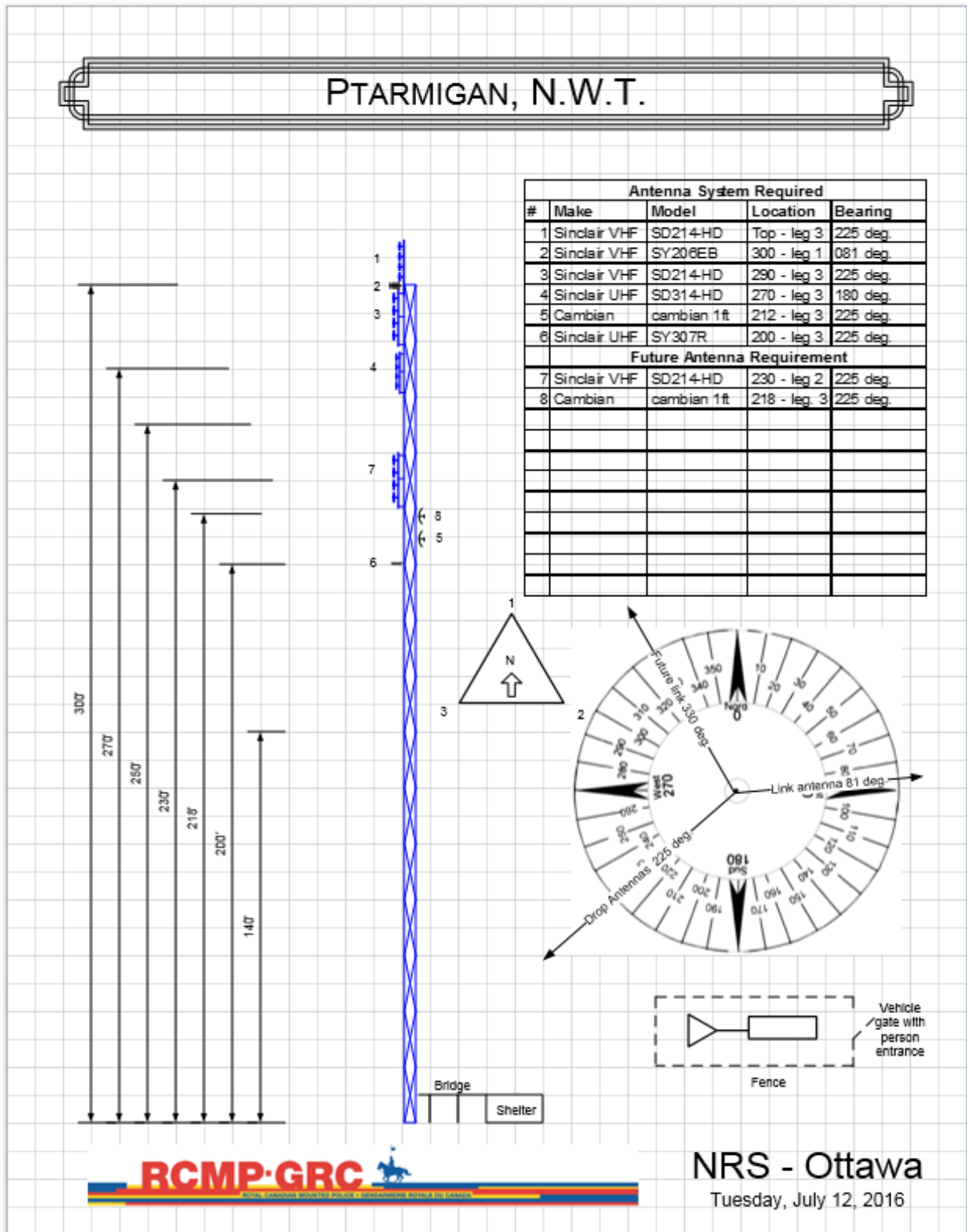
12.4







12.6 New Tower - Communications Structure Load List (CSLL)



NRS - Ottawa
 Tuesday, July 12, 2016



12.7 Site/Tower/Antenna and TX Line Details Ptarmigan Repeater Tower

Background

The information below is to be used for the specification, manufacture and installation of a new tower and the supply and installation of the specified antennas and transmission lines.

Tower/Antenna Requirements

Location: Off of Hwy 4 (Ingraham Trail) NE of Yellowknife, NT
Coordinates: 62 30 15.6 N Lat., 114 16 52.8 W Long.

