

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

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

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

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

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

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

**Comments - Commentaires**

<b>Title - Sujet</b> ROUTE 117 KOUCHIBOUGUAC PARK	
<b>Solicitation No. - N° de l'invitation</b> EC015-150845/A	<b>Date</b> 2014-09-12
<b>Client Reference No. - N° de référence du client</b> EC015-15-0845	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWA-122-5124	
<b>File No. - N° de dossier</b> PWA-4-72028 (122)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2014-10-07</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Chinye (PWA), Chukwudi	<b>Buyer Id - Id de l'acheteur</b> pwa122
<b>Telephone No. - N° de téléphone</b> (902) 496-5476 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA SEE HEREIN Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

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

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

**Issuing Office - Bureau de distribution**

Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.E.)  
B3J 3C9  
Halifax  
Nova Scot

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PWA-4-72028

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The bid solicitation package is to be inserted at this point and forms part of this document.

Le jointe au dossier de demande de soumissions doit être insérée ici et fait partie du présent document.

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## REQUEST FOR PROPOSAL (RFP) ROUTE 117 REHABILITATION, Kouchibouguac National Park, NB

### TABLE OF CONTENTS

The following is intended to clarify the general structure of the whole document.

Front Page

Supplementary Instructions to Proponents (SI)

- SI1 Introduction
- SI2 Proposal Documents
- SI3 Questions or request for clarifications
- SI4 Canada's Trade Agreements
- SI5 CERTIFICATIONS**
- SI6 Web Sites

Terms, Conditions and Clauses

Agreement

Supplementary Conditions (SC)

- SC1 Security Requirement**
- SC2 Language Requirements
- SC3 Federal Contractors Program for Employment Equity - Default by the Consultant

Agreement Particulars

Declaration/Certifications Form (Appendix A)

Price Proposal Form (Appendix B)

Submission Requirements and Evaluation (SRE)

Project Brief / Terms of Reference

Description of Project (PD)

Description of Services - Required Services (RS)

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## SUPPLEMENTARY INSTRUCTIONS TO PROPONENTS (SI)

### SI1 INTRODUCTION

1. Public Works and Government Services Canada (PWGSC) intends to retain an individual consulting firm or joint venture to provide the professional services for the project as set out in this Request for Proposal (RFP).
2. Proponents responding to this RFP are requested to submit a full and complete proposal. The proposal will cover the detailed approach to the work, and the pricing and terms offered. A combination of the technical and price of services submissions will constitute the proposal.

### SI2 PROPOSAL DOCUMENTS

1. All instructions, general terms, conditions and clauses identified in the RFP by number, date and title, are hereby incorporated by reference into and form part of this solicitation and any resultant contract.

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

2. The following are the proposal documents:
  - (a) Supplementary Instructions to Proponents (SI); R1410T (2014-06-26), General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal; Submission Requirements and Evaluation (SRE);
  - (b) the general terms, conditions and clauses, as amended, identified in the Agreement clause;
  - (c) Project Brief / Terms of Reference;
  - (d) the Supply Arrangement E0225-141687/xxx/PWA**
  - (e) any amendment to the solicitation document issued prior to the date set for receipt of proposals; and
  - (f) the proposal, Declaration/Certifications Form and Price Proposal Form.

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3. Submission of a proposal constitutes acknowledgment that the Proponent has read and agrees to be bound by these documents.

### **SI3 QUESTIONS OR REQUEST FOR CLARIFICATION**

Questions or requests for clarification during the solicitation period must be submitted in writing to the Contracting Authority named on the RFP - Page 1 as early as possible. Enquiries should be received no later than 3 working days prior to the closing date identified on the front page of the Request for Proposal. Enquiries received after that date may not be answered prior to the closing date of the solicitation.

### **SI4 CANADA'S TRADE AGREEMENTS**

This procurement is subject to the provisions of the North American Free Trade Agreement (NAFTA), and the World Trade Organization - Agreement on Government Procurement (WTO-AGP).

### **SI5 CERTIFICATIONS**

#### **1. Integrity Provisions - Associated Information**

By submitting a proposal, the Proponent certifies that the Proponent and its Affiliates are in compliance with the provisions as stated in Section G11 Integrity Provisions - Proposal of R1410T (2014-06-26) General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

#### **2. Federal Contractors Program for Employment Equity - Proposal Certification**

By submitting a proposal, the Proponent certifies that the Proponent, and any of the Proponent's members if the Proponent is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from Employment and Social Development Canada (ESDC) - Labour's website.

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

Canada will also have the right to terminate the Agreement for default if a Consultant, or any member of the Consultant if the Consultant is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Agreement.

The Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification (see Appendix A - Declaration/Certifications Form), before contract award. If the Proponent is a Joint Venture, the Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

## **SI6 - WEBSITES**

The connection to some of the Web sites in the RFP is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Employment Equity Act

<http://laws-lois.justice.gc.ca/eng/acts/E-5.401/index.html>

Federal Contractors Program (FCP)

[http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/index.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/index.shtml)

Certificate of Commitment to Implement Employment Equity form LAB 1168

<http://www.servicecanada.gc.ca/cgi-bin/search/efrms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e>

Code of Conduct for Procurement

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>

**Consent to a Criminal Record Verification (PWGSC-TPSGC 229 form)**

**<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>**

Lobbying Act

<http://laws-lois.justice.gc.ca/eng/acts/L-12.4/?noCookie>

Contracts Canada

<https://buyandsell.gc.ca/>

Supplier Registration Information

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<https://srisupplier.contractsCanada.gc.ca>

Consultant Performance Evaluation Report Form

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913-1.pdf>

Canadian economic sanctions

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

National Joint Council (NJC) Travel Directive

<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>

## **TERMS, CONDITIONS AND CLAUSES**

### **AGREEMENT**

1. The Consultant understands and agrees that upon acceptance of the offer by Canada, a binding Agreement shall be formed between Canada and the Consultant and the documents forming the Agreement shall be the following:
  - (a) the Front Page and this Agreement clause;
  - (b) the General Terms, Conditions and Clauses, as amended, identified as:
    - R1210D (2014-06-26), General Condition (GC) 1 - General Provisions – Architectural and/or Engineering Services
    - R1215D (2014-06-26), General Condition (GC) 2 - Administration of the Contract
    - R1220D (2011-05-16), General Condition (GC) 3 - Consultant Services
    - R1225D (2012-07-16), General Condition (GC) 4 - Intellectual Property
    - R1230D (2012-07-16), General Condition (GC) 5 - Terms of Payment
    - R1235D (2011-05-16), General Condition (GC) 6 - Changes
    - R1240D (2011-05-16), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
    - R1245D (2012-07-16), General Condition (GC) 8 - Dispute Resolution
    - R1250D (2012-07-16), General Condition (GC) 9 - Indemnification and Insurance
    - Supplementary Conditions
    - Agreement Particulars
  - (c) Project Brief / Terms of Reference;
  - (d) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
  - (e) the proposal, the Declaration/Certifications Form and the Price Proposal Form.
  - (f) **the Supply Arrangement E0225-141687/xxx/PWA**

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2. The documents identified above by title, number and date are hereby incorporated by reference into and form part of this Agreement, as though expressly set out herein, subject to any other express terms and conditions herein contained.

The documents identified above by title, number and date are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>

3. If there is a discrepancy between the wording of any documents that appear on the following 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) any amendment or variation in the Agreement that is made in accordance with the terms and conditions of the Agreement;
  - (b) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
  - (c) this Agreement clause;
  - (d) Supplementary Conditions;
  - (e) General Terms, Conditions and Clauses;
  - (f) Agreement Particulars;
  - (g) Project Brief / Terms of Reference;
  - (h) the document entitled "Doing Business with the National Capital Area";
  - (i) the proposal.

## **SUPPLEMENTARY CONDITIONS (SC)**

### **SC1 SECURITY REQUIREMENT**

There is no security requirement applicable to this Agreement.

### **SC2 LANGUAGE REQUIREMENTS**

1. Communication between Canada and the Consultant shall be in English.
2. The Consultant's services during construction tender call (such as addenda preparation, tenderers' briefing meetings, technical answers to questions by bidders) shall be provided expeditiously in both languages, as necessary.
3. The Consultant's services during construction shall be provided in the language of choice of the Contractor. The successful Contractor will be asked to commit to one or other of Canada's official languages upon award of the Construction

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Contract and, thereafter construction and contract administration services will be conducted in the language chosen by the Contractor.

4. Other required services in both of Canada's official languages (such as construction documentation) are described in detail in the Project Brief.
5. The Consultant Team, including the Prime Consultant, Sub-Consultants and Specialists Consultants shall ensure that the services being provided in either language shall be to a professional standard.

### **SC3 FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - DEFAULT BY THE CONSULTANT**

The Consultant understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Consultant and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the contract. If the AIEE becomes invalid, the name of the Consultant will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Consultant in default as per the terms of the contract.

### **AGREEMENT PARTICULARS**

The Agreement Particulars will be issued at time of award of contract and will identify the fee to be paid to the Consultant for the services determined in the Price Proposal Form.

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## APPENDIX A - DECLARATION/CERTIFICATIONS FORM

**Project Title:**

**Name of Proponent:**

**Street Address:**

**Mailing Address:**

**Telephone Number:** (    )

**Fax Number:** (    )

**E-Mail:**

**Procurement Business Number:**

<b>Type of Organization:</b>  _____ Sole Proprietorship  _____ Partnership  _____ Corporation  _____ Joint Venture	<b>Size of Organization:</b>  Number of Employees _____  Graduate Architects / Professional Engineers _____  Other Professionals _____  Technical Support _____  Other _____
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## APPENDIX A - DECLARATION/CERTIFICATIONS FORM (CONT'D)

### Federal Contractors Program for Employment Equity - Certification

I, the Proponent, 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 proposal non-responsive, or will declare a consultant in default, if a certification is found to be untrue, whether during the proposal evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Proponent's certifications. Failure to comply with any request or requirement imposed by Canada may render the proposal 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: \_\_\_\_\_ (YY/MM/DD) (If left blank, the date will be deemed to be the bid closing date.)

Complete both A and B.

A. Check only one of the following:

- ☐ A1. The Proponent certifies having no work force in Canada.
- ☐ A2. The Proponent certifies being a public sector employer.
- ☐ A3. The Proponent certifies being a federally regulated employer being subject to the *Employment Equity Act*.
- ☐ A4. The Proponent 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 Proponent has a combined work force in Canada of 100 or more employees;  
and

## **APPENDIX A - DECLARATION/CERTIFICATIONS FORM (CONT'D)**

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

**OR**

- ( ) A5.2. The Proponent 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 Proponent is not a Joint Venture.

**OR**

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

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## APPENDIX A - DECLARATION/CERTIFICATIONS FORM (CONT'D)

### Former Public Servant (FPS) - Certification

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 FPS, proponents 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 proposals is completed, Canada will inform the Proponent 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 proposal 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*

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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.

## **APPENDIX A - DECLARATION/CERTIFICATIONS FORM (CONT'D)**

### **Former Public Servant in Receipt of a Pension**

As per the above definitions, is the Proponent a FPS in receipt of a pension?

YES ( ) NO ( )

If so, the Proponent must provide the following information, for all FPS 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, proponents agree that the successful Proponent'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 Proponent a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? YES ( ) NO ( )

If so, the Proponent 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.

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## APPENDIX A - DECLARATION/CERTIFICATIONS FORM (CONT'D)

### Name of Proponent:

#### DECLARATION:

I, the undersigned, being a principal of the proponent, hereby certify that the information given on this form and in the attached proposal is accurate to the best of my knowledge. If any proposal is submitted by a partnership or joint venture, then the following is required from each component entity.

.....  
name signature  
.....  
title  
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

.....  
name signature  
.....  
title  
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

.....  
name signature  
.....  
title  
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

During proposal evaluation period, PWGSC contact will be with the following person:\_\_\_\_\_.

Telephone Number: ( ) \_\_\_\_\_ Fax Number: ( ) \_\_\_\_\_

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

This Appendix "A" should be completed and submitted with the proposal, but may be submitted afterwards as follows: if Appendix "A" is not completed and submitted with the proposal, the Contracting Authority will inform the Proponent of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the proposal non-responsive.

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## APPENDIX B - PRICE PROPOSAL FORM

INSTRUCTIONS: Complete this Price Proposal Form and submit in a **separate sealed envelope** with the Name of Proponent, Name of Project, PWGSC Solicitation Number, and the words "PRICE PROPOSAL FORM" typed on the outside of the envelope. Price Proposals are not to include Applicable Taxes.

PROPOSERS SHALL NOT ALTER THIS FORM

**Project Title: Route 117 Rehabilitation, Kouchibouguac National Park, NB**

**Name of Proponent:**

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**The following will form part of the evaluation process:**

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### REQUIRED SERVICES

**Fixed Fee** (R1230D (2012-07-16), GC 5 - Terms of Payment)

SERVICES	FIXED FEE
RS 1 Pre-Design Services	\$.....
RS2 Concept Design	\$.....
RS3 Design Development	<u>\$.....</u>
RS4 Construction Documents (Bilingual)	<u>\$.....</u>
RS 8.2 Surveying (during Design)	<u>\$.....</u>
<b>MAXIMUM FIXED FEES (Required Services)</b>	<b><u>\$..... (A)</u></b>

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### The following will NOT form part of the evaluation process

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Canada may accept or reject any of the following fees, disbursements and/or hourly rates. Canada reserves the right to negotiate on these fees, disbursements and/or hourly rates.

#### **DISBURSEMENTS**

**At cost without allowance for mark-up or profit, supported by invoices/receipts - see clause R1230D (2012-07-16), GC 5 - Terms of Payment, section GC5.12**

#### **Disbursements:**

Travel and expenses for design consultant for RS1 – RS4 & RS8.2 \$.....

**MAXIMUM AMOUNT FOR DISBURSEMENTS** \$.....

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pwa122  
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**The following will form part of the evaluation process:**

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**APPENDIX B - PRICE PROPOSAL FORM (CONT'D)**

Canada may accept or reject any of the following fees, disbursements and/or hourly rates. Canada reserves the right to negotiate on these fees, disbursements and/or hourly rates.

**OPTIONAL SERVICES**

**Fixed Fee** (R1230D (2012-07-16), GC 5 - Terms of Payment)

SERVICES

FIXED FEE

RS 5 Tender Call, Bid Evaluation &

Construction Contract Award

\$.....

RS6 Construction & Contract Administration &

Post Construction Warranty Review

( based on a 25 week construction period)

\$.....

RS8.2 Surveying (during Construction)

\$.....

RS8.3 Materials Testing

\$.....

**MAXIMUM FIXED FEES (Optional Services)**

**\$..... (B)**

**Time Based Fees** (R1230D (2012-07-16), GC 5 - Terms of Payment)

IDENTIFY SERVICE	ESTIMATED HOURS Column A	HOURLY RATES** Column B	TIME BASED FEE Columns Ax B
RS 8.4 Resident Construction Services based on 60 hours per week X 25 weeks	1,500	\$.....	\$.....
<b>MAXIMUM TIME BASED FEES</b>			<b>\$..... (C)</b>

\*Payment will be based on actual hours spent. Travel time and/or expenses will not be reimbursed separately.

\*\* All inclusive hourly rate is applicable to both normal working hours and any other shift work as required.

**TOTAL FEE FOR OPTIONAL SERVICES**

**\$..... (B)+(C)**

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**The following will NOT form part of the evaluation process**

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Canada may accept or reject any of the following fees, disbursements and/or hourly rates. Canada reserves the right to negotiate on these fees, disbursements and/or hourly rates.

**DISBURSEMENTS**

**At cost without allowance for mark-up or profit, supported by invoices/receipts - see clause R1230D (2012-07-16), GC 5 - Terms of Payment, section GC5.12**

**Disbursements:**

Travel and expenses for design consultant for RS5, RS6, RS8.2, RS8.3 & RS8.4 \$.....

**MAXIMUM AMOUNT FOR DISBURSEMENTS** \$.....

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## TOTAL COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

Total Fee for Required Services	\$.....(A)
Total Fee for Optional Services	\$.....(B)+(C)
 Total Evaluated Fee	 \$.....

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**APPENDIX B - PRICE PROPOSAL FORM (CONT'D)**

**THE FOLLOWING HOURLY RATES MAY BE USED FOR FUTURE CONTRACT AMENDMENTS**

**Principals**

Name	\$ per hour
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....
.....	\$.....

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APPENDIX B - PRICE PROPOSAL FORM (CONT'D)

Staff

Name / Position	\$ per hour
.....	.....
.....	.....
.....	.....
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**END OF PRICE PROPOSAL FORM**

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## Front Page

General Instructions to Proponents (GI)

Supplementary Instructions to Proponents (SI)

Terms and Conditions

Submission Requirements and Evaluation (SRE)

## Project Brief

Description of Project (PD)

Description of Services - Required Services (RS)

Description of Services - Additional Services (AS)

Appendix A Declaration/Certifications Form

Appendix B Price of Services Form

Appendix C Doing Business

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# **SUBMISSION REQUIREMENTS AND EVALUATION**

SRE 1 General Information  
SRE 2 Proposal Requirements  
SRE 3 Submission Requirements and Evaluation  
SRE 4 Price of Services  
SRE 5 Total Score  
SRE 6 Submission Requirements - Checklist

## SUBMISSION REQUIREMENTS AND EVALUATION

### SRE 1 GENERAL INFORMATION

#### 1.1 Reference to the Selection Procedure

An 'Overview of the Selection Procedure' can be found in R1410T General Instructions to Proponents (GI3).

#### 1.2 Calculation of Total Score

For this project the Total Score will be established as follows:

Technical Rating x 90%	=	Technical Score (Points)
Price Rating x 10%	=	Price Score (Points)
Total Score	=	Max. 100 Points

### SRE 2 PROPOSAL REQUIREMENTS

#### 2.1 Requirement for Proposal Format

The following proposal format information should be implemented when preparing the proposal.

