

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

**Regional Manager/Real Property
Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario**

Request For a Standing Offer Demande d'offre à commandes

Departmental Individual Standing Offer (DISO)

Offre à commandes individuelle du département(OCID)

Canada, as represented by the Minister of Public Works and Government Services Canada, hereby requests a Standing Offer on behalf of the Identified Users herein.

Le Canada, représenté par le ministre des Travaux Publics et Services Gouvernementaux Canada, autorise par la présente, une offre à commandes au nom des utilisateurs identifiés énumérés ci-après.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Regional Manager/Real Property Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario

Title - Sujet Geotechnical Engineering Services	
Solicitation No. - N° de l'invitation EQ754-131106/A	Date 2013-08-22
Client Reference No. - N° de référence du client 20131106	GETS Ref. No. - N° de réf. de SEAG PW-\$PWL-042-1879
File No. - N° de dossier PWL-2-35048 (042)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-10-03	Time Zone Fuseau horaire Eastern Daylight Saving Time EDT
Delivery Required - Livraison exigée	
Address Enquiries to: - Adresser toutes questions à: Correia-Reid, Vincent	Buyer Id - Id de l'acheteur pwl042
Telephone No. - N° de téléphone (416)590-8259 ()	FAX No. - N° de FAX (416)512-5862
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Ontario Region	
Security - Sécurité This request for a Standing Offer does not include provisions for security. Cette Demande d'offre à commandes ne comprend pas des dispositions en matière de sécurité.	

Instructions: See Herein

Instructions: Voir aux présentes

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

REQUEST FOR STANDING OFFER (RFSO)**GEOTECHNICAL ENGINEERING AND MATERIALS TESTING SERVICES****TABLE OF CONTENTS**

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SUPPLEMENTARY INSTRUCTIONS TO PROPONENTS (SI)

SI 1 CODE OF CONDUCT AND CERTIFICATIONS - RELATED DOCUMENTATION

Refer to section entitled Code of Conduct and Certifications - Proposal under the General Instructions to Proponents.

By submitting a proposal, the Proponent certifies that the Offeror and his affiliates are in compliance with the provisions as stated in the Code of Conduct and Certifications clause of the General Instructions to Proponents. The related documentation therein required will assist Canada in confirming that the certifications are true.

SI 2 FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

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

Canada will have the right to declare a proposal non-responsive, or to set-aside a Standing Offer, 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 issuing of a Standing Offer or during the period of the Standing Offer.

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

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

SI 3 SECURITY REQUIREMENTS

Proponents are hereby informed that there is a strong possibility that some call-ups against the Standing Offers might require that the consultants and their personnel possesses a Facility Security Clearance (FSC) at the RELIABILITY level issued by the Canadian Industrial Security Directorate (CISD) of Public Works and Government Services Canada (PWGSC).

Should a Proponent not have the level of security indicated above, the security clearance process can be initiated by the Proponent by contacting the PWGSC Security Advisor at the coordinates below:

Regional Chief Security and Emergency Preparedness

Telephone: 416-512-5968

Facsimile: 416-952-6481

Email:

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwl042

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

20131106

File No. - N° du dossier

PWL-2-35048

CCC No./N° CCC - FMS No/ N° VME

ONTSecurityandEmergencyManagement.SecuriteetGestiondes@pwgsc-tpsgc.gc.ca

Successful proponent(s) issued a standing offer as a result of this RFSO, who do not possess the required security clearance at time of call up, will be bypassed and PWGSC will proceed to the next consultant who possesses the required security clearance and is furthest away from the ideal business distribution. Refer to the Standing Offer Particulars SP 5.1.a for information regarding ideal business distribution.

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GENERAL INSTRUCTIONS TO PROPONENTS

Code of Conduct and Certifications - Proposal

1. Proponents must comply with the Code of Conduct for Procurement (<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>). In addition to the Code of Conduct for Procurement, proponents must a) respond to Requests for Standing Offers (RFSO) in an honest, fair and comprehensive manner, b) accurately reflect their capacity to satisfy the requirements stipulated in the RFSOs, Standing Offers and resulting contracts, c) submit proposals and enter into contracts only if they will fulfill all obligations of the Contract.
2. Proponents further understand that, to ensure fairness, openness and transparency in the procurement process, the commission of certain acts or offences will render them ineligible to be issued a Standing Offer and awarded a contract. Canada will declare non-responsive any proposal in respect of which the information herein requested is missing or inaccurate, or in respect of which the information contained in the certifications specified hereinafter is found to be untrue, in any respect, by Canada. If it is determined, after issuance of a Standing Offer, that the Proponent made a false declaration, Canada will have the right to set aside the Standing Offer and to terminate for default any resulting contracts. The Proponent will be required to diligently maintain up-to-date the information herein requested. The Proponent and any of the Proponent's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any Standing Offer arising from this RFSO and any call-ups made against the Standing Offer.
3. For the purpose of this section, everyone, including but not limited to organizations, bodies corporate, societies, companies, firms, partnerships, associations of persons, parent companies and subsidiaries, whether partly or wholly-owned, as well as individuals and directors, are Proponent's affiliates if:
 - a. directly or indirectly either one controls or has the power to control the other, or
 - b. a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the acts or convictions specified in this section which has the same or similar management, ownership, or principal employees, as the case may be.

