



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
Canada Place/Place du Canada
10th Floor/10e étage
9700 Jasper Ave/9700 ave Jasper
Edmonton
Alberta
T5J 4C3
Bid Fax: (780) 497-3510

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

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

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

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

Comments - Commentaires

Title - Sujet Electrical Infrastructure Upgrades	
Solicitation No. - N° de l'invitation EP922-210870/A	Date 2020-09-14
Client Reference No. - N° de référence du client CSC EP922-210870	
GETS Reference No. - N° de référence de SEAG PW-\$PWU-201-11898	
File No. - N° de dossier PWU-0-43084 (201)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2020-10-13	Time Zone Fuseau horaire Mountain Daylight Saving Time MDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Ho (RPC), Hector	Buyer Id - Id de l'acheteur pwu201
Telephone No. - N° de téléphone (780) 901-0989 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CSC BOWDEN INSTITUTION 2 HIGHWAY, BOX 6000 INNISFAIL Alberta T4G1V1 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Canada Place / Place du Canada
10th Floor / 10e étage
9700 Jasper Ave / 9700 ave Jasper
Edmonton
Alberta
T5J 4C3

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

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REQUEST FOR PROPOSAL (RFP)

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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. This is a single phase selection process. The nature of the requirement and the anticipated limited number of response by the industry leads PWGSC to believe that this approach will not unduly force a large number of firms to expend an overall unreasonable amount of effort in response to PWGSC.
3. Proponents responding to this RFP are requested to submit a full and complete proposal. The proposal will cover not only the qualifications, experience and organization of the proposed Consultant Team, but also 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.
4. This bid solicitation allows and encourages proponents to use the epost Connect service provided by Canada Post Corporation to transmit their proposals electronically.

Due to the nature of the bid solicitation, transmission of proposals by facsimile is not recommended for administrative reasons but offered to proponents to provide an alternative opportunity in case of incompatibility or inability to transmit by epost Connect service.

Proponents must refer to GI16 Submission of proposal, and SRE 2 Proposal Requirements, of the bid solicitation, for further information.

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);
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) Terms of Reference;

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- (d) the document entitled "Doing Business with PWGSC Documentation and Deliverables Manual";
- (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.
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 at e-mail address hector.ho@pwgsc-tpsgc.gc.ca as early as possible. Enquiries should be received no later than 7 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 World Trade Organization - Agreement on Government Procurement (WTO-AGP) and the Canada-European Union Comprehensive Economic and Trade Agreement (CETA).

SI5 CERTIFICATIONS

1. Integrity Provisions – Declaration of Convicted Offences

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Proponent must **provide with its bid, as applicable**, to be given further consideration in the procurement process, the required documentation as per General instructions 1 (G11), Integrity Provisions – Proposal, **section 3b**.

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 available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html>).

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.

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SI6 WORKERS COMPENSATION

- 1. The recommended Proponent shall provide to the Contracting Authority, prior to Contract award:**
 - a) a Workers Compensation Board letter of good standing, also listing covered Directors, Principals, Proprietor(s) or Partners who will be or who are anticipated to be present on the work site(s).
2. The recommended Proponent shall deliver all of the above documents to the Contracting Authority on or before the date stated (usually 3-5 days after notification) by the Contracting Authority. Failure to comply with the request may result in the proposal being declared non-compliant.

SI7 - 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)
<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html>

Certificate of Commitment to Implement Employment Equity form LAB 1168
<http://www.servicecanada.gc.ca/cgi-bin/search/eforms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e>

Ineligibility and Suspension Policy
<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>

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

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

Buy and Sell
<https://buyandsell.gc.ca/>

Supplier Registration Information
<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>

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GENERAL INSTRUCTIONS (GI) – ARCHITECTURAL AND/OR ENGINEERING SERVICES – REQUEST FOR PROPOSAL

GI1 Integrity provisions—proposal

1. The *Ineligibility and Suspension Policy* (the “Policy”) in effect on the date the bid solicitation is issued, and all related Directives in effect on that date, are incorporated by reference into, and form a binding part of the bid solicitation. The Proponent must comply with the Policy and Directives, which can be found at *Ineligibility and Suspension Policy* (<https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>).
2. Under the Policy, charges and convictions of certain offences against a Supplier, its affiliates or first tier sub-consultants, and other circumstances, will or may result in a determination by Public Works and Government Services Canada (PWGSC) that the Supplier is ineligible to enter, or is suspended from entering into a contract with Canada. The list of ineligible and suspended Suppliers is contained in PWGSC's Integrity Database. The Policy describes how enquiries can be made regarding the ineligibility or suspension of Suppliers.
3. In addition to all other information required in the bid solicitation, the Proponent must provide the following:
 - a. by the time stated in the Policy, all information required by the Policy described under the heading “Information to be Provided when Bidding, Contracting or Entering into a Real Property Agreement”; and
 - b. with its bid, a complete list of all foreign criminal charges and convictions pertaining to itself, its affiliates and its proposed first tier sub-consultants that, to the best of its knowledge and belief, may be similar to one of the listed offences in the Policy. The list of foreign criminal charges and convictions must be submitted using an Integrity Declaration Form, which can be found at *Declaration form for procurement* (<https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>).
4. Subject to subsection 5, by submitting a bid in response to this bid solicitation, the Proponent certifies that:
 - a. it has read and understands the *Ineligibility and Suspension Policy* (<https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>);
 - b. it understands that certain domestic and foreign criminal charges and convictions, and other circumstances, as described in the Policy, will or may result in a determination of ineligibility or suspension under the Policy;
 - c. it is aware that Canada may request additional information, certifications, and validations from the Proponent or a third party for purposes of making a determination of ineligibility or suspension;
 - d. it has provided with its bid a complete list of all foreign criminal charges and convictions pertaining to itself, its affiliates and its proposed first tier sub-consultants that, to the best of its knowledge and belief, may be similar to one of the listed offences in the Policy;
 - e. none of the domestic criminal offences, and other circumstances, described in the Policy that will or may result in a determination of ineligibility or suspension, apply to it, its affiliates and its proposed first tier sub-consultants; and
 - f. it is not aware of a determination of ineligibility or suspension issued by PWGSC that applies to it.
5. Where a Proponent is unable to provide any of the certifications required by subsection 4, it must submit with its bid a completed Integrity Declaration Form, which can be found at *Declaration form for procurement* (<https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>).
6. Canada will declare non-responsive any bid in respect of which the information requested is incomplete or inaccurate, or in respect of which the information contained in a certification or declaration is found by Canada to be false or misleading in any respect. If Canada establishes after award of the Contract that the Proponent provided a false or misleading certification or declaration, Canada may terminate the Contract for default. Pursuant to the Policy, Canada may

also determine the Proponent to be ineligible for award of a contract for providing a false or misleading certification or declaration.

G12 Definitions

In this Request for Proposal (RFP), the following words or phrases have the corresponding meaning.

"Applicable Taxes":

The Goods and Services Tax (GST), the Harmonized Sales Tax (HST), and any provincial tax, by law, payable by Canada such as, the Quebec Sales Tax (QST) as of April 1, 2013.

"Consultant Team":

The team of consultants, specialists and subconsultants, including the Proponent, proposed by the Proponent to perform the services required.

"Key Personnel":

Staff of the Proponent, subconsultants and specialists proposed to be assigned to this project.

"Price Rating":

A rating assigned to the price component of a proposal and subsequently used to establish a Price Score for inclusion as a percentage of the total score to be established following the evaluation and rating of technical proposals.

"Proponent":

The person or entity (or, in the case of a joint venture, the persons or entities) which submits a proposal. It does not include the parent, subsidiaries or other affiliates of the Proponent, or its sub-consultants.

"PWGSC Evaluation Board":

The board established to evaluate and rate proposals. Board members represent a broad cross-section of professional qualifications and experience.

"Technical Rating":

A rating assigned to the technical component of a proposal in the selection procedure and subsequently used to establish a Technical Score for inclusion as a percentage of the total score.

G13 Overview of selection procedure

The following is an overview of the selection procedure.

3.1 Proposal

1. Proponents submit the "technical" component of their proposal in one section and the proposed price of the services (price proposal) in a second section in accordance with the instructions contained in the proposal documents.
2. The information that Proponents are required to provide is set out in detail elsewhere in the RFP.
3. In response to the RFP, interested Proponents submit a proposal in which they:
 - a. indicate whether the proposal is submitted by an individual firm or by a joint venture;
 - b. if the proposal is submitted by a joint venture, describe the proposed legal and working relationships of the joint venture and the benefits to be gained by the formation of the joint venture;
 - c. identify the prime consultants and key sub consultants and specialists proposed for inclusion in the Consultant Team, and the proposed organizational structure of the Team;
 - d. describe the extent to which proposed members of the Consultant Team have successfully performed services for projects comparable to the project which is the subject of the proposal;
 - e. identify the professional accreditation, experience, expertise and competence of the Consultant Team and Key Personnel proposed to be assigned to perform the required services.

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f. comply with all other requirements set out in the RFP.

3.2 Proposal evaluation and rating

1. Technical components of all responsive proposals are reviewed, evaluated and rated by a Public Works and Government Services Canada (PWGSC) Evaluation Board in accordance with the criteria, components and weight factors set out in the RFP. Upon completion of the evaluation, Technical Ratings are established.
2. Proposals achieving the minimum Technical Score specified in the Submission Requirements and Evaluation section of the RFP are further considered.
3. The price proposals of all responsive proposals are considered upon completion of the technical evaluation. When there are three or more responsive proposals, an average price is determined by adding all the price proposals together and dividing the total by the number of price proposals opened. This calculation will not be conducted when one or two responsive proposals are received.
4. All price proposals which are greater than 25 percent above the average price will cause their respective complete proposals to be set aside and receive no further consideration.
5. 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 occasion where two (or more) price proposals are identical, these price proposals receive the same rating and the corresponding number of following ratings are skipped.
 - d. The Price Rating is multiplied by a predetermined percentage factor to establish a Price Score.
6. A price proposal in excess of any maximum funding limit, when this limit has been set in the Supplementary Instructions to Proponents, may result in disqualification of the complete proposal.

3.3 Total score

1. The total overall score (Total Score) assigned to each Proponent's complete proposal is calculated as the aggregate of:
 - a. the Technical Score, and
 - b. the Price Score.
2. The Proponent receiving the highest Total Score is the first entity that the PWGSC Evaluation Board will recommend for the provision of the required services.

3.4 Notification

PWGSC normally expects to advise in writing unsuccessful Proponents within one week after PWGSC has entered into a contractual arrangement with the successful Proponent.

G14 Procurement Business Number

Proponents are required to have a Procurement Business Number (PBN) before contract award. Proponents may register for a PBN online at [Supplier Registration Information \(https://srisupplier.contractsCanada.gc.ca/index-eng.cfm?af=ZnVzZWVidGlvbj1yZWdpc3Rlci5pbmRybyZpZD0y&lang=eng\)](https://srisupplier.contractsCanada.gc.ca/index-eng.cfm?af=ZnVzZWVidGlvbj1yZWdpc3Rlci5pbmRybyZpZD0y&lang=eng). For non-Internet registration, Proponents may contact the InfoLine at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Agent.

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G15 Responsive proposals

To be considered responsive, a proposal must meet all of the mandatory requirements set out in the RFP. No further consideration in the selection procedure will be given to a Proponent submitting a non-responsive proposal.

G16 Completion of submission

The Proponent shall base the proposal on the applicable proposal documents listed in the Supplementary Instructions to Proponents.

G17 Proposal price

Unless specified otherwise elsewhere in the proposal documents:

- a. the price proposal shall be in Canadian currency, and
- b. the price proposal shall not include any amount for Applicable Taxes, and
- c. the requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All proposals including such provision will render the proposal non-responsive.

G18 Communications—solicitation period

To ensure the integrity of the competitive bid process, enquiries and other communications regarding the RFP must be directed only to the Contracting Authority identified in the RFP. Failure to comply with this requirement may result in the proposal being declared non-responsive.

To ensure consistency and quality of information provided to proponents, significant enquiries received and their replies will be posted on the Government Electronic Tendering Service (GETS).

G19 Limitation of submissions

1. A Proponent may not submit more than one proposal. This limitation also applies to the persons or entities in the case of a joint venture. If more than one proposal is received from a Proponent (or, in the case of a joint venture, from the persons or entities), all such proposals shall be rejected and no further consideration shall be given.
2. A joint venture is defined as an association of two or more parties which combine their money, property, knowledge, skills, time or other resources in a joint business enterprise agreeing to share the profits and the losses and each having some degree of control over the enterprise.
3. An arrangement whereby Canada contracts directly with a prime consultant who may retain sub-consultants or specialist consultants to perform portions of the services is not a joint venture arrangement. A sub-consultant or specialist consultant may, therefore, be proposed as part of the Consultant Team by more than one Proponent. The Proponent warrants that it has written permission from such sub-consultant or specialist consultant to propose their services in relation to the services to be performed.
4. Notwithstanding paragraph 3. above, in order to avoid any conflict of interest, or any perception of conflict of interest, a Proponent shall not include in its submission another Proponent as a member of its consultant team, as a sub-consultant or specialist consultant.
5. Any joint venture entered into for the provision of professional services or other services must be in full compliance with the requirements of any provincial or territorial law pertaining thereto in the Province or Territory in which the project is located.

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G110 Licensing requirements

1. Consultant Team members and Key Personnel shall be, or be eligible to be licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law in the Province or Territory in which the project is located.
2. By virtue of submission of a proposal, the Proponent certifies that the Proponent's Consultant Team and Key Personnel are in compliance with the requirements of subsection 1 above. The Proponent acknowledges that PWGSC reserves the right to verify any information in this regard and that false or erroneous certification may result in the proposal being declared non-responsive.

G111 Rejection of proposal

1. Canada may reject a proposal where any of the following circumstances is present:
 - a. the Proponent has been declared ineligible for selection, following unsatisfactory performance in a previous project as determined in accordance with the department's performance review procedures;
 - b. an employee, sub-consultant or specialist consultant included as part of the proposal has been declared ineligible, for selection for work with the department in accordance with the performance review procedure referred to in paragraph 1.(a), which would render the employee, sub-consultant or specialist consultant ineligible to bid on the requirement, or the portion of the requirement the employee, sub-consultant or specialist consultant is to perform;
 - c. the Proponent is bankrupt or where, for whatever reason, its activities are rendered inoperable for an extended period;
 - d. evidence, satisfactory to Canada, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Proponent, any of its employees, any sub-consultant or any specialist consultant included as part of the proposal;
 - e. evidence satisfactory to Canada that based on past conduct or behavior, the Proponent, a sub-consultant, a specialist consultant or a person who is to perform the Services is unsuitable or has conducted himself/herself improperly;
 - f. with respect to current or prior transactions with the Government of Canada,
 - i. Canada has exercised its contractual remedies of taking the services out of the consultant's hands, suspension or termination for default with respect to a contract with the Proponent, any of its employees, any sub-consultant or any specialist consultant included as part of the proposal;
 - ii. Canada determines that the Proponent's performance on other contracts, including the quality of the services provided and the quality and timeliness of the delivery of the project, is sufficiently poor to jeopardize the successful completion of the requirement being bid on.
2. Where Canada intends to reject a proposal pursuant to subsection 1.(f), the Contracting Authority will so inform the Proponent and provide the Proponent ten (10) days within which to make representations, before making a final decision on the proposal rejection.

G112 Not applicable

Not applicable

G113 Insurance requirements

The successful Proponent shall be required to obtain and maintain Professional Liability and Commercial General Liability insurance coverage in accordance with the requirements set out elsewhere in the proposal documents.

G114 Joint venture

1. A joint venture is an association of two or more parties who combine their money, property, knowledge, expertise or other resources in a single joint business enterprise, sometimes referred as a consortium, to bid together on a requirement. Proponents who bid as a joint venture must indicate clearly that it is a joint venture and provide the following information:
 - a. the name of each member of the joint venture;
 - b. the Procurement Business Number of each member of the joint venture;
 - c. the name of the representative of the joint venture, i.e. the member chosen by the other members to act on their behalf, if applicable;
 - d. the name of the joint venture, if applicable.
2. If the information is not clearly provided in the proposal, the Proponent must provide the information on request from the Contracting Authority.
3. The proposal and any resulting contract must be signed by all the members of the joint venture unless one member has been appointed to act on behalf of all members of the joint venture. The Contracting Authority may, at any time, require each member of the joint venture to confirm that the representative has been appointed with full authority to act as its representative for the purposes of the bid solicitation and any resulting contract. If a contract is awarded to a joint venture, all members of the joint venture will be jointly and severally or solidarily liable for the performance of any resulting contract.

G115 Composition of Consultant Team

By submitting a proposal, the Proponent represents and warrants that the entities and persons proposed in the proposal to perform the required services will be the entities and persons that will perform the services in the fulfillment of the project under any contractual arrangement arising from submission of the proposal. If the Proponent has proposed any person in fulfillment of the project who is not an employee of the Proponent, the Proponent warrants that it has written permission from such person (or the employer of such person) to propose the services of such person in relation to the services to be performed.

G116 Submission of proposal

G116.1 Submission of proposal

1. Canada requires that each proposal, at solicitation closing date and time or upon request from the Contracting Authority, be signed by the Proponent or by an authorized representative of the Proponent. If a proposal is submitted by a joint venture, it must be in accordance with section G114.
2. It is the Proponent's responsibility to:
 - a. submit a proposal, duly completed, in the format requested, on or before the solicitation closing date and time set;
 - b. send its proposal only to the Bid Receiving Unit of Public Works and Government Services Canada (PWGSC) specified below, by the date and time indicated on page 1 of the bid solicitation.

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In the case of submission of a hard copy proposal, send its proposal only to:

**Bid Receiving Public Works and Government Services Canada
Canada Place, Suite 1000
9700 Jasper Avenue
Edmonton AB, T5J 4C3**

In the case of submission by epost Connect, see instructions in G116.2.1 below.

In the case of submission by Facsimile, see instructions in G116.2.2 below.

- c. obtain clarification of the requirements contained in the RFP, if necessary, before submitting a proposal;
 - d. ensure that the Proponent's name, return address, the solicitation number and description, and solicitation closing date and time are clearly visible on the envelope or the parcel(s) containing the proposal; and
 - e. provide a comprehensive and sufficiently detailed proposal that will permit a complete evaluation in accordance with the criteria set out in this RFP.
3. The technical and price components of the proposal must be submitted in separate sections in accordance with the instructions contained in the proposal documents.
 4. Timely and correct delivery of proposals to the office designated for receipt of proposals is the sole responsibility of the Proponent. PWGSC will not assume or have transferred to it those responsibilities. All risks and consequences of incorrect delivery of proposals are the responsibility of the Proponent.
 5. Proposals and supporting information may be submitted in either English or French.
 6. Canada will make available Notices of Proposed Procurement (NPP), bid solicitations and related documents for download through the Government Electronic Tendering Service (GETS). Canada is not responsible and will not assume any liabilities whatsoever for the information found on websites of third parties. In the event an NPP, bid solicitation or related documentation would be amended, Canada will not be sending notifications. Canada will post all amendments using GETS. It is the sole responsibility of the Proponent to regularly consult GETS for the most up-to-date information. Canada will not be liable for any oversight on the Proponent's part nor for notification services offered by a third party.

G116.2 Transmission by epost Connect or facsimile

1. epost Connect

- a. Proposals may be submitted by using the epost Connect service provided by Canada Post Corporation
(https://www.canadapost.ca/web/en/products/details.page?article=epost_connect_send_a):

The only acceptable email address to use with epost Connect for responses to this bid solicitation issued by PWGSC regional offices is:

ROReceptionSoumissions.WRBidReceiving@tpsgc-pwgsc.gc.ca

Note: Proposals will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in b., or to send proposals through an epost Connect message if the proponent is using its own licensing agreement for epost Connect.

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- b. To submit a proposal using epost Connect service, the Proponent must either:
- i. send directly its proposal only to the specified PWGSC Bid Receiving Unit, using its own licensing agreement for epost Connect provided by Canada Post Corporation; or
 - ii. send as early as possible, and in any case, at least six business days prior to the solicitation closing date and time (in order to ensure a response), an email that includes the bid solicitation number to the specified PWGSC Bid Receiving Unit requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered.
- c. If the Proponent sends an email requesting epost Connect service to the specified Bid Receiving Unit in the bid solicitation, an officer of the Bid Receiving Unit will then initiate an epost Connect conversation. The epost Connect conversation will create an email notification from Canada Post Corporation prompting the Proponent to access and action the message within the epost Connect conversation. The Proponent will then be able to transmit its proposal afterward at any time prior to the solicitation closing date and time.
- d. If the Proponent is using its own licensing agreement to send its proposal, the Proponent must keep the epost Connect conversation open until at least 30 business days after the solicitation closing date and time.
- e. The bid solicitation number should be identified in the epost Connect message field of all electronic transfers.
- f. It should be noted that the use of epost Connect service requires a Canadian mailing address. Should a Proponent not have a Canadian address, they may use the Bid Receiving Unit address specified in the solicitation in order to register for the epost Connect service.
- g. For proposals transmitted by epost Connect service, Canada will not be responsible for any failure attributable to the transmission or receipt of the proposal including, but not limited to, the following:
- i. receipt of a garbled, corrupted or incomplete proposal;
 - ii. availability or condition of the epost Connect service;
 - iii. incompatibility between the sending and receiving equipment;
 - iv. delay in transmission or receipt of the proposal;
 - v. failure of the Proponent to properly identify the proposal;
 - vi. illegibility of the proposal;
 - vii. security of proposal data; or
 - viii. inability to create an electronic conversation through the epost Connect service.
- h. The Bid Receiving Unit will send an acknowledgement of the receipt of proposal document(s) via the epost Connect conversation, regardless of whether the conversation was initiated by the supplier using its own license or the Bid Receiving Unit. This acknowledgement will confirm only the receipt of proposal document(s) and will not confirm if the attachments may be opened nor if the content is readable.
- i. Proponents must ensure that they are using the correct email address for the Bid Receiving Unit when initiating a conversation in epost Connect or communicating with the Bid Receiving Unit and should not rely on the accuracy of copying and pasting the email address into the epost Connect system.
- j. A proposal transmitted by epost Connect service constitutes the formal proposal of the Proponent and must be submitted in accordance with section G16.1.