- Submit one (1) bound original plus five (5) bound copies of the proposal
- Paper size should be - 216mm x 279mm (8.5" x 11")
- Minimum font size - 11 point Times or equal
- Minimum margins - 12 mm left, right, top, and bottom
- Double-sided submissions are preferred
- One (1) 'page' means one side of a 216mm x 279mm (8.5" x 11") sheet of paper
- 279mm x 432 mm (11" x 17") fold-out sheets for spreadsheets, organization charts etc. will be counted as two pages.
- The order of the proposals should follow the order established in the Request for Proposal SRE section

#### 2.2 Specific Requirements for Proposal Format

The maximum number of pages (including text and graphics) to be submitted for the Rated Requirements under SRE 3.2 is **20 pages**

The following are not part of the page limitation mentioned above;

- Covering letter

- Declaration/Certifications Form (Appendix A)
- Code of Conduct Certifications
- Front page of the RFP
- Front page of revision(s) to the RFP
- Price Proposal Form (Appendix B)

***Consequence of non-compliance: any pages which extend beyond the above page limitation and any other attachments will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Board members for evaluation.***

## **SRE 3 SUBMISSION REQUIREMENTS AND EVALUATION**

### **3.1 MANDATORY REQUIREMENTS**

Failure to meet the mandatory requirements will render the proposal as non-responsive and no further evaluation will be carried out.

#### **3.1.1 Declaration/Certifications Form**

Proponents must complete, sign and submit the following:

- Appendix A, Declaration/Certifications Form as required.

#### **3.1.2 Integrity Provisions - Associated Information**

Proponents who are incorporated, including those submitting proposals as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Proponent. Proponents submitting proposals as sole proprietorship, including those submitting proposals as a joint venture, must provide the name of the owner. Proponents submitting proposals as societies, firms, or partnerships do not need to provide lists of names. If the required names have not been received by the time the evaluation of proposals is completed, Canada will inform the Proponent of a time frame within which to provide the information. Failure to provide the names within the time frame specified will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

### **3.2 RATED REQUIREMENTS**

#### **3.2.1 Understanding of the Project: Maximum 3 pages**

The proponent should demonstrate understanding of the goals of the project, the functional/technical requirements, the constraints and the issues that will shape the end product.

Information that should be supplied:

- The functional and technical requirements
- Significant issues, challenges and constraints
- Project schedule and cost.

**3.2.2 Scope of Services: Maximum 6 pages**

The proponent should demonstrate capability to perform the services and meet project challenges and to provide a plan of action.

Information that should be supplied:

- Work Plan/Work Breakdown Structure - detailed breakdown of work tasks and deliverables
- Project schedule - proposed major milestone schedule (Gantt format)
- Risk management strategy

**3.2.3 Management of Services: Maximum 5 pages**

The Proponent should describe how the services will be managed; how the team will be organized; how the team will be managed. The proponent is also to identify sub-consultant disciplines and specialists required to complete the consultant team.

Information that should be supplied:

- Organization chart with position titles and names (Consultant team)
- Management/Communication strategies

**3.2.4 Approach / Methodology: Maximum 6 pages**

The proponent should elaborate on aspects of the project considered to be a major challenge. This is the opportunity for the Proponent to describe their approach to resolving design issues.

Information that should be supplied:

- Describe the major challenges and how your team approach will be applied to those particular challenges.

**3.3 EVALUATION AND RATING**

In the first instance, price envelopes will remain sealed and only the technical components of the proposals which are responsive will be reviewed, evaluated and rated by a PWGSC Evaluation Board in accordance with the following to establish Technical Ratings:

Criterion	Weight Factor	Rating	Weighted Rating
Understanding of the Project	2.0	0 - 10	0 – 20
Scope of Services	3.0	0 - 10	0 - 30
Management of Services	3.0	0 - 10	0 - 30
Approach / Methodology	2.0	0 - 10	0 - 20
Technical Rating	10.0		0 - 100

### Generic Evaluation Table

PWGSC Evaluation Board members will evaluate the strengths and weaknesses of the Proponent's response to the evaluation criteria and will rate each criterion with even numbers (0, 2, 4, 6, 8 or 10) using the generic evaluation table below:

	INADEQUATE	WEAK	ADEQUATE	FULLY SATISFACTORY	STRONG
0 point	2 points	4 points	6 points	8 points	10 points
Did not submit information which could be evaluated	Lacks complete or almost complete understanding of the requirements.	Has some understanding of the requirements but lacks adequate understanding in some areas of the requirements.	Demonstrates a good understanding of the requirements.	Demonstrates a very good understanding of the requirements.	Demonstrates an excellent understanding of the requirements.
	Weaknesses cannot be corrected	Generally doubtful that weaknesses can be corrected	Weaknesses can be corrected	No significant weaknesses	No apparent weaknesses
	Proponent do not possess qualifications and experience	Proponent lacks qualifications and experience	Proponent has an acceptable level of qualifications and experience	Proponent is qualified and experienced	Proponent is highly qualified and experienced
	Team proposed is not likely able to meet requirements	Team does not cover all components or overall experience is weak	Team covers most components and will likely meet requirements	Team covers all components - some members have worked successfully together	Strong team - has worked successfully together on comparable projects
	Sample projects not related to this requirement	Sample projects generally not related to this requirement	Sample projects generally related to this requirement	Sample projects directly related to this requirement	Leads in sample projects directly related to this requirement

	Extremely poor, insufficient to meet performance requirements	Little capability to meet performance requirements	Acceptable capability, should ensure adequate results	Satisfactory capability, should ensure effective results	Superior capability, should ensure very effective results
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To be considered further, proponents **must** achieve a minimum Technical Rating of **fifty (50) points** out of the hundred (100) points available as specified above.

**No further consideration will be given to proponents not achieving the pass mark of fifty (50) points.**

#### SRE 4 PRICE OF SERVICES

All price proposal envelopes corresponding to responsive proposals which have achieved the pass mark of fifty (50) points will be opened upon completion of the technical evaluation. An average price is determined by adding all the price proposals together and dividing the total by the number of price proposals being opened.

All price proposals which are greater than twenty-five percent (25%) above the average price will be set aside and receive no further consideration.

The remaining price proposals are rated as follows:

- A. The lowest price proposal receives a Price Rating of 100
- B. The second, third, fourth and fifth lowest prices receive Price Ratings of 80, 60, 40, and 20 respectively. All other price proposals receive a Price Rating of 0.
- C. On the rare occasions where two (or more) price proposals are identical, the matching price proposals receive the same rating and the corresponding number of following ratings are skipped.

The Price Rating is multiplied by the applicable percentage to establish the Price Score.

#### SRE 5 TOTAL SCORE

Total Scores will be established in accordance with the following:

Rating	Possible Range	% of Total Score	Score (Points)
Technical Rating	0 - 100	90	0 - 90
Price Rating	0 - 100	10	0 - 10
Total Score		100	0 - 100

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The Proponent receiving the highest Total Score is the first entity that the Evaluation Board will recommend for the provision of the required services. In the case of a tie, the proponent submitting the lower price for the services will be selected.

## **SRE 6 SUBMISSION REQUIREMENTS - CHECKLIST**

The following list of documents and forms is provided with the intention of assisting the Proponent in ensuring a complete submission. The Proponent is responsible for meeting all submission requirements.

Please follow detailed instructions in R1410T General Instructions to Proponents, GI16 Submission of Proposal. Proponents may choose to introduce their submissions with a cover letter.

- Declaration/Certifications Form - completed and signed - form provided in Appendix A
- Integrity Provisions - Associated Information - list of directors/owners
- Proposal - one (1) original plus 5 copies
- Front page of RFP
- Front page(s) of any solicitation amendment

In a separate envelope:

- Price Proposal Form - one (1) completed and submitted in a separate envelope

## PROJECT BRIEF / TERMS OF REFERENCE

### PR 1

#### Project Description

#### PR 1.1

##### Project Information

PR 1.1.1	PWGSC Project Title:	Route 117 Rehabilitation
PR 1.1.2	Location of Project:	Kouchibouguac National Park
PR 1.1.3	PWGSC Project Number:	R.070695.001
PR1.1.4	Client Service Unit :	New Brunswick
PR 1.1.5	Client/User :	Parks Canada

#### PR 1.2

##### PWGSC Project Team

PR 1.2.1	PWGSC Project Manager	TBD	Phone:
PR 1.2.2	Senior Project Manager	TBD	Phone:
PR 1.2.3	Project Leader	TBD	Phone:
PR 1.2.4	Property Manager	TBD	Phone:
PR 1.2.5	COE Design Manager	TBD	Phone:

#### PR 1.3 Client Mandate

Parks Canada on behalf of the people of Canada, protect and present nationally significant examples of Canada's natural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity for present and future generations.

#### PR 1.4 Project Outline

##### PR 1.4.1 Purpose of the Project

The purpose of the project is to produce a design and tender documents for pavement rehabilitation for 23.7 kms of Route 117 in Kouchibouguac National Park in New Brunswick. The segment of road under this design will start at the southern Park entrance at Route 134 and extend northward.

##### PR 1.4.2 Required Work

The work required by these terms of reference is described in detail under other clauses of this document.

##### PR 1.4.3 Project History Synopsis

## TEMPLATE Request for Proposal for a Medium Complexity requirement

The purpose of this project is to complete the investigation, design and tender documents for the repaving of the 23.7 km of Route 117 in Kouchibouguac National Park. Construction is expected in the summer of 2015.

The highway was originally part of the provincial network of highways and was re-built in the 1960's. Various sections have been re-built over the years. Route 117 was last paved in 1993. Pavement Inspection Data have been collected every three years for the last 10 years. The last inspection was done in 2010.

### PR 1.4.4 Detailed Scope of Work

Elements of this project include the following:

- a) Field investigation and survey to determine existing conditions.
- b) Review existing Pavement Condition Data pertaining to this project (see attached)
- c) Review the existing highway condition and rate in accordance with current Ontario Ministry of Transportation and Communications, "Manual for Condition Rating of Flexible Pavements, Distress Manifestations."
- d) Complete field survey and geotechnical testing. Complete topographical field survey.
- e) Review previous construction methods, maintenance methods for sections of this highway.
- f) Perform field strength test using Dynaflect, FWD, or Benkelman Beam.
- g) Recommend the most cost effective method for the rehabilitation and maintenance of the highway over a 20 year design life. Specifically address by chainage along the roadway different repair techniques and give the pros and cons of each.
- h) Verify condition of culverts, make recommendations for replacement methods.
- i) Complete design and replacement for the guide rail using flex beam and EAGRT systems.
- j) Complete design for clearing and ditching of off-takes.
- k) Complete design for asphalt gutters.
- l) Complete design for curve re-alignment and road widening in Black River area
- m) Recycle plan for any milled asphalt materials.
- n) Complete RS 1, 2, 3, and 4 by Feb1, 2015.
- o) Optional services for RS 5, 6, and 8.4 by Dec 31, 2015
- p) Complete design, drawing/specification and tender document preparation for the selected options from the Concept Design stage, including culvert replacement design, highway repair, rehabilitation, and/or replacement design, and design and drawing/specification preparation for all other associated features as required for the implementation of a complete highway upgrade.

### PR 1.4.5 Site Conditions

## TEMPLATE Request for Proposal for a Medium Complexity requirement

At least one traffic lane must be kept open during the day and two lanes at night. The supply, installation, operation, maintenance, relocation and removal of work area traffic control devices and the provision of traffic control persons will be carried-out in accordance with the Province of New Brunswick's Work Area Traffic Control Manual and item no.576," Construction Traffic Control" Of the Province of New Brunswick, Department of Transportation's Standard Specifications, January 2011.

### PR 1.4.6 Implementation Strategy

The project is expected to be tendered by March 31st, 2015 using conventional design, bid, build.

### PR1.4.7 Consultant Access to the Site

All provincial traffic requirements must be met for work on this highway during field inspection, survey, and geotechnical testing.

### PR1.4.8 Issues/Constraints/Challenges/Opportunities

At least one traffic lane must be kept open during the day and two lanes at night. The supply, installation, operation, maintenance, relocation and removal of work area traffic control devices and the provision of traffic control persons will be carried-out in accordance with the Province of New Brunswick's Work Area Traffic Control Manual and item no.576," Construction Traffic Control" Of the Province of New Brunswick, Department of Transportation's Standard Specifications, January 2011.

## PR 1.5 Budget

The construction costs for this project are estimated at \$14,500,000.00

## PR 1.6 Schedule

	Completion	
RS1	Dec 1, 2014	Required
RS2	Dec 1, 2014	Required
RS3	Jan 1, 2015	Required
RS4	Feb 1, 2015	Required

## PR 1.7 Existing Documentation

- 1) 2010 Pavement Inspection Report
- 2) Highway 117, Strengthening km 0.00 to 4.25, Kouchibouguac Nat'l Park, 1989 plans
- 3) Upgrading highway 117 km 0.00 to 6.5, Kouchibouguac Nat'l Park, 1981 plans
- 4) Upgrading highway 117 km 6.5 to 19.8, Kouchibouguac Nat'l Park, 1981 plans
- 5) data , cross-sections and preliminary design for curve re-alignment , Black River area, 2008

## PR 2 General Project Objectives

The General Project Objectives are stated in the Annex to this document:

<b>GPO 1</b>	<b>General Project Objectives</b>	
GPO 1.1	Design Principles – General	Included
GPO 1.2	Sustainable Development	Included
GPO 1.3	Code Compliance	Included

## TEMPLATE Request for Proposal for a Medium Complexity requirement

GPO 1.4	Risk Management	Included
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GPO 1.5	Health and Safety	Included
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GPO 1.6	PWGSC Standards & Procedures	Included
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### **GPO 2 Issues**

GPO 2.1	Major Cost Issues	Included
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GPO 2.2	Major Time Issues	Included
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GPO 2.3	Major Operational Issues	Included
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### **Project Administration – PA**

The requirements for Project Administration are stated in the Annex to this document.

### **Required Services – RS**

#### **RS 1 Pre-Design Services**

RS 1.1	Feasibility Studies/Options Analysis	Required
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RS 1.2	Project Approach	Required
--------	------------------	----------

RS 1.3	Implementation Strategy and Schedule	Required
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RS 1.4	Site Condition Reports and Performance Audits	Required
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RS 1.5	Infrastructure Evaluation & Recommendation Reports	Required
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RS 1.6	Engineering/Geotechnical or Other Investigations	Required
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RS 1.7	Environmental Protection Requirements	Required
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RS 1.8	Order of Magnitude Class 'D' (indicative) Cost Reports	Required
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RS 1.9	Hydrology and Drainage Structure Sizing	Required
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RS 1.10	Regulator Issues	Required
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<b>RS 2</b>	<b>Concept Design</b>	Required
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<b>RS 3</b>	<b>Design Development</b>	Required
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<b>RS 4</b>	<b>Construction Documents</b>	Required
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	Bilingual Documents	Required
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<b>RS 5</b>	<b>Tender Call, Bid Evaluation &amp; Construction Contract Award</b>	Optional
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TEMPLATE Request for Proposal for a Medium Complexity requirement

<b>RS 6</b>	<b>Construction &amp; Contract Administration &amp; Post Construction Warranty Review</b>	Optional
<b>RS 7</b>	<b>Risk Management (All Stages)</b>	Not Required
<b>RS 8</b>	<b>Support Services</b>	
RS 8.1	Estimating and Cost Planning	Not Required
RS 8.2	Surveying (during Design)	Required
	Surveying (during Construction)	Optional
RS 8.3	Materials Testing	Optional
RS 8.4	Resident Construction Services	Optional

### PR 3 HEALTH AND SAFETY PLAN

#### Health and Safety Plan

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
  - .1 List of health risks and safety hazards identified by hazard assessment.
  - .2 Control measures used to mitigate risks and hazards identified.
  - .3 On-site Contingency and Emergency Response Plan as specified below.
  - .4 On-site Communication Plan as specified below.
- .3 On-site Contingency and Emergency Response Plan shall include:
  - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
  - .2 Evacuation Plan: prior to entering the Work Site confirm escape routes, marshalling areas, and location of fire fighting equipment.
  - .3 Emergency Contacts: name and telephone number of officials from:
    - .1 Departmental Representative.
    - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
    - .3 Local emergency resource organizations.
  - .4 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name of PWGSC and Facility Management contacts.

## TEMPLATE Request for Proposal for a Medium Complexity requirement

- .4 On-site Communication Plan:
  - .1 Procedures for sharing of work related safety information to subconsultants, including emergency and evacuation measures.
  - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subconsultants.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever a new subconsultant arrives at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

## REQUIRED SERVICES

### GENERAL PROJECT OBJECTIVES

#### GPO 1 PROJECT OBJECTIVES

Each request will elaborate on the specific objectives for individual projects, however, the following broader government objectives will apply to all requests:

##### GPO 1.1 Design Principles - General

1. PWGSC expects the Consultant to maintain a high standard of engineering design, based upon recognized industry design principles. All design elements, planning, and engineering, must be fully coordinated and consistent in adherence to good design principles.
2. The level of quality is to be consistent with Government of Canada policies and guidelines as well as all other similar designed works performed for the Government of Canada.
3. The projects are to be implemented in a sustainable environmentally responsible manner.
4. Quality of materials and construction methods shall be commensurate with the type of infrastructure required and the budget. Avoid experimental materials. Take into account the total life-cycle costing of the infrastructure
5. Design for maximum flexibility to meet immediate and future needs.

##### GPO 1.2 Sustainable Development

The Canadian Federal Government has begun a series of initiatives to ensure that sustainable development principles are built into the policy of all federal organizations. Sustainable development goals will be outlined in each call-up.

##### GPO 1.3 Code Compliance

Codes, regulations, by laws and decisions of “authorities having jurisdiction” will be observed. In cases of overlap, the most stringent will apply. The Consultant shall identify other jurisdictions appropriate to the project.