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

Canada may, at any time, request that an Proponent provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form - PWGSC-TPSGC 229) for any or

all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the proposal being declared non-responsive.

5. The Proponent must diligently maintain an up-to-date list of names by informing Canada in writing of any change occurring during the validity period of the proposal as well as during the period of any Standing Offer arising from this RFSO and any call-ups made against the Standing Offer. The Proponent must also, when so requested, provide Canada with the corresponding Consent Forms.
6. By submitting a proposal, the Proponent certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Proponent, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties.
7. By submitting a proposal, the Proponent certifies that neither the Proponent nor any of the Proponent's affiliates have directly or indirectly, paid or agreed to pay, and will not, directly or indirectly, pay a contingency fee to any individual for the solicitation, negotiation or obtaining of the Standing Offer and any call-ups made against the Standing Offer if the payment of the fee would require the individual to file a return under section 5 of the Lobbying Act.
8. By submitting a proposal, the Proponent certifies that no one convicted under any of the provisions under a) or b) are to receive any benefit under a Standing Offer arising from this RFSO and any call-ups made against the Standing Offer. In addition, the Proponent certifies that except for those offences where a criminal pardon or a record suspension has been obtained or capacities restored by the Governor in Council, neither the Proponent nor any of the Proponent's affiliates has ever been convicted of an offence under any of the following provisions:
 - a. paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the Financial Administration Act, or
 - b. section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud*) for fraud committed against Her Majesty or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or
 - c. section 462.31 (*Laundering proceeds of crime*) or sections 467.11 to 467.13 (*Participation in activities of criminal organization*) of the Criminal Code of Canada, or
 - d. section 45 (*Conspiracies, agreements or arrangements between competitors*), 46 (*Foreign directives*) 47 (*Bid rigging*), 49 (*Agreements or arrangements of federal financial institutions*), 52 (*False or misleading representation*), 53 (*Deceptive notice of winning a prize*) under the Competition Act, or
 - e. section 239 (*False or deceptive statements*) of the Income Tax Act, or
 - f. section 327 (*False or deceptive statements*) of the Excise Tax Act, or
 - g. section 3 (*Bribing a foreign public official*) of the Corruption of Foreign Public Officials Act, or
 - h. section 5 (*Trafficking in substance*), section 6 (*Importing and exporting*), or section 7 (*Production of substance*) of the Controlled Drugs and Substance Act.
9. In circumstances where a criminal pardon or a record suspension has been obtained, or capacities have been restored by the Governor in Council, the Proponent must provide with its proposal or promptly thereafter a copy of confirming documentation from an official source. If such documentation has 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 will render the proposal non-responsive

10. Proponents understand that Canada may contract outside of the present solicitation process with a supplier who has been convicted of an offense enumerated under c) to h) of the paragraph hereinabove, or who is affiliated with someone who has been convicted of an offense enumerated under c) to h) of the paragraph hereinabove, when required to do so by law or legal proceedings, or when Canada considers it necessary to the public interest for reasons which include, but are not limited to:

- o Only one person is capable of performing the contract;
- o Emergency;
- o National security;
- o Health and safety;
- o Economic harm.

Canada reserves the right to impose additional conditions or measures to ensure the integrity of the procurement process.

GI 1 INTRODUCTION

1. Public Works and Government Services Canada (PWGSC) is inviting consulting firms with Geotechnical Engineering expertise to submit proposals for Standing Offers. The selected consultants shall provide a range of services as identified in the Required Services section of this document for geotechnical and material testing projects in the Ontario Region but not limited to the following:

- Bridges
- Dams
- Buildings
- Airport facilities
- Water and Sewage Treatment Plant
- Municipal Infrastructure facilities
- Road, pavements
- Small Craft Harbour facilities
- Ferry terminal, public wharves, docks and piersshore protection, river bank naturalization and stabilization
- Breakwaters and retaining structures
- Dredging material analysis
- timber crib, steel sheet piling and H-piling, reinforced concrete support structures (e.g. pile caps, beams, fascia, retaining walls and wharf decks
- Utility