Tower Height: 300 ft (91.4 m) Guyed

Antenna 1

Located above the top of the tower. – Leg 3
Azimuth = 225 degrees TN
Model: Sinclair SD214-HF2P2SNM(d00B)
4 dipole, 8.0 dBd gain, bi-directional, 138-174 MHZ
AVA5-50 TX line

Antenna 2

Located side mounted at 300' (91.4 m) – Leg 3
Azimuth = 081 degrees TN
Model: Sinclair SY206EB
Yagi directional antenna, 9.5 dBd gain, extended boom, 138-174 MHZ
AVA5-50 TX line

Antenna 3

Located side mounted at 290 (88.4 m) – Leg 3
Azimuth = 225 degrees TN
Model: Sinclair SD214-HF2P2SNM(d00B)
4 dipole, 8.0 dBd gain, bi-directional, 138-174 MHZ
AVA5-50 TX line

Antenna 4

Located side mounted at 270' (82.3 m) – Leg 3
Azimuth = 180 degrees TN
Model: Sinclair SD314-HF2P2SNM (D00S-WMABK-E6282)
4 dipole, 8.0 dBd, HD, Black Anodized 406-512 MHZ
AVA5-50 or AVA7-50 TX line if possible to minimize the loss at UHF freqs

Antenna 5

Located side mounted at 212' (64.6 m) – Leg 3
Azimuth = 225 degrees TN
Model: Cambian 1ft
armoured ethernet cable

NOTE: This antenna will be supplied by the local RCMP technician



Ptarmigan Repeater Tower Cont'd

Antenna 6

Located side mounted at 200' (61 m) – Leg 3

Azimuth = 225 degrees TN

Model: Sinclair SY307R-HF1SNF

Yagi directional, 10 dBd gain, HD, 406-430 MHZ

AVA5-50 TX line

Future Expansion/Loading of Antennas

Plan for additional tower loading with the possible future installation of up to two additional antennas. These are not to be supplied or installed as part of this requirement.

Antenna 7 (Future Expansion)

Located side mounted at 230' (70.1 m) – Leg 2

Azimuth = 225 degrees TN

Model: Sinclair SD214-HD

4 dipole, 8.0 dBd gain, bi-directional, 138-174 MHZ

AVA5-50 TX line

Antenna 8 (Future Expansion)