##### GPO 1.4 Risk Management

A risk management strategy is crucial for PWGSC Project Management and integrates project planning into procurement planning. All the stakeholders of a project will be an integral part of the risk management strategy, culminating in an integrated product team. Specific services required for project delivery are outlined in Required Services and the level of effort, if required, will be noted in the request.

##### GPO 1.5 Health and Safety

1. Public Works and Government Services Canada (PWGSC), recognizes the responsibility to ensure the health and safety of all persons on Crown construction projects and the entitlement of both federal employees and private sector workers to the full protection afforded them by occupational health and safety regulations.
2. In keeping with the responsibility and in order to enhance health and safety protection for all individuals on federal construction sites, PWGSC voluntarily complies with the applicable

## TEMPLATE Request for Proposal for a Medium Complexity requirement

provincial/territorial construction health and safety acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

### **GPO 1.6 PWGSC Standards and Procedures**

For standards relating to the service provisions required, please refer to the document Doing Business.

## **GPO 2 ISSUES**

### **GPO 2.1 Major Cost Issues**

**Issue:** Budget Limitations

Effective cost estimating and cost control is of prime importance and shall be provided by qualified personnel. The Class 'C' and Class 'B' cost estimates, where required, shall be submitted in elemental cost analysis format. The standard of acceptance for this format is the current issue of the elemental cost analysis format issued by the Canadian Institute of Quantity Surveyors. The level of effort will be noted in the individual request.

The Class 'A' cost estimate shall be submitted in trade cost breakdown format. Cost estimates shall have a summary plus full back-up showing items of work, quantities, unit prices and amounts.

### **GPO 2.2 Major Time Issues**

**Issue:** Out of Service Time Frame

It is imperative that the out of service time frame for the various projects as a result of construction be minimized as much as possible. Program operations and time frames will govern the particular allotted time frame for construction through the identified Call-Up.

### **GPO 2.3 Major Operational Issues**

**Issue:** Adjacent Programs

Minimize impact of any ongoing adjacent programs is mandatory and therefore design decisions must be sensitive to that requirement. Additional factors recognized as affecting adjacent programs are the following: reliability of systems and equipment, redundancy to ensure continued operation and prolonged commissioning issues.

## **PROJECT ADMINISTRATION**

### **PA 1 INTENT**

The following administrative requirements apply during all phases of project delivery and will be stipulated in each Call-Up.

#### **PA 1.1 Coordination**

1. The Project Manager assigned to the project is the Departmental Representative.
2. The Project Manager is directly concerned with the project and responsible for its progress. The Project Manager is the liaison between the Consultant, Public Works and Government Services Canada or Other Government Department (OGD) and the Client Departments.

## TEMPLATE Request for Proposal for a Medium Complexity requirement

Public Works and Government Services Canada or OGD administers the project and exercises continuing control over the Consultant's work during all phases of development. Unless directed otherwise by the Project Manager, the Consultant obtains all Federal requirements and approvals necessary for the work. The consultant shall:

- a. Carry out services in accordance with approved documents and directions given by the Project Manager;
- b. Prior to starting any project, obtain the Project Manager's approval of sub-consultant(s). Upon receipt from the Project Manager of written confirmation that the proposed sub-consultant(s) are acceptable, execute the Consultant Call-Up;
- c. Ensure all communications carry the PWGSC's or OGD's Project Title, Project Number and File Number, Callup Number, WBS Number;
- d. Advise the Project Manager of any changes that may affect schedule or budget or are inconsistent with instructions or written approvals previously given. The consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding.

### **PA 1.2 Coordination with Sub-Consultants**

The consultant shall:

1. Throughout all stages of the Project, coordinate and assume responsibility for the work of any sub-consultants and specialists retained by the consultant;
2. Ensure clear, accurate and ongoing communication of concept, budget, and scheduling issues (including changes) as they relate to the responsibilities of all sub-consultants and specialists from initial reviews to post construction reports;
3. Ensure Sub-Consultants provide adequate site inspection services and attend all required meetings.

### **PA 1.3 General Project Deliverables**

1. Where deliverables and submissions include summaries, reports, drawings, plans or schedules, six (6) hard copies shall be provided plus one (1) copy shall be provided in electronic format as follows unless approved otherwise in Appendices. Electronic format shall mean:

- |                                     |   |
|-------------------------------------|---|
| a. For written reports and studies: | Microsoft Word and PDF;   |
| b. For Spreadsheets, and budgets:   | Microsoft Excel and PDF;  |
| c. For Presentations:               | Microsoft Power Point;  |
| d. For Drawings:                    | AutoCad 2005 (*.dwg) refer to Doing Business;                                       |
| e. For Specifications:              | Either most recent version NMS Edit or MS Word as specified by the project manager; |
| f. For Schedules ( Time Plans)      | Microsoft Project;  |

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For GIS

ARCGIS refer Doing Business.

### **PA 1.4 Lines of Communication**

1. Correspond only with the Project Manager at the times and in the manner dictated by the Project Manager. The consultant shall not communicate with the client department unless so authorized in writing by the Project Manager.
2. During construction tender call, Public Works and Government Services Canada conducts all correspondence with bidders and makes the contract award.
3. After contract award the consultant shall follow communication protocol call as received from PWGSC or OGD.

### **PA 1.5 Media**

The consultant shall not respond to requests for project related information or questions from the media. Such enquiries are to be directed to the Project Manager.

### **PA 1.6 Meetings**

1. The Project Manager shall arrange meetings as required per Call-up relative to project scope and phase of work, for members of project team, including representatives from:
  - a. Client Department;
  - b. Public Works and Government Services Canada;
  - c. Consultants.
2. The Consultant shall attend the meetings, record the issues and decisions and prepare and distribute minutes within 48 hours of the meeting.

### **PA 1.7 Project Response Time**

It is a requirement of this Request for Standing Offer that the prime consultant and their proposed sub-consultants should be personally available to attend meetings **within 48 hours**, in the locality of the place of the work and to respond to inquiries **within 24 hours** of the Project Manager's request, from the date of the award of the consultant call-up until final inspection and turnover.

### **PA 1.8 Submissions, Reviews and Approvals**

For each call-up, work in progress may be reviewed by the Project Manager as well as a minimum, the following:

#### **PWGSCor OGD in-house resources:**

- Submission Format: drawings and specifications;
- Submission Schedule: Submissions are reviewed at a time to be arranged with 10 days notice when completed work has been forwarded to the Project Manager;
- Expected Turnaround Time: 2 weeks;
- Number of Submissions: until approval has been received.

#### **Design review committee:**

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Submission Format: reports, drawings and specifications, and oral presentations;

- Submission Schedule: Submissions are reviewed at a time to be arranged with **10** days notice;
- Expected Turnaround Time: 2 weeks;
- Number of Submissions: until approval has been received.

Reviews and approvals will be established at the time of issuing a call-up and the below table is provided for example purposes only.

	PWGSC/OGD		Client	
	R	A	R	A
Environmental Site Assessments	x	x	x	
Risk Assessments	x	x	x	
Remediation Action Plans	x	x		x
Environmental Impact Assessments	x	x	x	
Environmental Protection Plan	x	x	x	x
Project Scope of Services		x	x	
Class 'D' Estimate(s)		x	x	
Design Options	x		x	
Recommended Design Option		x		x
Class 'C' Estimate(s)		x	x	
Design Development Documents		x	x	
Class 'B' Estimate(s)		x	x	
33% Construction Drawings		x	x	
66% Construction Drawings and Specs		x	x	
99% Construction Drawings and Specs		x	x	
Class 'A' Estimate(s)		x		x
Final Tender Documents		x		x
Inspection Report	x	x	x	

R = Review    A = Approval

## General Scope of Services:

1. Be advised that services provided must be complete in that they identify all major issues that will have a significant impact on the project. This will promote a surprise-free environment which will enhance the success of project implementation.
2. If the project requirements are such that the prime consultant is asked to provide a sub consultant team, the proposed sub consultant names are to be submitted to the project manager for approval, prior to their being engaged for the work.
3. The RS sections following are intended to show the level of effort required for a 'full service' package. Individual call-ups will include a scope of services required for that specific project, which may or may not include all of the services noted in the sections below. Services that are required for a specific call-up are to follow the guidelines as set out herein.

### RS 1.0 PRE-DESIGN SERVICES

1. The purpose of this stage is to develop, as required by the scope of work
  - (1) Feasibility Studies/Options Analysis;
  - (2) Project Approach;
  - (3) Implementation Strategy and Schedule;
  - (4) Site Condition Reports and Performance Audits;
  - (5) Infrastructure Evaluation & Recommendations Report;
  - (6) Engineering/Geotechnical or Other Investigations;
  - (7) Environmental Protection Requirements (limited to services as required to identify the need for further investigation/analysis);
  - (8) Order of Magnitude Class 'D' (Indicative ) Cost Reports;
  - (9) Hydrology and Drainage Structure Sizing Design;
  - (10) Regulatory Issues.

### RS 1.1 Feasibility Studies / Options Analysis

#### 1.1.1 Intent

A report which outlines the research and subsequent analysis to determine the viability and practicality of a project. A feasibility study analyzes economic, financial, market, regulatory, environmental/sustainable and technical issues. The purpose at this stage is to investigate and analyze site conditions, including soil conditions, zoning, bylaws, traffic reports, service capacities, support systems, special purpose support systems, and provide recommendations.

#### 1.1.2 Scope and Activities

##### Feasibility Study includes as a minimum:

1. Attend project start up meeting:
  - (1) Visit the site, investigate and analyze the needs of the project;
  - (2) Investigate the requirements for the particular site, including existing and new technologies;
  - (3) Analyze the project requirements/program;
  - (4) Review all available existing material related to the site;
  - (5) Investigate and analyze all applicable codes, regulations standards as a minimum: National Building Code, Canada Labour Code, NFPA, Provincial Occupational Health and Safety Act, Medical Research Council; Environmental and DFO acts and regulations.
2. Evaluate existing infrastructure including: municipal, civil, environmental, mechanical, electrical and structural systems, functional adaptability, code compliance, hazardous and non-hazardous waste;
3. Identify and verify all authorities having jurisdiction over the project;
4. Establish a policy for this project to minimize environmental impacts consistent with the project objectives and economic constraints, and the application of the *Canadian Environmental Assessment Act (CEAA)*;
5. Review the proposed project milestones for verification that all dates are achievable;
6. Review the cost plan/budget for verification that the costs are realistic and achievable; and
7. Prepare recommendations on the feasibility of the project.

##### Options Analysis as a minimum:

1. Test the feasibility study recommendations using a minimum of three (3) options, schematic (sketch) only;
2. Pro/ Cons of each option;
3. Financial analysis (Class 'D') including life cycle analysis and best value for operation and maintenance;

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4. Indication of the preferred option.

### 1.1.3 Deliverables:

1. Comprehensive summary of the requirements, conditions, feasibility and options analysis, demonstrating an understanding of the scope of work, including:
  - (1) Report on existing infrastructure including its condition, deficiencies and life expectancy;
  - (2) Report on existing facilities and systems requirements;
  - (3) Report on all applicable codes, regulation, standards and authorities having jurisdiction;
  - (4) Report on potential environmental impact, sustainability and the whether there is a need for further environmental assessment;
  - (5) Report on recommendations and options analysis;
  - (6) Confirmed or adjusted project cost and time plans;
  - (7) Written identification of the problems, conflicts or other perceived information/clarifying assumptions for the acknowledgment of the project manager;
  - (8) Report on Class 'D' Order of Magnitude Cost for each option.

## RS 1.2 Project Approach

### 1.2.1 Intent

1. A written statement which describes various criteria and data for a project including design objectives, site requirements and constraints, equipment and systems, and requirements. The purpose of this stage is to describe the requirements which must be met to satisfy the requirements of the project. The process seeks to answer the following questions:
  - (1) What is the nature and scope of the problem?
  - (2) What information is required to develop a proper engineering solution to the problem?
  - (3) How much and what type of construction is needed?
  - (4) What are the future requirements of this site

### 1.2.2 Scope and Activities

1. In preparing a functional program, the Consultant's main task is to examine the project/ site in detail so as to define the clients needs and objectives. These requirements will establish criteria for evaluating potential design solutions and other strategic alternatives.
2. The Consultant must understand:
  - (1) The impacts of the project on the environment;
  - (2) The social impacts of its program on the community;
  - (3) The impacts on the existing infrastructure;
  - (4) Long term maintenance requirements and operational needs.
3. The Consultant shall then develop approximate sketches and technical requirements for the proposed works including:
  - (1) Details for proposed works;
  - (2) Environmental criteria; (Note: It is not the intent of this Supply Arrangement to procure Environmental Assessment services from this Consultant. However, on many projects, environmental criteria, identified by others, may need to be incorporated into the design.)
4. The Consultant shall also advise Project Manager on alternatives, such as the engineering and financial implications of various options. The Consultant shall assist in assessing the advantages or benefits - and the disadvantages or costs - of each alternative.

### 1.2.3 Deliverables:

1. The final Project Review is a report including as a minimum:
  - (1) Site requirements;
  - (2) Explicit space requirements for the future of the site including:
    - b) Definition of the function of each type of infrastructure;
    - c) The functional relationships between different types of infrastructure or areas;
    - d) Site and sketch of the different infrastructures;
    - e) Special technical requirements of each of the items.
  - (1) Financial requirements and a preliminary "Order of Magnitude "Class 'D' budget;
  - (2) Scheduling and time frame for the project;
  - (3) Other requirements including:
    - f) Regulatory issues;
    - g) Other requirements from Authorities having Jurisdiction;
    - h) Community goals and concerns;
    - i) Ecological and environmental concerns.
  - (1) A recommended construction delivery method (traditional design-bid-build, design-build, construction management).

## RS 1.3 Implementation Strategy and Schedule

### 1.3.1 Intent

The purpose of this stage is to detail an implementation strategy to meet the project goals and objectives.

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### 1.3.2 Scope and Activities

The Consultant shall complete the following as a minimum:

1. Prepare a detailed implementation strategy that documents, in a report, all activities, milestones and deliverables required for the effective delivery of the project including time frames for submissions, reviews and approvals;
2. Prepare a project schedule that identifies, in a graphic format such as Critical Path Method (CPM) or Program Evaluation Review Technique (PERT), all activities, milestones including critical deadlines, long lead delivery items and drop dead dates, required for the effective delivery of the project deliverables, including time frames for submissions, reviews and approvals;
3. The Implementation Strategy and Schedule described above shall include as a minimum:
  - (1) Site Master Plan;
  - (2) Sequencing of project tasks including items not included as part of constructed works;
  - (3) Move sequencing;
  - (4) Client construction requirements ( i.e. Security and training, etc.);
  - (5) Construction strategy;
  - (6) Advise the Project Manager of any changes to the scope that may affect schedule or are inconsistent with instructions or written approvals previously given. The Consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding;
  - (7) Submit the Implementation Strategy and Schedule for review. Revise as required. Resubmit for final approval. The original approved schedule will become the "Baseline" schedule to monitor project progress;
  - (8) Throughout the project, monitor critical path and deadlines for submissions, revisions and approvals and as a minimum submit monthly updates.

### 1.3.3 Deliverables

1. Implementation strategy
2. Time Plan (Schedule)

## RS 1.4 Site Condition Reports and Performance Audits

### 1.4.1 Intent

1. The purpose of this stage is to evaluate a site in order to determine the most appropriate management strategy for the retention, maintenance and/or retrofit / renewal of the infrastructure in order to satisfy current and future client requirements.
2. The cyclical review of infrastructure consists of the performance of a range of major evaluation and analysis studied:
  - (1) Management Plans
  - (2) Condition Reports
  - (3) Performance Reviews
  - (4) Serviceability
3. The scope of these cyclical reviews provides, in general terms an examination of inventory performance in five major areas:
  - (1) Operational Performance
  - (2) Functional Performance
  - (3) Financial Performance
  - (4) Technical Performance
  - (5) Environmental Performance

### 1.4.2 Scope and Activities

#### 1.4.2.1 Project Start-up

A Start-Up Meeting will be held at the time and place to be determined by the Project Manager.

#### 1.4.2.2 Research Phase

This phase represents the site pre-inspection review of the existing documentation in order to confirm the range of information available and to identify any missing components or areas of concern which will require special attention during the next phase - Infrastructure review.

#### 1.4.2.3 Infrastructure review

1. The Consultant team will undertake a detailed review of the current performance conditions of the infrastructure with respect to:
  - (1) Operational, Functional, Technical and Financial Performance.
2. The Consultant team will review pertinent information provided on the current performance conditions of the infrastructure with respect to Environmental performance.
3. With respect to maintenance, the consultant will:
  - (1) assess the levels of maintenance with respect to infrastructure meeting its anticipated life cycle;
  - (2) ensure that maintenance is completed to a level so as to avoid failure that could impact on users;
  - (3) Ensure that systems are evaluated for maintenance and testing;
  - (4) The on-site review will be structured in such a manner as to identify and document the inter-relationship of the findings for each specific set of performance criteria as they are affected by other sets of criteria.

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### 1.4.2.4 Report Development

After inspections data is analyzed with respect to condition, remaining useful life, code compliance, condition descriptions, and their impact on the functionality of the asset, and priorities for intervention are established.

### 1.4.3 Deliverables

1. Content Plan: This section of the Terms of Reference outlines the format and minimum scope of review to be undertaken in the performance of this infrastructure condition study.
2. The format has been developed in order to provide a direct link with the development of a Site Management Plan and therefore must be strictly adhered to.
3. The content plan is divided into seven major divisions and appendices:
  - (1) Executive Summary;
  - (2) Project Framework/Introduction;
  - (3) Operational Performance;
  - (4) Functional Performance;
  - (5) Technical Performance;
  - (6) Environmental Performance;
  - (7) Infrastructure Components Summary Tables;
  - (8) Appendices:
    - b) Annual Inspections;
    - c) Serviceability;
    - d) Performance Audits;
    - e) Environmental Audit (prepared by others if/as appropriate);
    - f) Other Audits and Studies.