2. Facsimile

- a. Proposals may be submitted by facsimile.

The only acceptable facsimile number for responses to bid solicitations issued by this PWGSC regional office is:

Bid Fax: (780) 497-3510

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- b. For proposals transmitted by facsimile, Canada will not be responsible for any failure attributable to the transmission or receipt of the faxed proposal including, but not limited to, the following:
 - i. receipt of garbled, corrupted or incomplete proposal;
 - ii. availability or condition of the receiving facsimile equipment;
 - iii. incompatibility between the sending and receiving equipment;
 - iv. delay in transmission or receipt of the proposal;
 - v. failure of the Proponent to properly identify the proposal;
 - vi. illegibility of the proposal; or
 - vii. security of proposal data.
- c. A proposal transmitted by facsimile constitutes the formal proposal of the Proponent and must be submitted in accordance with section G116.1.

G117 Late submissions

1. PWGSC will return or delete proposals delivered after the stipulated solicitation closing date and time, unless they qualify as a delayed proposal as described in G117.2. For late proposals submitted using means other than the Canada Post Corporation's epost Connect service, the physical proposal will be returned. For proposals submitted electronically, the late proposal will be deleted. As an example, proposals submitted using Canada Post Corporation's epost Connect service, conversations initiated by the Bid Receiving Unit via the epost Connect service pertaining to a late proposal, will be deleted. Records will be kept documenting the transaction history of all late proposals submitted using epost Connect.
2. A proposal delivered to the specified bid receiving unit after the solicitation closing date and time but before the contract award date may be considered, provided the proponent can prove the delay is due solely to a delay in delivery that can be attributed to the Canada Post Corporation (CPC) (or national equivalent of a foreign country). Private courier (Purolator Inc., Fedex Inc., etc.) is not considered to be part of CPC for the purposes of delayed proposals.
 - a. The only pieces of evidence relating to a delay in the CPC system that are acceptable to PWGSC are:
 - i. a CPC cancellation date stamp;
 - ii. a CPC Priority Courier bill of lading;
 - iii. a CPC Xpresspost label;that clearly indicates that the proposal was sent the day before the solicitation closing date.
 - b. The only pieces of evidence relating to a delay in the epost Connect service provided by CPC system that are acceptable to PWGSC is a CPC epost Connect service date and time record indicated in the epost Connect conversation history that clearly indicates that the proposal was sent before the solicitation closing date and time.
3. Misrouting, traffic volume, weather disturbances, labour disputes or any other causes for the late delivery of proposals are not acceptable reasons for the proposal to be accepted by PWGSC.
4. Postage meter imprints, whether imprinted by the Proponent, the CPC or the postal authority outside Canada, are not acceptable as proof of timely mailing.

G118 Not applicable

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G119 Acceptance of proposal

1. Canada may accept any proposal, or may reject any or all proposals.
2. In the case of error in the extension or addition of unit prices, the unit price will govern.
3. While Canada may enter into an agreement or contractual arrangement without prior negotiation, Canada reserves the right to negotiate with Proponents on any procurement.
4. Canada reserves the right to cancel or amend the RFP at any time.

G120 Legal capacity

The Proponent must have the Legal capacity to contract. If the Proponent is a sole proprietorship, a partnership or a corporate body, the Proponent must provide, if requested by the Contracting Authority, a statement and any requested supporting documentation indicating the laws under which it is registered or incorporated together with the registered or corporate name and place of business. This also applies to Proponents submitting a proposal as a joint venture.

G121 Debriefing

Should a Proponent desire a debriefing, the Proponent should contact the person identified on the front page of the RFP within 15 working days of the notification of the results of the solicitation. The debriefing will include an outline of the strengths and weaknesses of the submission, referring to the evaluation criteria. The confidentiality of information relating to other submissions will be protected. The debriefing may be provided in writing, by telephone or in person.

G122 Financial capability

1. Financial capability Requirement: The Proponent must have the financial capability to fulfill this requirement. To determine the Proponent's financial capability, the Contracting Authority may, by written notice to the Proponent, require the submission of some or all of the financial information detailed below during the evaluation of proposals. The Proponent must provide the following information to the Contracting Authority within fifteen (15) working days of the request or as specified by the Contracting Authority in the notice:
 - a. Audited financial statements, if available, or the unaudited financial statements (prepared by the Proponent's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Proponent's last three fiscal years, or for the years that the Proponent has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
 - b. If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Proponent must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.
 - c. If the Proponent has not been in business for at least one full fiscal year, the following must be provided:
 - i. the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - ii. the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Contracting Authority requests this information.

-
- d. A certification from the Chief Financial Officer or an authorized signing officer of the Proponent that the financial information provided is complete and accurate.
 - e. A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Proponent outlining the total of lines of credit granted to the Proponent and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.
 - f. A detailed monthly Cash Flow Statement covering all the Proponent's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Proponent's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the Proponent's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
 - g. A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Proponent's major sources and amounts of cash and the major items of cash expenditures, for the requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
2. If the Proponent is a joint venture, the financial information required by the Contracting Authority must be provided by each member of the joint venture.
 3. If the Proponent is a subsidiary of another company, then any financial information in 1. (a) to (e) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not by itself satisfy the requirement for the provision of the financial information of the Proponent, and the financial capability of a parent cannot be substituted for the financial capability of the Proponent itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.
 4. Financial Information Already Provided to PWGSC: The Proponent is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:
 - a. the Proponent identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and
 - b. the Proponent authorizes the use of the information for this requirement.

It is the Proponent's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.

5. Other Information: Canada reserves the right to request from the Proponent any other information that Canada requires to conduct a complete financial capability assessment of the Proponent.
6. Confidentiality: If the Proponent provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act (<https://laws-lois.justice.gc.ca/eng/acts/A-1/>), R.S., 1985, c. A-1, section 20(1) (b) and (c).
7. Security: In determining the Proponent's financial capability to fulfill this requirement, Canada may consider any security the Proponent is capable of providing, at the Proponent's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).
8. In the event that a proposal is found to be non-compliant on the basis that the Proponent is considered not to be financially capable of performing the subject requirement, official notification shall be provided to the Proponent.

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GI23 Performance evaluation

Proponents shall take note that the performance of the Consultant during and upon completion of the services shall be evaluated by Canada. The evaluation includes all or some of the following criteria: Design, Quality of Results, Management, Time and Cost. Should the Consultant's performance be considered unsatisfactory, the Consultant may be declared ineligible for future contracts. The form PWGSC-TPSGC 2913-1 (<https://www.tpsgc-pwgsc.gc.ca/app-acq/forms/2913-1-eng.html>), SELECT - Consultant Performance Evaluation Report, is used to record the performance.

GI24 Proposal costs

No payment will be made for costs incurred in the preparation and submission of a proposal in response to the Request for proposal. Costs associated with preparing and submitting a proposal, as well as any costs incurred by the Proponent associated with the evaluation of the proposal, are the sole responsibility of the Proponent.

GI25 Conflict of interest—unfair advantage

1. In order to protect the integrity of the procurement process, Proponents are advised that Canada may reject a proposal in the following circumstances:
 - a. if the Proponent, any of its sub-consultants, any of their respective employees or former employees was involved in any manner in the preparation of the bid solicitation or in any situation of conflict of interest or appearance of conflict of interest;
 - b. if the Proponent, any of its sub-consultants, any of their respective employees or former employees had access to information related to the bid solicitation that was not available to other Proponents and that would, in Canada's opinion, give or appear to give the Proponent an unfair advantage.
2. The experience acquired by a Proponent who is providing or has provided the goods and services described in the bid solicitation (or similar goods or services) will not, in itself, be considered by Canada as conferring an unfair advantage or creating a conflict of interest. This Proponent remains however subject to the criteria established above.
3. Where Canada intends to reject a proposal under this section, the Contracting Authority will inform the Proponent and provide the Proponent an opportunity to make representations before making a final decision. Proponents who are in doubt about a particular situation should contact the Contracting Authority before bid closing. By submitting a proposal, the Proponent represents that it does not consider itself to be in conflict of interest nor to have an unfair advantage. The Proponent acknowledges that it is within Canada's sole discretion to determine whether a conflict of interest, unfair advantage or an appearance of conflict of interest or unfair advantage exists.

GI26 Limitation of liability

Except as expressly and specifically permitted in this RFP, no Proponent or Potential Proponent shall have any claim for any compensation of any kind whatsoever in relation to this RFP, or any aspect of the procurement process, and by submitting a proposal each Proponent shall be deemed to have agreed that it has no claim.

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GI27 Code of Conduct for Procurement—proposal

The *Code of Conduct for Procurement* (<https://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>) provides that Proponents must respond to bid solicitations in an honest, fair and comprehensive manner, accurately reflect their capacity to satisfy the requirements set out in the bid solicitation and resulting contract, submit bids and enter into contracts only if they will fulfill all obligations of the Contract. By submitting a bid, the Proponent is certifying that it is complying with the *Code of Conduct for Procurement*. Failure to comply with the *Code of Conduct for Procurement* may render the bid non-responsive.

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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 (2018-06-21), General Condition (GC) 1 - General Provisions – Architectural and/or Engineering Services
 - R1215D (2016-01-28), General Condition (GC) 2 - Administration of the Contract – Architectural and/or Engineering Services
 - R1220D (2015-02-25), General Condition (GC) 3 - Consultant Services
 - R1225D (2015-04-01), General Condition (GC) 4 - Intellectual Property
 - R1230D (2018-06-21), General Condition (GC) 5 - Terms of Payment – Architectural and/or Engineering Services
 - R1235D (2011-05-16), General Condition (GC) 6 - Changes
 - R1240D (2018-06-21), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2016-01-28), General Condition (GC) 8 - Dispute Resolution – Architectural and/or Engineering Services
 - R1250D (2017-11-28), General Condition (GC) 9 - Indemnification and Insurance
 - (c) Project Brief / Terms of Reference;
 - (d) the document entitled "Doing Business with PWGSC Documentation and Deliverables Manual";
 - (e) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
 - (f) the proposal, the Declaration/Certifications Form and the Price Proposal Form.

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;

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- (f) Agreement Particulars;
 - (g) Terms of Reference;
 - (h) the document entitled "Doing Business with PWGSC Documentation and Deliverables Manual";
 - (i) the proposal.

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SUPPLEMENTARY CONDITIONS (SC)

SC1 SECURITY REQUIREMENT

There is no security requirement applicable to this Agreement.

SC2 EMPLOYER/PRIME CONSULTANT:

1. During the Design Stage

- a) The Consultant shall, where the Consultant is working on Federal property and is in control of the work site (no Federal presence or construction contractor), for the purposes of the applicable provincial or territorial Occupational Health & Safety Acts and Regulations, and for the duration of the Work of the Contract:
 - i) act as the Employer, where the Consultant is the only employer on the work site, in accordance with the Authority Having Jurisdiction;
 - ii) assume the role of Prime Consultant, where there are two or more employers (including sub-consultants) involved in work at the same time and space at the work site, in accordance with the Authority Having Jurisdiction; and

2. During the Construction Stage

- a) The Consultant shall, for the purposes of the Occupational Health & Safety Acts and Regulations, and for the duration of the Work of the Contract, agree to accept that the Construction Contractor is the Principal/Prime Contractor, and to conform to that Contractor's Site Specific Health and Safety Plan.

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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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

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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 General instructions 3 (G13), Overview of selection procedure.

1.2 Calculation of Total Score

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

$$\begin{array}{rcl} \text{Technical Rating x 90\%} & = & \text{Technical Score (Points)} \\ \text{Price Rating x 10\%} & = & \text{Price Score (Points)} \\ \hline \text{Total Score} & = & \text{Max. 100 Points} \end{array}$$

SRE 2 PROPOSAL REQUIREMENTS

2.1 Proposal via Epost Connect service

This bid solicitation allows and encourages proponents to use the epost Connect service provided by Canada Post Corporation to transmit their proposal electronically.

If the Proponent chooses to submit its proposal electronically through epost Connect service, Canada requests that the Proponent submits its proposal in accordance with section G116, Submission of proposal, of the General Instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

Canada requests that the proposal be gathered per separate electronic document (attachment) as follows:

Section I: Technical Proposal;

Section II: Price Proposal.

The electronic attachment should be labelled with the name of the section and the Solicitation Number.

If the Proponent is simultaneously providing copies of its proposal using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will take precedence over the wording of the other copies.

2.2 Proposal in Hard Copies

If the Proponent chooses to submit its proposal in hard copies, Canada requests that the Proponent submits its proposal in separately bound sections as follows:

Section I: Technical Proposal (submit one (1) bound original plus one (1) electronic copy on a data storage device of the proposal)

Section II: Price Proposal (submit one (1) bound original) in a separate sealed envelope.)

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Double-sided submissions are preferred.

2.3 Proposal by Facsimile

Due to the nature of the bid solicitation, proposals transmitted by facsimile is not recommended for administrative reasons but offered to proponents to provide an alternative opportunity in case of incompatibility or inability to transmit by epost Connect service.

If the Proponent submits its proposal by facsimile, Canada requests that the following sections be clearly identified and separated in the proposal:

Section I: Technical Proposal

Section II: Price Proposal

2.4 Requirement for Proposal Format

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

- Paper (or page) 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
- 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") papers (or pages) 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

2.5 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 thirty (30) pages.

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

- Covering letter
- Cover page
- Tab/Dividers used to solely identify the sections of the proposal, provided they are free of all other text and/or graphics
- Table of Contents
- Consultant Team Identification (Appendix A)
- Declaration/Certifications Form (Appendix B)
- Integrity Provisions – Required Documentation
- Front page of the RFP
- Front page of revision(s) to the RFP
- Price Proposal Form (Appendix C)

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.

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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 Licensing, Certification or Authorization

The proponent shall be a(n) Electrical Engineer, licensed, or eligible to be licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law in the province of Alberta.

3.1.2 Consultant Team Identification

The consultant team to be identified must include the following:

Proponent (prime consultant) – Electrical Engineer
Key Sub-consultants / Specialists – Architect, Electronic Security Systems specialist (ESS)

If the proponent proposes to provide multidisciplinary services that might normally be provided by a sub-consultant, this should be indicated here.

Information required - name of firm, key personnel to be assigned to the project. For the prime consultant indicate current license and/or how you intend to meet the provincial or territorial licensing requirements. In the case of a joint venture identify the existing or proposed legal form of the joint venture (refer to General instructions 9 (GI9) Limitation of submissions).

An example of an acceptable format (typical) for submission of the team identification information is provided in Appendix A.

3.1.3 Declaration/Certifications Form

Proponents must complete, sign and submit the following:

- Appendix B, Declaration/Certifications Form as required.

3.1.4 Integrity Provisions – Required documentation

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Proponent must provide, **as applicable**, to be given further consideration in the procurement process, the required documentation as per General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3a**.

3.2 RATED REQUIREMENTS

3.2.1 Achievements of Proponent on Projects

Describe the Proponent's accomplishments, achievements and experience as prime consultant on projects.

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Select a **maximum** of 3 projects undertaken within the last 10 years. Joint venture submissions are not to exceed the maximum number of projects. Only the first 3 projects listed in sequence will receive consideration and any others will receive none as though not included.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management - i.e. contract price & final construction cost - explain variation
- project schedule control and management - i.e. initial schedule and revised schedule - explain variation
- client references - name, address, phone and fax of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

The Proponent (as defined in General instructions 2 (GI2) Definitions) must possess the knowledge on the above projects. Past project experience from entities other than the Proponent will not be considered in the evaluation unless these entities form part of a joint venture Proponent.

Please indicate those projects which were carried out in joint venture and the responsibilities of each of the involved entities in each project.

3.2.2 Achievements of Key Sub-consultants and Specialists on Projects

Describe the accomplishments, achievements and experience either as prime consultant or in a sub-consultant capacity on projects. If the Proponent proposes to provide multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

Select a **maximum** of 3 projects undertaken within the last 10 years per key sub consultant or specialist. Only the first 3 projects listed in sequence (per key subconsultant or specialist) will receive consideration and any others will receive none as though not included.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management
- project schedule control and management
- client references - name, address, phone and fax of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

3.2.3 Achievements of Key Personnel on Projects

Describe the experience and performance of key personnel to be assigned to this project regardless of their past association with the current proponent firm. This is the opportunity to emphasize the strengths of the individuals on the team, to recognize their past responsibilities, commitments and achievements.

Information that should be supplied for each key personnel:

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-
- professional accreditation
 - accomplishments/achievements/awards
 - relevant experience, expertise, number of years experience
 - role, responsibility and degree of involvement of individual in past projects

3.2.4 Understanding of the Project:

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
- Broader goals (federal image, sustainable development, sensitivities)
- The relationship between this commission and any earlier studies completed for PWGSC
- Significant issues, challenges and constraints
- Project schedule and cost. Review schedule and cost information and assess risk management elements that may affect the project
- The Client User's philosophies and values

3.2.5 Scope of Services:

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:

- Scope of Services - detailed list of services
- Work Plan - detailed breakdown of work tasks and deliverables
- Project schedule - proposed major milestone schedule
- Risk management strategy

3.2.6 Management of Services:

The Proponent should describe how he /she proposes to perform the services and meet the constraints; how the services will be managed to ensure continuing and consistent control as well as production and communication efficiency; how the team will be organized and how it will fit in the existing structure of the firms; to describe how the team will be managed. The proponent is also to identify sub-consultant disciplines and specialists required to complete the consultant team.

If the Proponent proposes to provide multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

Information that should be supplied:

- Confirm the makeup of the full project team including the names of the consultant sub-consultants and specialists personnel and their role on the project.
- Organization chart with position titles and names (Consultant team). Joint Venture business plan, team structure and responsibilities, if applicable
- What back-up will be committed
- Profiles of the key positions (specific assignments and responsibilities)

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- Outline of an action plan of the services with implementation strategies and sequence of main activities
- Reporting relationships
- Communication strategies
- Response time: demonstrate how the response time requirements will be met

3.2.7 Design Philosophy / Approach / Methodology

The proponent should elaborate on aspects of the project considered to be a major challenge which will illustrate design philosophy / approach / methodology. This is the opportunity for the Proponent to state the overall design philosophy of the team as well as their approach of resolving design issues and in particular to focus on the unique aspects of the current project.

Information that should be supplied:

- Design Philosophy / Approach / Methodology
- Describe the major challenges and how your team approach will be applied to those particular challenges.

3.3 EVALUATION AND RATING

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
Achievements of Proponent	2.0	10	20
Achievements of Key Sub-consultants / Specialists	1.0	10	10
Achievements of Key Personnel on Projects	2.0	10	20
Understanding of the Project	1.5	10	15
Scope of Services	1.0	10	10
Management of Services	1.0	10	10
Design Philosophy / Approach / Methodology	1.5	10	15
Technical Rating	10.0		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

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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

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.

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SRE 4 PRICE OF SERVICES

All price proposals corresponding to responsive proposals which have achieved the pass mark of fifty (50) points will be considered upon completion of the technical evaluation. When there are three or more responsive proposals, an average price is determined by adding all the price proposals together and dividing the total by the number of price proposals being opened. This calculation will not be conducted when one or two responsive proposals are received.

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

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 General instructions 16 (GI16) Submission of proposal. Proponents may choose to introduce their submissions with a cover letter.

- Team Identification - see typical format in Appendix A
- Declaration/Certifications Form - completed and signed - form provided in Appendix B
- Integrity Provisions – Required documentation – **as applicable** in accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>) and as per General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3a**.
- Integrity Provisions - Declaration of Convicted Offences – **with its bid, as applicable** in accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci->

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if/politique-policy-eng.html) and as per General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3b.**

- Proposal
- Front page of RFP
- Front page(s) of any solicitation amendment
- Price Proposal Form completed and submitted in a separate section.

For hard copy Proposal NOT REQUIRED:

- Proposal - one (1) original plus one (1) electronic copy on a data storage device of the proposal)
- Price Proposal Form – only one (1) Price proposal Form completed and submitted in a separate envelope

For epost Connect Proposal:

- Proposal - one (1) electronic document attached to the message
- Price Proposal Form – one (1) Price proposal Form completed and submitted in a separate electronic document attached to the message

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APPENDIX A - TEAM IDENTIFICATION FORMAT

For details on this format, please see SRE in the Request For Proposal.

The prime consultant and other members of the Consultant Team shall be, or eligible to be, licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law.

I. Prime Consultant (Proponent – Electrical Engineer):

Firm or Joint Venture Name:

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....
.....

II. Key Sub Consultants / Specialists:

Architect

Firm Name:

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....