Located side mounted at 218' (66.4 m) – Leg 3

Azimuth = 225 degrees TN

Model: Cambian 1ft

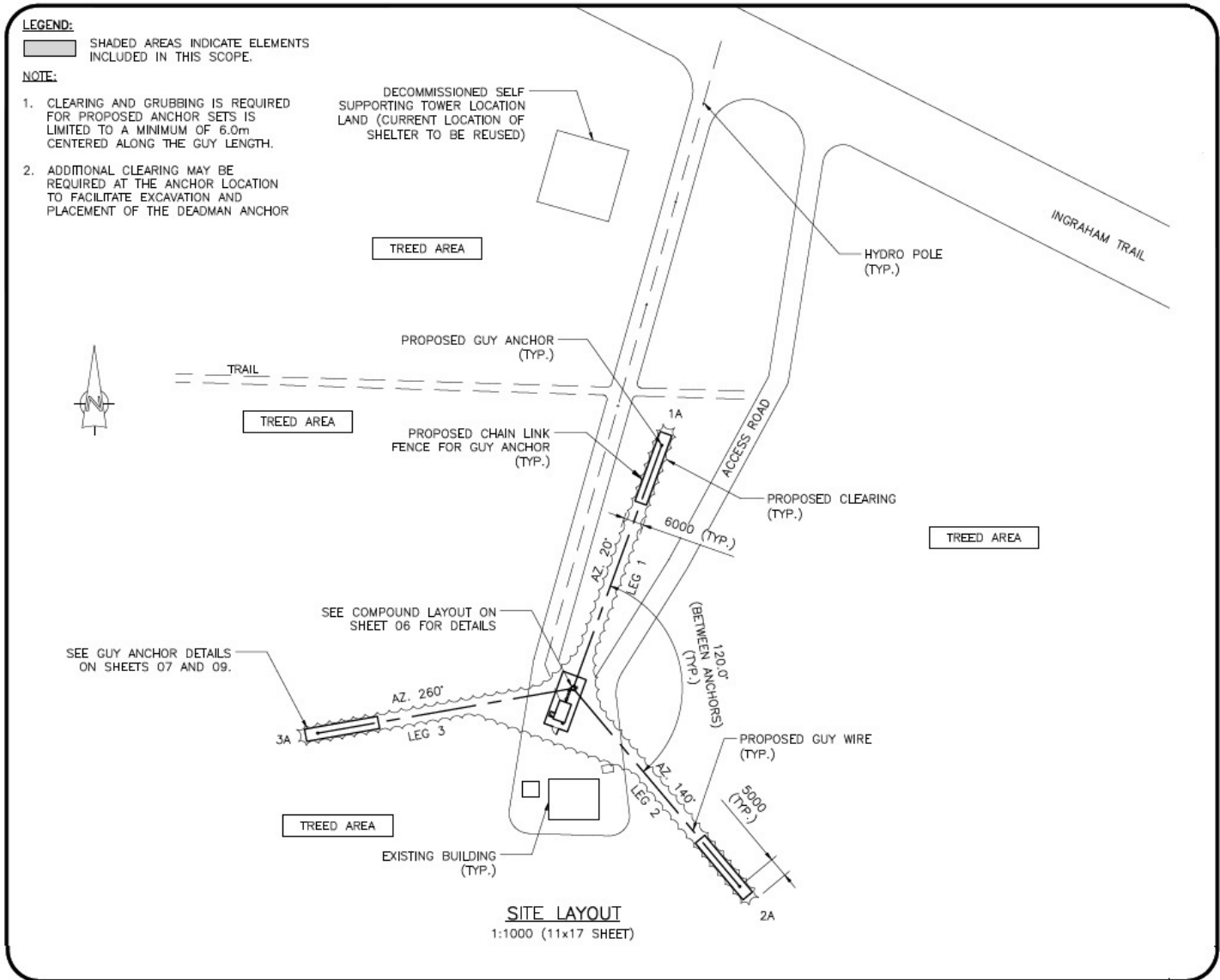
armoured ethernet cable

Antenna Feed Lines

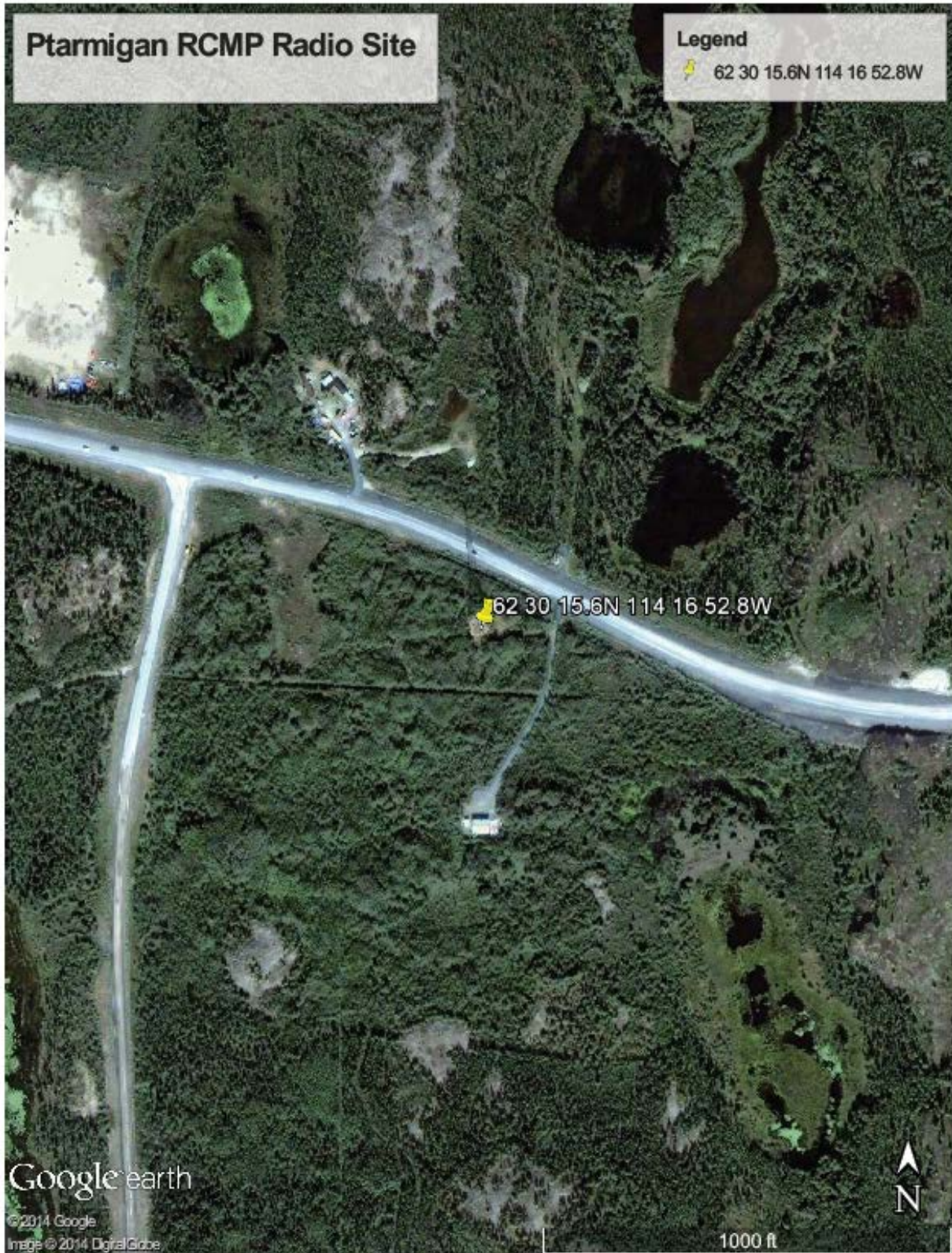
AVA5-50 (4, possibly 5), AVA7-50 (1 if possible), armoured ethernet cable (1)

Feed Line Entry to Detachment Building

The specified transmission line must be routed across a waveguide bridge using the existing entry port as access to the building. The estimated length of additional cable needed run to the termination point inside of the RCMP building is 9 meters (~30 feet). The AVA5-50A and AVA7-50 feed-lines are to be terminated with N-Female for antenna connections and N-Male for equipment side. Refer to the site plan and photos for further details.