## RS 1.5 Infrastructure Evaluation & Recommendations Reports

### 1.5.1 Intent

The purpose of this stage is to identify and evaluate existing infrastructure including as a minimum civil infrastructure, mechanical and electrical equipment and all other infrastructure which will be utilized in the current and future operation of the site.

### 1.5.2 Scope and Activities

1. Prepare a detailed inventory of existing infrastructure and equipment found on the site. Include drawings identifying existing location, layout.
2. Based on parameters developed in conjunction with the Project Manager and the client department, prepare an evaluation report that assesses the condition of existing infrastructure and equipment. Assess the current inventory against the client department's functional requirements. Include an examination of the following:
  - (1) Reusing/refurbishing existing infrastructure and equipment; and/or
  - (2) Procuring/ constructing new infrastructure and equipment; and
  - (3) Current technologies and innovative solutions for the site;
  - (4) Prepare a detailed cost analysis that compares the reuse/refurbishment of existing infrastructure and equipment, with the purchase of new . Consideration should be given to cost effectiveness and time frames required for refurbishment of existing infrastructure and equipment and/or the procurement of new.

### 1.5.3 Deliverables

Submit report for review, revise as required and resubmit for final approval.

## RS 1.6 Engineering/ Geotechnical or Other Investigations

### 1.6.1 Intent

The purpose of this stage is to research and carry out all Geotechnical and Engineering investigations, as a minimum, to complete the requirements of the site or project.

### 1.6.2 Scope and Activities

1. Conduct investigations to obtain the required information, as a minimum Geotechnical and Engineering, to prepare and carry out the activities necessary to establish the required infrastructure for the site or project.
2. Prepare report on each investigation clearly describing what information was required, why it was required and what the results were.

### 1.6.3 Deliverables

Submit report for review, revise as required and resubmit for final approval.

## RS 1.7 Environmental Protection Requirements

### 1.7.1 Intent

The purpose of this stage is to outline the requirements for discharge off site, erosion control and water management, environmental protection, waste management and permitting.

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### 1.7.2 Scope and Activities

1. Prepare a report that identifies environmental protection requirements and make appropriate recommendations.
2. Prepare requirements for a water management, waste management and environmental protection plans for construction and post construction stages.

### 1.7.3 Deliverables

Submit report for review, revise as required and resubmit for final approval.

## RS 1.8 Order of Magnitude Class 'D' (Indicative) Cost Reports

### 1.8.1 Intent

The purpose of this stage is to provide an indication of the total cost of the project, based on the user's functional requirements to the degree known at the time. It is based on historical cost data for similar work, suitably adjusted for such factors as: effect of inflation, location, risk, quality, size and time. All related factors affecting cost are considered to the extent possible. Such an estimate is strictly an indication (rough order of magnitude) of the project total cost and completion date. This estimate is used to establish the indicative estimate required by Treasury Board for Preliminary Project Approval. Expected degree of accuracy: 20%.

### 1.8.2 Scope and Activities:

1. **Cost Planning:** Specific tasks include as a minimum:
  - (1) Prepare cost plans from project briefs, preliminary concepts or other preliminary information;
  - (2) Prepare cost analysis;
  - (3) Prepare option analysis and "what if" scenarios;
  - (4) Provide advice and recommendations on project planning in order to achieve the most cost effective project sequence;
  - (5) Identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts;
  - (6) Advise on alternative procurement and construction strategies to create efficiencies wherever possible;
  - (7) Identify, forecast and analyze project-related issues including possible market shortages and potential price fluctuations.
2. **Cost Estimating:** Develop cost estimates of projects:
  - (1) Prepare order of magnitude Class 'D' cost estimates; and be prepared to further develop the cost estimate to level Class 'A' ready for tender.
  - (2) Quantify design and construction costs, contingencies and risks;
  - (3) Prepare and investigate costing alternatives to assist in the identification of the most cost-effective design and/or construction approach; Investigate and report on life-cycle costs;
  - (4) Document all unit pricing, analysis, and valuation.

### 1.8.3 Deliverables

1. **Cost Planning**
  - (1) Cost plans;
  - (2) Cost analyses and "what if" scenarios;
  - (3) Cash flows; and / or
  - (4) Reports on alternative procurement and construction strategies or other project-related issues.
2. **Cost Estimating**
  - (1) Fully detailed cost estimate. Order of magnitude Class 'D' accuracy; and be prepared to further develop the cost estimate to level "A" ready for tender.
  - (2) Documentation of the methodology of the estimate and any assumptions made;
  - (3) Documentation of all pricing and valuation calculations;
  - (4) Reports on investigation of costing alternatives; and / or
  - (5) Reports on life-cycle costs.

## RS 1.9 Hydrology and Drainage Structure Sizing Design

### 1.9.1 Intent

A study of the local hydrology to assess the requirements for drainage structure design.

### 1.9.2 Scope and Activities:

To review and summarize aspects of drainage requirements for a project and to calculate the structure type and sizing requirements.

### 1.9.3 Deliverables

A detailed engineering design of drainage structures for each project requirement and a report that outlines the basis for structure sizing and location.

## RS 1.10 Regulatory Issues

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### 1.10.1 Intent

To confirm that all design meets all requirements as set forth by code and regulatory authorities having jurisdiction.

### 1.10.2 Scope and Activities:

To attend meetings for discussion purposes of any design issues and to resolve any design issues.

### 1.10.3 Deliverables

Plans and specifications compliant with necessary requirements meeting regulatory and code requirements.

## RS 2.0 CONCEPT DESIGN

### 2.1 Intent

To translate the project requirements into preliminary design to explore design options and analyze them with respect to priorities and program objectives previously identified. Out of this process, one option will be recommended to proceed to Design Development.

### 2.2 Scope and Activities:

1. Obtain written approval from Project Manager for development of schematic design options based on the analysis of the Project Brief;
2. Provide alternative design options exploring possible technical and environmental strategies which are viable and have potential for development;
3. Analyze each solution with regard to the project goals including cost and schedule;
4. Write a preliminary project-description report outlining the various components and system options;
5. Incorporate the findings of environmental assessment and Canadian Environmental Assessment Act (CEAA) Screening Report (prepared by others), if required/requested;
6. Minimize the use of hazardous/toxic materials and products made from endangered or rare species (i.e. tropical hardwoods);
7. Recommend one option for further development with all supporting background and technical justifications;
8. Produce a Class 'C' cost estimate for the various options; and be prepared to further develop the cost estimate to level Class 'A' ready for tender.
9. Produce an implementation schedule, including alternative procurement and construction strategies.

### 2.3 Deliverables

10. Schematic Design Drawings;
11. Site plan showing proposed works, existing infrastructure, existing and proposed services and fit within surrounding context;
12. Description of the options with recommendation of preferred solution;
13. Waste Management plan
14. Project specification amendment;
15. Plan to incorporate the recommendations of decisions for the CEAA (prepared by others), if required/requested;
16. Cost Plan, including cost analysis, "what if" scenarios, potential risks, alternative procurement and construction strategies;
17. Class 'C' Cost Estimate, including methodology of the estimate, assumptions made, costing alternatives and life cycle costs. Document all unit pricing, analysis, and valuation
18. Prepare project master schedule and identify potential risks to schedule;
19. Report on deviation from schedule and recommend corrective measures or updated time line.

## RS 3.0 DESIGN DEVELOPMENT

### 3.1 Intent

To further develop one of the options presented at the Concept Design stage. The Design Development documents consist of drawings and other documents to describe the size and character of the entire project as to engineering, structural, environmental, mechanical and electrical systems, materials and such other elements as may be appropriate.

### 3.2 Scope and Activities:

20. Obtain written approval from Project Manager for development of one of the proposed concept design options;
21. If any alterations are demanded, document all required changes, analyze the impact on all project components, and resubmit for approval if required;
22. Expand and clarify the Concept Design intent for each design discipline;
23. Present the design materials to the client, design review or other committees as indicated by the project manager;
24. Present the design to the government or local authorities where required;
25. Ensure coordination of all disciplines' design development;
26. Analyze the constructability of the project and advise on the construction process and duration;
27. Based on all material available at the time, prepare a milestone schedule for the consideration with special attention to the impact on tenants;
28. Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project;
29. Define Commissioning Requirements;

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30. Provide a list of all NMS sections to be used, complete with a full draft specification, catalogue cuts and sustainable development/green choices.

### 3.3 Deliverables

1. Plans for all works, including all disciplines, showing all infrastructure. Indicating all key dimensions;
2. Preliminary works plans and plans for site preparation;
3. Engineering plans and details.
4. Elevations;
5. Site models as required;
6. Outline specifications for all systems and principle components or equipment;
7. Updated cost plan and cash flow;
8. Class 'B' (substantive) cost estimate showing changes from Class 'C' (indicative) cost estimate
9. Update time plan (Schedule) with highlighted changes to the time plan;
10. Preliminary construction schedule including long term delivery items;
11. Project dossier detailing the basic assumptions of the project and the justifications for all major decisions;
12. Prepare a Commissioning Brief describing major commissioning activities which include, as a minimum, civil, mechanical, electrical, municipal and integrated system testing;
13. Updated sustainable development strategy report.

## RS 4.0 CONSTRUCTION DOCUMENTS

### 4.1 Intent

14. Based on approved Design Development documents, the Consultant is required to prepare drawings and specifications setting forth in detail the requirements for the final cost estimate and construction of the project.
15. To prepare drawings and specifications setting forth in detail the requirements for the construction and final cost estimate of the project.
- (1) 33% indicates technical completeness of all working documents;
  - (2) 66% indicates substantial technical development of the project - well advanced engineering and engineering plans, details, schedules and specifications;
  - (3) 99% is the submission of complete Construction Documents ready for tender call and submission to local authorities for pre-permit purposes;
  - (4) Develop project specific Systems Operations Manual (SOM);
  - (5) Final Submission incorporates all revisions required in the 99% version and is intended to provide PWGSC with complete construction documents for tender call.

### 4.2 Scope and Activities:

**Activities are similar at all three stages; completeness of the project development should reflect the stage of a submission.**

- (1) Obtain Project Manager's approval for Design Development submissions (33%, 66%, 99% and Final)
- (2) Requirements pertaining to such elements as format, type, content, number of copies, etc. For the preparation and submission of Construction Documents are presented in PA 1 and in Doing Business.
- (3) Confirm format of drawings and specifications;
- (4) Clarify special procedures (i.e. phased construction);
- (5) Submit drawings and specifications at the required stages. (33%, 66%, 99%);
- (6) Provide written response to all review comments and incorporate them into Construction Documents where required;
- (7) Advise as to the progress of cost estimates and submit updated cost estimates as the project develops;
- (8) Update the project time plan (schedule);
- (9) Prepare a final Class 'A' (substantive) estimate;
- (10) Review and approve materials and construction processes specifications to meet sustainable development objectives.

### 4.3 Details

1. Technical and Production Meetings
  - (1) Production of construction documents at the 33%, 66%, and 99% submissions will be reviewed during the meetings arranged by Project Manager and Consultant;
  - (2) Representatives from Client Department(s) and PWGSC support staff will be present as arranged by the Project Manager;
  - (3) Consultant shall ensure that their staff and the sub-consultant representatives attend the technical and production meetings as required;
  - (4) Consultant shall ensure all documents are coordinated with all sub-consultants and disciplines;
  - (5) Consultant shall arrange for all necessary data, progress prints, etc.;
  - (6) Consultant shall prepare minutes of the meetings and distribute copies to all participants.
2. Progress Review
  - (1) As work progresses on construction drawings, submit, from each discipline, drawings, schedules, details, pertinent design data and updated Cost Plan and Project Schedule as required.

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### 4.4 Deliverables

3. Deliverables are similar at all three stages; completeness of the project development should reflect the stage of a submission.
4. 99% Submission:
  - (1) Complete specification and working drawings.
  - (2) 99% Commissioning plan and Systems Operations manual
  - (3) One copy of site information, soil investigation report, borehole logs, etc.
  - (4) One copy of support data, studies, calculations, etc., required by Engineering disciplines for final checking and record.
  - (5) One copy of updated Cost Plan and Project Schedule
5. Final Submission:
  - (1) This submission incorporates all revisions required by the review of the 99% submission. Provide the following:
    - b) Ten complete sets of originals of the working drawings.;
    - c) Ten sets of original specifications;
    - d) Class 'A' estimate;
    - e) Complete Commissioning Plan;
    - f) Complete Systems Operations Manual;
    - g) As a safeguard against loss or damage to the originals, retain a complete set of drawings in reproducible form and one copy of specification;
    - h) Inspection Authorities Submission;
    - i) Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call.

## RS 5.0 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

### 5.1 Intent

To assist in obtaining and evaluating bids from qualified contractors to construct the project as per the Tender Documents.

### 5.2 Scope and Activities:

1. Tender Call
  - (1) The Project Manager shall be responsible for the production of the required number of copies of the Tender Documents and for such other documents as are necessary for tender call purposes.
  - (2) The Consultant shall:
    - b) Prepare, sign, seal and submit complete sets of approved tender-ready, Construction Drawings and Specifications to the Project Manager. Requirements pertaining to number and types of copies of Construction Drawings and Specifications are outlined below under PA 1.
    - c) Provide the Project Manager with all information required by tenderers to fully interpret the Construction Documents. The Contracting Authority will issue the addenda to all participants.
    - d) Attend tenderers briefing meeting(s) (i.e. Job Showing), upon request
    - e) Prepare addenda based on questions arising in such meetings for issue by the Contracting Authority. The Contracting Authority will issue the addenda to all participants; and
2. Bid Evaluation and Construction Contract Award
  - (1) The Consultant shall, as a minimum, assist tender evaluation by providing advice on such elements as;
    - b) The completeness of tender documents in all respects;
    - c) The technical aspects of the tenders;
    - d) The effect of alternatives and qualifications which may have been included in the tender;
    - e) The tenderers capability to undertake the full scope of work;
    - f) The availability of adequate equipment to carry out the work;
    - g) Examine and report on any cost and schedule impact created by the issue of tender / contract addenda.
  - (1) If PWGSC decides to re-tender the project, provide advice and assistance to the Project Manager;
  - (2) Revise and amend, at your cost, the construction documents to bring the cost of the work within the limits stipulated.

### 5.3 Deliverables

1. Originals of drawings and specifications;
2. Electronic copies of drawings and specifications;
3. Addenda where needed;
4. Full notes of all inquiries, and related correspondence, during the bidding period;
5. Changes to the documents, if re-tendering is necessary;
6. Updated cost estimate or schedule;
7. Submission Requirements for Construction Drawings and Specifications;
8. Provide three (3) complete sets of approved Construction Drawings as follows:
  - (1) One (1) hard copy, signed and sealed; and
  - (2) Two (2) electronic copies (one in native format and one in PDF format);
9. Provide three (3) sets of approved Construction Specifications as follows:
  - (1) One (1) hard copy properly bound and covered;and

## TEMPLATE Request for Proposal for a Medium Complexity requirement

- (2) Two (2) electronic copies (one in native format and one in PDF format).
- 10. The electronic true copy of drawings and specifications is for tendering purposes only and do not require to be signed and sealed.
- 11. The original signed and sealed hard copy of drawings and specifications will be the version used by the successful contractor for construction and building permit purposes.
- 12. Electronic Versions of Construction Drawings and Specifications
  - (1) Electronic true copy of the final submission drawings and specifications on one or multiple CD-ROM in Portable Document Format (PDF) in accordance with Doing Business. The PDF files should to the greatest extent possible be derived from the native software in which they were created and must not have any password protection and printing restrictions.

### RS 6.0 CONSTRUCTION & CONTRACT ADMINISTRATION & POST CONSTRUCTION WARRANTY REVIEW

#### 6.1 Intent

To ensure the implementation of the project in compliance with the Contract Documents and to direct and monitor all necessary or requested changes to the scope of work during construction.

#### 6.2 Scope and Activities:

- 1. During the implementation of the project, act on PWGSC's behalf to the extent and scope noted in the request;
- 2. Carry out the review of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents;
- 3. Attend site and or job meetings as required;
- 4. Keep Project Manager informed of the progress and quality of the work and report any defects or deficiencies in the work observed during the course of the site review;
- 5. Ensure compliance with Commissioning Plan, update plan as necessary;
- 6. Determine the amounts owing to the Contractor based on the progress of the work and certify payments to the contractor for approval;
- 7. Act as interpreter of the requirements of the Contract Documents;
- 8. Provide cost advice during construction;
- 9. Advise the Project Manager of all potential changes to scope, schedule and cost, for the duration of the implementation;
- 10. Review the Contractor's submittals;
- 11. Prepare and justify change orders for issue by the Departmental Representative;
- 12. Indicate any changes or material/equipment substitutions on Record Documents;
- 13. During the twelve (12) month warranty period investigate all defects and alleged defects and issue instructions to the Contractor;
- 14. Prepare and post Systems Operating Instructions;
- 15. Assist in commissioning activities as requested;
- 16. Finalize Systems Operations Manual;
- 17. Conduct a final warranty review and coordinate as built of the final work.;

#### 6.3 Deliverables

- 1. Written reports from site visits including persons involved;
- 2. Written reports on the progress of the work and the cost of the project at the end of each month;
- 3. Additional detail drawings when required to clarify, interpret or supplement the Construction; Documents
- 4. Post contract drawings (As-Built Drawing);
- 5. Interim or Final certificates;
- 6. Debrief of Commissioning Activities;
- 7. As built records;
- 8. Warranty deficiency list;
- 9. Report on Final Warranty Review;

### RS 7.0 RISK MANAGEMENT (ALL STAGES)

#### 7.1 Intent

The consultant is to provide support to the Project Manager in identifying risks throughout the project life cycle.

#### 7.2 Scope and Activities:

- 1. Identify risk events based on past experience and using proposed checklist or other available lists;
- 2. Qualify/quantify probability of risk event (Low, Medium, High) and their impact (Low, Medium, High);
- 3. Prioritize risk events (i.e. concentrate efforts on risk events with High probability and Medium to High impact);
- 4. Develop risk response (i.e. evaluate alternatives for mitigation. This is the real added-value of risk management); and
- 5. Implement risk mitigation.