Electronic Security Systems specialist (ESS)

Firm Name:

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
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APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address:

Mailing Address:

Telephone Number: ()

Fax Number: ()

E-Mail:

Procurement Business Number:

Type of Organization: _____ Sole Proprietorship _____ Partnership _____ Corporation _____ Joint Venture	Size of Organization: Number of Employees _____ Graduate Architects / Professional Engineers _____ Other Professionals _____ Technical Support _____ Other _____
--	---

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APPENDIX B - 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 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.

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APPENDIX B - 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: 2019-01 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.

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APPENDIX B - 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 "B" should be completed and submitted with the proposal, but may be submitted afterwards as follows: if Appendix "B" 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 C - PRICE PROPOSAL FORM

INSTRUCTIONS:

- Complete this Price Proposal Form and submit in accordance with the instructions in this solicitation.
- Price Proposals are not to include Applicable Taxes.
- PROPOSERS SHALL NOT ALTER THIS FORM

Project Title:

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES

Fixed Fee (R1230D (2018-06-21), GC 5 - Terms of Payment – Architectural and/or Engineering Services)

SERVICES	FIXED FEE
1. Commissioning	\$.....
2. Cost Management	\$.....
3. Pre-Design	\$.....
4. Design Development	\$.....
5. Construction Documents	\$.....
6. Tendering (to assist the Departmental Representative)	\$.....
7. Construction Support	\$.....
8. Post Construction	<u>\$.....</u>

MAXIMUM FIXED FEES \$.....

TOTAL FEE FOR REQUIRED SERVICES \$.....



Doing Business with PWGSC

Documentation and Deliverables Manual



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Revisions

Version	Date	Description
0.1	August 14, 2017	Draft version for consultation.
1.0	January 12, 2018	Original Issuance

1 General

1.1 Effective Date

January 12, 2018

1.2 Authority

This manual is issued by the authority of the Director General, Technical Services, Real Property Branch (RPB), Public Works and Government Services Canada (PWGSC).

1.3 Purpose

This document provides architectural and engineering (A&E) consultants with the requirements for producing deliverables for PWGSC projects in order to ensure a well-documented design process, and facilitate review by PWGSC staff.

1.4 Scope

This document shall apply to design-bid-build projects undertaken by PWGSC on its own behalf as well as for other government departments (OGDs). It is applicable to all regions of PWGSC and can be supplemented with regional addendum.

1.5 Harmonization with Terms of Reference

This document shall be used in conjunction with the project's Project Brief / Terms of Reference (TOR). In case of a conflict between documents, the requirements of the TOR prevail over those of this document.

1.6 Departmental Name Change

In the fall of 2015, Public Works and Government Services Canada (PWGSC) was renamed Public Services and Procurement Canada (PSPC).

This name change is occurring in a phased approach, and for most documents PSPC should be used. However, all contract documents shall use the legal name Public Works and Government Services Canada (PWGSC) until the name has been changed in legislation.

1.7 Terminology

This document utilizes the following terminology:

- “shall” is used to express a requirement, a provision the Consultant is obligated to meet; “should” is used to express a recommendation; and
- “may” is used to express an option or that which is permissible within the limits of this document.

1.8 Definitions

Addenda: Changes to the construction documents or tendering procedures, issued during the tendering process.

Construction Documents: The drawings and specifications (including addenda).

Drawings: The graphic means of showing work to be done, as they depict shape, dimension, location, quantity of materials and relationship between building components.

Reports: Written account given of a particular matter after thorough investigation or consideration prepared by the Consultant.

Specifications: Written descriptions of materials and construction processes in relation to quality, colour, pattern, performance and characteristics of materials, installation and quality of work requirements.

2 Construction Documents

2.1 General

This section provides direction to Consultant firms on the preparation of construction documents (namely specifications and drawings) to be submitted to PWGSC for real property projects across Canada.

Specifications, drawings, and addenda shall be complete and clear so that contractors can prepare bids without guesswork.

2.1.1 Principles of PWGSC Contract Documents

Contact documents shall be prepared based on common public procurement principles. PWGSC does not use Canadian Construction Documents Committee (CCDC) documents.

PWGSC is responsible for preparing and issuing the construction contract and the terms and conditions as well as all other related bidding and contractual documents. For detailed information, the standard acquisition clauses and conditions commonly used by PWGSC in the contracting process are available on the buyandsell.gc.ca website.

2.1.2 Translation

When bilingual documents are required in the Terms of Reference, all documentation including drawings, specifications, reports as well as all bidder questions shall be in both official languages.

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

2.1.3 Construction Documents Definitions

Unless otherwise indicated in the Project Brief / Terms of Reference, construction document submissions (33%, 50 or 66%, 99%, and 100% / final) shall meet the definitions outlined below. Further discipline based requirements may be included in the TOR.

- 33%: shall demonstrate general intent of design and compliance and alignment with relevant standards. Summary specification required, but not a full specification.
- 50% or 66%: shall show full system, all components, requirements, and lack only minor details on drawings. Specifications shall be well advanced and contain major work and material requirements and lack only minor details.
- 99%: shall be for final review by PWGSC, lacking no detail and complete with a project specific specification.
- 100% (or final): shall address comments by PWGSC as required, signed and sealed by the responsible design professional in compliance with various provincial jurisdiction requirements, ready for tender.

2.1.4 Quality Assurance

It is the sole responsibility of the Consultant firms to undertake their own quality control process and to review, correct, and coordinate their documents (between disciplines). The Consultant shall also ensure the constructability of their design.

2.1.5 Quality Assurance Deliverables

For every construction document submission (33 %, 50 % or 66 %, 99 % and 100 %), the Consultant shall provide:

- a completed and signed Checklist for the Submission of Construction Documents (see Appendix A); and
- an index as per Appendix B.

2.1.6 Terminology & Quantities

The Consultant shall 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,” “equivalent to,” and “to be determined on site by Departmental Representative” shall not be indicated in specifications nor in drawings, as such wording promotes inaccurate and inflated bids.

Construction documents shall permit bidders to bid accurately. If a precise quantity is impossible to identify (e.g. cracks to be repaired), then provide an estimated quantity for bidding purposes (to be used in conjunction with unit prices). Ensure that the terminology used throughout construction documents is consistent and does not contradict applicable codes and standards.

2.1.7 Units of Measure

All units of measure within drawings and specifications shall be based on the International System of Units (SI).

2.2 Drawings

2.2.1 General

Drawings shall be prepared in accordance with the [PWGSC National CADD Standard](#) and the Canadian Standards Association CSA B78.5-93: *Computer-Aided Design Drafting (Buildings)*. Drawing shall also meet the following criteria:

- dimensions shall be in metric only (no dual dimensioning);
- no trade names present on any drawings; and
- no specification-type notes are on any drawing.

2.2.2 Information to be Included

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

2.2.3 Title Blocks and Revision Notes

PWGSC title block shall be used for drawings and sketches (including addenda).

The percent of drawing completion should be included in the revision notes. Revision notes shall be inputted during design development, but cleared for 100% complete drawing (ready for tender).

2.2.4 Drawing Numbers

Drawings should be numbered in sets according to the type of drawing and the discipline involved as indicated in the following table. The requirements of the *PWGSC National CADD Standard* supersede these requirements, where warranted.

Discipline	Drawing
Demolition	D01, D02, etc.
Architecture	A01, A02, etc.
Civil	C01, C02, etc.
Landscaping	L01, L02, etc.
Mechanical	M01, M02, etc.
Electrical	E01, E02, etc.
Structural	S01, S02, etc.
Interior Design	ID01, ID02, etc.

2.2.5 Presentation Requirements

Present the drawings in sets, providing the applicable demolition, site plan, civil, landscaping, architecture, structural, mechanical, and electrical drawings in that order. All drawings should be of uniform standard size.

2.2.6 Legends

Provide a legend of symbols, abbreviations, references, etc., on the front sheet of each set of drawings, or in the case of large sets of drawings, provided the legend immediately after the title sheet and index sheets.

2.2.7 Schedules and Tables

Where schedules or tables occupy entire sheets, locate them at the back of each set of drawings for convenient reference.

2.2.8 North Arrow

Include a north arrow on all plans. 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.

2.2.9 Drawing Symbols

Follow generally accepted drawing conventions, understandable by the construction trades and in accordance with PWGSC publications.

2.2.10 As-Built Drawings

As-built drawings are official record drawings and shall represent as constructed conditions including location and size of equipment, devices, plumbing lines, mechanical and electrical equipment, structural elements etc. As-built drawings shall be updated in CAD, handwritten notes are not acceptable.

2.2.11 Submission Format

Unless otherwise stated in the Terms of Reference, drawing submissions shall be in electronic and hard copy format.

2.2.11.1 Drawing Hard Copy Deliverable Format

Drawing submitted in hard copy shall be:

- printed to scale with black lines on white paper;
- bound with staple or other means into sets, where presentations exceed 50 sheets, the drawings for each discipline may be bound separately for convenience and ease of handling; and
- of a paper size as agreed to with the Departmental Representative.

2.2.11.2 Drawing Electronic Copy Deliverable Format

Drawing submitted electronically shall be provided:

- without password protection or printing restrictions;
- in two formats:
 - PDF/E-1 (in compliance with ISO 24517-1);
 - .dwg format; and
- in accordance with Appendix D.

2.3 Building Information Modelling (BIM)

PWGSC is committed to using non-proprietary or “OpenBIM” standards. As such, the Consultant is not required to use any specific proprietary software format. For the sake of legacy information quality, the Consultant shall use the international standards of interoperability for BIM (IFC) in all cases where models are submitted. Consultants shall work with software that is compliant to this standard.

Where used, BIM shall not replace the submission requirements outlined by this document. Rather, consultants shall submit models in addition requirements outlined herein.

Where BIM is used, models and modelled information shall be submitted in the following two formats:

- .native (whichever format is native to the Modelling software used by the Consultant);
- .ifc (Industry Foundation Classification – IFC4 – [ISO 16739:2013](#)); and

All Modelled Information, and Model Information Exchanges shall conform to:

- Project-specific requirements, such as they are laid out in the Project Execution Plan, Project Documentation and Model Element Table; and
- The project-identified BIM Standards & Guidelines.

Models for electronic submissions shall be organized as per Appendix D.

2.4 Specifications

2.4.1 National Master Specification

Specifications prepared for PWGSC shall follow the most current version of the [National Master Specification \(NMS\)](#) format offered by the National Research Council.

The Consultant has overriding responsibility for the content of construction project specifications. For each specification, he or she shall edit, amend, and supplement the NMS template as deemed necessary to produce an appropriate project specification free of conflict and ambiguity. The Consultant should refer to the latest *NMS User's Guide* and *NMS Development Guide* issued by the National Research Council for further guidance on using the NMS.

2.4.2 Index

Specifications shall include an index which list all specification sections, including numbers of pages, as well as the division and section names in the format shown in Appendix B.

2.4.3 Specification Organization

Narrow scope sections describing single units of work should be used for complex work. Broad scope sections may be used for less complex work. The Consultant shall use consistently for the entire specification either the NMS 1/3 page format, the NMS 2/3-page format or the Construction Specifications Canada (CSC) full-page format.

Start each section on a new right hand page and show the PWGSC project number, NMS section title, NMS section number, page number, and specification date on each page. The project title, and Consultant's name are not to be indicated.

2.4.4 Standards

Code and standard references in the NMS may not be up to date, the Consultant shall ensure that the project specification use the current applicable edition of all references quoted.

2.4.5 Specifying Materials

Specifications should make use of generic names in referencing construction materials. The Consultant should refer to the latest version of the *NMS Development Guide* issued by the National Research Council for further details. The term "Acceptable Manufacturers" shall not be used, as this restricts competition and does not ensure the actual material or product will be acceptable.

2.4.5.1 Alternate Products and Materials

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.

2.4.5.2 Sole Sourcing

Sole sourcing of materials and/or work is only allowed in exceptional and justifiable circumstances. Prior to including sole source materials and/or work, the Consultant shall contact the Departmental Representative to obtain approval for the sole sourcing. Consultants shall provide proper justification for all individual sole source requirements.

Sole sourcing for materials and work may be required when performing work on existing proprietary systems, such as fire alarm systems, building automation systems (BAS) etc.

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

Designated Contractor

- .1 Retain the services of [_____] to do the work of this section.

Wording for the sole source of building automation system should be in Part 1 as follows:

Designated Contractor

- .1 Retain the services of [_____] or its authorized representative to complete the work of all building automation system sections.

Wording for the sole source of building automation system should be in Part 2 as follows:

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 (i.e. fire alarm systems) should be in Part 2 as follows:

Acceptable Materials

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

2.4.6 Measurement for Payment

The measurement for payment shall be provided in lump sum or unit prices.

2.4.6.1 Unit Prices

Unit prices should only be used in instances where the quantity can only be roughly estimated (e.g. earth work). The approval of the Departmental Representative shall be sought in advance of their use. In each applicable NMS section where unit prices are used, add new or replace paragraph title “Measurement for Payment” with “Unit Prices.” and 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.

Provide a unit price table, sample shown below, to designate the work to which a unit price arrangement applies. The table shall include:

- the price per unit and the estimated total price for each item listed;
- a complete description of each type of work covered; and
- items 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
TOTAL ESTIMATED AMOUNT						

2.4.7 Cash Allowances

Construction documents shall be complete and contain all of the requirements for the contractual work. Cash allowances are to be used only under exceptional circumstances (i.e. utility companies, municipalities), where no other method of specifying pricing is appropriate.

To include cash allowances, obtain approval from the Departmental Representative in advance, and use Section 01 21 00 – Allowances of the NMS to specify the criteria.

2.4.8 Warranties

The 12-month warranty period specified in PWGSC’s standard acquisition clauses and conditions with regard to the contract should typically be retained as is. Extended warranties should only be used where experience has shown that serious defects are likely to appear after expiry of the standard one-year warranty period. When necessary to extend beyond the 12 month warranty period,

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 [____] months.

Where the extended warranty is intended to apply to a particular part of a specification section, modify the previous text as follows:

For [____], the 12 month warranty period is extended to [____] months.

2.4.9 Miscellaneous Requirements

Paragraphs noted as “Scope of Work” shall not be included. Within Part 1 – General of specifications, the paragraphs “Summary” and “Section Includes” shall not be utilized.

2.4.10 Specification Coordination

All sections of the specifications shall be coordinated, including the “Related Sections” portion of specifications and appendices. References to non-existent sections shall not be present within the specifications.

2.4.11 Regional Guide

The Consultant should contact the Departmental Representative to obtain the region’s requirements for Division 01 (General Requirements) or other short-form specifications as appropriate.

2.4.12 Health and Safety

All project specifications are required to include Section 01 35 29 – Health and Safety Requirements. Confirm with the Departmental Representative to determine if there are any instructions to meet regional requirements.

2.4.13 Subsurface Investigation Reports

If required, subsurface investigation report(s) shall be included after Section 31, and the following paragraph added to Section 31:

Subsurface Investigation Report(s)

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

If the Departmental Representative 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 providing the subsurface investigation report(s), the foundation information required by the current *National Building Code of Canada* (Division C, Part 2, 2.2.4.6) shall be included on foundation drawings.

2.4.14 Prequalification and Pre-Award Submissions

Do not include in the specifications 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 Departmental Representative.

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

2.4.15 Contracting Issues

Specifications describe the workmanship and quality of the work and shall not contain any contracting issues. Division 00 of the NMS is not used by PWGSC, except for the Seals page 00 01 07 and the Table of Contents 00 01 10. In specifications, remove all references to the following:

- general instructions to bidders;
- general conditions;
- Canadian Construction Documents Committee (CCDC) documents;
- priority of documents;
- security clauses and clearances;
- terms of payment or holdback;
- the tendering process;
- bonding requirements;
- insurance requirements;
- alternative and separate pricing;
- site visits (mandatory or optional); and
- the release of lien and deficiency holdbacks.

2.4.16 Specification Submission Format

Unless otherwise stated in the Terms of Reference, specification submissions shall be in electronic and hard copy format.

2.4.16.1 Specification Hard Copy Deliverable Format

Specifications submitted in hard copy shall be printed on both sides of 216 mm x 280 mm white bond paper.

2.4.16.2 Specification Electronic Copy Deliverable Format

Specifications submitted electronically shall be:

- provided in PDF/A (in compliance with ISO 19005) format, without password protection and printing restrictions; and
- in accordance with Appendix D.

2.5 Addenda

2.5.1 Format

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

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

No Consultant information (name, address, phone #, Consultant project #, etc.) should appear in addenda or their attachments (except on sketches).

2.5.2 Content

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

Where there are many or major changes to a section or drawing, consider deleting the entire section or drawing and replacing it with a new version.

3 Cost Estimates

3.1 Cost Estimates Submission Formats

3.1.1 Format

Construction cost estimates for projects shall be prepared in the elemental analysis format, which is in accordance with the latest edition issued by the Canadian Institute of Quantity Surveyors (CIQS) for all PWGSC regions excluding Quebec. Within Quebec region the cost estimates shall be prepared in the Unifomat II format.

3.1.2 Contents

All cost estimates shall contain the following:

- introduction narrative complete with an outline description of the cost estimate basis;
- description of information obtained and used in the cost estimate including the date received;
- listing of notable inclusions;
- listing of notable exclusions;
- listing of items/issues carrying significant risk;
- summary of the itemized cost estimate;
- itemized breakdown of cost estimate by elemental analysis for Class B, C, and D; and
- itemized breakdown of costs estimate in both elemental analysis and National Master Specification division format for Class A, including measured quantities, unit rate pricings and amounts for each item of work.

Allowances, if deemed necessary by Consultant, shall contain the following:

- design allowance to cover unforeseen items during design phase;
- escalation allowance for changes in market conditions between the date of the cost estimate and the date tender is called;
- construction allowance to cover unforeseen items during construction; and
- the basis of calculations of the above allowances.

3.2 Classes of Cost Estimates for Construction Projects

PWGSC applies a detailed, four-level classification using the terms Class A, B, C and D. Apply these estimate classifications at the project stages as defined in the TOR. For projects required to be submitted to Treasury Board (TB) for approval: an indicative estimate shall be at least a Class D and a Substantive Estimate shall be at least a Class B.

3.2.1 Class D (Indicative) Estimate

Based upon a comprehensive statement of requirements, an outline of potential solutions and/or functional program, this estimate is to provide an indication of the final project cost that will enable ranking to be made for all the options being considered. This cost estimate shall be prepared in elemental analysis format. The level of accuracy of a Class D cost estimate shall be such that no more than a 20% design allowance is required.

3.2.2 Class C Estimate

Based on schematic/conceptual design and/or comprehensive list of project requirements, this estimate shall be adequately detailed and shall be sufficient for making the correct investment decision. This cost estimate shall be based on measured quantities of all items of work and prepared

in elemental analysis format. The level of accuracy of a Class C cost estimate shall be such that no more than a 15% design allowance is required.

3.2.3 Class B (Substantive) Estimate

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

This cost estimate shall be based on measured quantities of all items of work and prepared in elemental analysis format. The level of accuracy of a Class B cost estimate shall be such that no more than a 10% design allowance is required.

3.2.4 Class A (Pre-Tender) Estimate

Based on completed construction drawings and specifications prepared prior to calling competitive tenders, this estimate shall be sufficient to allow a detailed reconciliation and/or negotiation with any contractor's tender submission. This cost estimate shall be based on fully measured quantities of all items of work and prepared in both elemental analysis and Trade division format as per MasterFormat™. The level of accuracy of a Class A cost estimate shall be such that no more than a 5% design allowance is required.

4 Project Schedules

4.1 Schedule Format

Project schedules shall be submitted in the .mpp file extension (compatible with MS Project). The schedule shall include:

- major and minor milestones;
- activities representing discrete elements of work assigned to one person which:
 - are named using verb-noun combination (i.e. Review Design Development Report);
 - contain realistic durations in days;
- project logic linking activities with appropriate relationships finish-start (FS), finish-finish (FF), start-start (SS); and
- Identification of the critical path activities.

4.2 Progress Report

The progress report shall detail the progress of each activity up to the date of the report. It shall also include any logic changes made, both historic and planned; projections of progress and completion; as well as the actual start and finish dates of all activities being monitored.

The contents of each progress report will vary depending on the requirements at each project phase. A progress report should include:

- an executive summary;
- a narrative report;
- a variance report;
- a criticality report;
- an exception report (as required);
- the master schedule with cash flow projections; and
- the detailed project schedule (network diagram or bar charts).

4.2.1 Executive Summary

The executive summary should provide a synopsis of narrative, variance, criticality and exception report, and is not to exceed one page.

4.2.2 Narrative Report

The project narrative shall detail 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 Detailed Schedule, and Critical Paths.

4.2.3 Variance Report

The variance report, with supporting schedule documentation, should detail the work performed to date and compare work progress to work planned. It should summarize the progress to date and explain all causes of deviations and delays and the required actions to resolve delays and problems with respect to the detailed schedule and critical paths. The variance report shall be presented in the following format:

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

4.2.4 Criticality Report

The criticality report identifies all activities and milestones with negative, zero, and up to five days' Total Float. It is used as a first sort for ready identification of the critical paths, or near-critical paths, through the entire project. The criticality report shall be presented in the following format:

Paper size: Letter
Orientation: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision Block
Body text: Narratives for each report to match other reports
Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete, Total Float

4.2.5 Exception Report

The exception report shall be provided when unforeseen or critical issues arise. The Consultant shall advise the Departmental Representative and submit the details and proposed solutions in the form of an exception report. The report shall include sufficient description and detail to clearly identify:

- scope changes, including identifying the nature, reason, and total impact of all identified and potential project scope changes affecting the project;
- delays and accelerations, including identifying the nature, reason, and total impact of all identified and potential duration variations; and
- options enabling a return to the project baseline, including Identifying the nature and potential effects of all proposed options for returning the project within the baselined duration.