Site Plan – New Proposed Tower Location



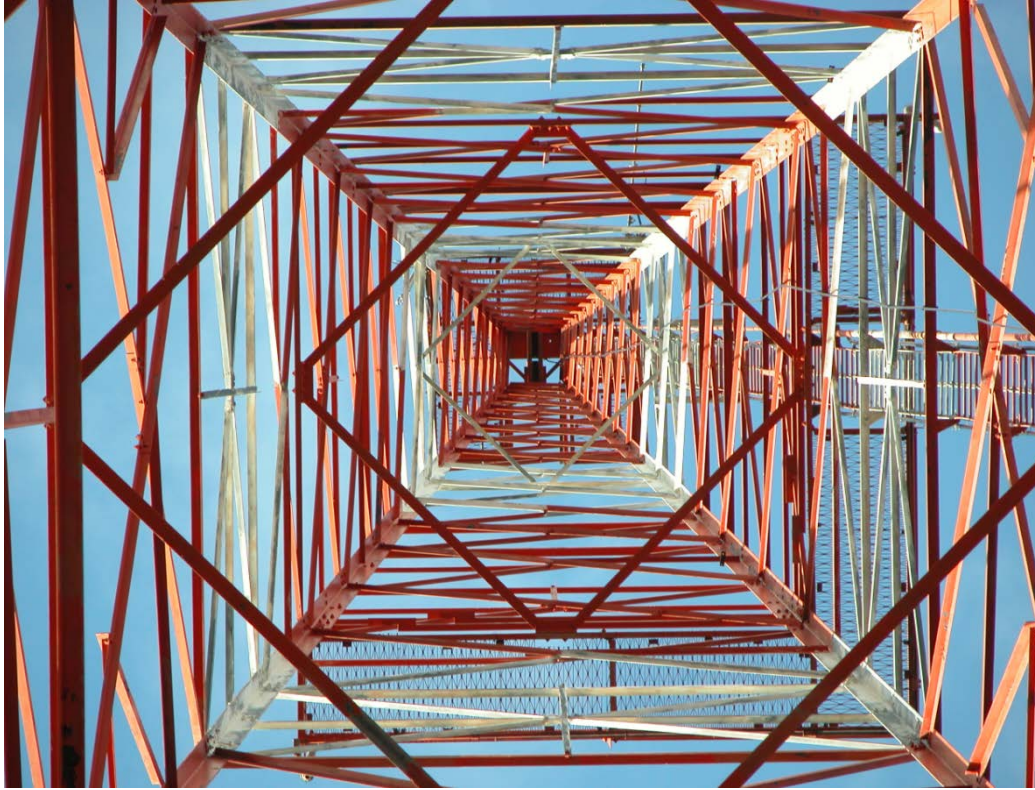
New Tower Location Satellite View



Photos



Existing tower to remove



Existing tower to remove



Shelter



Shelter



Royal Canadian Gendarmerie royale
Mounted Police du Canada

Sollicitation No. – N° de l'invitation : **201702812C**

13.0 Appendix A - RCMP Standards and Guidelines For Communication Sites

Note: attached as a separate pdf document.



14.0 Appendix B - Antenna Specifications

Sinclair SD214-H



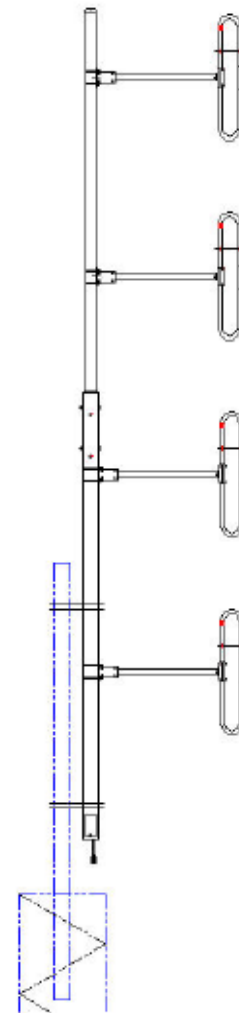
Antennas
Low Band, Aviation, and VHF Antennas
SD214-H Series

- SD214-HF2P2SNM(D00B)** 4 dipole, 8.0 dBd, bi-directional, top mount, HD, 138-174 MHz
- Also referred as: SD214-HF2P2SNM(B)
- Covers entire 138-174 MHz frequency range with a VSWR of 1.5:1 or better
 - 8.0 dBd gain with bi-directional pattern
 - heavy duty, 300 Watts power handling
 - Top mount

The SD214-H series is a heavy duty rugged 4-bay exposed dipole antenna designed for applications where moderate gain is required. These premium-quality antennas are well suited to public safety applications.