#### 7.3 Deliverables

- 1. Prepare Risk Management Reports at Design Development, 66% Design Documents, and 100% Design Documents stages;

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2. Include input from all sub-consultants, and from Client;
3. Take steps to implement risk mitigation. This includes as a minimum further recommendations, analysis, investigations, site meetings and site supervision.

### RS 8.0 SUPPORT SERVICES

#### 8.1 ESTIMATING AND COST PLANNING

##### 8.1.1 Cost Specialist: (where required by project scale/scope and as outlined in the call-up).

1. Delivering projects on time and within budget is a high priority. A fully qualified cost estimating, cost planning and cost control resource(s), referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on construction projects may be required. This Cost Specialist will be conversant with all aspects of construction cost estimating during the design stages including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.
2. The purpose of cost planning and cost control is to assist in the accomplishment of project cost objectives. It is a continuous and interactive process involving planning, action, measurement, evaluation and revision.

##### 8.1.2 Scope of Services

3. The Cost Specialist shall provide an interactive and continuous cost consulting service from the commencement of project design through to construction completion and subsequent evaluation, including the preparation of complete estimates for all construction trades, escalation, inflation and contingency costs, as noted in the previous RS sections.
4. The Cost Specialist shall provide a cost advising, and cost monitoring/reporting service.
5. The Cost Specialist shall attend all relevant project and production meetings throughout the design phases and be prepared to present and defend the estimates directly to the Project Manager.

##### 8.1.3 Cost Estimate and Planning Report

6. The Cost Specialist is to provide continuous cost monitoring, timely identification and early warning of all changes that affect or potentially affect the estimated construction costs of the project.
7. If the estimate falls short of or exceeds the Construction Cost Limit due to such changes, the Cost Specialist with the Consultant team shall fully advise the Project Manager. The Cost Specialist with the Consultant team shall propose alternative design solutions.
8. An Cost Estimate and Planning Report will include sufficient description and cost detail to clearly identify:
  - (1) Scope Change: Identifying the nature, reason and total cost impact of all identified and potential project scope changes affecting Construction Cost Estimate;
  - (2) Cost Overruns and Under runs: Identifying the nature, the reason and the total cost impact of all identified and potential cost variations;
  - (3) Options Enabling a return to the Construction Cost Estimate: Identifying the nature and potential cost effects of all identified options proposed, in order to return the project within the Construction Cost Estimate.

##### 8.1.4 Responsibilities

PWGSC will review all aspects of the Cost Specialist's work on a continuing basis to determine the validity and completeness of the information provided. In the event areas of concern are identified, including errors and omissions as well as areas of inadequate detail or areas that require further explanation, the Cost Specialist shall re-examine the estimates provided and make such revisions as are subsequently agreed to be necessary and/or provide ample acceptable evidence that such corrections or amendments are unnecessary.

##### 8.1.5 No Action Abrogates Consultant's Responsibilities

9. No acceptance or approval by PWGSC, whether expressed or implied, shall be deemed to relieve the Cost Specialist, or the Consultant, of professional or technical responsibility for the estimates and cost reports.
10. Neither does acceptance of an estimate by PWGSC in any way abolish the Consultant's responsibility to maintain the specified Construction Cost Limit throughout the life of the project, or the requirement to redesign should the lowest acceptable bid differ significantly from the agreed Construction Cost Plan, unless and until the Project Manager indicates otherwise in writing.

#### 8.2 Surveying

##### 8.2.1. Intent

To have adequate survey control for design purposes or during construction.

##### 8.2.2 Scope and Activities

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To provide survey personnel and necessary equipment to conduct all necessary surveys and survey information required for design purposes. If required, services during construction provide personnel and equipment necessary for construction contract survey purposes.

### 8.2.3 Deliverables

Complete survey plans consistent with design requirements to be supplied in digital format.

### 8.3 Materials Testing

#### 8.3.1 Intent

To procure materials testing services during construction, including the testing of placed materials such as backfill soils and gravels.

#### 8.3.2 Scope and Activities

To provide materials testing services, equipment and personnel on an as required or as specified basis to conduct testing of materials: at source, as samples submitted by the Contractor, and as placed in-situ, to make sure that the materials and the construction and/or placement methods are in accordance with the contract drawings and specifications.

#### 8.3.3 Deliverables

Materials testing reports and, if required/requested, recommendations for removal and /or remediation of non-conforming materials.

### 8.4 RESIDENT CONSTRUCTION SERVICES

#### 8.4.1 Intent

1. The intent of the provision of Resident Construction Service is to implement the project in compliance with the Construction Contract Documents and to ensure construction contractor compliance with their contract. The Consultant shall provide a Resident Construction Services Representative for the duration of the construction contract stage.
2. The purpose of the Resident Construction Services Representative is responsible to:
  - (1) ensure the presence of the Consultant on site for the project;
  - (2) to inspect, coordinate and monitor all aspects of the work during key periods of the construction of the facility, and liaise with the contractor, Public Works And Government Services Canada and other agencies as appropriate to the work;
  - (3) to provide resident inspection during key periods of construction work and maintaining records of all construction work placed on behalf of the design engineer and Project Manager;
  - (4) ensure that a sufficient level of communication is maintained with the Project Manager, Consultant, Contractor and any other organization applicable to the construction and construction contract administration of the individual detachment construction contract.
3. Resident Construction Services Representative(s) should:
  - (1) be a registered Professional Engineer or be eligible for registration in the Province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador; or
  - (2) be a registered Certified Engineering Technologist or be eligible for registration in the province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador; or
  - (3) be a registered Certified Engineering Technician or be eligible for registration in the province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador;
  - (4) Other combinations of education and experience will be considered considering the requirements and complexity of the service(s) required.
4. The Resident Construction Services Representative shall:
  - (1) be directly responsible to the Consultant;
  - (2) become thoroughly familiar with all pertinent documents for the construction including as a minimum the National Building Code. They shall be aware of all Federal, Provincial and Municipal standards for the health and safety of construction workers;
  - (3) become thoroughly familiar with the requirements of the Consultant Project Brief and project responsibilities of others which relate to these services;

#### 8.4.2 Scope and Activities

##### 1. General

- (1) The Resident Construction Services Representative's service shall commence on the date the contractor physically mobilizes on a site and finish on the date of Certificate of Substantial Performance unless otherwise stated by the Project Manager.
- (2) The Consultant shall be responsible to distribute and assign the Construction Services Representative in such a manner that the intent of these services, as stated above is assured. The consultant shall ensure, via his planned

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allotment of the Construction Services Representative's time, that quality assurance is maintained and that all critical aspects of the work by the construction contractor's forces occur in the presence of the Resident Construction Services Representative.

- (3) The Consultant shall, prior to the construction contract tender of the facility provide Detail Project Schedule, identifying the key stages of construction and the planned allotment of hours when the Resident Construction Services Representative shall be on site.
    - (4) The PWGSC representatives may, at their discretion, request additional amounts and/or less amounts of services of the Resident Construction Services Representative. Those additional and/or reduced services shall be calculated utilizing the hourly rate identified by the Consultant.
2. Duties and Responsibilities
  - (1) Provide Resident Construction Services including inspection, coordination and monitoring during the construction work and be responsible to the Consultant.
  - (2) Maintain daily records, while on site, of all construction work placed and ensure constant communication amongst Project Manager, the Consultant and Contractor.
  - (3) The Consultant shall ensure that the Resident Construction Services Representative maintains, records and submits time sheets. The Consultant shall forward time sheets of the Resident Construction Services Representative to Project Manager after verifying accuracy and approving. The Consultant shall submit reviewed and approved time sheets to the Project Manager, within two weeks after completion of 40 hours of service by the Resident Construction Services Representative, for review.
3. Inspection and Reporting
  - (1) The Resident Construction Services Representative shall:
    - b) inspect all phases of the work in progress, for the purpose of bringing to the attention of the Contractor, after checking with the Consultant, and Project Manager any discrepancies between the work, the contract documents and accepted construction procedures;
    - c) keep a daily log of such inspections and issue a weekly written report to the Consultant in the form directed.
  - (1) The Consultant shall review and approve weekly reports prior to distribution to the Departmental Representative (Project Manager). Reports shall be distributed within five (5) working days of the reports week ending date.
  - (2) The Resident Construction Services Representative shall make any other reports or surveys as may be requested by the Project Manager through the Consultant.
4. Interpretation of the Contract Documents
  - (1) Interpretation of the contract documents shall be the responsibility of the Consultant. The Consultant may, however, have the Resident Construction Services Representative provide him with information regarding job conditions and may require him to relay day-to-day instructions to the Contractor.
  - (2) It shall be the duty of the Resident Construction Services Representative to assist the Consultant and further inform the Consultant of any anticipated problems which may delay the progress of the work. The method of relaying such information shall be determined by the Consultant.
5. Changes in the Work
  - (1) The Resident Construction Services Representative shall not authorize or order any change in the work which will constitute a change in design or in the value of the contract except as delegated by the Project Manager.
  - (2) The Consultant may call upon the Resident Construction Services Representative to assist in the evaluation of changes in the work, where a knowledge of job conditions is required.
6. Communication and Liaison

The Resident Construction Services Representative shall:

  - (1) Convey the Consultant's instructions regarding the required standards of workmanship to the Contractor(s);
  - (2) Check specifications, confer and obtain guidance on these findings with the Consultant. The matter is then to be brought to the attention of the Contractor's Superintendent. Although informal discussions with Sub-trade Superintendents are usually permissible, (but only with the agreement of the Contractor), the Resident Construction Services Representative should not deal directly with foreman or tradesmen, or interfere with the progress of the work;
  - (3) Communicate formally with the Contractor via memorandum form only. When this form is issued the Resident Construction Services Representative must immediately file copies with PWGSC and the Consultant;
  - (4) Contact the Consultant immediately when it is apparent that information or action is required of the Consultant, e.g. general instructions, clarifications, sample of shop drawing approvals, requisitions, contemplated change orders, site instructions, details, drawings, etc.;

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- (5) Accompany PWGSC representatives on inspections and report to the Consultant requirements, comments or instructions of PWGSC's forces. Note that the Resident Construction Services Representative should encourage such requirements, comments or instructions to be provided to him in writing;
  - (6) Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor and immediately report these to the Consultant with comments;
  - (7) Ensure that PWGSC and the Consultant are notified promptly when key pieces and/or components of materials and equipment are delivered, so that these parties can arrange for the appropriate personnel to have an opportunity to inspect same prior to installation.
7. Inspection of the Work
- (1) The Resident Construction Services Representative shall make on site observations and spot checks of the work to determine whether the work, materials and equipment conform with the contract documents and supplementary conditions. The Resident Construction Services Representative shall advise the Contractor of any deficiencies or unapproved deviations via memorandum and report immediately to the Consultant and Project Manager any of these on which the Contractor is tardy or refuses to correct.
  - (2) The Resident Construction Services Representative shall arrange for the Consultant's architectural, structural, mechanical, electrical and other consultants to make the periodic inspections required by the Consultant's contract, and for these inspections to be made timely with respect to the progress of the work.
  - (3) The Resident Construction Services Representative shall also report if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.
  - (4) The Resident Construction Services Representative shall assist in the preparation of all deficiency reports, interim, preliminary, and final, in collaboration with the PWGSC and Consultant's representatives.
  - (5) The Resident Construction Services Representative shall be responsible for the measurement of all work to be done by the Contractor
8. Site Meetings
- The Resident Construction Services Representative shall attend and participate in all job-site meetings held during key periods of construction.
9. Inspection and Testing
- (1) The Resident Construction Services Representative must see that the tests and inspections required by the contract documents are conducted, and should observe these tests and report the results in the daily log.
  - (2) The Consultant should be notified if the test results do not meet the specified requirements, or if the Contractor does not have tests undertaken as required.
10. Emergencies
- (1) In the case of emergency where safety of persons or property is concerned or work is endangered, to safeguard the interests of PWGSC, the Resident Construction Representative shall give immediate written notice and verbal contact to PWGSC of the possible hazard.
11. Limitations
- The Resident Construction Services Representative shall not:
- (1) Authorize deviations from the contract documents;
  - (2) Approve shop drawings or samples unless requested by project manager for project use;
  - (3) Accept any work or portions of the build works;
  - (4) Enter into the area of responsibility of the Contractor.
12. Hazardous Construction Operations
- The Resident Construction Services Representative is to communicate regularly with the Construction Safety Professional regarding any issues of site safety. All safety related issues must be forwarded immediately to the Safety Professional, as well as the Project Manager.
13. Equipment Required and Provided by Consultant
- (1) Costs of all equipment required shall be covered in the quoted fixed hourly rate. Equipment required shall include as a minimum:
    - b) Digital Camera;
    - c) Personal Protective Equipment;
    - d) Office Supplies required to perform services;
    - e) Cell Phone or other acceptable means of communication;
    - f) Laptop computer.

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- (1) Provision of a site trailer and cover costs associated with same, including: fax machine and furniture will be supplied by construction Contractor.

### 8.4.3 Deliverables

1. Daily Log
  - (1) The Resident Construction Services Representative shall keep a daily log while on site. This will record the following;
    - b) weather conditions, particularly unusual weather relative to construction activities in progress;
    - c) major material and equipment deliveries;
    - d) daily activities and major work done;
    - e) number of workers on site (full day or part day) and trade represented;
    - f) start, stop or completion of activities;
    - g) presence of inspection and testing firms, tests taken, results, etc.;
    - h) unusual site conditions experienced;
    - i) significant developments, remarks, etc.;
    - j) special visitors on site;
    - k) authorities given Contractor to undertake certain or hazardous works;
    - l) Environmental, Safety or other notable incidents;
    - m) reports, instructions from Appropriate Authorities Response Actions.
  - (1) Based on site/ project specific conditions, the items recorded may expand or be reduced. The log is the personal property of the Resident Construction Services Representative. Copies of the log book, certified as copies, are to be provided at the end of the project.
2. Weekly Records
  - (1) The Resident Construction Services Representative shall prepare weekly reports for the Consultant in the form directed:
    - b) progress relative to schedule;
    - c) major activities commencing or completed during the week; main activities now in progress;
    - d) major deliveries of materials and/or equipment;
    - e) difficulties which may cause delays in completion;
    - f) materials and labour needed immediately;
    - g) cost estimates of work completed and materials delivered (cost plus contracts);
    - h) outstanding information or action required by Consultant or PWGSC;
    - i) work force;
    - j) weather;
    - k) remarks;
    - l) accidents on site;
    - m) safety hazards caused by the work, the Contractor or his agents.
  - (1) The items may be expanded or reduced based on site/ project specific conditions.
3. Site Records
  - (1) The Resident Construction Services Representative shall maintain up to date files at the site for the use as follows:
    - b) Contract and Tender Documents;
    - c) Approved Shop Drawings;
    - d) Approved Samples;
    - e) Samples;
    - f) Site Instructions;
    - g) Contemplated Change Orders;
    - h) Change Orders;
    - i) Memoranda;
    - j) Test and Deficiency Reports;
    - k) Correspondence and Minutes of Meeting;
    - l) Names, addresses, telephone numbers of Client representatives, Consultant and all Contractors, sub-trades key personnel associated with the contract; including home telephone numbers in case of emergencies.
  - (1) The items may be expanded or reduced based on site/ project specific conditions.
  - (2) In addition, the Resident Construction Services Representative shall maintain an up to date progress schedule.

A reproduction of the original contract drawings shall be carefully preserved and shall be kept marked up to date with all addenda, change orders, site instructions, details, as-built conditions, etc., issued sub

## Doing Business

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### **Appendices**

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Appendix 'B'	Sample Addendum Format
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Appendix 'D'	User Manual on Directory Structure and Naming Conventions Standards for Construction Tender Documents on CDROM, dated May 2005
Appendix 'E'	Basic Reference Guide on Converting Construction Drawings into Portable Document Format (PDF), dated May 2005

## SECTION 1 INTRODUCTION

This document must be used in conjunction with the Terms of Reference (TOR), as the two documents are complimentary. The TOR describes project-specific requirements while this document deals with information common to all projects. In case of a conflict between the two documents, the requirements of the TOR override this document.

## SECTION 2 PWGSC NATIONAL CADD STANDARD

Drawings shall be in accordance with PWGSC National CADD Standards and Canadian Standards Association (CSA) B78.3.

Refer to:

<http://www.tpsgc-pwgsc.gc.ca/cadd-standards/text/index-e.html>

The above link is subject to change. The Consultant shall check with the Project Manager to ensure that the link and related information are current and relevant with regards to PWGSC National CADD Standards.

## SECTION 3 GUIDE TO PREPARATION OF CONSTRUCTION DOCUMENTS FOR PWGSC

### 1 Purpose

This document provides direction in the preparation of construction contract documents (namely specifications, drawings and addenda) for Public Works and Government Services Canada (PWGSC).

Drawings, specifications and addenda must be complete and clear, so that a contractor can prepare a bid without guesswork. Standard practice for the preparation of construction contract documents requires that:

- drawings are the graphic means of showing work to be done, as they depict shape, dimension, location, quantity of materials and relationship between building components.
- specifications are written descriptions of materials and construction processes in relation to quality, colour, pattern, performance and characteristics of materials, installation and quality of work requirements.
- Addenda are changes to the construction contract documents or tendering procedures, issued during the tendering process.

### 2 Principles of PWGSC Contract Documents

PWGSC's contract documents are based on common public procurement principles. PWGSC does not use Canadian Construction Document Committee (CCDC) documents.

The terms and conditions are prepared and issued by PWGSC as well as other related bidding and contractual documents. For information, the clauses are available on the following web site: <http://sacc.pwgsc.gc.ca/sacc/query-e.jsp>. Any questions should be directed to the Project Manager.

### 3 Quality Assurance

Consultants are required to undertake their own quality control process and must review, correct and coordinate (between disciplines) their documents before sending them to PWGSC.