The exception report shall be provided in the following format:

Paper size: Letter
Orientation: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision
Body text: Narrative to match other reports

Paper size: Letter
Orientation: Landscape
Title format: Project Title, Report Type, Print Date, Data Date, Revision
Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float

4.2.6 Master Schedule

A master schedule including cash projection shall be provided in the following format:

Paper size: 11X17
Orientation: Landscape
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish,
Total Float
Footer format: Project Title, Report Type, Print Date, Data Date, Revision Block
Sorting: Early Start, then Early Finish, then Activity ID based on the WBS.

4.2.7 Detailed Project Schedule

A detailed project schedule shall be provided along with a network diagram or bar charts in the following format:

Paper size: 11X17
Orientation: Landscape
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish,
Total Float
Footer format: Project Title, Report Type, Print Date, Data Date, Revision Block
Sorting: Early Start, then Early Finish, then Activity ID based on the WBS.

Appendix A Checklist for the Submission of Construction Documents

Date:	
Project Title:	Project Location:
Project Number:	Contract Number:
Consultant's Name:	PWGSC Departmental Representative
Review Stage (stages may vary at discretion of project team): 33% <input type="checkbox"/> 50% or 66% <input type="checkbox"/> 99% <input type="checkbox"/> 100% <input type="checkbox"/>	

Drawings\Design			
Item	Verified by	Explanations	Action By
1 Index			
1a The index shows a complete listing of drawing titles and numbers.			
2 Title Blocks			
2a The title block is as per the <i>PWGSC National CADD Standard</i> .			
3 Units			
3a All units of measure are metric.			
4 Trade Names			
4a Trade names are not used.			
5 Specification Notes			
5a There are no specification-type notes.			
6 Terminology			
6a The term "Departmental Representative" is used instead of "Engineer," "PWGSC," "Owner," "Consultant," or "Architect."			
6b 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.			
7 Information to be included			
7a The project quantities, configurations, dimensions, and construction details are included.			
7b References to future work and elements not in the tender documents do not appear or are kept to an absolute minimum and clearly marked.			

Drawings\Design			
Item	Verified by	Explanations	Action By
8 Quality Assurance			
8a Coordination review of the design between various disciplines has been completed by the Consultant.			
8b Constructability review of design has been performed.			
9 Signing and Sealing			
9a Every final drawing bears the seal and signature of the responsible design professional in compliance with various provincial jurisdiction requirements.			

Specifications			
Item	Verified by	Explanations	Action by
1 National Master Specification			
1a The current edition of the National Master Specification (NMS) has been used.			
1b Sections have been included for all work identified on drawings and sections have been edited.			
2 Index			
2a The index shows a complete list of specifications sections with the correct number of pages.			
3 Organization			
3a Either the NMS 1/3- or 2/3-page format or the Construction Specifications Canada full-page format is used consistently for the entire specifications.			
3b Each section starts on a new page and the project number, section title, section number, page number and date is shown on each page.			
3c The Consultant's name is not indicated.			
4 Terminology			
4a The term "Departmental Representative" is used instead of "Engineer," "PWGSC," "Owner," "Consultant," or "Architect."			
4b 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.			
5 Dimensions			
5a Dimensions are provided in metric only.			
6 Standards			
6a The current edition of all references quoted is used.			
7 Specifications Materials			
7a The method of specifying materials uses recognized standards. Actual brand names and model numbers are not specified.			
7b Materials are specified using standards and performance criteria.			

Specifications			
Item	Verified by	Explanations	Action by
7c Non-restrictive, non-trade name “prescription” or “performance” specifications are used throughout.			
7d The term “Acceptable Manufacturers” is not used.			
7e No sole sourcing has been used.			
7f If sole sourcing has been used, the correct wording has been used and a justification, estimate, and specification have been provided to the Departmental Representative for the sole-sourced products.			
8 Measurement for Payment			
8a Unit prices are used only for work that is difficult to estimate.			
9 Cash Allowances			
9a No cash allowances have been used or if they have, approval from the Departmental Representative has been received.			
10 Miscellaneous Requirements			
10a No paragraphs noted as “Scope of Work” are included.			
10b In Part 1 - General of any section, the paragraphs “Summary” and “Section Includes” are not used.			
11 Specification Coordination			
11a The list of related sections and appendices are coordinated.			
12 Health and Safety			
12a Section 01 35 29.06 – Health and Safety Requirements is included.			
13 Subsurface Investigation Reports			
13a Subsurface investigation reports are included after Section 31.			
14 Prequalifications			
14a There are no mandatory contractor and/or subcontractor prequalification requirements or references to certificates, transcripts, licence numbers of a trade or subcontractor, or other such documentation or item included in the bid.			

Specifications			
Item	Verified by	Explanations	Action by
15 Contracting Issues			
15a Contracting issues do not appear in the specifications.			
15b Division 00 of the NMS is not used except 00 01 07 (Seals Page) and 00 01 10 (Table of Contents).			
16 Quality Assurance			
16a There are no specification clauses with square brackets “[]” or lines “_” indicating that the document is incomplete or missing information.			
17 Signing and Sealing			
17a Every final specification bears the seal and signature of the responsible design professional as required. Seals and signatures shall be shown in NMS section 00 01 07.			

I confirm that the drawings and specifications have been thoroughly reviewed and that the items listed above have been addressed or incorporated. I acknowledge and accept that by signing, I am certifying that all items noted above have been addressed.

Consultant's Representative: _____

Firm name: _____

Signature: _____ Date: _____

Appendix B Drawings and Specifications Table of Contents Template

B.1 General

List all drawings by number and title.

For specifications, list all divisions, sections (by number and title), and the number of pages in each section.

B.2 Sample Table of Contents

Project No: _____ **Table of Contents** **Index**
Page 1 of ____

DRAWINGS:

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

SPECIFICATIONS:

DIVISION	SECTION	NO. OF PAGES
01	01 00 10 – General InstructionsXX
	01 14 25 – Designated Substances ReportXX
	01 35 30 – Health and SafetyXX
23	23 xx xx	
26	26 xx xx	

Appendix C Addenda Formatting Template

C.1 Instructions

To re-issue a drawing with an addendum:

- indicate the drawing number and title; and
- list the changes or indicate the revision number and date.

To re-issue a specification with an addendum:

- indicate the section number and title; and
- list all changes (i.e. deletions, additions, and replacements) by article or paragraph.

The addendum, drawings and specifications should be sent as separate files.

C.2 Sample Addendum

Date: _____

Addendum Number: _____

Project Number: _____

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

DRAWINGS:

- 1 A1 Architecture
.1

SPECIFICATIONS:

- 1 Section 01 00 10 – General Instructions
 - .1 Delete article (xx) entirely.
 - .2 Refer to paragraph (xx.x),
delete the following: ...
and replace with the following: ...
- 2 Section 23 05 00 – Common Work Results - Mechanical
 - .1 Add new article (x) as follows:

Appendix D Directory Structure and Naming Convention Standards for Construction Tender Documents

D.1 Electronic Submissions

Electronic submittals of drawings, specification and models shall be in the following format unless otherwise specified in the Terms of Reference or instructed by the Departmental Representative:

- On media burned to read only memory (ROM) on either CD-ROM or DVD+R where:
 - CD-ROMs comply with ISO 9660:1988 standards;
 - DVD+Rs are 4.7 GB, single-sided, single-layer and comply with ISO/IEC 17344:2006 standards;
 - media is “closed” upon completion of burning; and
 - media is usable in such a way that files may be accessed and copied from it.

If BIM model size is greater than storage capacity of a DVD, refer to Terms of Reference or contact the Departmental Representative for transmission instructions.

Some projects may require the Consultant to upload files to an electronic system outlined in the Terms of Reference or as instructed by the Departmental Representative.

D.2 Directory Structure

D.2.1 1st Tier Subfolder

The 1st tier of the directory structure shall be “Project #####” where ##### represents each digit of the Project Number. The Project Number must always be used to name the 1st 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.

D.2.2 2nd Tier Subfolder

The 2nd tier of the directory structure shall consist of: “Bilingual - Bilingue”, “English” and “Français” folders. The folders of the 2nd tier cannot be given any other names since the Government Electronic Tendering System (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 subfolders of the 3rd tier.

D.2.3 3rd Tier Subfolder

The 3rd tier of the directory structure shall consist of: “Drawings - Dessins”, “Drawings”, “Models”, “Specifications”, “Reports”, “Dessins”, “Modèles”, “Devis” and “Rapports”. The folders of the 3rd 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 3rd tier folder in each document.

D.2.4 4th Tier Subfolder - Drawings

The 4th-tier subfolders for Drawings should reflect the various disciplines of the set of drawings. Because the order of appearance of the subfolders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the subfolders in the “Drawings – Dessins”, “Drawings” and “Dessins” folders. The first subfolder 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.

The 4th tier “Drawings” and “Dessins” folder shall follow the naming convention:

- 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 – Électrique

The numbering of the 4th tier subfolders is for sorting purposes only and is not tied to a specific discipline. For example, “Architecture” could be numbered 05 for a project where there is four other disciplines before “Architecture” in the set of drawings or 01 in another project where it’s the first discipline appearing in the set.

The order of the drawings shall be 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 subfolders 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-older will be printed in alphanumerical order before the drawings in the 02 sub- folder etc.);

Each drawing PDF file within each subfolder 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.).

D.2.5 4th-Tier Subfolders for Specifications

The “Specifications” and “Devis” folders must have 4th tier subfolders created to reflect the various elements of the specifications. Because the order of appearance of the subfolders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the subfolders in the “Specifications” and “Devis” folders.

The 4th tier subfolders 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

Numbering of the 4th tier subfolders 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 subfolders 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 subfolder will be printed, in alphanumerical order before the PDF files in the 02 subfolder, etc.).
- Each specifications PDF file within each subfolder 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.).

D.2.6 Directory Structure Example

The following is an example of the directory structure for the tender document, refer to previous sections for requirements, and use only sections applicable to the given project:

```
Project #####
  Bilingual – Bilingue
    Drawings – Dessins
      01 - Drawing List – Liste des dessins
      02 – Demolition – Démolition
      03 – Architecture – Architectural
      04 – Civil – Civil
      05 – Landscaping - Aménagement paysager
      06 – Mechanical – Mécanique
      07 – Electrical – Électricité
      08 – Structural - Structural
      09 – Interior Design – Aménagement intérieur
  English
    Drawings
      01 - Drawing List
      02 – Demolition
      03 – Architecture
      04 – Civil
      05 – Landscaping
      06 – Mechanical
      07 – Electrical
      08 – Structural
      09 – Interior Design
    ...
    Models
    Specifications
      01 – Index
      02 – Divisions
      03 – Appendices
    Reports
  Français
    Dessins
    Modèles
    Devis
    Rapports
```

D.3 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 subfolder of the directory structure.

D.3.1 Drawing File Names

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

X### - Y

Where:

X = the letter or letters from the drawing title block (“A” for Architecture 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 4th tier subfolders must be named with the same letter (“A” for Architecture 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 subfolder 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 subfolder, 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.

D.3.2 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 drawings 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.

D.3.3 Documents Other Than Specifications Divisions

Because PDF files within the Specifications subfolders are sorted alphanumerically (in ascending order) for both on screen display and printing order, all files that appear in folders other than the “Divisions” subfolder 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 – Drawings and Specifications Index

D.3.4 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 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.

D.4 Media Label

The CD-ROM or DVD+R shall be labeled with the following information:

Project Number / Numéro de projet

Project Title / Titre du projet

Documents for Tender / Documents pour appel d'offres

Disk X of/de X

Example:

Project 123456 / Projet 123456

Repair Alexandra Bridge / Réparation du pont Alexandra

Documents for Tender / Documents pour appel d'offres

Disk 1 of/de 1



Architectural & Engineering Services **TERMS OF REFERENCE**

CSC Bowden – Electrical Infrastructure Upgrades

**For:
Correctional Service Canada
(CSC)
Bowden Institution
Bowden, Alberta**

August 20, 2020



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1 PROJECT DESCRIPTION

1.1 GENERAL

1.1.1 PURPOSE OF THE TERMS OF REFERENCE (TOR)

- .1 Public Works & Government Services Canada (PWGSC) requires the services of an electrical engineering firm (Consultant), acting as the Prime Consultant, with a multi-disciplinary team of sub-consultants for the delivery of services required for this project.

1.1.2 THE TOR AND THE DOING BUSINESS WITH PWGSC DOCUMENTATION AND DELIVERABLES MANUAL

- .1 The TOR describes the project specific requirements, services and deliverables while the *Doing Business with PWGSC Documentation and Deliverables Manual* outlines the standards and procedures for construction documents, cost estimating and project scheduling.
- .2 Document precedence:
 - .1 In the event of a document conflict the TOR takes precedence.

1.1.3 PROJECT INFORMATION

Project Information	
Project Title:	CSC Bowden – Electrical Infrastructure Upgrades
Project Address:	Bowden Institution Bowden, Alberta
PWGSC Project Number:	R.100932.001
PWGSC Contracting Officer:	TBD

1.2 BACKGROUND INFORMATION

1.2.1 USER DEPARTMENT

- .1 The User Department referred to throughout the TOR is Correctional Service Canada (CSC)
- .2 CSC, as part of the criminal justice system and respecting the rule of law, contributes to public safety by actively encouraging and assisting offenders to become law-abiding citizens, while exercising reasonable, safe, secure and humane control.

1.2.2 USER DEPARTMENT’S NEED

- .1 Electrical infrastructure including all major electrical equipment (i.e. Switchgear, Generators, Transfer Switches, Transformers, Distribution Boards, and Panels) has exceeded expected service life and requires replacement/upgrades.
 - .1 In addition to being past useful service life, the high voltage transformers, main disconnects, automatic transfer switches and other electrical components are out-dated and dangerous to service. High volumes of electrical components are becoming obsolete and difficult to find replacement parts.



- .2 The Bowden Institution requires lightning protection for all site infrastructure – including buildings and transformers.
 - .1 Based on recent experience, the existing lightning protection is insufficient to protect the Bowden Institution from lightning damage.

1.2.3 EXISTING CONDITIONS

- .1 Bowden Institution is a medium-security correctional institution with a minimum-security annex. The Institution houses over 700 inmates and employs over 500 staff members. It is located approximately 10 kilometres south of Innisfail, Alberta.
- .2 Refer to the *Bowden Institution, Facility Condition Report* in Appendix A for a detailed description of existing conditions.

1.2.4 CHALLENGES AND CONSTRAINTS

- .1 All site visits must be arranged through the Departmental Representative.
 - .1 All access throughout the institution will be escorted by CSC.
- .2 The Consultant is required to submit to CSC the name(s) for all his/her firm's personnel, as well as for any sub-consultants, prior to visiting the project site for any reasons, such as, preliminary site inspection, attendance for site design meetings, etc. Security clearance checks may include credit checks. Failure to obtain security clearances will result in forfeiture of the commission for this project.
- .3 The Consultant is required to complete and submit to CSC an Electronic Registry form and Tool Registry form prior to bringing any electronics or tools to the site. The forms will be provided to the successful Consultant upon contract award.
- .4 Work will be carried out during normal working hours during full operation of the Institution.
 - .1 All systems affected by the Work must remain fully functional at the end of each work day.
 - .1 The CSC Electronic Security System (ESS) requires partial functionality at all times – coordination with CSC is essential.

1.3 OUTLINE OF WORK

1.3.1 GENERAL

- .1 Electrical design for Electrical Infrastructure Work (1.3.2) and Lightning Protection System Work (1.3.3) may require other disciplines to complete the design Work.
 - .1 Determine scope of Work for associated architectural, civil, structural and/or mechanical design in the Pre-Design Service.

1.3.2 ELECTRICAL INFRASTRUCTURE WORK

- .1 Buildings 1 - 5 - Living Units:
 - .1 Replace the following;
 - .1 600 V to 120/208, 75 kVa,



- .2 600 V to 120/208, 30 kVa.
 - .2 Main Disconnects;
 - .3 Transfer Switches.
- .2 Building 6 - Native Cultural Centre:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 45 kVa,
 - .2 Main Disconnect / Panel, 400 Amp;
 - .3 Transfer Switch 347/600, 250 Amp.
 - .3 Building 13 – Chapel:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Breaker;
 - .3 Transfer Switch.
 - .4 Building 14 – Private Family Visits, Units 1 & 2:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Breaker;
 - .3 Transfer Switch.
 - .5 Building 15 – Private Family Visits, Units 3 & 4:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Breaker;
 - .3 Transfer Switch.
 - .6 Building 17 - Dissociation / Segregation Health:
 - .1 Replace the following;
 - .1 Transformers;
 - .1 600 V to 120/208, 50 kVa,
 - .2 600 V to 120/208, 45 kVa,
 - .3 600 V to 120/208, 45 kVa.
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
 - .7 Building 18 - Gymnasium:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 45 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;



- .4 Main Breakers.
- .2 Upgrade Power Panels.
- .8 Building 19 - Hobby Shop and Library:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 45 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
 - .2 Upgrade Power Panels.
- .9 Building 20 - Kitchen and Dining Hall:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 75 kVa,
 - .2 600 V to 120/208, 30 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .10 Building 21 - Administration Building:
 - .1 Replace the following;
 - .1 Transformers;
 - .1 600 V to 120/208, 112.5 kVa,
 - .2 600 V to 120/208, 30 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .11 Building 22 - Sally Port / Gate House:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 45 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .12 Building 23 - Checkpoint Charlie:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
 - .2 Upgrade Power Panels.



- .13 Building 25 – Inmate Smoking Area:
 - .1 Upgrade Power Panels.
- .14 Building 26 – Native Sacred Ground Storage Shed
 - .1 Upgrade Power Panels.
- .15 Building 28 - Corcan Industries:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 225 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers;
 - .2 Upgrade Power Panels.
- .16 Building 31 - Maintenance:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208, 15 kVa,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers;
 - .2 Upgrade Power Panels.
- .17 Building 33 - Laundry:
 - .1 Replace the following;
 - .1 Transformers;
 - .1 600 V to 120/208, 45 kVa,
 - .2 600 V to 120/208, 45 kVa,
 - .3 600 V to 120/208, 30 kVa,
 - .2 Motor Control Centre;
 - .3 Main Disconnects;
 - .4 Transfer Switches;
 - .5 Main Breakers;
 - .2 Upgrade Power Panels.
- .18 Building 34 - Business Centre:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Transfer Switch;
 - .3 Main Breaker.
- .19 Buildings 39 – 50 – Annex Buildings:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Transfer Switch;



- .3 Main Breaker.
- .20 Building 61 – Annex Corcan Warehouse:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Transfer Switch;
 - .3 Main Breaker.
- .21 Building 62 – Annex Maintenance Building:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Transfer Switch;
 - .3 Main Breaker.
- .22 Building 70 – Agri-Business Centre:
 - .1 Replace the following;
 - .1 Transformer;
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .23 Building 71 – Agri-Centre Machinery Storage Shed #1:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .24 Building 72 – Corcan Shop:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208,
 - .2 Main Disconnects;
 - .3 Transfer Switches;
 - .4 Main Breakers.
- .25 Building 73 – Sewage Disposal Plant:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208;
 - .2 Transfer Switch;
 - .3 Main Breaker.
- .26 Building 74 – Shooting Range Storage Shed:
 - .1 Replace the following;
 - .1 Transformer;



- .1 600 V to 120/208;
- .2 Transfer Switch;
- .3 Main Breaker.
- .27 Machinery Building 1:
 - .1 Replace Main Disconnect.
- .28 Machinery Building 2:
 - .1 Upgrade Lighting (LED) and Power Panel.
- .29 Machinery Building 3:
 - .1 Upgrade Lighting (LED) and Power Panel.
- .30 Building 80 - Main Substation/Generator Building:
 - .1 Replace all electrical switchgear, disconnects, transfer switches, tiebreakers, panel boards, wiring, and Generators (c/w electrical equipment/controls).
 - .2 Upgrade all wiring from the Substation equipment to the new 25 kVa Transformers (includes through the underground perimeter loop system and underground vaults).
- .31 Building 85 – Compost Building:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208;
 - .2 Main Breaker;
 - .3 Transfer Switch.
- .32 Building 116 – Stores:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208;
 - .2 Main Breaker;
 - .3 Transfer Switch.
- .33 Building 130 – Potable Water Building:
 - .1 Replace the following;
 - .1 Transformer;
 - .1 600 V to 120/208;
 - .2 Main Breaker;
 - .3 Transfer Switch.
- .34 Electrical Trenches:
 - .1 Test and Evaluate Cables and 26 Connection Points;
 - .2 Upgrade 26 Connection Points.
 - .3 Repair/upgrade trench enclosures as required.
- .35 Site:
 - .1 Replace Security Fence Double Light Standards;
 - .2 Refurbish / Replace High-Mast Medium Security Light Standards;
 - .3 Upgrade Electrically Controlled Main Entrance Gate;
 - .4 Replace all 25 kVa transformers and wiring for the perimeter loop;



- .1 Install new wiring into each building from the new 25 kVa transformers into all new 600V to 120/208V transformers, disconnects, switchgear, breakers, transfer switches, panel boards, low voltage relay panels and including any other existing electrical equipment that needs to be updated or is obsolete.
- .5 Remove and replace all above ground overhead 25 kVa lines at the Annex area to an underground vault system and tie into existing vaults.