The design of these antennas provides for coverage between 118 to 225 MHz in 3 sub bands, 118-138 MHz for civil aviation applications, 138-174 MHz for private mobile networks, public safety and public security and 220-225 MHz for transportation networks.

The standard connector offered is N-Male



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E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesia@sinctech.com	salescan@sinctech.com
Product Specification Sheet		SD214-HF2P2SNM(D00B)	Issue: 7	Dated: 20-10-15
EPR: 017741-2				Dated: 10-02-15
Customer Tech Manual: 005612				

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Sinclair SD214-H Cont'd



A Norsat Company Norsat International Inc.

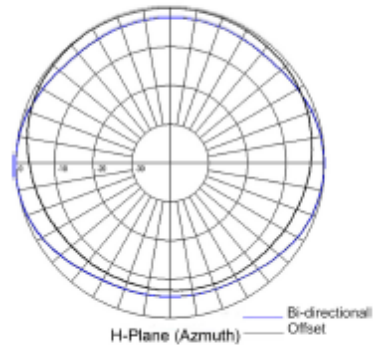
Antennas
Low Band, Aviation, and VHF Antennas
SD214-H Series

Electrical Specifications		
Frequency Range	MHz	138 to 174
Connector		N-Male
Gain (nominal)	dBd (dBi)	8 (10.1)
Input VSWR (max)		1.5:1
Polarization		vertical
Impedance	Ω	50
Pattern		Bi-directional
Vertical beamwidth (typ)	degrees	17
Average Power Input (max)	W	300
Lightning protection		DC ground
Electrical tilt (available)		0,2,4,6, or 8 degrees

Notes
*1 : Qty. 2

Mechanical Specifications		
Width	in (mm)	43.75 (1111)
Depth	in (mm)	5 (127)
Length/ Height	in (mm)	222 (5639)
Base pipe diameter	in (mm)	4 (102)
Base pipe mounting length	in (mm)	48 (1219)
Radiating element material		aluminum
Base pipe material		aluminum
Weight	lbs (kg)	109 (49.49)
Weight iced (1/2" ice)	lbs (kg)	198 (89.89)
Mounting Hardware (Optional)		Clamp006C
Actual Shipping weight	lbs (kg)	162 (73.55)
Shipping dimensions	in (mm)	228x48x6 (5791x1219x152)
Mounting configurations		top mount

Ordering Information
Clamps must be ordered separately.



Environmental Specifications		
Temperature range	*F (*C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	6.01 (0.56)
Wind Loading Area (1/2" ice)	ft² (m²)	8.96 (0.83)
Rated wind velocity (no ice)	mph (km/h)	195 (314)
Rated wind velocity (1/2" radial ice)	mph (km/h)	155 (250)
Lateral thrust (100 mph No Ice)	lbs (N)	223 (991.9)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	190 (256.5)
Bending moment (100 mph No Ice)	ft-lbs (Nm)	1164 (1571.4)
Tip deflection (100 mph No Ice)	degrees	0.5

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E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesia@sinctech.com	salescan@sinctech.com

Product Specification Sheet
EPR 017741-2
Customer Tech Manual 005612

80214-HF2P28NM(D008)

Issue: 7

Dated: 20-10-15
Dated: 10-02-15

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Sinclair SY206EB



Antennas
Low Band, Aviation, and VHF Antennas
SY206EB Series

SY206EB

Yagi directional antenna, 9.5 dBd gain, extended boom, 138-174 MHz

- Six element extended boom yagi
- Outstanding durability and performance
- DC grounded for lightning protection

The SY206 antenna consists of a six-element yagi of outstanding durability and performance. All elements including the folded dipole are maintained at DC Ground potential for lightning protection. All elements on this antenna are attached to the boom with solid cast aluminum clamps.

This highly versatile antenna is supplied as a standard mount yagi, or, as an end-boom mounted unit.

As with other yagis, this VHF antenna is available in multiple-unit arrays for added gain. Horizontally or vertically parallel kits of 'H' frames can readily be supplied to mount two or four yagis with a common feed.