2. The consultant team must be capable of providing the following services but not limited to the following:

- Site characterization and hazard mapping
- Utility locates, permits and clearances and Traffic Control Plans
- Subsurface investigations and baseline reports for boreholes and test pits for both land and underwater and comprehensive laboratory services
- Groundwater Monitoring and Instrumentation
- Temporary and Permanent Dewatering
- Hydro geological Studies
- Geotechnical Analysis - seepage, bearing capacity, settlement, slope stability analysis, instrumentation and monitoring
- Seismic risk analysis, liquefaction assessment and earth quake engineering

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- Design of shallow and deep foundations, including various types of piles
 - Deep foundations full scale static and dynamic load testing
 - Aggregate Management - prospecting and selection of borrow areas.
 - Concrete mix designs and testing and report for air, slump, concrete compressive strength and field concrete coring.
 - Mortar / grout cubes testing and report.
 - Soil and aggregate compaction testing including nuclear denosometer.
 - Field sampling of asphalt materials, asphalt plate sample, field asphalt compaction testing
 - Laboratory soil testing including but not limited to sieve analysis, standard proctor test, and modified proctor test.
 - Asphalt testing – asphalt content and gradation test, full Marshall testing, laboratory percent air void test and Superpave Performance Grade (PG) asphalt testing.
 - Contaminates soil and groundwater testing and analysis.
 - Reinforcement steel inspection before concreting as required.
 - Structural steel inspection including welding and bolting inspection and report.
3. Proponents shall be licensed or eligible to be licensed to practice in the province of Ontario. Firms should be able to demonstrate successful delivery of these services for a broad variety of projects over the last five (5) years. In general, the firm and its personnel will be evaluated on the basis of their demonstrated understanding of the scope of services, their approach and methodology to providing those services, the quality of their relevant experience in this area, as well as the cost of the provision of the services.
4. It is PWGSC's intention to award up to three (3) Standing Offers, each for a period of three (3) years from the date of issuance of the Standing Offers. The total dollar value of all Standing Offers is estimated to be \$5,000,000.00 (HST Included). Individual call-ups will vary, up to a maximum of \$1,000,000.00 (HST included) under exceptional circumstances. Proponents should note that there is no guarantee that the full or any amount of the Standing Offers will be called-up; PWGSC will award call-ups only when the specific services to be provided under the Standing Offer are needed. Please refer to Section SP5, CALL-UP PROCEDURE.
5. This procurement is subject to the provisions of the North American Free Trade Agreement (NAFTA), World Trade Organization - Agreement on Government Procurement (WTO-AGP), the Canada-Colombia Free Trade Agreement (FTA) and the Canada-PERU FTA.

GI 2 PROCUREMENT BUSINESS NUMBER

Proponents are required to have a Procurement Business Number (PBN) before issuance of a standing offer. Proponents may register for a PBN on line at Supplier Registration Information (<https://srisupplier.contractsCanada.gc.ca/>). For non-Internet registration, proponents may contact the Info Line at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Agent.

GI 3 CONTRACTING AUTHORITY

1. The Contracting Authority for this Request for Standing Offer is:

Vincent Correia Reid, Supply Officer
Public Works and Government Services Canada
Real Property Contracting
4900 Yonge Street, 12th Floor
Toronto, ON

M2N 6A6

Tel: (416) 590-8259

Fax: (416) 512-5652

E-mail address: vincent.correia-reid@pwgsc.gc.ca

2. The Contracting Authority is responsible for the establishment of the Standing Offer, its administration, and any contractual issues relating to individual call-ups.

GI 4 DEPARTMENTAL REPRESENTATIVE

1. A Departmental Representative will be identified at time of each individual Call-Up.
2. The Departmental Representative will be responsible for all matters concerning the technical content of the work under the Call-Up.

GI 5 QUANTITY

The level of services and estimated expenditure specified in the Request for Standing Offer are only an approximation of requirements given in good faith. The making of a proposal by the Proponent shall not constitute an agreement by Canada. Canada may make one or several call-ups against a standing offer.

GI 6 PWGSC OBLIGATION

A Request for Standing Offer does not commit PWGSC to authorize the utilization of a standing offer or to pay any cost incurred in the submission of proposals, or cost incurred in making necessary studies for the preparation thereof, or to procure or contract for any services. PWGSC reserves the right to reject or authorize for utilization any proposal in whole or in part, with or without further discussion or negotiation. Canada reserves the right to cancel or amend the Request for Standing Offer at any time.