## SPECIFICATIONS

### 1 National Master Specification

The National Master Specification (NMS) is a master construction specification available in both official languages, which is divided into 48 Divisions and used for a wide range of construction and/or renovation projects. In preparing project specifications, the Consultant must use the current edition of the NMS in accordance with the “NMS User’s Guide”.

The Consultant retains overriding responsibility for content and shall edit, amend and supplement the NMS as deemed necessary to produce an appropriate project specification free from conflict and ambiguity.

### 2 Specification Organization

Narrowscope sections describing single units of work are preferred for more complex work, however, broadscope sections may be more suitable for less complex work. Use either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full-page format.

Start each Section on a new page and show Project Number, Section Title, Section Number and Page Number on each page. Specification date, project title, and consultant’s name are not to be indicated.

### 3 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to" or "equivalent to", "to be determined on site by "Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

### 4 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

### 5 Standards

As references in the NMS may not be up to date, it is the responsibility of the consultant to ensure that the project specification uses the latest applicable edition of all references quoted. The following is a list of some of the Internet websites which provide the most current publications of standards for reference in the construction specification document.

- CSA standards: <http://www.csa.ca>
- CGSB standards: <http://www.pwgsc.gc.ca/cgsb>



- ANSI standards: <http://www.ansi.org>
- ASTM Standards: <http://www.astm.org>
- ULC standards: <http://www.ulc.ca>
- General reference of standards: <http://www.cssinfo.com>

The NMS website ([www.pwgsc.gc.ca/nms](http://www.pwgsc.gc.ca/nms)) also links to other documents references in the NMS under its "Links" feature.

## 6 Specifying Materials

The practice of specifying actual brand names, model numbers, etc., is against departmental policy except for special circumstances. The method of specifying materials shall be by using recognized standards such as those produced by Canadian Gas Association (CGA), Canadian General Standards Board (CGSB), Canadian Standards Association (CSA), and Underwriters' Laboratories of Canada (ULC), or by trade associations such as Canadian Roofing Contractors' Association (CRCA) and Terrazzo, Tile, Marble Association of Canada (TTMAC). Canadian standards should be used wherever possible.

If the above method cannot be used and where no standards exist, specify by a non-restrictive, non-trade name "prescription" or "performance" specifications.

In exceptional or justifiable circumstances or if no standards exist and when a suitable non-restrictive, non-trade name "prescription" or "performance" specification cannot be developed, specify by trade name. Include all known materials acceptable for the purpose intended, and in the case of equipment, identify by type and model number.

Acceptable Materials: set up the paragraph format as follows:

Acceptable Materials:

1. ABC Co. Model [\_\_\_\_\_].
2. DEF Co. Model [\_\_\_\_\_].
3. GHI Co. Model [\_\_\_\_\_].

Alternative materials to those specified may be considered during the solicitation period, however, the onus will be on the Consultant to review and evaluate all requests for approval of alternative materials.

The term "Acceptable Manufacturers" should not be used, as this restricts competition and does not ensure the actual material or product will be acceptable. A list of words and phrases that should be avoided is included in the NMS User's Guide.

Sole Sourcing: Sole sourcing for materials and work can be used for proprietary systems (ie. fire alarm systems, EMCS systems). **Substantiation and/or justification will be required.**

Wording for the sole source of work should be in Part 1 as:

"Designated Contractor

- .1 Hire the services of [\_\_\_\_\_] to do the work of this section."



Wording for the sole source of EMCS systems should be in Part 1 as

"Designated Contractor

- .1 Hire the services of [ ] or its authorized representative to complete the work of all EMCS sections."

and in Part 2 as "Materials

- .1 There is an existing [ ] system presently installed in the building. All materials must be selected to ensure compatibility with the existing [ ] system.

Wording for the sole source of materials (ie. fire alarm systems) should be in Part 2 as:

"Acceptable materials

- .1 The only acceptable materials are [ ] ."

Prior to including sole source materials and/or work, the Consultant should contact the Project Manager to obtain the approval for the sole sourcing.

## 7 Unit Prices

Unit prices are used where the quantity can only be estimated (eg. earth work) and the approval of the Project Manager must be sought in advance of their use.

Use the following wording:

[The work for this section] or [define the specific work if required, e.g. rock excavation] will be paid based on the actual quantities measured on site and the unit prices stated in the Bid and Acceptance Form.

In each applicable NMS section, replace paragraph title "Measurement for Payment" with "Unit Prices".

Sample of Unit Price Table:

The Unit Price Table designates the Work to which a Unit Price Arrangement applies.

- (a) The Price per Unit and the Estimated Total Price must be entered for each Item listed.  
(b) Work included in each item is as described in the referenced specification section.

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit GST/HST extra	Estimated Total Price GST / HST extra
<b>TOTAL ESTIMATED AMOUNT</b>						
<b>Transfer amount to subparagraph 1)(b) of BA03</b>						

## 8 Cash Allowances

Construction contract documents should be complete and contain all of the requirements for the





contractual work. Cash allowances are to be used only under exceptional circumstances (ie. utility companies, municipalities), where no other method of specifying is appropriate. Obtain approval from the Project Manager in advance to include cash allowances and then use "Section 01 21 00 - Allowances" of the NMS to specify the criteria.

## 9 Warranties

It is the practice of PWGSC to have a 12 month warranty and to avoid extending warranties for more than 24 months. When necessary to extend beyond the 12 month warranty period provided for in the General Conditions of the contract, use the following wording in Part 1 of the applicable technical sections, under the heading "Extended Warranty":

- "For the work of this Section [\_\_\_\_], the 12 month warranty period is extended to 24 months.
- Where the extended warranty is intended to apply to a particular part of a specification section modify the above as follows: "For [\_\_\_\_] the 12 month ... [\_\_\_\_] months."

Delete all references to manufacturers' guarantees.

## 10 Scope of Work

No paragraphs noted as "Scope of Work" are to be included.

## 11 Summary and Section Includes in Part -1 General of Section

Do not use "Summary" and "Section Includes."

## 12 Related Sections

In every section of the specification at 1.1 "Related Sections": coordinate the list of related sections and appendices. Ensure co-ordination among the sections of the specification and ensure not to reference any section or appendices which do not exist.

## 13 Index

List all the plans and specification sections with correct number of pages, section names and correct drawing titles in the format shown in Appendix A.

## 14 Regional Guide

The Consultant should contact the Project Manager to obtain the region's requirements for Division 01 or other short form specifications as might be appropriate. For example, it is required in the National Capital Region that regional Section 01 00 10 - General Instructions be used on all projects.

## 15 Health and Safety

It is required that all project specifications include "Section 01 35 29.06 - Health and Safety Requirements." Confirm with the Project Manager to determine if there are any instructions to meet regional requirements.

## 16 Designated Substances Report



Include "Section 01 14 25 - Designated Substances Report"

### **17 Subsurface Investigation Reports**

Subsurface Investigation Report(s) are to be included after Section 31 and the following paragraph should be added to Section 31:

Subsurface investigation report(s)

- .1 Subsurface investigation report(s) are included in the specification following this section.

When the Project Manager determines that it is not practical to include the subsurface investigation report(s), alternate instructions will be provided.

Where tender documents are to be issued in both official languages, the subsurface investigation report(s) shall be issued in both languages.

In addition to the provision of the Subsurface Investigation Report, the foundation information required by the National Building Code of Canada 2005 (Division C, Part 2, 2.2.4.6) shall be included on foundation drawings.

### **18 Experience and Qualifications**

Remove experience and qualification requirements from specification sections.

### **19 Prequalification and Pre-award submissions**

Do not include in the specification any mandatory contractor and/or subcontractor prequalification or pre-award submission requirements that could become a contract award condition. If a prequalification process or a pre-award submission is required, contact the Project Manager.

There should be no references to certificates, transcripts or license numbers of a trade or subcontractor being included with the bid.

### **20 Contracting Issues**

Specifications describe the workmanship and quality of the work. Contracting issues should not appear in the specifications. Division 00 of the NMS is not used for PWGSC projects.

Remove all references within the specifications, to the following:

- General Instructions to Bidders
- General Conditions
- CCDC documents
- Priority of documents
- Security clauses
- Terms of payment or holdback
- Tendering process
- Bonding requirements
- Insurance requirements

- Alternative and separate pricing
- Site visit (Mandatory or Optional)
- Release of Lien and deficiency holdbacks

## DRAWINGS

### 1 Title Blocks

Use PWGSC title block for drawings and sketches (including addenda).

### 2 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

### 3 Trade Names

Trade names on drawings are not acceptable. Refer to SECTION 3, SPECIFICATIONS, 6.0 Specifying Materials for specifying materials by trade name.

### 4 Specification Notes

No specification type notes are to appear on any drawing.

### 5 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to" or "equivalent to", "to be determined on site by "Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

### 6 Information to be included

Drawings should show the quantity and configuration of the project, the dimensions and details of how it is constructed. There should be no references to future work and no any information that will be changed by future addenda. The scope of work should be clearly detailed and elements not in contract should be eliminated or kept to an absolute minimum.

**7 Drawing Numbers:** Number drawings in sets according to the type of drawing and the discipline involved as follows (The requirements of SECTION 2 PWGSC NATIONAL CADD STANDARD will supercede these requirements, where warranted).

During the Design Phase of the project each submission and review must be noted on the Notes block of the drawing title, but at the time of construction document preparation, all revision notes should be removed.

Discipline	Drawing
Demolition	D1, D2, etc.
Architectural	A1, A2, etc.
Civil	C1, C2, etc.
Landscaping	L1, L2, etc.
Mechanical	M1, M2, etc.
Electrical	E1, E2, etc.
Structural	S1, S2, etc.
Interior Design	ID1, ID2, etc.

- 8 Presentation Requirements:** Present drawings in sets comprising the applicable demolition, architectural, structural, mechanical and electrical drawings in that order. All drawings should be of uniform standard size.
- 9 Prints:** Print with black lines on white paper. Blue prints are acceptable for document submissions at 33%, 66% and 99% stages. Confirm with Project Manager the size of prints to be provided for review purposes.
- 10 Binding:** Staple or otherwise bind prints into sets. Where presentations exceed 20 sheets, the drawings for each discipline may be bound separately for convenience and ease of handling.
- 11 Legends:** Provide a legend of symbols, abbreviations, references, etc., on the front sheet of each set of drawings or, in large sets of drawings, immediately after the title sheet and index sheets.
- 12 Schedules:** Where schedules occupy entire sheets, locate them next to the plan sheets or at the back of each set of drawings for convenient reference. *See CGSB 33-GP-7 Architectural Drawing Practices for schedule arrangements.*
- 13 North Points:** On all plans include a north point. Orient all plans in the same direction for easy cross-referencing. Wherever possible, lay out plans so that the north point is at the top of the sheet.
- 14 Drawing Symbols:** Follow generally accepted drawing conventions, understandable by the construction trades, and in accordance with PWGSC publications.

## ADDENDA

### 1 Format

Prepare addenda using the format shown in Appendix B. No signature type information is to appear.

Every page of the addendum (including attachments) must be numbered consecutively. All pages must have the PWGSC project number and the appropriate addendum number. Sketches shall appear in the PWGSC format, stamped and signed.

No Consultant information (name, address, phone #, consultant project # etc.) should appear in the addendum or its attachments (except on sketches).

### 2 Content

Each item should refer to an existing paragraph of the specification or note/detail on the drawings. The clarification style is not acceptable.

## DOCUMENTATION

### Translation

When required, all documentation included in the construction contract documents shall be in both official languages.

Ensure that English and French documents are equal in all respects. There can be no statement that one version takes precedence over the other.

### Consultant shall provide:

- Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- Index: as per Appendix 'C'
- Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- Drawings: reproducible originals, sealed and signed by the design authority.
- Tender information:
  - Including a description of all units and estimated quantities to be included in unit price table.
  - Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
  - Government Electronic Tendering System (MERX): Consultants to provide an electronic true copy of the final documents (specifications and drawings) on one or multiple CD-ROM in Portable Document Format (PDF) without password protection and printing restrictions. The electronic copy of drawings and

specifications is for bidding purposes only and do not require to be signed and sealed. See Appendix 'D' and Appendix 'E'.

**PWGSC shall provide:**

- General and Special Instructions to Bidders
- Bid and Acceptance Form
- Standard Construction Contract Documents

## SECTION 4 CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

### DESCRIPTION OF THE CLASSES OF ESTIMATES USED BY PWGSC FOR CONSTRUCTION COSTING OF BUILDINGS PROJECTS

#### **Class 'D' (Indicative) Estimate:**

Based upon a comprehensive statement of requirements, and an outline of potential solutions, this estimate is to provide an indication of the final project cost, and allow for ranking all the options being considered.

Submit Class D cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m<sup>2</sup> for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class D cost estimate shall be such that no more than a 20% contingency allowance is required.

#### **Class 'C' Estimate:**

Based on a comprehensive list of requirements and assumptions, including a full description of the preferred schematic design option, construction/design experience, and market conditions. This estimate must be sufficient for making the correct investment decision.

Submit Class C cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m<sup>2</sup> for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class C cost estimate shall be such that no more than a 15% contingency allowance is required.

#### **Class 'B' (Substantive) Estimate:**

Based on design development drawings and outline specifications, which include the design of all major systems and subsystems, as well as the results of all site/installation investigations. This estimate must provide for the establishment of realistic cost objectives and be sufficient to obtain effective project approval.

Submit Class B cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.



The level of accuracy of a class B cost estimate shall be such that no more than a 10% design contingency allowance is required.

**Class 'A' (Pre-Tender) Estimate:**

Based on completed construction drawings and specifications prepared prior to calling competitive tenders. This estimate must be sufficient to allow a detailed reconciliation/negotiation with any contractor's tender.

Submit Class A cost estimates in both elemental cost analysis format and trade divisional format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class A cost estimate shall be such that no more than a 5% design contingency allowance is required.

## SECTION 5 TIME MANAGEMENT

### 1 Time Management, Planning, and Control

The Time Management, Planning, and Control Specialist (scheduler) shall provide a Project Planning and Control System (Control System) for Planning, Scheduling, Progress Monitoring and Reporting and a Time Management, Planning, and Control Report (Progress Report). It is required that a fully qualified and experienced Scheduler play a major role in providing services in the development and monitoring of the project schedule.

The scheduler will follow good industry practices for schedule development and maintenance as recognized by the Project Management Institute (PMI).

PWGSC presently utilizes the Primavera Suite software and MicroSoft Project for its current Control Systems and any software used by the consultant should be fully integrated with these, using one of the many commercially available software packages.

#### 1.1 Schedule Design

Project Schedules are used as a guide for execution of the project as well as to communicate to the project team when activities are to happen, based on network techniques using Critical Path Method (CPM).

When building a Control System you must consider:

1. The level of detail required for control and reporting;
2. The reporting cycle- monthly and what is identified in the Terms of Reference, but also includes Exception Reports;
3. That the duration must be in days;
4. What is required for reporting in the Project Teams Communications Plan and
5. The nomenclature and coding structure for naming and reporting requirements of activities, schedules and reports.

#### 1.2 Schedule Development

For purposes of monitoring and reporting of project progress and ease of schedule review it is important to maintain a standard for all schedules and reports starting with the Work Breakdown Structure (WBS), identification of Milestones, naming of activities as well as schedule outputs and paper sizing and orientation.

## Work Breakdown Structure

When developing the schedule the consultant needs to use PWGSC standards and practices. Two basic requirements are the National Project Management System (NPMS) and a Work Breakdown Structure (WBS), structured supporting the NPMS (Levels 1-4).

The WBS is as follows:

- Level 1      Project Title (NPMS)
- Level 2      Project Stage (NPMS)
- Level 3      Project Phase (NPMS)
- Level 4      Processes to meet Deliverables/Control Points Milestones (NPMS)
- Level 5      Sub-Processes and Deliverables in support of Level 4
- Level 6      Discrete activities. (Work Package)

Not all the Stages, Phases and Processes in the NPMS will be required on all the projects, however the structure remains the same.

## Major and Minor Milestones

The Major Milestones are standard Deliverables and Control Points within NPMS and are required in all schedule development. These Milestones will be used in Management Reporting within PWGSC as well as used for monitoring project progress using Variance Analysis. The Minor milestones are process deliverables (Level 4) or sub-process deliverables (level 5) also used in Variance Analysis.

Each Milestone will also be assigned appropriate coding for Status Reporting and Management Reporting.

Milestones must have zero duration and are used for measuring project progress.

Milestones may also be external constraints such as the completion of an activity, exterior to the project, affecting the project.

## Activities

All activities will need to be developed based on Project Objectives, Project Scope, Major and Minor Milestones, meetings with the project team and the scheduler's full understanding of the project and its processes.

Subdivide the elements down into smaller more manageable pieces that organize and define the total scope of work in Levels 5-6 that can be scheduled, costed, monitored and controlled. This process will develop the Activity List for the project.

Each activity is a discrete element of work and is the responsibility of one person to perform.

Each activity will describe the work to be performed using a verb and noun combination (i.e. Review Design Development Report).

Activities should not have durations longer than 2 update cycles, with exception of activities not yet defined in a "Rolling Wave".

Each activity will be assigned at WBS level 6 and appropriately coded for Status Reporting and Management Reporting.

These elements will become activities, interdependently linked in Project Schedules.

### **Project Logic**

Once the WBS, Milestones and Activity List have been developed the activities and milestones can be linked in a logical manner starting with a Project Start Milestone. Every activity and milestone must be linked in a logical manner using either a Finish to Start (FS), Finish to Finish (FF), Start to Start (SS) or Start to Finish (SF) relationship. There can be no open-ended activities or milestones.

A Finish to Start (FS) is the preferred relationship.

When developing relationships avoid the use of lags and constraints in place of activities and logic.

### **Activity Duration**

The activity duration (in days) is the estimated length of time it will take to accomplish a task.