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Product Specification Sheet		SY206EB		Dated: 25-10-10



Sinclair SY206EB Cont'd



Antennas
Low Band, Aviation, and VHF Antennas
SY206EB Series

Electrical Specifications

Frequency Range	MHz	138 to 174
Gain (nominal)	dBd (dBi)	9.5 (11.6)
Input VSWR (max)		1.5:1
Polarization		vertical or horizontal
Pattern		Directional
Horizontal beamwidth (typ)	degrees	56
Vertical beamwidth (typ)	degrees	46
Average Power Input (max)	W	250
Lightning protection		DC ground
Front-to-back ratio (typ)	dB	17

Mechanical Specifications

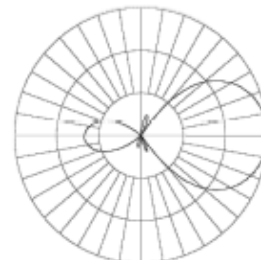
Connector		N (male)
Length/ Height	in (mm)	113.38 (2880)
Width	in (mm)	42 (1067)
Depth	in (mm)	6.1 (155)
Weight	lbs (kg)	12.5 (5.68)
Weight iced	lbs (kg)	43.5 (19.75)
Actual Shipping weight	lbs (kg)	45 (20.43)
Shipping dimensions	in (mm)	124.8x48x6 (3170x1219x152)

Environmental Specifications

Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	1.92 (0.18)
Wind Loading Area (ice)	ft² (m²)	3.75 (0.35)
Rated wind velocity (no ice)	mph (km/h)	130 (209)
Rated wind velocity (1/2" radial ice)	mph (km/h)	85 (137)
Lateral thrust (100mph)	lbs (N)	72 (320.3)
Bending moment	ft-lbs (Nm)	333 (449.6)

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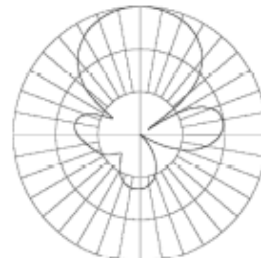
SINCLAIR TECHNOLOGIES



MEASURED RADIATION PATTERN
VERTICAL POLARIZATION

Elevation
Relative Gain - 10 dB per Division

SINCLAIR TECHNOLOGIES



MEASURED RADIATION PATTERN
VERTICAL POLARIZATION

Azimuth
Relative Gain - 10 dB per Division



Sinclair SD314-H



**Antennas
UHF and Tetra Antennas
SD314-H Series**

SD314-HF2P2SNM(D00S-ABK) 4 dipole, 8.0 dBd, HD, Black anodized, 406-512 MHz

- Covers 406-512 MHz frequency range
- 8 dBd gain with bi-directional pattern
- Heavy duty, 200W power handling
- Side mount and black anodized

The SD314-H series is an extremely rugged 4-bay exposed dipole antenna designed for applications where moderate gain is required. These premium-quality antennas are well suited to public safety applications.

The design of these antennas provides for coverage between 370 to 512 MHz in 2 sub bands, 370-460 MHz and 406-512 MHz for private mobile networks, public safety and public security networks.

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E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesia@sinctech.com	salescan@sinctech.com
Product Specification Sheet EPR 016154 Customer Tech Manual 005962		SD314-HF2P2SNM(D00S-ABK)	Issue: 1	Dated: 20-10-15 Dated: 28-09-15
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Sinclair SD314-H Cont'd



Antennas
UHF and Tetra Antennas
SD314-H Series

Electrical Specifications

Frequency Range	MHz	406 to 512
Connector		N-Male *1
Gain (nominal)	dBd (dBi)	8 (10.1)
Input VSWR (max)		1.5:1
Polarization		vertical
Impedance	Ω	50
Pattern		Bi-directional
Vertical beamwidth (typ)	degrees	16
Average Power Input (max)	W	200
Lightning protection		DC ground
Electrical tilt (available)		0,2,4,6,8, or 10 degrees

Notes
*1 : N-Female available
*2 : Qty 2
*3 : Flat plate equivalent

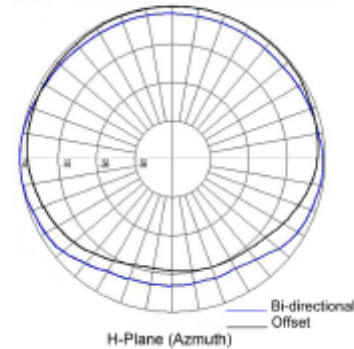
Mechanical Specifications

Width	in (mm)	16.5 (419)
Depth	in (mm)	3.5 (89)
Length/ Height	in (mm)	114 (2895)
Base pipe diameter	in (mm)	2.38 (60)
Base pipe mounting length	in (mm)	86 (2184)
Radiating element material		aluminum
Base pipe material		aluminum
Finish		anodize (black)
Weight	lbs (kg)	21 (9.53)
Mounting Hardware (Optional)		Clamp005, Clamp015, Clamp130, or Clamp125U *2
Actual Shipping weight	lbs (kg)	40 (18.16)
Shipping dimensions	in (mm)	118x4x20 (2997x102x508)
Mounting configurations		side mount

Ordering Information
Clamps must be ordered separately.