1.3.3 LIGHTNING PROTECTION SYSTEM WORK

- .1 Assess options for a new/upgraded lightning protection system at the Bowden Institution.
 - .1 Includes all buildings/structures and infrastructure/equipment affecting the operations of the Bowden Institution.

1.4 OBJECTIVES

1.4.1 GENERAL GOALS

- .1 Quality Design through the:
 - .1 Appropriateness of the real property solution for its use and location;
 - .2 Collaborative Project Delivery (CPD) process – refer to Definitions;
 - .3 Economic viability of the real property solution considered and/or developed;
 - .4 Successful incorporation of environmentally sustainable solutions;
 - .5 Incorporation of suitable high quality materials and components into the design that are durable and are constructed with good industry practice;
 - .6 Appropriate incorporation of innovations within the project delivery and solutions.
- .2 Fully integrate all components and systems including architectural, structural, mechanical, electrical, IT and security design (e.g. ESS).
- .3 Fully integrate new components and systems with existing electrical and security systems.
- .4 Provide an integrated design and construction process involving:
 - .1 Interdisciplinary collaboration, including all stakeholders as identified, design professionals, contractors and authorities having jurisdiction;
 - .2 Agreed upon design principles and decision making protocols.
- .5 Employ advanced systems and technologies to support contemporary operating requirements with capacity for growth and change.
- .6 Review trends and identify, through benchmarking, requirements necessary to provide creative, functional and cost effective Work solutions.
- .7 Provide a Lightning Protection System compatible with existing buildings/structures and capable of minimizing lightning damage by meeting/exceeding applicable codes, acts, standards and regulations.



- .8 Provide a design that is efficient and cost effective considering both initial cost and operation & maintenance costs over a life cycle of 25 years.

1.4.2 ENVIRONMENTAL/SUSTAINABLE DEVELOPMENT

- .1 Design using sustainable design principles based on LEED® requirements and in alignment with the most current CSC Sustainable Development Strategy (SDS):
 - .1 <http://www.csc-scc.gc.ca/publications/005007-8601-eng.shtml>

1.4.3 PROJECT DELIVERY

- .1 Project delivery will be Design Bid Build.
- .2 Provide fully integrated and coordinated professional and design services for the delivery of a project in accordance with the requirements in the TOR and as contained herein.
- .3 Obtain written authorization from the Departmental Representative before proceeding from one project milestone to another.
- .4 Coordinate all services with the Departmental Representative.
- .5 Establish and maintain a Project Management Plan.
- .6 Maintain continuity of key personnel and a dedicated working team for the life of the project.
- .7 Deliver the project to be within:
 - .1 The construction Budget established during preliminary project approval, and;
 - .2 The Project Milestones in this TOR.
- .8 Provide full coordination of services with the CSC Bowden Institution security systems contractor.
- .9 Conduct Quality Assurance reviews during the Project Milestones, including the application of Value Engineering principles during the design of all complex systems.

1.5 SUMMARY OF SERVICES AND SPECIALTIES

1.5.1 GENERAL SERVICES

- .1 Provide a Consultant Team including the following specialist services:
 - .1 Professional/Registered Electrical Engineering Services;
 - .1 Prime Consultant;
 - .2 **Electronic Security System (ESS) specialist;**
 - .3 Lightning Protection System specialist.
 - .2 Commissioning specialist;
 - .1 Consulting engineers may function as the Commissioning Authority.
 - .3 Cost Estimating specialist;
 - .1 Certified by the Canadian Institute of Quantity Surveyors.
- .2 The extent of the requirement for Professional Architectural, Civil Engineering, Structural Engineering and/or Mechanical Engineering Services will be determined upon completion of an approved Pre-Design Report.



1.6 SCHEDULE

1.6.1 GENERAL

- .1 Prepare a Project Schedule, finalizing milestone duration and completion dates, in accordance with the milestone list.

1.6.2 MILESTONE LIST

Project Phase	Milestone Completion Date	Number of Weeks
Consultant Contract Award	2020-11-01	
Pre-Design	2020-12-15	6 weeks
PWGSC Quality Assurance Review	2020-12-29	2 weeks
Design Development	2021-02-15	6 weeks
PWGSC Quality Assurance Review	2021-02-28	2 weeks
66% Construction Documents	2021-04-15	6 weeks
PWGSC Quality Assurance Review	2021-04-30	2 weeks
99% Construction Documents	2021-06-15	6 weeks
PWGSC Quality Assurance Review	2021-06-30	2 weeks
Tender Documents	2021-07-15	2 weeks
Substantial Performance (including Commissioning Completion and Interim Commissioning Report)	2022-07-15	52 weeks
Final Completion (including: Standard Operating Procedures; Final Inspection and Acceptance)	2022-08-15	4 weeks
Post Construction (including: Final Certificate of Completion; Record Documents; O&M Manual; Commissioning Manual and Standard Operating Manual; Warranty Deficiency List)	2022-09-15	4 weeks
Post Construction (including: Final Warranty Review Report; Final Commissioning Manual and Standard Operating Manual)	2023-05-15	36-40 weeks

1.7 COST

1.7.1 ESTIMATED CONSTRUCTION COST

- .1 The estimated Electrical Infrastructure Work construction cost is anticipated at this time to be \$3,000,000.
 - .1 The estimated construction cost does not include the Lightning Protection System, project management fees, administrative costs, Consultant fees, risk allowance, escalation or GST and is in 'Budget-Year (Current)' dollars.



1.8 EXISTING DOCUMENTATION

1.8.1 AVAILABLE FOR THE CONSULTANT

- .1 Limited as-built drawings and Operation & Maintenance Manuals will be available at the start of the Pre-Design phase. The Consultant will be responsible for verifying the accuracy of the information incorporated into the design.
- .2 Building drawings are in AutoCAD (dwg) format.
 - .1 The drawings will require modifications by the Consultant.

1.8.2 DISCLAIMER

- .1 Reference information will be available in the language in which it is written.
- .2 The documentation may be unreliable and is offered, "as is" for the information of the Consultant.
- .3 The Consultant is responsible for verifying the accuracy of the information incorporated into the final design.

1.9 CODES, ACTS, STANDARDS, REGULATIONS

1.9.1 GENERAL

- .1 In addition to Provincial and Municipal Acts, Codes, By-laws and Regulations appropriate to the area of concern, the following Codes, Acts, Standards and Guidelines are applicable to this project (in the event of a conflict between codes, the more stringent shall take precedence):
 - .1 NRC National Building Code of Canada 2015;
 - .2 NRC National Fire Code of Canada 2015;
 - .3 NRC National Plumbing Code of Canada 2015;
 - .4 NRC National Energy Code of Canada for Buildings 2017;
 - .5 General Electrical;
 - .1 CSA C22.1, Canadian Electrical Code Part I Safety Standard for Electrical Installations and CE Code Handbook. Amendments for Provinces,
 - .2 National Electrical Manufacturers Association (NEMA),
 - .3 Electrical and Electronic Manufacturers' Association of Canada (EEMAC),
 - .4 American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE) - ANSI/IEEE C62.41, Surge Voltages in Low-Voltage AC Power Circuits,
 - .5 American Society for Testing and Materials (ASTM),
 - .6 ASTM F1137 11e1, Specification for Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners,
 - .7 The Canadian Council of Ministers of the Environment (CCME),
 - .8 The Canadian Environmental Protection Act (CEPA),
 - .9 Canadian Environmental Assessment Agency (CEAA),
 - .10 UL8750 -15 LED Standard for equipment use in Lighting Products,



- .11 IES LM-79-08 & IESNA 80-08 LED Photometric Testing Standard,
- .12 ANSI C82.16; LED Drivers-Method of Measurement,
- .13 ANSI C78.50; LED Lamps Physical and Electrical Characteristics,
- .14 American National Standards Institute (ANSI),
- .15 ANSI/NEMA C82.1; Electric Lamp Ballasts-Line Frequency
Fluorescent Lamp Ballast,
- .16 CSA C22.2 No. 41, Grounding and Bonding Equipment.
- .6 Lightning Protection;
 - .1 Canadian Electrical Code,
 - .2 CAN/CSA B72-M87,
 - .3 National Fire Protection Association (NFPA) 780, Standard for
the Installation of Lightning Protection Systems,
 - .4 Lightning Protection Institute (LPI) 175, Standard of Practice for
the Design, Installation, Inspection of Lightning Protection
Systems.
 - .5 BC EN/EC 62305 Lighting protection standard,
 - .6 ANSI/IEEE Standard 142 Recommended Practice for grounding
 - .7 ANSI/IEEE C62.1 Standard for Gapped Silicon-Carbide Surge
Arresters for AC Power Circuits,
 - .8 ANSI/IEEE C62.11 Standard for Metal-Oxide Surge Arresters for
AC Power Circuits (>1 kV) NFPA 70 (NEC) National Electrical
Code,
 - .9 UL 67 Panel boards,
 - .10 UL 96, Lightning Protection Components,
 - .11 UL 96A, Installation Requirements for Lightning Protection
Systems,
 - .12 UL 467 Grounding and Bonding Equipment,
 - .13 UL 489 Molded-Case Circuit Breakers, Molded-Case Switches
and Circuit-Breaker Enclosures,
 - .14 UL 497, Protectors for Paired-conductor Communications
Circuits,
 - .15 UL 497A Secondary Protectors for Communications Circuits,
 - .16 UL 497B Protectors for Data Communications and Fire Alarm
Circuits,
 - .17 UL 497C Protectors for Coaxial Communications Circuits,
 - .18 UL Subject 497E Outline for Protectors for Antenna Lead-In
Conductors,
 - .19 UL 1449, Surge Protective Devices.
- .7 The Canada Labour Code (CLC);
- .8 The Canada Occupational Health and Safety Regulations;
- .9 CSC Technical Criteria for Correctional Institutions.
- .2 At the start-up meeting the Departmental Representative will provide
additional codes and standards unique and not published by the Federal
Government.



- .3 The CSC-NHQ Departmental Fire Protection Department is the Authority Having Jurisdiction (AHJ) on this project.
- .4 Identify, analyse and design the project in accordance with the requirements of all AHJs and all applicable Codes, Acts, Standards and Guidelines and Legislation:
 - .1 Be versed with the legislation and requirements that are unique to Federal Government buildings in Canada;
 - .1 Standard Operation Procedures (SOP) to meet CLC.
 - .2 Be versed with the legislation and requirements that are unique to Federal Government projects tendered through Public Works and Government Services Canada.



2 REQUIRED SERVICES

2.1 GENERAL REQUIREMENTS

2.1.1 SERVICES

- .1 Commissioning.
- .2 Cost Management.
- .3 Pre-Design.
- .4 Design Development.
- .5 Construction Documents.
- .6 Tendering (to assist the Departmental Representative).
- .7 Construction Support.
- .8 Post Construction.

2.2 PROJECT REVIEW AND ACCEPTANCE

2.2.1 GENERAL

- .1 Comply with all applicable laws and regulatory requirements as required by the General Conditions of the Contract.

2.2.2 QUALITY ASSURANCE REVIEWS, ACCEPTANCE AND PRESENTATIONS

- .1 At each submission:
 - .1 Review submissions to be posted on the project FTP site (e.g. AutoDesk BIM 360 Docs) in searchable PDF format;
 - .2 Expected turnaround time for each review is ten (10) working days;
 - .3 The Consultant Team will receive review comments in the form of an editable MS Word document or MS Excel document;
 - .1 Provide a single coordinated written response within five (5) working days of receiving review comments;
 - .2 The purpose of this review is information and awareness for PWGSC and not quality control for the Consultants. The Consultant Team must employ their own quality control program and remain fully responsible for the design and services provided.

2.3 RISK MANAGEMENT

2.3.1 CONTEXT

- .1 The Departmental Representative prepares the Risk Management Plan.
- .2 Assist the Departmental Representative with the identification of risk items and factors arising from the technical requirements of the project.

2.4 COMMISSIONING SERVICE

2.4.1 GENERAL

- .1 The purpose of the Commissioning Service is to certify that a fully functioning project, meeting the Owner's Project Requirements (OPR), is delivered to the User Department through appropriate design and construction verifications.



- .2 Commissioning (Cx) is an integral part of the Consultant's required services.
 - .1 Required Cx activities and deliverables are listed within each project phase service.
- .3 Participation in commissioning is based on the project scope, complexity and risk.
- .4 Provide commissioning service on the basis of CAN/CSA Z320-11.

2.4.2 SCOPE AND ACTIVITIES

- .1 Refer to Pre-Design to Post-Construction Services for Commissioning scope and activities.

2.4.3 DELIVERABLES

- .1 Refer to Pre-Design to Post-Construction Services for commissioning deliverables.

2.5 COST MANAGEMENT SERVICE

2.5.1 GENERAL

- .1 Include the following cost management services in addition to the cost estimating requirements of the *Doing Business with PWGSC Documentation and Deliverables Manual*:
 - .1 Cost estimates and Consultant billing are also required to be broken down by fiscal year (i.e. April 1 - March 31);
 - .2 Include a cost breakdown for commissioning activities in all cost estimates;
 - .3 Refer to Construction Document and Construction Support Services for Cost Management deliverables.

2.6 PRE-DESIGN SERVICE

2.6.1 GENERAL

- .1 The Pre-Design Report demonstrates the Consultant readiness to commence the Work and consolidate the scope of the design.
- .2 The Pre-Design Report will be utilized as the benchmark project control document to monitor progress of the project.

2.6.2 SCOPE AND ACTIVITIES

- .1 Participate in meetings, prepare minutes and decision logs.
- .2 Visit the project site, analyse site conditions and document any conditions that will impact project delivery and design.
- .3 Review existing reports, documents and material related to the project, User Department concerns and all other requirements identified in this TOR.
- .4 Confirm:
 - .1 Project specific goals and objectives;
 - .2 All project requirements to identify any conflicts or potential additional Work and indicate the impact on project scope, schedule and costs;
 - .3 All additional information that will be required to deliver the project;



- .4 Preliminary summaries of regulatory and statutory requirements, AHJ, codes, regulations and standards;
- .5 Sustainable Development Strategies:
 - .1 Proposed policy for the project to minimize environmental impacts consistent with the project objectives and economic constraints, including:
 - .1 Recommendations on Sustainable Development Design standards to be applied to the project.
- .5 Develop the Owner Project Requirements (OPR). Refer to Definition.
- .6 Electrical Infrastructure Work.
 - .1 Review, validate and update the Electrical Infrastructure Work items described in the Outline of Work (article 1.3.2). Provide an electrical design synopsis, describing the electrical Work in sufficient detail for assessment and Acceptance by the Departmental Representative and User Department including:
 - .1 All associated architectural, structural, civil and security system (Electronics Security System – ESS) Work required in support of the electrical Work;
 - .2 Feasibility studies of proposed systems in accordance with the Sustainable Development requirements.
 - .2 Perform detail arc flash study and labeling.
 - .3 Execute load balance study and address issues.
 - .4 Provide Class 'D' Cost Estimates for each Electrical Infrastructure Work item (1.3.2).
- .7 Lightning Protection System Work.
 - .1 Review and assess the existing Bowden Institution Lightning Protection System:
 - .1 Verify the existing condition of:
 - .1 Each zone of protection,
 - .2 Air termination network,
 - .3 Down conductors,
 - .4 Earth termination network,
 - .5 Bonding to prevent side flashing.
 - .2 Verify the grounding electrode resistance for the Electrical Distribution System including substations;
 - .3 Validate the soil resistivity testing, provide details and strategies to ensure efficiency and Code compliance.
 - .2 Develop options for a new/upgraded Lightning Protection System including:
 - .1 All buildings/structures and infrastructure (including transformers) affecting the operations of the Bowden Institution;
 - .1 Detailed analyses of grounding system for each building including electrical and mechanical systems,



- .2 All associated architectural, structural and civil work required in support of the electrical Work;
- .3 Impact on architectural and structural elements.
- .4 Assessment of the costs, benefits and feasibility described in sufficient detail for the Departmental Representative and User Department to evaluate the options and select a preferred project delivery option.
 - .1 Provide Class 'D' Cost Estimates for each option.
- .8 Report on adjustments required to the Budget, risk analysis and schedule, including allowances for reviews and approvals for each stage of the project life cycle.
- .9 Initiate the Commissioning (Cx) Process;
 - .1 Confirm the extent of Cx requirements;
 - .2 Prepare a project-specific design phase Commissioning Plan. Refer to Definition.

2.6.3 DELIVERABLES

- .1 Pre-Design Report documenting the Pre-Design Scope and Activities.
 - .1 Revise as required.
 - .2 Provide one (1) electronic searchable PDF copy on the project FTP site.

2.7 DESIGN DEVELOPMENT SERVICE

2.7.1 GENERAL

- .1 Develop the Electrical Infrastructure and Lightning Protection System Work prepared and approved in Pre-Design.
- .2 Finalize all major design components, technical criteria and performance objectives, cost estimates schedule and codes/standards regulatory compliance prior to advancing to Construction Document Services.
 - .1 Confirm that the design continues to support the project specific objectives documented in the Pre-Design phase – including the OPR.
- .3 Integrate all components and systems, including architectural, structural, mechanical, electrical and security design.
- .4 Prepare the Design Development Report, consisting of drawings and other documents to describe the scope, quality and cost of the project in sufficient detail to facilitate design approval, confirm code compliance and obtain authorization to prepare the construction documents.

2.7.2 SCOPE AND ACTIVITIES

- .1 Participate in meetings, presentations, prepare agenda, minutes and decision logs.
- .2 Prepare a Design Development Report to expand the intent for each discipline to complete the design for this project.
- .3 Develop a Basis of Design (BOD) document to the OPR approved in Pre-Design. Refer to Definition.
- .4 Present/submit the design for review to authorities having jurisdiction as required.



- .5 Architectural (if required):
 - .1 Provide plans and preliminary details in support of the electrical Work.
- .6 Civil (if required):
 - .1 Prepare a site plan showing buildings and infrastructure items including the following:
 - .1 Site services and building service connections referenced to proposed building outlines;
 - .2 Site access roads and sidewalks;
 - .3 Existing and proposed grades and drainage improvements.
 - .2 Provide typical trench and related details, including profiles of below grade services.
- .7 Structural (if required):
 - .1 Provide drawings indicating modifications to existing structure and new structures / systems (e.g. transformer pads), structural materials, details, fireproofing methods and other significant or unusual details;
 - .2 Indicate all design loads, e.g. dead and live loads, on all plans with atypical loads marked;
 - .3 Live loads are to include localized seismic, wind and snow, and;
 - .4 Provide brief design calculations including outputs from computerized analysis.
- .8 Electrical:
 - .1 Update the electrical design synopsis for the approved Pre-Design Work items. Provide data on the Electronics Security System (ESS), total connected load, the maximum demand and diversity factors and the sizing of the emergency load;
 - .2 Indicate metering locations and all distribution components on a distribution diagram.
 - .3 Provide plans and typical details.
- .9 Continue to review all applicable statutes, regulations and by-laws in relation to the design of the project and conduct a detailed code analysis to demonstrate compliance.
 - .1 If there are non-compliance issues, develop alternative solutions to support the design and submit for approval to the AHJ.
- .10 Analyse the Constructability of the project and advise on the construction phasing process and duration.
- .11 Develop a Preliminary Project Description to Uniformat Level of Detail 5 – refer to Preliminary Project Description PPDFormat™ definition for further detail.
- .12 Update the Budget, schedule, risk analysis and identify any conflicts that will need to be addressed with respect to the scope, quality, schedule and cost.
- .13 Corresponding directly to the Preliminary Project Description PPDFormat™, prepare a Class 'B' cost estimate.



- .14 Update the sustainable design strategy and report on sustainability targets.
- .15 Update the OPR.
 - .1 Confirm BOD and Commissioning Plan conformance to OPR.
- .16 Develop system component lists including equipment, components, systems and different levels of integration between systems (including security) to be commissioned:
 - .1 List of components that delineate and make up the respective systems;
 - .2 List of systems that delineate and make up the respective integrated systems, and;
 - .3 List of integrated systems.
- .17 Develop Commissioning forms and verification check sheets specific to pre-functional (static installation and start-up) and functional performance verification tests (dynamic operation and integrated operation) for all components, systems and integrated systems specific to the project.
- .18 Develop a Commissioning Issues/Resolution log.
- .19 Facilitate a presentation of the design development report involving the Departmental Representative and User Department representatives.
 - .1 Anticipate minor revisions prior to Acceptance by the Departmental Representative and User Department.

2.7.3 DELIVERABLES

- .1 Design Development Report documenting the Design Development Scope and Activities.
 - .1 One (1) electronic searchable PDF copy on the project FTP site.

2.8 CONSTRUCTION DOCUMENTS SERVICE

2.8.1 GENERAL

- .1 Develop the necessary construction documents required to tender the approved design.