Consideration needs to be taken in how many resources are needed and are available, to accomplish any activity. (Example: availability of Framers during a "Housing Boom".) Other factors are the type or skill level of the available resources, available hours of work, weather etc.

There will be several types of lists and schedules produced from this process, which will form part of the Progress Report.

### **Activity List**

An Activity List identifies all activities including milestones required to complete the whole project.

### **Milestone List**

A Milestone List identifies all project Major and Minor milestones.

### **Master Schedule**

A Master Schedule is a schedule used for reporting to management at WBS level 4 and 5 that identifies the major activities and milestones derived from the detailed schedule. Cash Flow projections can be assigned at WBS level 5 for monitoring the Spending Plan.

### **Detailed Project Schedule**

A Detailed Project Schedule is a schedule in reasonable detail (down to WBS Level 6 and 7) for progress monitoring and control, this will ensure that the schedule shall be in sufficient detail to ensure adequate planning and control.

## **1.3 Schedule Review and Approval**

Once the scheduler has identified and properly coded all the activities; put them into a logical order and then determined the appropriate durations. The scheduler can then analyze the schedule to see if the milestone dates meet the contractual requirements and then adjust the schedule accordingly by changing durations, resource leveling or changing logic.

When the schedule has been satisfactorily prepared the scheduler can present the detailed schedule to the Project Team for approval and be Baselined. There may be several iterations before the schedule meets with the Project Teams agreement and the contractual requirements.

The final agreed version must be copied and saved as the Baseline to monitor variances for reporting purposes.

## **1.4 Schedule Monitoring and Control**

Once Baselined the schedule can be better monitored, controlled and reports can be produced.



Monitoring is performed by, comparing the baseline activities % complete and milestone dates to the actual and forecast dates to identify the variance and record any potential delays, outstanding issues and concerns and provide options for dealing with any serious planning and scheduling issues in report form.

Analyze and report from early start sequence on all activities due to start, underway, or finished for the complete project.

There will be several reports generated from the analysis of the baseline schedule and will form part of the Time Management Report in the Required Services Sections (RS)

### **Progress Reports**

A Progress Report reflects the progress of each activity to the date of the report, any logic changes, both historic and planned, projections of progress and completion the actual start and finish dates of all activities being monitored.

#### **The Progress Report includes:**

A Narrative Report, detailing the work performed to date, comparing work progress to planned, and presenting current forecasts. This report should summarize the progress to date, explaining current and possible deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

Narrative reporting begins with a statement on the general status of the project followed by a summarization of delays, potential problems and project status criticality, any potential delays, outstanding issues and concerns and options for dealing with any serious planning and scheduling issues.

A Variance Report, with supporting schedule documentation, detailing the work performed to date, comparing work progress to planned. This report should summarize the progress to date, explaining all causes of deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

A Criticality Report identifying all activities and milestones with negative, zero and up to five days Total Float used as a first sort for ready identification of the critical, or near critical paths through the entire project.

Included in the Progress Report as attachments are: WBS chart, Activity Lists, Milestone Lists, Master Schedules, Detailed Project Schedule

### **Exception Report**

The Scheduler is to provide continuous monitoring and control, timely identification and early warning of all unforeseen or critical issues that affect or potentially affect the project.

If unforeseen or critical issues arise, the Scheduler will advise the Project Manager and submit proposed alternative solutions in the form of an Exception Report.

An Exception Report will include sufficient description and detail to clearly identify:

1. Scope Change: Identifying the nature, reason and total impact of all identified and potential project scope changes affecting the project.
2. Delays and accelerations: Identifying the nature, the reason and the total impact of all identified and potential duration variations.
3. Options Enabling a Return to the project baseline: Identifying the nature and potential effects of all identified options proposed to return the project within baselined duration.

### **1.5 Standard Submissions**

At each submission or deliverable stage provide a complete and updated Progress Report, the contents of each report will vary with requirements and at each project phase. Typically a Progress Report has:

1. Executive Summary;
2. Narrative Report;
3. Variances Report;
4. Criticality Report;
5. Exception Report (as required)
6. Work Breakdown Structure Chart;
7. Activity List;
8. Milestone List;
9. Master Schedule with Cash Flow Projections;
10. Detail Project Schedule (Network Diagram or Bar Charts);

### **1.6 Schedule Outputs and Reporting Formats**

The sheet sizing and orientation is more a suggestion that a role, changes to the paper format may vary to accommodate the information and column information required.

## Progress Reports

Paper Size: Letter

Paper Format: Portrait

Title Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Body Text: Narratives for each report to match other reports generated in the D.S.S.

Variance Report Columns: Activity ID, Activity Name, Planned Finish, Revised Finish, Variance, Activity % Complete,

Criticality Report Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete, Total Float.

## Exception Reports

Paper Size: Letter

Paper Format: Portrait

Title Format: Project Title; Report Type; Print Date; Data Date; Revision

Body Text: Narrative to match other reports generated in the D.S.S.

Paper Size: Letter

Paper Format: Landscape

Title Format: Project Title; Report Type; Print Date; Data Date; Revision

Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float.

Work Breakdown Structure (indent tree):

Paper Size: Letter

Paper Format: Portrait

Columns: WBS Code, WBS Name, Duration, Cost estimate, start and finish dates.

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

## Activity Lists

Paper Size: Letter

Paper Format: Portrait

Columns: Activity ID, Activity Name, Start, Finish, Predecessor, Successor.

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

## Milestone Lists

Paper Size: Letter  
Paper Format: Portrait  
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block  
Columns: Activity ID, Activity Name, Start, Finish.

Sort with Early Start, then Early Finish, then Activity ID and without the WBS.

## Master Schedule (Bar Chart)

Paper Size: 11X17  
Paper Format: Landscape  
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block  
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish, Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

## Detailed Project Schedules (Bar Chart)

Paper Size: 11X17  
Paper Format: Landscape  
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block  
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish, Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

## APPENDIX 'A' - Checklist for the Submission of Construction Documents to PWGSC

Last updated April 22, 2008

<b>Date:</b>		
<b>Project Title:</b>	<b>Project Location:</b>	
<b>Project Number:</b>	<b>Contract Number:</b>	
<b>Consultant's Name:</b>	<b>PWGSC Project Manager:</b>	
<b>Review Stage:</b>		
66%	99%	100%

Item	Verified by:	Comments:	Action by:
<b>Specifications:</b>			
<b>1 National Master Specifications</b>			
<b>1a</b> The current edition of the NMS has been used.			
<b>2 Specification Organization</b>			
<b>2a</b> Either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full page format is used.			
<b>2b</b> Each Section starts on a new page and the Project Number, Section Title, Section Number and Page Number show on each page.			
<b>2c</b> Specification date and consultant's name are not indicated.			
<b>3 Terminology</b>			
<b>3a</b> The term Departmental Representative is used instead of Engineer, PWGSC, Owner, Consultant or Architect.			
<b>3b</b> Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by" are not used.			
<b>4 Dimensions</b>			
<b>4a</b> Dimensions are provided in metric			

only.			
<b>5 Standards</b>			
<b>5a</b> The latest edition of all references quoted is used.			
<b>6 Specifications Materials</b>			
<b>6a</b> The method of specifying materials uses recognized standards. Actual brand names and model numbers are not specified.			
<b>6b</b> Identify if non-restrictive, non-trade name “prescription” or “performance” specifications are used.			
<b>6c</b> Indicate if a list of acceptable materials have been used.			
<b>6d</b> The term “Acceptable Manufacturers” is not used.			
<b>6e</b> Indicate if sole sourcing has been used.			
<b>7 Unit Prices</b>			
<b>7a</b> Unit prices are used only for work that is difficult to estimate.			
<b>8 Cash Allowances</b>			
<b>8a</b> Indicate if cash allowances have been used.			
<b>9 Warranties</b>			
<b>9a</b> Indicate if warranties extend more than a 12 or 24 months period.			
<b>9b</b> Manufacturers guarantees are not indicated.			
<b>10 Scope of Work</b>			
<b>10</b> No paragraphs noted as “Scope of Work” are included.			
<b>11 Summary and Section Includes</b>			
<b>11a</b> In part 1 of section, paragraphs “Summary” and “Section Includes” are not used.			
<b>12 Related Sections</b>			
<b>12a</b> The list of related sections and appendices are coordinated.			
<b>13 Index</b>			
<b>13a</b> The index shows a complete list of plans and specification sections with the correct number of pages and correct drawing titles and section names.			
<b>14 Regional Guide Specifications</b>			

<b>14a</b> General Instructions is included (Section 01 00 10 in the NCA).			
<b>15 Health and Safety</b>			
<b>15a</b> Section 01 35 29.06 - Health and Safety Requirements is included.			
<b>16 Designated Substances Report</b>			
<b>16 a</b> Section 01 14 25 - Designated Substances Report is included.			
<b>17 Subsurface Investigation Reports</b>			
<b>17a</b> Subsurface Investigation Reports are included in Division 31.			
<b>18 Experience and qualifications</b>			
<b>18a</b> Experience and qualification requirements do not appear in the specification sections			
<b>19 Pre-qualifications</b>			
<b>19a</b> There are no mandatory contractor and/or subcontractor pre-qualification requirements or references to certificates, transcripts or license numbers of a trade or subcontractor being included in the bid.			
<b>20 Contracting Issues</b>			
<b>20a</b> Contracting issues do not appear in the specifications.			
<b>20b</b> Division 00 of the NMS is not used.			
<b>21 Quality Issues</b>			
<b>21a</b> There are no specification clauses with square brackets “[ ]” or lines “__” indicating that the document is incomplete or missing information.			

Item	Verified by:	Comments:	Action By:
<b>Drawings:</b>			
<b>1 Title Blocks</b>			
<b>1a</b> The PWGSC title block is used.			
<b>2 Dimensions</b>			
<b>2a</b> Dimensions are provided in metric only.			
<b>3 Trade Names</b>			
<b>3a</b> Trade names are not used.			
<b>4 Specification Notes</b>			
<b>4a</b> There is no specification type notes.			
<b>5 Terminology</b>			
<b>5a</b> The term Departmental Representative is used instead of Engineer, PWGSC, Owner, Consultant or Architect.			
<b>5b</b> Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by" are not used.			
<b>6 Information to be included</b>			
<b>6a</b> The project quantity and configuration, dimensions and construction details are included.			
<b>6b</b> References to future work and elements not in contract do not appear or are kept to an absolute minimum and clearly marked.			



I confirm that the plans and specifications have been thoroughly reviewed and that the items listed above have been addressed or incorporated. I acknowledge and accept that by signing certifying that all items noted above have been addressed, should it be found during the tendering of these documents or implementation of the project, that the items above were not properly addressed, my firm will be responsible to resolve all related issues at my firm's expense and may receive an unsatisfactory consultant performance evaluation which could have an impact on my firm's ability to obtain work from PWGSC in the future.

Consultant's Representative: \_\_\_\_\_

Firm name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX 'B' - Sample of Addendum

Last updated April 22, 2008

ADDENDUM No. \_\_\_\_\_

Project Number: \_\_\_\_\_

**The following changes in the bid documents are effective immediately. This addendum will form part of the contract documents**

### DRAWINGS

SPEC NOTE: indicate drawing number and title, then list changes or indicate revision number and date, and re-issue drawing with addendum.

- 1 A1 Architectural  
.1

### SPECIFICATIONS

SPEC NOTE: indicate section number and title.

- 1 Section 01 00 10 - General Instructions

SPEC NOTE: list all changes (i.e. delete, add or change) by article or paragraph

- .1 Delete article (xx) entirely.
  - .2 Refer to paragraph (xx.x) and change ...
- 2 Section 23 05 00 - Common Work Results - Mechanical  
  - .1 Add new article (x) as follows:

## APPENDIX 'C' - Sample of Index

Last updated April 22, 2008

Project No: \_\_\_\_\_

Index  
Page 1 of \_\_\_\_

### DRAWINGS AND SPECIFICATIONS

#### DRAWINGS:

SPEC NOTE: List all Drawings by number and title.

C-1	Civil
L-1	Landscaping
A-1	Architectural
S-1	Structural
M-1	Mechanical
E-1	Electrical

#### SPECIFICATIONS:

SPEC NOTE: List all Divisions, Sections (by number and title) and number of pages.

<u>DIVISION</u>	<u>SECTION</u>	<u>NO. OF PAGES</u>
DIVISION 01	01 00 10 - General Instructions.....	.....XX
	01 14 25 - Designated Substances Report.....	.....XX
	01 35 30 - Health and Safety.....	.....XX
DIVISION 23	23 xx xx	
DIVISION 26	26 xx xx	

## APPENDIX 'D'

### USER MANUAL ON DIRECTORY STRUCTURE AND NAMING CONVENTION STANDARDS FOR CONSTRUCTION TENDER DOCUMENTS ON CD ROM

Issued by:

Real Property Contracting Directorate

PWGSC

**May 2005**

Last Updated: June 3, 2008

Version 1.0

## PREFACE

The Government of Canada (GoC) has committed to move towards an electronic environment for the majority of the services it offers. This covers the advertisement and distribution of contract opportunities, including construction solicitations. As a result, it is necessary to obtain a copy of construction drawings and specifications (in PDF format **without** password protection) on one or multiple CD-ROM to facilitate for the GoC the transfer of the construction drawings and specifications electronically to the Government Electronic Tendering System (GETS).

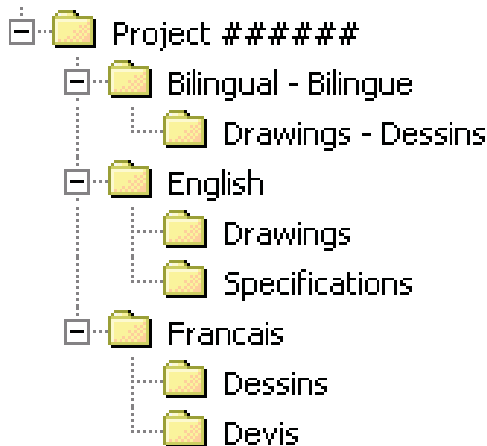
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction. This manual defines the standard to be followed by both consultants and print shops at time of formatting and organizing the information, whether drawings and specifications are created by scanning print documents or saved as PDF files from the native software (AutoCAD, NMS Edit, MS-Word, etc...) in which these were created.

It is important to note that the procedure described in this manual is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this manual is to provide a standard for the organization and naming of the electronic files that will be recorded on CD-ROM.

## 1. DIRECTORY STRUCTURE

### 1.1 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Tier Sub-Folders

Each CD-ROM, whether it is for the original solicitation (tender call) or for an amendment (addendum), must have the applicable elements of the following high-level Directory Structure created:



The following important points are to be noted about the Directory Structure:

- The “*Project #####*” folder is considered the 1<sup>st</sup> Tier of the Directory Structure where *#####* represents each digit of the Project Number. The Project Number must always be used to name the 1<sup>st</sup> Tier folder and it is always required. Free text can be added following the Project Number, to include such things as a brief description or the project title;
- The “*Bilingual - Bilingue*”, “*English*” and “*Français*” folders are considered the 2<sup>nd</sup> Tier of the Directory Structure. The folders of the 2<sup>nd</sup> Tier **cannot** be given any other names since GETS uses these names for validation purposes. At least one of the “*Bilingual - Bilingue*”, “*English*” and “*Français*” folders is always required, and these must always have one of the applicable sub-folders of the 3<sup>rd</sup> Tier;
- The “*Drawings - Dessins*”, “*Drawings*”, “*Specifications*”, “*Dessins*” and “*Devis*” folders are considered the 3<sup>rd</sup> Tier of the Directory Structure. The folders of the 3<sup>rd</sup> Tier **cannot** be given any other names since GETS also uses these names for validation purposes. There must be always at least one of the applicable 3<sup>rd</sup> Tier folder in each document.

**IMPORTANT:** The applicable elements of the Directory Structure (1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Tier folders) are always required and cannot be modified.

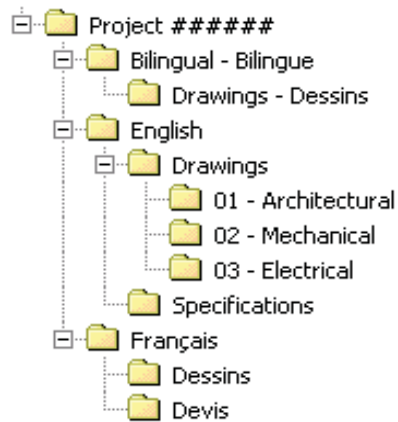
## 1.2 4<sup>th</sup> Tier Sub-Folders for Drawings

The “*Drawings – Dessins*”, “*Drawings*” and “*Dessins*” folders must have 4<sup>th</sup> Tier sub-folders created to reflect the various disciplines of the set of drawings.

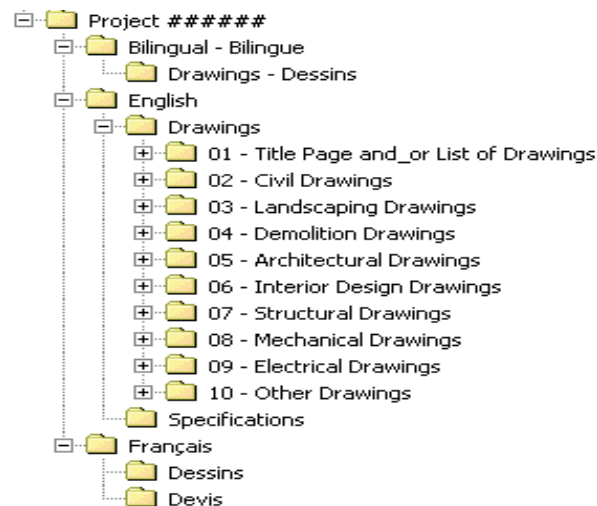
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “*Drawings – Dessins*”, “*Drawings*” and “*Dessins*” folders.

Note: The first sub-folder must be always reserved for the Title Page and/or the List of Drawings unless the first drawing of the set is an actual numbered discipline drawing.