Environmental Specifications

Temperature range	*F (*C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	1.9 (0.18)
Wind Loading Area (1/2" ice)	ft² (m²)	3.1 (0.29) *3
Rated wind velocity (no ice)	mph (km/h)	240 (386)
Rated wind velocity (1/2" radial ice)	mph (km/h)	200 (322)
Lateral thrust (100 mph No Ice)	lbs (N)	70.3 (312.7)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	19.6 (26.5)
Bending moment (100 mph No Ice)	ft-lbs (Nm)	101 (136.4)



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Product Specification Sheet EPR 016154 Customer Tech Manual 005902		SD314-HF2P28NM/D008-ABK	Issue: 1	Dated: 20-10-15 Dated: 28-09-15
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Sinclair SY307R



**Antennas
UHF and Tetra Antennas
SY307R Series**

SY307R-HF1SNF

Yagi directional, radome enclosed, 10 dBd, HD, 406-430 MHz

Also referred as: SRL307RHDFN*1

- Heavy duty, radome enclosed 10 dBd gain directional antenna
- Extremely rugged antenna withstands 195 mph winds.
- Ideally suited for harsh environments.

The SY307R is a heavy duty, radome enclosed 10 dBd gain directional antenna, ideally suited to harsh environment applications. This extremely rugged antenna will withstand 175 mph winds, with up to 0.5 inch of radial ice.



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E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesia@sinctech.com	salescan@sinctech.com
Product Specification Sheet EPR: 015907 Customer Tech Manual: 005243		SY307R-HF1SNF	Issue: 10	Dated: 08-10-13 Dated: 01-10-13

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Antennas
 UHF and Tetra Antennas
 SY307R Series

Electrical Specifications

Frequency Range	MHz	403 to 430
Bandwidth	MHz	24
Connector		N-Female
Gain (nominal)	dBd (dBi)	10 (12.1)
Input VSWR (max)		1.5:1
Polarization		vertical or horizontal
Impedance	Ω	50
Pattern		Directional
Horizontal beamwidth (typ)	degrees	48
Vertical beamwidth (typ)	degrees	42
Average Power Input (max)	W	250
Lightning protection		DC ground
Front-to-back ratio (typ)	dB	15

Notes

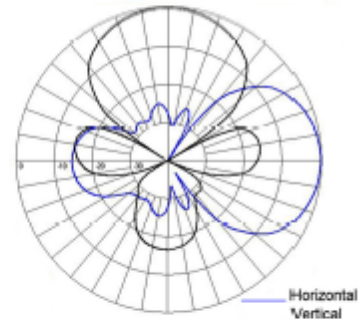
- *1 : 0.5" radial ice
- *2 : 0.5" radial ice
- *3 : Values based on 100 mph with 0 inches of ice
- *4 : Values based on 100 mph with 0 inches of ice

Mechanical Specifications

Depth	in (mm)	16 (406)
Length/ Height	in (mm)	30 (762)
Width	in (mm)	13 (330)
Radiating element material		aluminum
Reflector material		aluminum
Weight	lbs (kg)	18 (8.17)
Weight iced	lbs (kg)	35 (15.89) *1
Mounting Hardware (Standard)		Clamp002B
Actual Shipping weight	lbs (kg)	28 (12.71)
Shipping dimensions	in (mm)	18x18x36 (457x457x914)

Environmental Specifications

Temperature range	*F (*C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	1.34 (0.12)
Wind Loading Area (1/2" ice)	ft² (m²)	1.48 (0.14) *2
Rated wind velocity (no ice)	mph (km/h)	195 (314)
Rated wind velocity (1/2" radial ice)	mph (km/h)	175 (282)
Lateral thrust (100 mph No Ice)	lbs (N)	53 (235.7) *3
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	56 (75.6) *4



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Product Specification Sheet		SY307R-HF18NF	Issue: 10	Dated: 08-10-13
EPR 015607				Dated: 01-10-13
Customer Tech Manual 005243				

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Royal Canadian Gendarmerie royale
Mounted Police du Canada

Sollicitation No. – N° de l'invitation : **201702812C**

15.0 Appendix C – Geotechnical Surveys

Note: attached as a separate pdf documents.



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16.0 Appendix D – Environment Canada Wind Data

Note: attached as a separate pdf documents.



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17.0 Appendix E – Engineering Documentation

Note: attached as a separate pdf documents.



**ANNEX B
FINANCIAL BID PRESENTATION SHEET
(BASIS OF PAYMENT)**

Name of Firm: _____

Address: _____

Contact Person: _____

Phone number: (____) ____ - _____ Fax number: (____) ____ - ____

Email: _____ @ _____

Bidder must provide a firm price* for each of the 2 options listed below and detailed in the SOW section 5.0 and 6.0. Applicable taxes extra. Bidders **should** use this page to submit their bid.