2.8.2 SCOPE AND ACTIVITIES

- .1 Coordinate, chair, prepare minutes and report on project meetings.
 - .1 Present the updates and supporting analysis within project meetings.
- .2 Prepare one (1) tender package coordinated with all disciplines.
- .3 Create construction documents in accordance with the *Doing Business with PWGSC Documentation and Deliverables Manual*.
 - .1 Finalize designs according to the Budget and schedule;
 - .1 Coordinate the Work, including scope changes required to remain within Budget,
 - .2 Non-compliances may require revisions to the contract documents at the Consultants cost,



- .2 Apply a process of continuing cost control, with increasing levels of detail during the production of construction documents and update the cost estimates as the Work progresses.
- .4 Provide a cost breakdown by unit rate and/or trade for review of bids and comparison with the successful Contractor's cost breakdown.
- .5 Update the project schedule.
- .6 Establish a quality control process for the construction and contract administration stage.
- .7 Participate in stakeholder coordination and Value Engineering sessions.
- .8 Update the BOD and OPR.
- .9 Develop commissioning construction documentation complete with verification forms using National Master Specifications (NMS) Division 01 specifications including:
 - .1 An updated Cx Plan with detailed commissioning strategies, Cx forms/check sheets and training requirements;
 - .2 Cx forms and verification check sheets ready for commissioning of specific components, equipment, systems and integrated systems specific to the project;
 - .1 Component verification (static verification),
 - .1 Including CSC Electronics Security System (ESS),
 - .2 Installation verification,
 - .3 Start-up,
 - .4 Systems verification test,
 - .5 Integrated system functional performance verification for dynamic operation, and;
 - .6 Cx issue log.
 - .3 Expected design performance parameters;
 - .1 Observed performance including any indication of whether or not this performance is acceptable, and;
 - .2 Design Engineer of Record date and signatures along with those performing and witnessing the test.
- .10 Provide written response to PWGSC comments at the 66% and 99% completion review stages and integrate comments into the final construction documents.
- .11 Participate in the risk management process.
- .12 Include in the contract documents, a requirement for the contractor to develop a waste reduction and management plan during the construction of this project.
- .13 Update the Project Log tracking with approved major decisions.
- .14 Establish a quality control process for the construction and contract administration phase.

2.8.3 DELIVERABLES

- .1 Include items listed in the "Scope and Activities" section above, the *Doing Business with PWGSC Documentation and Deliverables Manual* and items listed below.



- .2 Update the report at each submission noting any deviations from earlier BOD submissions and, as necessary, reconfirming key OPR goals and objectives, along with:
 - .1 An updated estimate demonstrating compliance with the Construction Cost Plan, and;
 - .2 An updated project log with tracking on approved major decisions.
- .3 66% complete Construction Documents:
 - .1 Updated class "B" estimate;
 - .2 Updated OPR and BOD documents;
 - .3 Updated project schedule;
 - .4 Construction Drawings and Specifications;
 - .1 Drawings and specifications should meet all requirements for a building permit application;
 - .5 One (1) electronic searchable PDF copy on the project FTP site.
- .4 99% complete Construction Documents, fully coordinated as if ready for tender:
 - .1 This submission incorporates all revisions required by the review of the previous submission and a written response to the PWGSC 66% review;
 - .2 The Consultant shall submit documents to the Departmental Representative and Authority Having Jurisdiction;
 - .3 Class "A" estimate;
 - .4 Updated project schedule;
 - .5 Construction Drawings;
 - .1 Drawings should reflect 99% completeness as a complete design without any incomplete drawings (as if ready for tendering).
 - .6 Complete Specifications;
 - .1 Including all required sections coordinated with the drawings;
 - .2 Bidders' price breakdown form (for submission at tender closing), and;
 - .3 Commissioning specifications, including forms applicable to Pre-Functional verification (static verification, installation & start-up) and Functional Performance Verification Testing (operational and dynamic).
 - .4 CSC security requirements for the Bowden Institution,
 - .1 Provided by CSC.
 - .7 Updated Commissioning Plan, and;
 - .8 One (1) electronic searchable PDF copy on the project FTP site.
- .5 Final (100%) Construction Documents ready for tendering:
 - .1 Incorporate all revisions required by the review of the previous submission and a written response for the PWGSC 99% review;
 - .2 Advise the Departmental Representative of all issues raised by other officials;
 - .3 The submittal includes:



- .1 Signed and sealed documents:
 - .1 Three (3) – hard copies;
 - .2 One (1) electronic searchable PDF copy on the project FTP site.
- .2 Updated Class 'A' cost estimate,
- .3 Updated project schedule, and;
- .4 Construction Drawings & Specifications as per the *Doing Business with PWGSC Documentation and Deliverables Manual*.
- .4 The Consultant must confirm in writing that:
 - .1 The documents are ready to be issued for tender,
 - .2 The checklist in the *Doing Business with PWGSC Documentation and Deliverables Manual* has been reviewed in concert with the requirements of the Consultant Agreement, and;
 - .3 A full review and coordination of the Contract Documents are complete and in accordance with professional standard of care.

2.9 TENDER SERVICE

2.9.1 GENERAL

- .1 Support the Departmental Representative with the tender.
- .2 The Contract Authority for this project is the PWGSC Real Property Contracting (RPC) branch.
- .3 Tendering will use the Public Works and Government Services internet procurement system (<https://buyandsell.gc.ca>).

2.9.2 SCOPE AND ACTIVITIES

- .1 When requested, the Consultant will be required to:
 - .1 Provide the Departmental Representative with information required by bidders to interpret construction documents;
 - .2 Prepare addenda in response to all questions within two (2) business days during the bidding period and submit to the Departmental Representative;
 - .3 Attend up to one (1) on site bidder's conference;
 - .4 If PWGSC decides to re-tender the project, or any specific tender package, provide full services to the Departmental Representative, and;
 - .5 During bid review and analysis assist the Departmental Representative as required by analysing and reconciling any differences between pre-tender estimates and submitted bids.

2.9.3 DELIVERABLES

- .1 Addenda.
- .2 Written responses to all questions.
- .3 Bid analysis and/or recommendations.



2.10 CONSTRUCTION SUPPORT SERVICE

2.10.1 GENERAL

- .1 Support the Departmental Representative with the construction phase and confirm that the quality, Budget and schedule meet the project requirements.

2.10.2 SCOPE AND ACTIVITIES

- .1 The Consultant shall share all project information with PWGSC:
 - .1 All material specifications, mixes and test results shall be turned over to the Departmental Representative for future maintenance by PWGSC and others.
- .2 General Services:
 - .1 Prepare minutes and reports on project and construction site meetings;
 - .2 Review shop drawings, test reports and other submissions;
 - .3 Update the project log tracking with approved major decisions, including those impacting project scope, Budget and schedule;
 - .4 Prepare and issue a communications protocol and a shop drawing review protocol in consultation with the Departmental Representative;
- .3 Construction & Contract Administration:
 - .1 Provide bi-weekly field reviews and as required to fulfill the Consultant's professional obligations to monitor the construction activities throughout the construction period and keep the Departmental Representative informed of Work progress;
 - .1 Reject unsatisfactory Work;
 - .2 Provide written reports on field reviews;
 - .2 Provide construction progress reports based on Contractor's submissions and on-site performance;
 - .3 Furnish supplemental instructions to the Contractor with reasonable promptness or in accordance with a schedule for such instructions agreed to by PWGSC and the Contractor;
 - .4 Provide additional drawings to clarify, interpret or supplement the contract documents;
 - .5 Review and comment on various documents such as the Contractor's Progress Claims and all information impacting schedules;
 - .6 Offer timely technical advice on all disputes and claims between PWGSC and the Contractor;
 - .7 Identify need for special tests, inspections and additional Work;
 - .8 Assist the Departmental Representative to prepare the Certificate of Substantial Performance and provide sign-off.
- .4 Cost Services:
 - .1 After the issuance of the contract, provide details for evaluating the project's cost performance;
 - .2 Evaluate change orders, claims, Work completed and cash flow;



- .3 Determine the amounts owing to the Contractor based on Work progress and certify payments to the Contractor.
- .5 Changes to the Work:
 - .1 Assist the Departmental Representative in preparing Contemplated Change Notices (CCNs) and Change Orders (COs) to be issued by the Departmental Representative.
- .6 Review, witness, verify test, approve and sign off all commissioning submittals for performance parameters before test and after test and for adherence to OPR and BOD including:
 - .1 All factory test reports and data;
 - .2 Installation, start-up and Testing, Adjusting and Balancing (TAB);
 - .3 Components, systems and integrated systems based checks;
 - .4 Cx forms and verification checklists, process and procedures specific to components, systems and different levels of integration between systems;
 - .5 Cx schedule;
 - .6 Deferred, seasonal and re-test system deficiency;
 - .7 Review and assist with O&M and Owner Training Manual;
 - .8 Oversee and Document Functional Performance Testing;
 - .1 Follow up on testing issues as required.
 - .9 Update Cx Issues Log;
 - .10 Conduct field reviews complete with Cx site reports verifying components and systems being commissioned in accordance with the OPR and the BOD;
 - .11 Chair Cx Team meetings and report progress on a bi-weekly basis complete with minutes for distribution;
 - .12 Provide verification of final reports upon completion of the entire project;
 - .13 Lead and facilitate the Cx Team's Interim Acceptance Report sign-off, and;
 - .14 Engineer(s) of Record Letter of Acceptance.
- .7 Update the Cx Plan, BOD and OPR.
- .8 Coordinate with the CSC Fire Protection Engineer for a Fire and Life Safety Inspection.

2.10.3 DELIVERABLES

- .1 Meeting minutes.
- .2 Bi-weekly field review and work progress reports (including construction photographs).
- .3 Reviewed shop drawings, test reports/certificates and other submissions.
- .4 Clarifications, Supplemental Instructions, Contemplated Change Notices and Change Order Recommendations.
- .5 Reviewed and certified Contractor Progress Claims.
- .6 Comments to Contractor Schedule, and Change Orders.



- .7 Completed Certificate of Substantial Performance.
- .8 Standard Operating Procedures - refer to the Definition.
- .9 Interim Commissioning Report - refer to the Commissioning Report Definition.

2.11 POST CONSTRUCTION SERVICE

2.11.1 GENERAL

- .1 Support the Departmental Representative in obtaining all final documents required for project Close-out (refer to the Project Milestones definition).

2.11.2 SCOPE AND ACTIVITIES

- .1 Project Close-out Services:
 - .1 Revise documentation to reflect all changes, revisions and adjustments after completion of commissioning;
 - .2 Prepare record drawings (AutoCAD format as per the *Doing Business with PWGSC Documentation and Deliverables Manual* requirements) and specifications based on Contractor's as-builts;
 - .3 Prepare and submit final Certificate of Completion and records;
 - .4 Review the Operations and Maintenance manual;
 - .5 Finalize the Commissioning Manual;
 - .6 Participate in Lessons Learned workshops, if requested.
- .2 Warranty Services:
 - .1 Participate in warranty inspections with the Departmental Representative and Contractor;
 - .2 Provide a warranty deficiency list;
 - .1 Monitor and certify correction of deficiencies before expiry of warranties;
 - .3 Monitor environmental and life safety system checks to be carried out by the Contractor/O&M staff before expiration of warranties.

2.11.3 DELIVERABLES

- .1 Warranty Deficiency List.
- .2 Final Certificate of Completion.
- .3 Record Documents:
 - .1 One (1) hard copy – Full size sets, and one (1) electronic searchable PDF copy of each record document on the project FTP site;
 - .2 One (1) copy of each record drawing in AutoCAD - DWG file format.
 - .1 Refer to the *Doing Business with PWGSC Documentation and Deliverables Manual* for AutoCAD drawing requirements and standards.
- .4 Operations and Maintenance Manual(s):
 - .1 Three (3) hard copies.
 - .2 One (1) electronic searchable PDF copy on the project FTP site.
- .5 Final Commissioning Manual (signed) - refer to the Definition.
- .6 Final Systems Operation Manual (signed) - refer to the Definition.



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- .7 Final Warranty Review Report.
 - .1 Final certification of installation and warranty from manufacturers.
 - .2 Sign-off on Warranty.



3 PROJECT ADMINISTRATION

3.1 GENERAL REQUIREMENTS

- .1 The administration requirements outlined in this section are applicable to all PWGSC projects in the Western Region, unless otherwise indicated in the TOR.

3.2 LANGUAGE

- .1 Construction documents must be prepared in English.

3.3 MEDIA

- .1 The Consultant shall not respond to any media inquiry.
- .2 Direct all media requests to the Departmental Representative.

3.4 PROJECT MANAGEMENT

3.4.1 GENERAL

- .1 PWGSC administers the project on behalf of Canada and exercises continual control over the project during all phases of development.
- .2 The PWGSC project management team, the Consultant Team, the Contractor and the User Department teams are to work cooperatively at every stage of the design and construction process in order to assure the creation of a successful project.

3.5 LINES OF COMMUNICATION

- .1 All communications will be through the Departmental Representative, unless directed otherwise.
 - .1 This includes formal contact between the Consultant Team, the Contractor, the PWGSC Project Team and the User Department.
- .2 Direct communication between members of the PWGSC Project Team on routine matters may be required for resolution of technical issues.
 - .1 However, this shall not alter project scope, Budget or schedules, unless confirmed in writing by the Departmental Representative.
- .3 During construction tender call, PWGSC will conduct all correspondence with bidders and award the contract.

3.6 MEETINGS

3.6.1 GENERAL

- .1 The Departmental Representative will arrange meetings throughout the project, with representatives from:
 - .1 The User Department;
 - .2 PWGSC;
 - .3 The Consultant Team, and;
 - .4 The Contractor (during the construction phase).
- .2 Standing agenda items shall include:
 - .1 Project Schedule;
 - .2 Cost;
 - .3 Risk;



- .4 Quality, and;
- .5 Health and Safety.
- .3 Project Start-up Meeting:
 - .1 Shall be arranged and facilitated by the Departmental Representative, and;
 - .2 Includes the PWGSC AECO Design Manager, User Department Representatives and the Consultant Team.

3.6.2 DESIGN PHASE:

- .1 Bi-weekly meetings with PWGSC and the Consultant Team will normally be held via teleconference.
- .2 The following meetings with PWGSC, the User Department and the Consultant Team will be held at the Bowden Institution:
 - .1 Pre-Design start-up meeting;
 - .2 Design Development presentation.

3.6.3 CONSTRUCTION PHASE:

- .1 Bi-weekly meetings with PWGSC, the Consultant Team and the Contractor will normally be held at the construction site for the duration of the project and as required.
- .2 In addition include site meetings for the following activities:
 - .1 Commissioning & Verification, including an inspection by the CSC Fire Protection Engineer;
 - .2 Substantial Performance;
 - .3 Final Completion;
 - .4 Post Construction Warranty.

3.7 CONSULTANT RESPONSIBILITIES

- .1 The Consultant Team includes the Consultant's staff, sub-consultants and specialists.
 - .1 This team must maintain the same, or better, level of expertise, as presented in their proposal, for the duration of the project;
 - .2 The team must include qualified registered architectural and engineering professionals with extensive relevant experience and who are capable of providing all required services;
 - .1 Professional Registrations / certifications must remain current.
 - .3 Team members may be qualified to provide services in more than one discipline, and;
 - .4 The Consultant may expand the team to include additional disciplines.
- .2 The Consultant is responsible for:
 - .1 Obtaining Departmental Representative Acceptance for each project phase before proceeding to the next phase;
 - .2 Accurately communicating design, Budget, and scheduling issues to staff, sub-consultants and specialists;
 - .3 Coordinating input for the Departmental Representative's Risk Management Plan, and;



- .4 Developing and coordinating a comprehensive quality assurance process to ensure that submissions are accurate, complete and meet TOR requirements.

3.7.2 DESIGN PROJECT MILESTONES

- .1 Attend meetings.
- .2 Record the issues and decisions.
- .3 Prepare and distribute minutes within two (2) working days of the meeting.
- .4 Ensure sub-consultants attend all required meetings.

3.7.3 CONSTRUCTION PROJECT MILESTONE

- .1 Record the meeting issues and decisions.
- .2 Prepare and distribute minutes within two (2) working days of the meeting.
- .3 Attend meetings and provide site inspection services;
- .4 Ensure sub-consultants provide site inspection services and attend all required meetings.
- .5 The Consultant is responsible for:
 - .1 Coordinating and directing the Work of all team activities, sub-consultants and specialists;
 - .2 Preparing a design that meets project requirements, and;
 - .3 Obtaining approvals on behalf of the Departmental Representative from the User Department and AHJ.
 - .1 The Consultant shall adjust the documentation to meet the requirements of these authorities.

3.8 PWGSC RESPONSIBILITIES

3.8.1 ADMINISTRATION

- .1 PWGSC administers the project and exercises continual control over the project during all phases of development.
- .2 The following administrative requirements apply during all phases of the project delivery.

3.8.2 REVIEWS

- .1 PWGSC will review the Work at various stages and reserves the right to reject unsatisfactory Work at any stage.
- .2 If later reviews show that earlier Acceptances must be withdrawn, the Consultant shall re-design and re-submit at no extra cost.

3.8.3 ACCEPTANCE

- .1 PWGSC Acceptance of submissions from the Consultant simply indicates that - based on a general review - the material complies with governmental objectives and practices, and meets overall project objectives.
- .2 Acceptance does not relieve the Consultant of professional responsibility for the Work or compliance with the contract.



3.8.4 PWGSC PROJECT MANAGEMENT

- .1 The Project Manager assigned to the project is the Departmental Representative.
- .2 The Departmental Representative is directly responsible for:
 - .1 The progress and administration of the project, on behalf of PWGSC;
 - .2 Day-to-day project management and is the Consultant's single point of contact for project direction, and;
 - .3 Providing authorizations to the Consultant on various tasks throughout the project.
- .3 Unless directed otherwise by the Departmental Representative, the Consultant obtains all Federal approvals necessary for the Work.

3.8.5 PWGSC ARCHITECTURE AND ENGINEERING CENTRE OF EXPERTISE (AECOE)

- .1 Provides advisory services and Quality Assurance Reviews of Consultant deliverables.
- .2 Participates regularly in design and construction Project Milestones and may attend meetings as and when required.
- .3 Provides a Design Manager for the project who will coordinate the services of AECOE.

3.9 USER DEPARTMENT RESPONSIBILITIES

3.9.1 USER DEPARTMENT PROJECT LEADER

- .1 Is accountable for the expenditure of public funds and delivery of the project in accordance with the terms accepted by the Treasury Board.
- .2 Reports to the senior User Department executive management.
- .3 Will play several critical roles for the successful implementation of the project, including:
 - .1 Coordination of the quality, timing and completeness of information and decisions relating to issues related to the functional performance of the facility.

3.10 REVIEW AND APPROVAL BY AUTHORITY HAVING JURISDICTION

- .1 The CSC-NHQ Fire Protection Department will conduct reviews and approvals in place of provincial and municipal authorities.

3.11 TECHNICAL REPORTS

- .1 Technical Reports are official government documents, which are used to support an application for approval or to obtain authorization or Acceptance. Technical Reports must:
 - .1 Be complete, clear and professional in appearance and organization, with proper reference to related parts and contents in the report;
 - .2 Clearly outline the intent, objectives, process, results and recommendations;
 - .3 Present the flow of information and conclusions in a logical, easy to follow sequence;



- .4 Be in written narrative, graphic, model (traditional and/or computer generated), and photographic format, which can be web enabled;
- .5 Have all pages are numbered in sequence, and;
- .6 Be printed double-sided, if hard copies are produced.
- .2 Standard practice for the organization of technical reports include:
 - .1 A cover page, clearly indicating the nature of the report, the date, the PWGSC project number and who prepared the report;
 - .2 A Table of Contents;
 - .3 An Executive Summary;
 - .1 A true condensed version of the report following the identical structure, including only key points and results/recommendations requiring review and/or approval;
 - .4 The body of the report is to be structured such that the reader can easily review the document and locate, respond to and/or reference related information contained elsewhere in the report easily;
 - .5 Appendices are to be used for lengthy segments of the report, supplementary and supporting information and/or for separate related documents.
- .3 The report content must:
 - .1 Use a proper numbering system (preferably legal numbering), for ease of reference and cross-reference;
 - .1 The use of 'bullet points' are to be avoided.
 - .2 Use proper grammar, including using complete sentences, for clarity, to avoid ambiguity and facilitate easy translation into French, if required;
 - .1 The use of undefined technical terms, industry jargon and cryptic phrases are to be avoided.
 - .3 Be written as efficiently as possible, with only essential information included in the body of the report and supporting information in an appendix if needed.



4 APPENDIX A

4.1 BOWDEN INSTITUTION, FACILITY CONDITION ASSESSMENT



5 DEFINITIONS

5.1 PURPOSE

5.1.1 DOCUMENT DEFINITIONS:

- .1 Definition of words and phrases in the Terms of Reference (TOR), and *Doing Business with PWGSC – Documentation and Deliverables Manual* to:
 - .1 Expand the detail associated with the services and deliverables addressed in the above Documents, and;
 - .2 Provide a clear understanding of the project scope, procedures, and quality performance requirements.

5.2 DEFINITIONS

5.2.1 ACCEPTANCE

- .1 A formal action taken by an assigned person with authority (contractual or otherwise) to declare that some aspect of the project are permitted to proceed.

5.2.2 BASIS OF DESIGN (BOD)

- .1 Refers to CSA Z320 Article 3, Definitions.
- .2 A dynamic narrative document throughout the Project Milestones, recording the rationale for decisions and confirming to the Project Team design conformance to the ideas, concepts and criteria considered important to the owner as contained in the Owner Project Requirements (OPR) - for OPR see Definition;
 - .1 As the Design Consultant BOD also outlines the intended systems for the project, the Design Consultant's Cx Process Manager/Cx Authority, using a compliance evaluation/tracking matrix, confirms the BOD's compliance to the OPR.
- .3 Documents the primary thought processes and assumptions behind design and implementation decisions.
- .4 Text and graphics are organized to facilitate future use as a building reference document.
 - .1 The O&M Manual describes "what" components/systems have been selected, the BOD describes "why" and "how" the design achieves the performance requirements of the OPR, and;
 - .2 BOD and OPR are components of the Cx Manual.
 - .1 OPR - refer to Definition for further information.
- .5 Includes:
 - .1 A Summary:
 - .1 Project's conceptual framework;
 - .2 Compliance with OPR statement (including new Owner directives);
 - .3 Compliance with the Functional Program, and;
 - .4 Rationale for decisions made throughout the specific Project Milestone.