Examples of 4<sup>th</sup> Tier sub-folders for drawings:



or



### 1.2.1 Naming Convention

The 4<sup>th</sup> Tier sub-folders for drawings must adhere to the following standard naming convention.

For the “*Drawings*” and “*Dessins*” folders:

## - Y

Where:

## = A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The title of the folder

Example: 03 – Mechanical

For the “*Drawings - Dessins*” folder:

## - Y - Z

Where:

## = A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The English title of the folder

Z = The French title of the folder

Example: 04 - Electrical - Électricité

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to a specific discipline. For example, “*Architectural*” could be numbered 05 for a project where there is four other disciplines before “*Architectural*” in the set of drawings or 01 in another project where it’s the first discipline appearing in the set.

It is essential to ensure that the order of the drawings on the CD-ROM be exactly the same as in the hard copy set. GETS will sort each drawing for both screen display and printing as per the following rules:

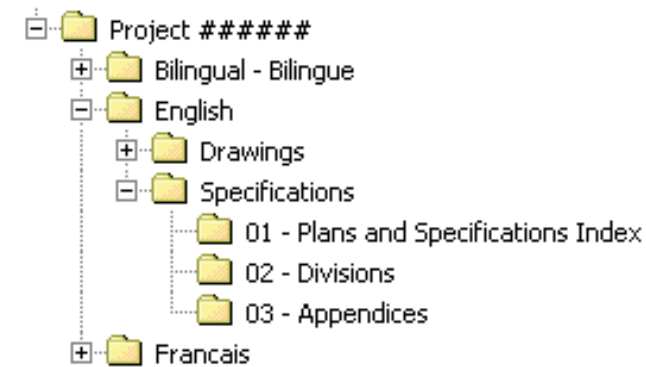
- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the drawings in the 02 sub-folder etc...);
- Each drawing PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Drawing A001 will be printed before Drawing A002, Drawing M02 before Drawing M03, etc...).

### 1.3 4<sup>th</sup> Tier Sub-Folders for Specifications

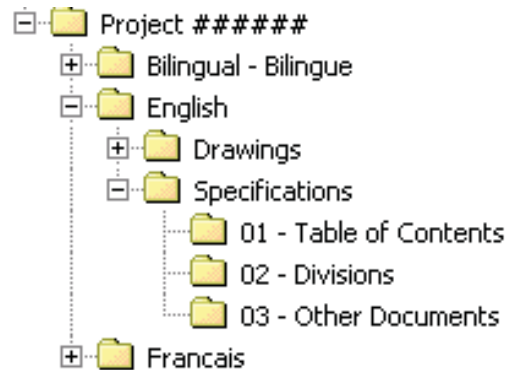
The “*Specifications*” and “*Devis*” folders must have 4<sup>th</sup> Tier sub-folders created to reflect the various elements of the specifications.

Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “*Specifications*” and “*Devis*” folders.

Examples of 4<sup>th</sup> Tier sub-folders for specifications:



or



#### 1.3.1 Naming Convention

The 4<sup>th</sup> Tier sub-folders for specifications must adhere to the following standard naming convention.

For the “*Specifications*” and “*Devis*” folders:

## - Y

Where:

## = A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The title of the folder

**Example: 02 – Divisions**

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to an element of the specifications.

It is essential to ensure that the order of the elements of the specifications on the CD-ROM be exactly the same as in the hard copy. GETS will sort each element of the specifications for both screen display and printing as per the following rules:

- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the specifications PDF files in the 01 sub-folder will be printed, in alphanumerical order before the PDF files in the 02 sub-folder, etc...);
- Each specifications PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Division 01 will be printed before Division 02, 01 - Appendix A before 02 - Appendix B, etc...).

## 2. NAMING CONVENTION FOR PDF FILES

Each drawing, specifications division or other document that are part of the tender documents must be converted in PDF format (without password protection) in accordance with the following standard naming convention and each PDF file must be located in the appropriate sub-folder of the Directory Structure.

### 2.1 Drawings

Each drawing must be a **separate single page** PDF file. The naming convention of each drawing must be:

X### - Y

Where:

X = The letter or letters from the drawing title block ("A" for Architectural or "ID" for Interior Design for example) associated with the discipline

### = The drawing number from the drawing title block (one to three digits)

**Y =                      The drawing name from the drawing title block (for bilingual drawings, the name in both English and French is to appear)**

Example:            A001 - First Floor Details

Each drawing that will be located in the appropriate discipline 4<sup>th</sup> Tier sub-folders must be named with the same letter (“A” for Architectural Drawings for example) and be numbered. The drawing number used to name the PDF file must match as much as possible the drawing number of the actual drawing (the exception being when leading zeros are required).

The following important points about drawings are to be noted:

- The drawing PDF files within each sub-folder are sorted alphanumerically for both displaying and printing. If there are more than 9 drawings in a particular discipline the numbering must use at least two numerical digits (i.e. A01 instead of A1) in order to avoid displaying drawing A10 between A1 and A2. The same rule applies when there are more than 99 drawings per discipline i.e. three digits instead of two must be used for the numbering (for example M003 instead of M03);
- If drawing PDF files are included in the “*Bilingual - Bilingue*” folder, these cannot be included as well in the “*English*” and/or “*Français*” folders;
- If drawings not associated with a particular discipline are not numbered (Title Page or List of Drawings for example), these will be sorted alphabetically. While this does not represent a problem if there is only one drawing in the sub-folder, it could disrupt the order when there are two or more drawings. If the alphabetical order of the drawings name does not represent the order on the hard copy set, the drawings are to be named as per the following standard convention when converted in PDF format to ensure proper display and printing order.

## - Y

Where:

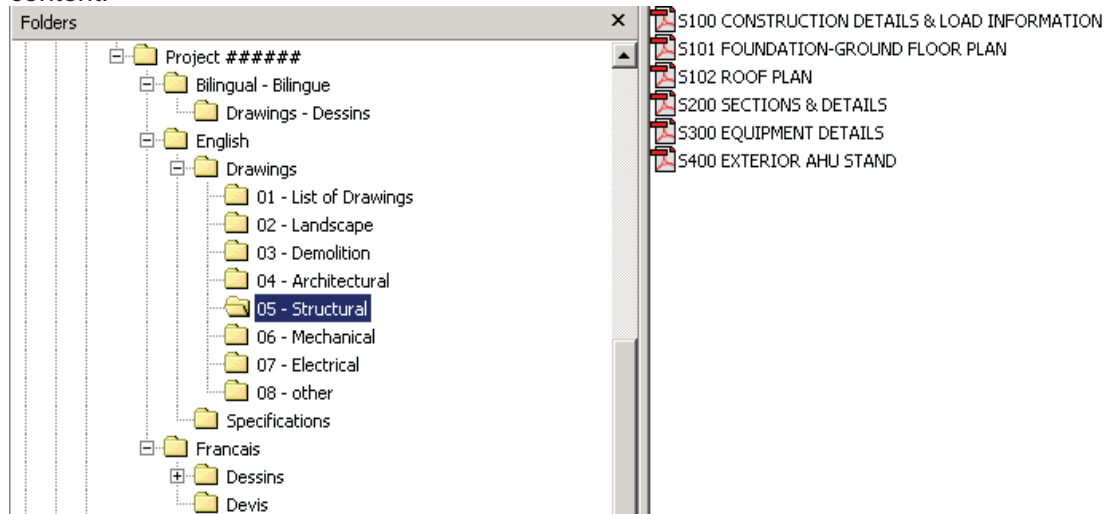
## =                      A two digit number ranging from 01 to 99 (leading zeros must be included)

Y =                      The name of the drawing

Example:            01 - Title Page  
                          02 - List of Drawings

If numbers are not used in the PDF files name, “*List of Drawings*” will be displayed before “*Title Page*” because “L” comes before “T” in the alphabet.

Example of a 4<sup>th</sup> Tier Drawings sub-folder's content:



## 2.2. Specifications

Each Specifications Division must be a separate PDF file and all pages contained in each PDF file must have the same physical size (height, width). The Plans and Specifications Index must also be a separate PDF file. If there are other documents that are part of the Specifications (e.g. Appendix or other) these are to be separate PDF files as well.

### 2.2.1 Documents other than Specifications Divisions

Because PDF files within the Specifications sub-folders are sorted alphanumerically (in ascending order) for both on screen display and printing order, all files that appear in folders other than the "Divisions" sub-folder must be named using a number:

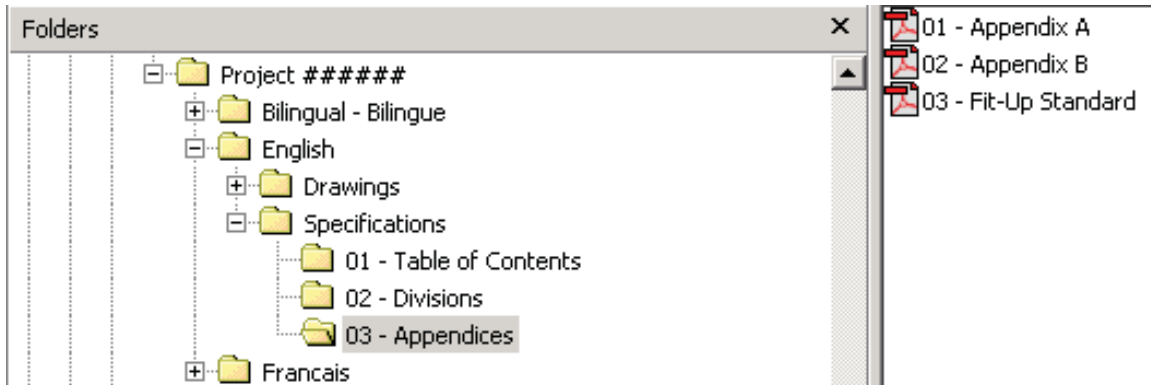
## - Y

Where:

## = Two digit number ranging from 01 to 99 with leading zeros required  
Y = Name of the document

Example: 01 - Plans and Specifications Index

Example of a sub-folder content (sub-folder other than “*Divisions*”):



### 2.2.2 Specifications Divisions

The Specifications Divisions must be named as follows:

Division ## - Y

Where:

Division ## = The actual word “*Division*” followed by a space and a two digit number ranging from 01 to 99 (with leading zeros required)

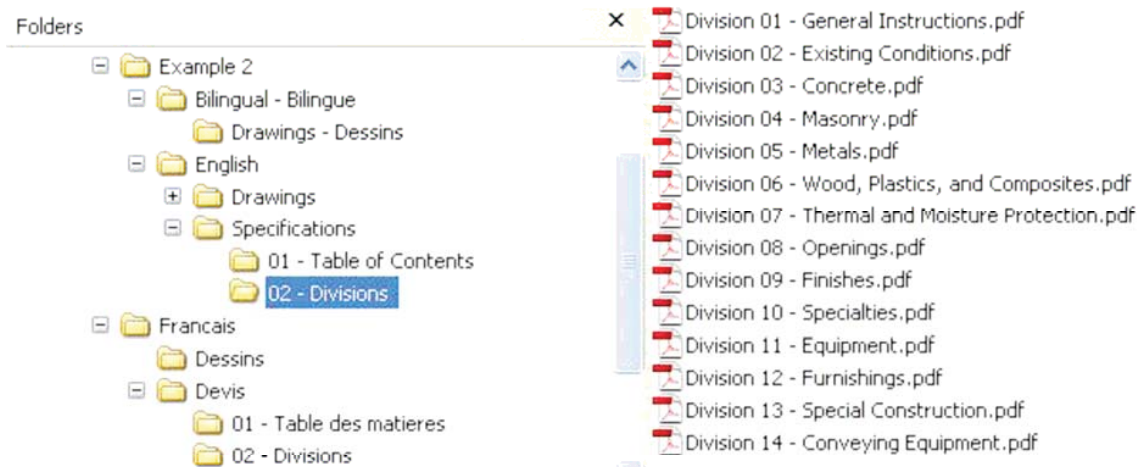
Y = Name of the Specifications Division as per **CSC/CSI MasterFormat™**

Example: Division 05 – Metals

The following important point about specifications is to be noted:

- The Numbering of the Divisions **cannot** be altered from **CSC/CSI MasterFormat™** even if some Divisions are not used in a given project. For example, Division 05 will always remain Division 05 even if Division 04 is not used for a given project.

Example of a “Divisions” sub-folder content:



### 3. CD-ROM LABEL

Each CD-ROM is to be labeled with the following information:

Project *Number* / *Numéro de projet*  
 Project *Title* / *Titre du projet*  
 Documents for Tender / Documents pour appel d'offres  
 CD *X* of/de *X*

Example:

Project 123456 / Projet 123456  
 Repair Alexandra Bridge / Réparation du pont Alexandra  
 Documents for Tender / Documents pour appel d'offres  
 CD 1 of/de 1

## APPENDIX 'E'

### BASIC REFERENCE GUIDE ON CONVERTING CONSTRUCTION DRAWINGS INTO PORTABLE DOCUMENT FORMAT (PDF)

**Issued by:**  
**Real Property Contracting Directorate**  
**PWGSC**

May 2005 Last Updated: May 3, 2005

Version 1.0

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## PREFACE

Portable Document Format (PDF) is the standard format for documents that are posted on the Government Electronic Tendering System (GETS). There is therefore a need to obtain from architectural and engineering consultants an electronic copy of drawings and specifications in PDF for tendering Government of Canada (GoC) construction projects.

In order to have the highest quality in term of resolution and printing, consultants should to the greatest extent possible have the PDF drawing and specification files derived from the native software in which they were created. Scanning is permissible but only in special circumstances, for example when there is no electronic version of a drawing being included in a construction tender package.

The purpose of this document is to provide basic information on the conversion of Computer Aided Design and Drafting (CADD) drawings in PDF. Creating a PDF file from a CADD drawing is a relatively simple process once all the necessary configurations and settings are in place. It actually should not take any longer than it would take to create a plot file or to send a drawing to a printer. The information in this guide is not intended to cover all technical aspects of the conversion, which can be done using various methods, but rather to highlight important points about the process and file settings. The conversion of specifications is not covered in this basic reference guide since it does not require any special configuration or setting.

The information provided in this basic reference guide is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this guide is to provide basic information on the PDF conversion process bearing in mind that additional detailed technical information is available from the various software manufacturers.

## 1. PRINTER DRIVERS

Adobe Acrobat provides two different printer drivers that are able to convert CADD drawing into PDF format, Acrobat PDF Writer and Acrobat Distiller. Before creating a PDF file from a CADD drawing, a choice must be made as to which one will be used.

Acrobat PDF Writer is a non-PostScript printer driver that works best with documents that don't contain complex graphics

Acrobat Distiller is a PostScript printer driver that works best with documents that contain PostScript fills, Encapsulated PostScript (EPS) graphics, or other complex elements.

It is recommended that Acrobat Distiller be used to create PDF file of architectural and engineering drawings due to their size and complex graphical nature.

## 2. PRINTER CONFIGURATION

Before converting a CADD drawing to PDF, an Acrobat printer configuration file for the PDF paper size needs to be created. This function can be done in the CADD software rather than using a custom paper size defined for the Acrobat distiller feature. The recommended method is to add a PostScript Adobe plotter in the CADD software and making the necessary setting in terms of media source and size, scale and orientation. The configuration can then be re-used to simplify the conversion process for future files that use the same page size.

As an alternative, although not recommended, a custom-defined size can be created in Acrobat Distiller in the *properties* menu.

## 3. CREATING PDF FILES

Once the printer configuration has been done in the CADD software, open up Acrobat Distiller and make the necessary settings in the *preferences* and *job options* sub-menu. Ensure that the page size match the sheet size selected in the CADD software to create the file. Particular settings can be saved under different names for future use.

With the Acrobat Distiller application open, ensure the required sheet size is displayed in the *job options* window. Then it is simply a matter of bringing the CADD file into the Acrobat Distiller creation box.

A progress bar will show during the conversion and the newly converted PDF file should open up and be displayed for verification.

## 4. PDF FILES SETTINGS

### 4.1 Security

Adobe Acrobat contains security features that can be used to secure the files by restricting any changes to the files. However, since the files will be posted on GETS and will be used for printing copies, the files **must not** be password protected and **must** allow printing.



#### 4.2 Drawing Orientation

The final PDF drawing files must be displayed on the screen in the same direction that the users are intended to view them. This can be achieved by adjusting the setup of the plotter. If the drawing is not oriented properly after the conversion, it can be rotated manually within Adobe Acrobat.

#### 4.3 Font Type

In order to avoid any problems during the conversion and to minimize the potential for font display errors, the fonts used for the production of construction drawings must be *PostScript* or *True Type* fonts.

#### 4.4 Resolution

Since the PDF files will be used for printing, it is important that a proper resolution be selected. It is recommended to select 600 dots per inch (dpi).

#### 4.5 Scale

When choosing the Plot scale in Adobe, it is important to choose the 1:1 scale to ensure the integrity of the scale from which the drawings were created in the CADD software.

### 5. SCANNING

Scanning is not recommended and should be done only when the drawing is not available electronically. When scanning a drawing, it is important that it be done in real size (scale 1:1) to ensure that the scale remains intact in subsequent printing. It is recommended that each scanned drawing be opened and verified to ensure that the resolution, scale and border are of an acceptable quality.

### 6. FINAL CHECKLIST

When the drawing file has gone through the PDF conversion, it is recommended to open it and verify the following:

- That the sheet size displayed is what was intended to be created (the size is viewable in the lower left corner of the drawing).
- That the orientation of the sheet is correct.
- That the line types, line weights and fonts match the CADD drawing.
- That the PDF file is in black and white.
- That each drawing is a single PDF file.
- That the PDF file is not password protected and printable.

If all the items are verified, the PDF file is useable

### 7. ADDITIONAL INFORMATION

For more information about the creation of PostScript and EPS files please refer to the User's Guide of the CADD software being used to produce the drawings. For more information about creating PDF file please refer to the Acrobat Distiller User's Guide and/or visit the Adobe Web site at [www.adobe.com](http://www.adobe.com).