Option A – Tower A	Proposed firm price
Demolition and Removal of Operational Tower	\$
Erection of RCMP owned replacement tower	\$
Total	\$

Option B – Tower B	Proposed firm price
Demolition and Removal of Operational Tower	\$
Erection of new pre-fabricated replacement tower	\$
Total	\$

*The firm lot price includes any fuel or other costs related to the transportation of equipment above and beyond the allowable fuel costs outlined in the National Joint Council Travel Directive <http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>. **Travel and Living expenses, as detailed below, should not be included in the firm lot price.**

THE FOLLOWING CLAUSES DO NOT REQUIRE SUBMISSION BY BIDDERS AND WILL BE ADDRESSED AT CONTRACT AWARD BY THE CONTRACTING AUTHORITY.

Disbursements:

The firm rates specified are inclusive of overhead expenses such as administrative support, facsimile, courier, photocopying, mail, word processing, other operating costs and any time spent traveling to locations. Accordingly, separate billing of any items related to the routine cost of doing business shall not be permitted under any resulting contract.

Goods and Services Tax/Harmonized Sales Tax

All prices and amounts of money in the Contract are exclusive of the Goods and Services Tax (GST) or Harmonized Sales Tax (HST), as applicable, unless otherwise indicated. The GST or HST, whichever is applicable, is extra to the price herein and will be paid by Canada.



The estimated GST/HST of \$_____CAD (to be added at contract award) will be included in the total estimated cost on page 1 of the contract. GST/HST, to the extent applicable, will be incorporated into all invoices and progress claims and shown as a separate item on invoices and progress claims. All items that are zero-rated, exempt or to which the GST does not apply, are to be identified as such on all invoices. The Contractor agrees to remit to Canada Revenue Agency any amounts of GST paid or due.

Travel and Living Expenses

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the [National Joint Council Travel Directive \(http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php\)](http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php) and with the other provisions of the directive referring to "travelers", rather than those referring to "employees".

All travel must have the prior authorization of the Project Authority.
All payments are subject to government audit.

Estimated Costs: \$65,000.00



**ANNEX C
MANDATORY TECHNICAL EVALUATION CRITERIA**

1.0 At bid closing time, the Bidder must comply with the following Mandatory Requirements and provide the necessary documentation to support compliance.

Any proposal which fails to meet the following Mandatory Requirements will be deemed non-responsive and will not be given further consideration. Each requirement should be addressed separately.

2.0 Interpretation of Technical Evaluation Criteria

- The Bidder should provide enough information to demonstrate that they have a full understanding of all requirements described in the RFP including any inspections, regulations, standards and laws that are applicable to the project.
- The Bidder should provide enough information to answer the question: *“Can the Bidder provide the requested deliverables on time, on budget and if so, how?”*
- It should include a proposed detailed Schedule which demonstrates the ability to meet given phases and time lines identified in Section 12, Site Specific Details

The Proposal must meet Mandatory Requirements specified below. The Bidder must provide necessary documentation to support compliance with each requirement. Any Proposal that fails to meet the Mandatory Requirements will be declared non-responsive. The Bidder should address each Mandatory Requirement separately.

For evaluation purposes:

- “Where” means the name of the employer as well as the position/title held by the individual
- “When” means the start date (month and year) and the end date (month and year) of the period during which the individual acquired the qualification/experience; and
- “How” means a clear description of the activities performed and the responsibilities assigned to the individual in this position and during this period.

MANDATORY Technical Evaluation Criteria		Name:	
Criteria	Compliant (yes/no)	Substantiating Detail (Explanation)	Proposal page #
M1	<p>The bidder must provide two (2) examples of completed projects which included the replacement of a tower measuring at least 150 ft.</p> <p>Examples must include:</p> <ul style="list-style-type: none"> • Client name • Project date • Description of work performed • Project location 		



ANNEX D INSURANCE REQUIREMENTS

Commercial General Liability Insurance - G2001C

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by the Royal Canadian Mounted Police.
 - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
 - d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - g. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
 - j. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
 - l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - m. Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.



ANNEX “E” to PART 5 - BID SOLICITATION

1.0 FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\) – Labour's](#) website.

Date: _____(YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- A1. The Bidder certifies having no work force in Canada.
- A2. The Bidder certifies being a public sector employer.
- A3. The Bidder certifies being a federally regulated employer being subject to the [Employment Equity Act](#).
- A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

- A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

- A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- B1. The Bidder is not a Joint Venture.

OR

- B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

2.0 FORMER PUBLIC SERVANT

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with



Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes () No ()**

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes () No ()**

If so, the Bidder must provide the following information:

- a. name of former public servant;



- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.