- .2 Design assumptions, such as:
 - .1 Anticipated future changes not included in the project, and;
 - .2 Selected assembly and system performance requirements.
- .3 A Unifomat Level 4 narrative description and statement on the purpose of the selected components, assemblies, systems and methods – see PPDFormat Definition, including:
 - .1 Areas served by the respective components, assemblies and systems, and;
 - .2 Illustrations of system configurations, including single line and plan drawings of each system.
- .4 Design options and analysis considered during the:
 - .1 Life Cycle Costing and Value Engineering workshops, and;
 - .2 Development of sustainable features and strategies.
- .5 Calculations and option analysis matrixes, organized by discipline, including:
 - .1 Connected or related loads and system capacities, and;
 - .2 Design criteria and the applicable codes/standards used in the calculations.
- .6 Special features or unique supply items/sources, general control strategies, sequences, and reset schedules, such as:
 - .1 Building Components and Connectivity (BCC – see Definitions for further details);
 - .2 Seasonal switch-over procedures, and;
 - .3 Emergency procedures during a fire condition, power or equipment failure, including:
 - .1 Reference to Standard Operating Procedures (SOP) requirements. For SOP – refer to Definition for further information.
- .7 Interfaces with existing systems, and;
- .8 Maintenance issues.

5.2.3 BASIS OF ESTIMATE (BOE)

- .1 A “living” document throughout the project design, construction process and project life cycle.
- .2 Provides a framework for progress monitoring and reporting.
- .3 Prepared and updated to facilitate the understanding, assessment and validation of the estimated value breakdowns, independent of any other supporting documentation.
- .4 Includes:
 - .1 Level of consensus between concurrent/third party estimates;
 - .2 Estimate methodology;
 - .3 Basis of pricing - cost data sources, and allowances;
 - .4 Description of information obtained and used in the estimate including the date received;
 - .5 Notable assumptions, exclusions and inclusions;



- .6 Listing of items/issues carrying notable risks;
 - .7 Opportunities, and any deviations from standard practices;
 - .8 Record of pertinent communications and agreements that have been made between the estimator and other project stakeholders;
 - .9 Major changes relative to previous estimates;
 - .10 Significant market events that may have an effect on the costs, and;
 - .11 Estimate reconciliation.
- .5 With the last submission include:
- .1 Variances related to:
 - .1 Change Orders;
 - .2 Work Package estimate, and;
 - .3 Estimate Construction Cost.
 - .2 And, any additional relevant information.

5.2.4 BUDGET

- .1 Developed using Cost Estimates and the Project Schedule.
- .2 Provides a view of how much the project is estimated to cost both in total and periodic terms.
- .3 Determines the cost performance baseline for use in cost management variance analysis such as, determining earned performance value.
- .4 Is aligned with funding limits to confirm funding availability/appropriation.
- .5 Also refer to - Estimated Construction Cost definition.

5.2.5 "CANADA", "CROWN"/"HER MAJESTY"

- .1 Her Majesty the Queen in right of Canada.

5.2.6 COLLABORATIVE PROJECT DELIVERY (CPD)

- .1 The CPD approach promotes and facilitates knowledge collaboration between design and construction professionals and subject matter experts to create optimal design and construction solutions and methodologies in order to achieve an appropriate, timely and fiscally responsible Quality project delivery.
 - .1 Recognizes that project success is tied to all Project Team members' success in the integrated process.
 - .1 The CPD process starts at the Pre-Design with Departmental Representative as Lead Partnering Session and the Design Consultant, as Lead, project start-up meeting early in Schematic Design.
 - .1 CPD as an interactive process which continues throughout the project life cycle.
- .2 Joint Project Team goals include:
 - .1 Ownership and focus on Quality including, Owner Project Requirements (OPR), Basis of Design (BOD) as well as Budget and schedule performance;



- .2 Focus on optimizing the design and construction as a whole to fulfill the PWGSC Quality expectations;
- .3 Mutual support for the project procedures and management;
- .4 Leveraging Value Engineering, Life Cycle Costing and commissioning skills, and;
- .5 Creation of an innovative learning environment.

5.2.7 COMMISSIONING AUTHORITY

- .1 Refer to the:
 - .1 Commissioning Process Manager (CPM) Definition for description of Cx Authority and part of the Consultant Team;
 - .2 CSA Z 320, Article 3 Definitions for Third Party description;
 - .3 TOR for the requirement of a Cx Authority as a part of the Consultant Team membership or of an independent third party Cx Authority to be separately engaged by PWGSC.

5.2.8 COMMISSIONING EVALUATION REPORT

- .1 A Cx Manual component.
- .2 Includes a debriefing report, with aspects such as:
 - .1 A complete assessment of the project;
 - .2 Lessons learned;
 - .3 Variances between the actual and planned levels of performance;
 - .4 A listing of components and systems not commissioned and the reasons;
 - .5 Recommended follow-up actions including Re-commissioning.

5.2.9 COMMISSIONING (CX) MANUAL

- .1 Deliverable by the Consultant's Cx Process Manager/Cx Authority.
- .2 Contains the following:
 - .1 Updated Owner Project Requirements (OPR);
 - .2 Updated Basis of Design (BOD);
 - .3 Updated Commissioning Plan;
 - .4 Static verification, start-up and functional performance testing reports;
 - .5 Commissioning Report;
 - .6 User and operator training reports;
 - .7 Occupancy and operations evaluation reports;
 - .8 All relevant project reports and correspondence, and;
 - .9 Recommendations for Re-commissioning and frequency by equipment type and system.
- .3 Requires Cx Process Manager/Cx Authority sign-off at a Construction Contract Substantial Performance and Completion (final) milestones.

5.2.10 COMMISSIONING (CX) PLAN

- .1 Deliverable by Consultant's Cx Process Manager/Cx Authority.
- .2 Refer to CSA Z320 Article 4.2.3 Commissioning Plan.
 - .1 For further detail refer to the following ASHRAE 202 Articles:



- .1 Article 7 – Commissioning Plan, Article 7.2 – Requirements;
- .2 Article 10 – Design Review, Article 10.2 – Requirements;
- .3 Article 11 – Commissioning Submittal Review – Article 11.2 Requirements;
- .4 Article 15 – Training, Article 15.2 Requirements.
- .3 A dynamic document throughout the project life cycle.
- .4 Outlines a Plan to execute the scope of Work.
 - .1 The ongoing Plan development is carried out through iterative reviews, workshops, and meetings to ultimately become the complete plan including construction and occupancy milestones of the project.
- .5 “Design Phase” (Pre-Design) Cx Plan:
 - .1 Cx Plan is based on the Programming, OPR and Acceptance of risk and Budget.
 - .1 Outlines a preliminary execution plan including activities, Cx Team roles and responsibilities, schedules and deliverables for pre design and subsequent design and BOD ultimately be updated and completed during the construction and occupancy milestones.
- .6 “Design Phase” (Schematic Design, Design Development and Construction Documents) Cx Plan:
 - .1 Cx Plan is updated to address the remaining Project Milestones including construction documentation, construction and occupancy. The Plan includes:
 - .1 Detailed tasks, roles and responsibilities, schedule, work flow processes and a list of the systems to be commissioned, and;
 - .2 Coincides with the design documents such as the specifications so that the Commissioning Team is clear on the goals and process.
 - .3 Refer to CSA Z320 Article 4.3. – Design Phase, Article 4.3.1, General.
 - .1 For further detail refer to ASHRAE 202, Article 10 Design Review – Article 10.2 Requirements.
- .7 “Construction Phase” Cx Plan:
 - .1 During the Construction milestone, the updated Cx Plan continues to outline the Cx Team’s roles and responsibilities, implementation of issues resolution protocol, the procedures and forms for documenting commissioning activities and the schedules for commissioning activities, reporting and deliverables.
 - .2 Refer to CSA Z320 Article 4.4 – Construction Phase, Article 4.4.1, General.
 - .1 Add the following requirements:
 - .1 Cx schedule, and Installation start-up lists.
 - .2 For further detail refer to ASHRAE 202, Article 11 Commissioning Submittal Review –Article 11.2 Requirements.



5.2.11 COMMISSIONING (Cx) PROCESS

- .1 Refer to CSA Z320 Article 4, Commissioning Process.
- .2 A dynamic document throughout the project life cycle.
- .3 The process by which the design and construction documents (plans, sections, specifications, BOD, etc.) are confirmed to be consistent with each other; includes the commissioning requirements and the OPR.
- .4 During the Cx design reviews the Consultant is ultimately responsible for the project design and final decisions regarding the design expected performance.
 - .1 Supporting the Cx Process may also be the Design Consultant's Commissioning Process Manger/Cx Authority to lead the Cx Team in the design and implementation of the Process that may involve, for example either;
 - .1 A third party Cx Provider company, procured by PWGSC or,
 - .2 A Contractor's Cx Agent.

5.2.12 COMMISSIONING PROCESS MANAGER (CPM)

- .1 Cx functional entity:
 - .1 May also be identified as Cx Authority entity.
- .2 Member of the Consultant Team.
- .3 Overall functional responsibilities is to lead the Commissioning Team in the:
 - .1 Design of the Commissioning Process so that it begins with commissioning of individual components and progresses to commissioning the complete integrated building system as a whole, and;
 - .2 Update of the BOD and OPR during design and construction.
- .4 Dependent the requirement for independence from the design and construction management, the CPM may include the functional role and be identified as a functional Commissioning Authority entity in, for example, the Cx Plan Specification, article - Roles and Responsibilities of the Cx Team:
 - .1 Regarding "independent Commissioning Authority" requirements, refer to Canada Green Building Council (CGBC).
- .5 Requires a unique combination of engineering, design fundamentals and building operations knowledge including: energy systems design, installation and operation, commissioning planning and process management, hands-on field experience with energy systems performance, interaction, start-up, balancing, testing, troubleshooting, operation and maintenance procedures, and energy systems automation and controls.
- .6 Responsible for Cx deliverables, such as:
 - .1 Sequencing;
 - .2 Means and methods;
 - .3 Verification of installation and performance to BOD and OPR;
 - .4 Documentation and related sign-offs, and;



- .5 Manuals.
- .7 Cx Process Manager/Cx Authority, unless otherwise stated, will only make recommendations, and observations during the design review.

5.2.13 COMMISSIONING RECORD CHECKLIST

- .1 Refer to CSA Z320 Article 4.9, Final Documentation.
 - .1 Add to Article 4.9.3, Additional Commissioning Documentation, the following requirements:
 - .1 Certificate of Interim Acceptance;
 - .2 Final Certificate of Completion;
 - .3 Deferred Cx Test Report;
 - .4 System and Environmental Check Reports e.g. Storage Tanks;
 - .5 Final Cx Report;
 - .6 Cx Evaluation Report, and;
 - .7 Final Standard Operation Procedures.
 - .2 Cx Record Checklist outlines the deliverables to be assembled and updated over the course of the Design, Construction and Delivery Close Out.
 - .3 Cx Record Checklist may include sections such as:
 - .1 Commissioning Plan;
 - .2 Commissioning Schedule;
 - .3 Owner's Project Requirements (OPR);
 - .4 Basis of Design (BOD);
 - .5 Project Team, complete with functional entity titles;
 - .6 Design QA Review compiled reports;
 - .7 Project Issues/Resolutions Logs;
 - .8 Cx Issues/Resolutions Logs;
 - .9 Commissioning meeting minutes;
 - .10 Commissioning specifications;
 - .11 Commissioning forms and check sheets;
 - .12 Commissioning site reports;
 - .13 Coordination drawings;
 - .14 Testing and inspection procedures;
 - .15 System start-up plans;
 - .16 Construction checklists;
 - .17 Inspection reports;
 - .18 Test reports;
 - .19 Commissioning test certifications;
 - .20 Training plans;
 - .21 Training documentation – electronic and hard copy;
 - .22 Deferred testing documentation;
 - .23 Post-construction review/re-inspection report;
 - .24 Systems Manual;
 - .25 Operations and Maintenance Manual; and



.26 Re-commissioning Manual.

5.2.14 COMMISSIONING REPORT

- .1 Deliverable by Consultant's Cx Process Manager/Cx Authority.
- .2 A Cx Manual Component (at Construction Contract Substantial Performance and Completion – final/post Warranty) milestone.
 - .1 Requires CPM/Cx Authority sign-off and Design Consultant verification at Substantial Performance and Completion.
- .3 The Cx Report (at Substantial Performance) is based on:
 - .1 Final BOD and OPR;
 - .2 System components list requiring commissioning;
 - .3 Final performance verification forms and check sheets: component, systems and integrated systems - design values to actuals;
 - .1 Static, installation, start-up, functional performance and integrated system verification;
 - .4 All commissioning site review reports;
 - .5 Commissioning issue logs and progress reports;
 - .6 Final training sessions;
 - .7 Post occupancy changes;
 - .8 Deferred commissioning; and
 - .9 Current information not available or incomplete at Interim Acceptance/Substantial Performance.
- .4 A Final Commissioning Report (prior to end of Warranty Period), which includes:
 - .1 Final Cx Evaluation Report;
 - .2 Updated Cx Report from Substantial Performance;
 - .3 Post-Occupancy test results and evaluations; and
 - .4 Updated Issues/Resolutions Log – highlighting documented Cx resolutions.
- .5 All progressive/interim Acceptances requiring all Project Team members to sign-off.

5.2.15 COMMISSIONING RISK ASSESSMENT

- .1 Deliverable by Consultant's Cx Process Manager/Cx Authority.
- .2 The Cx Risk Assessment aligns the rigor of the Commissioning Process with the following 2 risk items associated with Architectural and Engineering systems:
 - .1 Building: The function and performance; and
 - .2 Deliverables: The deficiencies, such as, inaccurate as-built documentation, ineffective owner/occupant training, lack of documented system performance testing, and lack of comprehensive systems manuals.
- .3 The Cx Risk Assessment is often summarized in a matrix and accompanied by a basis of assessment narrative.
- .4 The premise of the Cx Risk Assessment is to identify:



- .1 Building type and the intended use as a guide for Cx risk associated with the intended building systems; and
- .2 How the performance of each system will affect the performance of all other systems, and how non-performance in the building may have a negative impact on function and operational confidence.

5.2.16 COMMISSIONING SCOPE

- .1 Facilitated deliverable by Consultant's Cx Process Manager/Cx Authority.
- .2 Conducted by a Cx Team.
- .3 An integrated developmental process for determining the level of Cx effort based on the scope, rigor, OPR, building operation and function, including:
 - .1 Cx prioritization; and
 - .2 Cx Risk Assessment.

5.2.17 COMMISSIONING TEAM (CX TEAM)

- .1 A live documented Team throughout the project life cycle.
- .2 The objective of the team is to encourage interdisciplinary collaboration to confirm the Cx Process is completed and the facility criteria has been achieved.
- .3 Cx Team composition is first identified and defined at the Pre-Design milestone, followed by an integrated development of a Cx Process and the assignment of the Cx roles and responsibilities and corresponding services and deliverables.
- .4 Size and membership varies depending on the project size, complexity and phase of design and construction.
- .5 Team make-up may consist of a:
 - .1 Departmental Representative – including PWGSC Cx Manager;
 - .2 User Department – O&M Personnel;
 - .3 Consultant(s) (dependant on the TOR, including Consultant's Cx Authority);
 - .4 Contractor's Agent; and
 - .5 Contractor's Agencies.

5.2.18 CONTRACTOR'S COMMISSIONING AGENCIES

- .1 To be identified as the in the specifications as the "Contractor's Sub-Contractor Commissioning Agency/Agencies" (CS-CCxA) functional entity/entities, in the Cx Plan Specifications, article - Roles and Responsibilities of the Cx Team. Includes Agencies, such as:
 - .1 Installing contractor/sub-contractor;
 - .2 Equipment manufacturers, such as, elevators, emergency generators;
 - .3 Specialist Cx Agency, Cx Work outside the scope or expertise of other Cx Agencies, Work such, as environmental space condition, air quality; and
 - .4 TAB Agency, such as adjusting flow rated and pressure related to ducted air and hydronic systems, fans and pumps.



- .2 Available for emergency and troubleshooting service during the first year of occupancy and modification outside the responsibilities of the O&M personal.

5.2.19 CONTRACTOR'S COMMISSIONING AGENT

- .1 Responsibilities are distinct from the Contractor's site supervisor.
- .2 To be identified in the specifications (Cx Plan Section, article – Roles and Responsibilities of the Cx Team,) as the "Contractor's Commissioning Agent" (CCxA) functional entity.
- .3 Responsible for the implementation of all commissioning activities required by the specifications, including demonstrations, training, testing, preparation and submission of testing reports.
- .4 Available for emergency and troubleshooting service during the first year of occupancy and modification outside the responsibilities of the O&M personal.

5.2.20 CONSTRUCTABILITY

- .1 The extent to which the design of the building facilitates the ease of construction, which is subject to the overall requirements for the completed building project.
- .2 The effective and timely integration of construction knowledge into the conceptual planning, design, construction, and field operations of a project to achieve project goals and building performance at the optimal level by:
 - .1 Implementing a Quality project delivery process which also meets the project objectives in the best possible time and accuracy at the most cost-effective levels; and
 - .2 A balance of various project, environmental and market constraints.

5.2.21 CONSTRUCTION CHECKLIST – CHECKS AND TESTS

- .1 Also known as Contractor's Cx "systems readiness checklist".
- .2 Confirms specified equipment is provided, undergone Static Verification, properly installed, initially Started-up and checked out in preparation for full operation and Functional Performance testing.
- .3 Refer to CSA Z320 Article 4.4 – Construction Phase.
 - .1 Add to Article 4.4.2 – Pre-construction the following requirements:
 - .1 Cx schedule, and Installation start-up lists.

5.2.22 CONSTRUCTION COST ESTIMATE

- .1 Refer to the *Doing Business with PWGSC Manual*, Section 3 - Cost Estimates for further Construction Cost Estimate details.
- .2 Construction Cost Estimate as compared to the Budget – see Definition.
- .3 Estimates cost of the Work associated with the overall project at each Project Milestone, and tender packages, Division 01 General Requirements and other supporting activities within the project lifecycle.
- .4 Cost breakdown estimating is formatted as per CIQS general best practices including the following formats associated with PPDFormat™ and MasterFormat™ (MF) National Master Specifications:



- .1 During Schematic Design (SD) – Uniformat Level(s) of Detail as mutually agreed upon by the Departmental Representative and Consultant;
 - .1 For further detail refer to Preliminary Project Description (PPD/PPDFormat™) Definition.
- .2 During Design Development (DD) – as per Uniformat Level of Detail 5;
 - .1 For further detail refer to Preliminary Project Description (PPD/PPDFormat™) Definition, and;
- .3 During Construction Documentation (CD) – as per MasterFormat™ - Divisional and Sectional details;
 - .1 National Master Specifications (NMS) is the basis for construction specifications.
- .5 In all cases, include Basis of Estimate (BOE) – see Definition.

5.2.23 CONSTANT DOLLAR ESTIMATE

- .1 This is an estimate expressed in terms of the dollars of a particular base fiscal year.
- .2 It includes no provisions for inflation.
- .3 Cash Flow over a number of fiscal years may also be expressed in constant dollars of the base year including no allowance for inflation in the calculation of costs.
 - .1 For Current Dollar Estimates – see Definitions;

5.2.24 CONSULTANT

- .1 Architectural/Interior Design/Engineering firm acting in the capacity of Prime Consultant and professional of record for the provision of services described in the TOR.
 - .1 The Consultant manages and coordinates the Consultant Team (refer to Definition).

5.2.25 CONSULTANT TEAM

- .1 The Consultant (architectural/interior design/engineering firm and Prime Consultant) and their sub-consultants including professionals and advisors with whom PWGSC has contracted to provide other services described in this TOR.

5.2.26 CURRENT DOLLAR ESTIMATE

- .1 Budget Year Dollars is also to be referred to as Nominal dollars.
- .2 An estimate based on costs arising in each Fiscal Year (FY - ending March 31) of the project schedule.
- .3 Escalated to account for inflation and other economic factors affecting the period covered by the estimate.
- .4 Costs and benefits across all periods should initially be tabulated in Budget Year Dollars for the following reasons:
 - .1 It is the form in which financial data is usually available;
 - .2 Tax adjustments are accurately and easily made in Budget year dollars; and



.3 It enables during analysis, the construction a realistic picture which takes into account changes in relative prices.

.5 Constant Dollar Estimate – see Definitions.

5.2.27 DEPARTMENTAL REPRESENTATIVE (DR)

.1 The person designated in the Contract, or by written notice to the Contractor/Consultant, to act as the Departmental Representative for the purposes of being a Contract entity.

5.2.28 ESTIMATED CONSTRUCTION COST

.1 The Budget identified in the TOR or subsequently in writing by the Departmental Representative:

.1 Also stated as “Construction Cost Estimate” or “Construction Cost Limit”.

5.2.29 FACILITY TURNOVER

.1 Refer to CSA Z320 Article 4.7, Facility Turnover Activities.

.1 Add to Article 4.7 the following review requirements:

.1 Review signatories, client/stakeholder, of a document agreeing to accept project outcomes and/or on the condition that all recorded deficiencies are to be addressed as appended;

.1 Facility Turnover Activities are required where the project or part of the project (“partial interim occupancy”) is being turned over.