GI 7 RESPONSIVE PROPOSALS

To be considered responsive, a proposal must meet all of the mandatory requirements set out in the Request for Standing Offer. No further consideration in the selection procedure will be given to a Proponent submitting a non-responsive proposal. Proponents that submitted non-responsive proposals are notified accordingly.

GI 8 COMMUNICATIONS - SOLICITATION PERIOD

1. Questions or requests for clarification during the solicitation period must be submitted in writing to the Contracting Authority named on the Request for Standing Offer - Page 1 as early as possible.

Enquiries should be received no later than ten (10) working days prior to the closing date identified on the front page of the Request for Standing Offer. Enquiries received after that time may not be answered.

2. To ensure the integrity of the competitive bid process, enquiries and other communications regarding the RFSO must be directed only to the Contracting Authority identified in the RFSO. Failure to comply with this requirement may result in the proposal being declared non-responsive.
3. To ensure consistency and quality of information provided to proponents, significant enquiries received and the replies to such enquiries will be provided simultaneously to proponents to which the RFSO has been sent, without revealing the sources of the enquiries.

GI 9 OVERVIEW OF SELECTION PROCESS

1. The Standing Offer selection process is as follows:
 - a) a Request for Standing Offer is obtained by proponents through the Government Electronic Tendering Service (GETS);
 - b) in response to the Request for Standing Offer, interested proponents shall submit their proposals using a "two-envelope" procedure, in which proponents submit the "technical" component of their proposal in one envelope and the proposed price of the services (price proposal) in a second envelope as further described in GI 10.3 below;
 - c) responsive proposals are reviewed, evaluated and rated by a PWGSC Evaluation Board in accordance with the criteria, components and weight factors set out in the Request for Standing Offer;
 - d) PWGSC may issue a standing offer to the successful proponents;
 - e) Proponents are notified of the results within one week after PWGSC has entered into a standing offer arrangement with the successful proponents.

GI 10 SUBMISSION OF PROPOSAL

1. Canada requires that each proposal, at 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 GI18.
2. It is the Proponent's responsibility to:
 - a) obtain clarification of the requirements contained in the Request for Standing Offer, if necessary, before submitting a proposal;
 - b) submit an original of the proposal plus the specified number of copies, duly completed, IN THE FORMAT REQUESTED, on or before the closing date and time set for receipt of proposals;
 - c) send its proposal only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified on page 1 of the Request for Standing Offer or to the address specified in the Request for Standing Offer;
 - 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 the Request for Standing Offer.
3. The technical and price components of the proposal must be submitted in separate, easily identified envelopes in accordance with the instructions contained in the proposal document. Both envelopes shall be submitted as one package which shall clearly and conspicuously display and indicate on the outside of the package the information identified in paragraph 2. d) above.

4. Timely and correct delivery of proposals to the office designated for receipt of proposals is the sole responsibility of the Proponent. Public Works and Government Services Canada 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. The evaluation of proposals may result in authorization to utilize one or more Standing Offers in whole or in part, taking into consideration the evaluation criteria and selection method stated herein. The lowest or any proposal will not necessarily be authorized. In case of error in the calculation of prices, the unit prices will govern.
6. The proposal should completely and thoroughly address each element of the requirements as enumerated in the Request for Standing Offer. It is also essential that the elements contained in the proposal be stated in a clear and concise manner.
7. Proposal documents and supporting information may be submitted in either English or French.

GI 11 NON-ACCEPTANCE OF ELECTRONICALLY TRANSMITTED PROPOSALS

Due to the nature of this solicitation, a complete technical proposal, as well as a cost of services proposal (submitted under separate cover), with supporting information is required to allow a proper evaluation to be conducted. Electronic transmission of the proposal by such means as electronic mail or facsimile is not considered to be practical, and therefore, will not be accepted.

GI 12 EVALUATION OF PRICE

The price proposal must be submitted in Canadian dollars and will be evaluated GST/HST excluded.

GI 13 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 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.
4. Notwithstanding paragraph 3. above, in order to avoid any conflict of interest, or any perception of conflict of interest, no person or entity acting as an individual Proponent or as part of a joint venture Proponent, shall be proposed as a member of another Proponent's consultant team, either as a sub-consultant or specialist consultant or as part of another joint venture Proponent. Failure to comply with this limitation will result in all submissions so involved being rejected.

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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.

GI 14 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 law in the province of the work.
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 paragraph 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.

GI 15 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.