5.2.30 FUNCTIONAL PERFORMANCE TESTING

.1 Refer to CSA Z320 Article 4.5, Functional Performance Testing.

.1 For further detail refer to ASHRAE 202, Article 13 Issues and Resolution Documentation – Article 13.2 Requirements.

.1 Review Functional Performance Testing data entry in the Issues and Resolutions log according to ASHRAE 202, Section 13, including:

.1 Tests at peak load conditions as identified in the Cx Plan.

5.2.31 INTERIM ACCEPTANCE

.1 Refer to CSA Z320 Article 4.6, Interim Acceptance.

.1 Add to Article 4.6 (i) the following requirements:

.1 System Operations Manual and Standard Operating Procedures, including;

.1 Normal and emergency mode of operations, and;

.2 Life and Safety Compliance Report.

.2 Interim Acceptance will be synonymous with Substantial Completion as per GC’s of the Construction and Consultant Contract.

5.2.32 ISSUES/RESOLUTION (I/R) LOG

.1 The I/R Log contains description of project issues and/or variances ranging from specifics such as with the Owner Project Requirements (OPRs) to general design and construction and related processes and deliverables.



- .1 On an ongoing basis the log maintains the status of current/ongoing and resolved issues;
- .2 Issues are identified and tracked as encountered during all design phases, construction and operations of the facility.
- .2 I/R Log is also included as an item in:
 - .1 The meeting Design and Construction agenda; and
 - .2 The monthly construction phase report on the Cx Plan.
- .3 For more information on what needs to be documented also refer to ASHRAE Guideline, The Commissioning Process.

5.2.33 LIFE CYCLE COSTING (LCC)

- .1 LCC methodology, used during investment analysis and planning, design, construction and procurement, employs a comprehensive economic comparison of competing options.
- .2 Comparison of competing options is to be made between ideas similar in nature that are designed to satisfy the same basic function or set of functions.
- .3 LCC interpretation, as related to competing options assessment.
 - .1 The sum of the present values that are associated with investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs, and disposal costs, over the lifetime of the project.
- .4 Refer to industry standard practices for measuring life cycle costs of the building and building systems such as, ASTM Standards.
- .5 Also refer to Value Engineering (Assessment) definition.

5.2.34 MASTER SCHEDULE (MASTER PROJECT SCHEDULE)

- .1 Refer to the *Doing Business with PWGSC Manual*.
 - .1

5.2.35 OPERATION AND MAINTENANCE MANUAL(S) (O&M)

- .1 Developed throughout the project lifecycle.
- .2 Produced by the Construction Manager/Contractor and is part of the CPD integrated process and is supported by the Consultant and Departmental Representative.
- .3 Requires Cx Process Manager/Cx Authority sign-off at contract Substantial Performance.
- .4 Prepared using product information report forms/data provided by Subcontractors, Own Forces and information from other sources as required.
- .5 Refer to NMS Division 01 General Requirements document for further detail.

5.2.36 OWNER PROJECT REQUIREMENTS (OPR)

- .1 Refer to CSA Z320 Article 3, Definitions.
 - .1 For further detail refer to ASHRAE 202, Article 6 - Owner's Project Requirements, Article 6.2 – Requirements.



- .2 Developed by the Consultant, in consultation with “the Owner” - PWGSC/User Department, during the Pre-Design Project Milestone.
- .3 Text and graphics are organized to facilitate future use as a building reference document.
 - .1 BOD and OPR are components of the Cx Manual.
- .4 A dynamic document throughout the project lifecycle that defines the Owner’s values and end goals; their ideas, concepts and end state quantifiable and measurable performance benchmarks/criteria by usage, by systems and/or by occupancy classification associated with topics such as:
 - .1 Project Program – pertinent Functional (Space) Program extracts, such as;
 - .1 Basic facility data (such as, area, number of stories Occupancy and construction type(s)), user/area usage schedules, restrictions and limitations, expandability, flexibility and durability (life span).
 - .2 Environmental and Sustainability Goals including;
 - .1 LEED® certification, CO₂ monitoring, and resource reuse.
 - .3 Energy Efficiency Goals including;
 - .1 Measures affecting lighting and HVAC energy efficiency such as orientation shading, ventilation and renewable power.
 - .4 Indoor Environmental Quality Requirements regarding;
 - .1 Lighting, temperature and humidity, acoustics, air quality, ventilation and filtration, controls adjustability, after hour’s accommodations, natural daylighting, ventilation and views.
 - .5 Equipment and system Expectations, such as;
 - .1 Levels of quality, reliability, flexibility, maintenance, complexity and target efficiencies, building system technologies regarding manufactures, acoustics, vibration, degree of integration, automation and functionality for controls load shedding and demand and response energy management.
 - .6 Building Occupant and O&M Personal Expectations;
 - .1 Building operation description and by whom and at what capability, level of training and orientation for occupants and O&M staff.
 - .7 Cx Process Manager Information;
 - .1 Name of Agency/Firm and contact person(s) and address name, address and personal contact.
 - .5 Starting with the Pre-Design project milestone the OPR is the foundation of the Commissioning Process - an integral part of Commissioning and future Re-Commissioning.
 - .1 Working through the various other Project Milestones is supported by the BOD documenting that the various decisions, concepts, designs, calculations, and product selections to meet the OPR.



5.2.37 PERMITS AND FEES

- .1 Refer to the Contract Documents, General Conditions (GCs).

5.2.38 PRELIMINARY PROJECT DESCRIPTION (PPD/PPDFORMAT™)

- .1 PPDFFormat™ is a guideline document published by the Construction Specification Institute (CSI).
 - .1 A tool to evaluate the design practicality during the design phase.
 - .2 The guide assists with an appropriate level of documenting qualitative and quantitative descriptions of “functional elements” – Elements and their respective Elemental Components, systems and assemblies comprising the project during the Schematic Design (SD) and Design Development (DD) Project Milestones.
 - .1 Associated deliverables are integral documents of the SD and DD Reports.
 - .3 PPD is organized using the Unifomat hierarchical structure and corresponding Level of Detail (LoD) - levels 1–5.
 - .1 Elemental and Elemental Components LoD breakdowns parallel preliminary project cost estimating formats, providing corresponding quantitative cost estimates per functional element, elemental component and related qualitative descriptions.
 - .2 The Consultant and Departmental Representative are to agree on the LoD based on the required accuracy of the Construction Cost Estimate to secure funding, manage cash flow or address risk.
 - .4 LoD may also be dependent on factors such as:
 - .1 How PPD may be used to throughout the design and documentation process to provide for opportunities, such as;
 - .1 Tracking decision progressions during design options development and final selection of preferred/optimum solution;
 - .2 Function elements complexities, and;
 - .3 Design decisions progression, such as, designing from the exterior into the interior.
 - .2 Preferred delivery format during the SD and DD Project Milestones is the “Outline Format Full Page Example” on page number 25 of the PPDFFormat Guide.
 - .1 The Outline Format facilitates design progression tracking throughout the design phase Project Milestones.
 - .3 With reference to the “Outline Format Full Page Example” and the outlined Element Levels, the LoD during the SD and DD Project Milestones is as follows:
 - .1 SD, LoD – 4, complete with a “Description” article providing a generic description of the Level 4 functional element supported by a Basis of Design narrative may also be substantiated by the OPR;



- .1 Corresponding, per Level 4 Element, Construction Cost Estimate – Class 'C', +/- 15%.
- .2 DD, Level 5;
 - .1 While Levels 1-4 may be defined in PPDFormat™ for Levels 5 and beyond, UniFormat™ 2010 considers these Levels discretionary requiring user definition;
 - .1 LoD 5 is, therefore, considered defined in the following article.
 - .2 LoD 5 includes, as per "Outline Format Full Page Example", the following articles:
 - .1 Functional Requirements addressing Element overall requisite including;
 - .1 Performance Requirements of the assembly that are quantifiable, measurable and,
 - .2 Design Requirements that, for example, may affect cost or be related to design quality regarding aesthetic, utility, performance or impact, but are not directly component attributes.
 - .2 Components, a parts listing making up the functional element, complete with attributes that are prescriptive and/or performance based;
 - .1 Each Component is accompanied by a corresponding MasterFormat™ Section number to be the basis for Construction Documentation (CD) specifications.
 - .3 Additional outline headings to be considered include;
 - .1 Alternates, for consideration of their effect on cost or schedule,
 - .2 Material/equipment Location Schedules,
 - .3 Workmanship and Fabrication requirements affecting cost,
 - .4 Reports associated with Codes, fire and zoning searches.
 - .3 Corresponding, per Level 5 Elemental Component, Construction Cost Estimate – Class 'B', +/- 10%.

5.2.39 PROJECT MANAGEMENT PLAN (PMP)

- .1 Live project interface document throughout the project life cycle.
 - .1 The Consultant designates a Project Manager Team to interface with the Departmental Representative, stakeholder and Consultant Team.
 - .2 Project Management progress is assessed against the PMP.
- .2 The PMP is structured to reflect project phases and respective Project Team's interdisciplinary service category required Deliverables – actual or virtual.
- .3 Establishes project Quality Control, set up with:
 - .1 Task management, processes, and procedures;



- .2 Monitoring systems and reporting for early identification and registration of deviations and/or trends related to Quality Matrixes.
- .4 Creates an opportunity to monitor other Project Team members' management processes and procedures including:
 - .1 Departmental Representative's PMP.
- .5 PMP may include:
 - .1 High level, total project depiction/documentation including;
 - .1 Project quality and current performance status in comparison to the start of project including major changes;
 - .2 Risk management: risks mitigated and risks remaining towards project completion;
 - .3 Issues/resolution log management: issues resolved and issues remaining towards forecasted project completion.
 - .2 Resource management: people, tools and others;
 - .3 Communication protocol: coordination, leadership, communication lines/channels, communication type, and reporting approach;
 - .4 Claims management: towards equitable resolutions and minimal disruptions;
 - .5 Scope and change management: achieving project delivery and facility feature requirements;
 - .6 Time management: master and detailed design/construction activities milestone deliverable schedules – updated to include slippage, recovery and claims avoidance;
 - .7 Budget and cost management: monitoring, tracking and projecting;
 - .8 Risk management: methods of identifying and evaluating risk including risk indexes (probability/consequence), mitigation actions, progress tracking and contingency planning;
 - .9 Quality management: quality design and delivery;
 - .10 Procurement management: means of delivery;
 - .11 Issues/resolution management: log development and maintenance;
 - .12 Construction Delivery Close Out (as per Division 01) Project Management Control System; and
 - .13 Meetings: preconstruction, progress and special meetings.

5.2.40 PROJECT MILESTONES

- .1 Pre-Design (PD)
 - .1 The Consultant Required Service includes activities such as:
 - .1 Analyse the Departmental Representative's information as may be presented at the time of Solicitation and the Project Start-up meeting; and
 - .2 Confirm, that based on the provided information, the Consultant is prepared to proceed with the Design Contract with regards to schedule, construction cost estimate, scope of Work and quality;
 - .1 Prior to proceeding with the design, the Consultant and the Departmental Representative may discuss additional services from the Consultant Team or Specialty Consultants,



- .3 Design Development (DD)
 - .1 The Consultant Required Service includes activities such as:
 - .1 Based on the SD design option selected, facilitate and provide documentation to define and describe all aspects of the project, with the purpose that all that remains is the formal Construction Documentation;
 - .2 Resolve any issues/coordination carried over from SD, refine design and coordinate all discipline details and finalize spatial, functional and operational performance requirements to minimize risk of modifications during Construction Documentation;
 - .3 Provide DD documents such as drawings, reports, and other documentation or media to illustrate and define the design concept in terms of, such as;
 - .1 Siting;
 - .2 Plan form and massing;
 - .3 Character and materials;
 - .4 Structural, mechanical and electrical systems, and;
 - .5 Elemental and Elemental Component descriptions and Construction Cost Estimates to Uniformat Level of Detail 5;
 - .1 Refer to Preliminary Project Description (PPD/PPDFormat™) Definition for further detail;
 - .6 Preliminary modeling and simulations (such as energy analysis and daylight simulation), and;
 - .7 Cx Plan and Cx construction cost including testing procedures and check sheets/forms (as per CAN/CSA Z320) associated with;
 - .1 Static Verification;
 - .2 Start-up, and;
 - .3 Functional Performance Testing.
 - .2 Final Deliverable:
 - .1 Design Development Report.
 - .3 Progressive Deliverables, such as:
 - .1 Updated BOD and OPR;
 - .2 Cx Plan, and;
 - .3 Response to PWGSC QA reviews.
 - .4 Construction Documentation:
 - .1 Refer to *Doing Business with PWGSC Manual*.
 - .5 Tender:
 - .1 The Consultant Required Service includes activities such as;
 - .1 Provide assistance and advisory services as may be necessary to the Departmental Representative in, obtaining a competitive bid and in awarding a construction contract.
 - .2 Deliverables, such as;



- .1 Addenda;
- .2 Written responses to questions, and
- .3 Bid analysis and/or recommendations.
- .6 Construction:
 - .1 The Consultant Required Services includes activities such as;
 - .1 Provide assistance and advisory contract administration services to the Departmental Representative to administer the construction contract as set out in the general conditions of the contract for construction;
 - .1 The Consultant is not an "Agent" of the Crown nor responsible for Contractor's performance.
 - .2 Act as Departmental Representative's professional advisor in interpreting the contract documents;
 - .3 Consult on the Contractor's performance, and;
 - .4 Review the construction.
 - .2 Deliverables;
 - .1 Multiple deliverables as per;
 - .1 Consultant's contract general conditions, and;
 - .2 TOR specified Deliverables.
- .7 Close Out:
 - .1 The Consultant Required Service includes activities such as;
 - .1 Provide assistance in the use and occupancy of the facility.
 - .2 Assist and advise Departmental Representative with;
 - .1 The Contractor's performance and guarantees documentation;
 - .2 Prior to the 12 month warranty period, review defects or deficiencies observed by the Departmental Representative;
 - .1 Compile items that require the Contractor's attention to complete the terms of the Contract.
 - .2 Final Deliverable;
 - .1 Year End Warranty Review – defect status.
 - .3 Progressive Deliverables, such as;
 - .1 Lessons learned.

5.2.41 PROJECT TEAM

- .1 Typically includes entities, such as:
 - .1 Departmental Representative,
 - .2 Consultant Team;
 - .3 Independent third parties also in contract with PWGSC, and;
 - .4 User Department and Operational personnel.

5.2.42 PWGSC COMMISSIONING MANAGER (PWGSC Cx MGR)

- .1 Government commissioning liaison amongst all project stakeholders and reports to the Departmental Representative.
- .2 Undertakes Quality Assurance Reviews of Cx submissions.



5.2.43 QUALITY

- .1 The degree to which the Work meets or exceeds the Project requirements and expectations.

5.2.44 QUALITY ASSURANCE (QA) REVIEWS

- .1 PWGSC QA Reviews are an advisory service to the Project Team and stakeholders where respective submission/deliverable accountabilities remain in effect as per contractual conditions or other forms of commitment.
 - .1 Consultant remains professionally accountable for the design validation and verification required of the Project Milestone submissions during the project life cycle.
- .2 QA Reviews, supported by commentary, conclude with a risk assessment associated with Quality of design and documentation deliverables, and include:
 - .1 Parameters to confirm at the onset of a review whether deliverables are appropriately scoped and detailed with respect to current Project Milestones or phase/progressive submissions.
- .3 QA Reviews focus on Quality Indicators (QI) parameters associated with Design Quality Indicators (DQI) and Quality Deliverable Indicators (QDI).
- .4 Design Quality Indicators (DQI):
 - .1 3 Aspects of DQI:
 - .1 Functionality – design utility;
 - .2 Build Quality – design performance, and;
 - .3 Impact – project contextual interactivity (such as cultural, market, environmental conditions/factors):
 - .1 Project impact on context, and vice versa;
 - .2 Context impact on project.
 - .2 Each DQI Aspect is considered against Good Design Protocols, such as;
 - .1 Creativity and Technical Competence;
 - .2 Functional Suitability;
 - .3 Whole-of-Life Performance;
 - .4 Health, Safety and Security;
 - .5 Inspiring and Attractive;
 - .6 Appropriate Innovation, and;
 - .7 Sustainable and Enduring.
 - .3 As each DQI Aspect is considered against Good Design Protocols, each Aspect is also assessed against the same Characteristics such as:
 - .1 Conceptual Integrity;
 - .2 Functionality;
 - .3 Operability;
 - .4 Constructability, and;



- .5 Claims Prevention.
- .5 Quality Deliverable Indicators (QDI):
 - .1 Focus on documentation delivery.
 - .1 Submitted documentation is assessed against 6 characteristics:
 - .1 Clarity;
 - .2 Completeness;
 - .3 Compliance;
 - .4 Consistency;
 - .5 Correctness, and;
 - .6 Decision Traceability.

5.2.45 RECOMMISSIONING MANUAL

- .1 Deliverable by Consultant's Cx Process Manager/Cx Authority.
- .2 Refer to CSA Z320 Article 4.9.4, Recommissioning manual.

5.2.46 RISK MANAGEMENT PLAN

- .1 Departmental Representative (DR) initiates and maintains a PWGSC RM Program.
- .2 The objective of the Plan is to develop a methodology to improve risk management by:
 - .1 Establishing risk policies to confirm acceptable levels of non-compliance as per DR Risk Management Plan;
 - .2 Focusing on external and internal risk parameters, and;
 - .3 Articulating an approach/framework to identifying risk and its impact in advance and managing the risk with the goal of reducing, transferring or avoiding risk where appropriate.
- .3 Program and Plans are collaboratively monitored and amendments are proposed to the DR by the Project Team as required for an effective project delivery.

5.2.47 STANDARD OPERATING PROCEDURES (SOP)

- .1 Systems Operations Manual component.
- .2 Procedures are to meet the Canada Labour Code requirement of "every employer" (User Department) by way of "a qualified person to set out, in writing, instructions for operations, inspections, testing, clearing and maintenance" of various components, systems and integrated systems.
 - .1 Updated throughout the building lifecycle for continued safety and consistent Work practices.
 - .2 Capable of being the basis for the development of Departmental policies.
- .3 Includes site specific:
 - .1 Equipment, chemicals and other concerns such as life safety compliance, emergency provisions/procedures, security, access, sustainability and the environment.
 - .2 Series of flow charts designed to model the actions, activities and network of interconnected activities associated with systems and related operations and maintenance.



5.2.48 STATIC VERIFICATION

- .1 Refer to CSA Z320 Article 4.4.4, Static Verification.
 - .1 Add to Article 4.4.4 the following review requirements:
 - .1 Review select equipment certificated of authenticity (such as, circuit breakers).

5.2.49 SUB-PROJECT

- .1 User Department/Departmental Representative project Work completed by a Departmental Service Provider requiring a coordinated delivery in a main capital Works project, for example:
 - .1 IT Works, Furniture delivery and installation;
- .2 If Work takes place in the same space and time as capital Works then capital Work's health and safety plan governs Sub-Project Work.

5.2.50 SYSTEMS

- .1 Refer to CSA Z320 Article 5, Specific systems.
 - .1 Require confirmation of other systems, such as those that may relate to, for example:
 - .1 Civil Engineering;
 - .1 CSA Z320 currently considers related systems outside the building foot print and therefore not included in the Standard;
 - .2 Sound Masking;
 - .1 As part of CSA Article, 5.1.3.4, Interior Space, Functional Performance Testing;
 - .3 Duct Pressure Tests and Indoor Air Quality (IAQ) Tests;
 - .1 As part of CSA Article, 5.4.3.4, Mechanical Systems, Functional Performance Testing.

5.2.51 SYSTEMS OPERATIONS MANUAL (SYSTEMS DESCRIPTIONS/SYSTEMS MANUAL)

- .1 Developed throughout the project lifecycle.
- .2 Refer to CSA Z320 Article 3, Definitions.
- .3 Extend the CSA Definition to include in emergency conditions as a mode of operation.
- .4 Normally produced by the Construction Manager/Contractor and as part of the CPD integrated process with Support by the Consultant and Departmental Representative.
 - .1 Requires Cx Process Manager sign-off at contract Substantial Performance.
- .5 Standard Operating Procedures (SOP) document is a component of the Systems Operations Manual – see Definition.

5.2.52 UNIFORMAT™

- .1 A uniform, hierarchical classification structure of construction systems and assemblies.
 - .1 Current version – CSI/CSC Unifomat, 2010 edition.
- .2 UniFormat organizational structure also guides the development and delivery of:



- .1 Construction Cost estimates – refer to Definition for further detail and;
- .2 PPDFormat, Preliminary Project Descriptions during the design phase – refer to Definition for further detail.

5.2.53 VALUE ENGINEERING (VE)

- .1 Value Engineering (Assessment) methodology, as related to competing options assessment, emphasizes the return-on-investment aspect of decision making in terms of LCC to maintain or improve the desired levels of capability and performance during planning, design, construction and procurement.
 - .1 When the options satisfy the required function, then the best value option is to be identified by comparing the first costs and life-cycle costs of each alternative.
 - .2 Refer to industry standard practices for value methodologies associated with buildings and building systems such as, SAVE and ASTM Standards.
 - .3 Also refer to Life-Cycle Costs definition.

5.2.54 WORK

- .1 Refer to Contract Documents: General Conditions (GCs).

5.2.55 WORK BREAKDOWN STRUCTURE (WBS)

- .1 Integral to schedules and project execution plans.

----- END -----