GI 16 NOT APPLICABLE

GI 17 INSURANCE REQUIREMENTS

1. The successful Proponent shall be required to obtain and maintain Professional Liability and Comprehensive General insurance coverage in accordance with the requirements set out elsewhere in the Request for Standing Offer documents.
2. No insurance requirement stipulated in the Request for Standing Offer documents should be construed as limiting any insurance required by federal, provincial or municipal law. Neither should it limit any coverage which the successful Proponent and other members of the consultant team may consider to be necessary for their own protection or to fulfill their obligations.
3. By virtue of submission of a proposal, the Proponent certifies that the Proponent and the other members of the consultant team as may be applicable are capable of obtaining, and will obtain and maintain liability insurance in accordance with the requirements set out in the proposal documents.

GI 18 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 standing offer 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 RFSO and any resulting standing offer. If a standing offer is issued to a joint venture, all members of the joint venture will be jointly and severally or solidarity liable for the performance of any contract resulting from a call-up against the standing offer.

GI 19 LATE SUBMISSIONS

Submissions delivered after the stipulated closing date and time will be returned unopened.

GI 20 DEFINITION OF PROPONENT AND LEGAL CAPACITY

"Proponent" means the person or entity (or, in the case of a joint venture, the persons or entities) submitting a proposal to provide services under a call-up resulting from a standing offer. It does not include the parent, subsidiaries or other affiliates of the Proponent, or its sub-consultants. 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.

GI 21 DEBRIEFING

A debriefing will be provided, on request, only following entry by PWGSC into a contractual arrangement with the successful Proponent. Should a Proponent desire a debriefing, the Proponent should contact the person identified on the front page of the Request for Standing Offer 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.

GI 22 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.
- 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, 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.

GI 23 REVISION OF PROPOSAL

A proposal submitted may be amended by letter or facsimile provided the revision is received at the office designated for the receipt of proposals, on or before the date and time set for the receipt of proposals. The revision must be on the Proponent's letterhead or bear a signature that identifies the Proponent, and must clearly identify the change(s) to be applied to the original proposal. The revision must also include the information identified in GI 10 2. d).

GI 24 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 , SELECT - Consultant Performance Evaluation Report (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913-1.pdf>), is used to record the performance.

GI 25 PROPOSAL COSTS

No payment will be made for costs incurred in the preparation and submission of a proposal in response to the Request for Standing Offer. 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.

GI 26 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.

GI 27 LIMITATION OF LIABILITY

Except as expressly and specifically permitted in this Request for Standing Offer, no Proponent or potential Proponent shall have any claim for any compensation of any kind whatsoever in relation to this Request for Standing Offer, 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.

GI 28 STATUS AND AVAILABILITY OF RESOURCES

The Proponent certifies that, should it be issued a standing offer as a result of the Request for Standing Offer, every individual proposed in its proposal will be available to perform the Services resulting from a call-up against the Standing Offer as required by Canada's representatives and at the time specified in a call-up or agreed to with Canada's representatives. If for reasons beyond its control, the Proponent is unable to provide the services of an individual named in its proposal, the Proponent may propose a substitute with similar qualifications and experience. The Proponent must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Proponent: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwl042

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

20131106

File No. - N° du dossier

PWL-2-35048

CCC No./N° CCC - FMS No/ N° VME

STANDING OFFER PARTICULARS (SP)

- SP 1 General
- SP 2 Withdrawal/Revision
- SP 3 Period of the Standing Offer
- SP 4 Call-Up Limitation
- SP 5 Call-Up Procedure
- SP 6 Invoicing

STANDING OFFER PARTICULARS

SP 1 GENERAL

1. The Consultant acknowledges that a standing offer is not a contract and that the issuance of a Standing Offer and Call-up Authority does not oblige or commit Canada to procure or contract for any services listed in the Standing Offer.
2. The Consultant offers to provide and deliver to Canada the services described in the Standing Offer, in accordance with the pricing set out in the Standing Offer if, and when the Contracting Authority may request such services, in accordance with the conditions listed at subsection 3 below.
3. The Consultant understands and agrees that:
 - a) a call-up against the Standing Offer will form a contract only for those services which have been called-up, provided that such call-up is made in accordance with the provisions of the Standing Offer;
 - b) Canada's liability is limited to that which arises from call-ups against the Standing Offer made within the period specified in the Standing Offer;
 - c) Canada has the right to procure the services specified in the Standing Offer by means of any other contract, standing offer or contracting method;
 - d) the Standing Offer cannot be assigned or transferred in whole or in part;
 - e) the Standing Offer may be set aside by Canada at any time.

SP 2 WITHDRAWAL/REVISION

In the event that the Consultant wishes to withdraw the Standing Offer after authority to call-up against the Standing Offer has been given, the Consultant must provide no less than thirty (30) days' written notice to the Contracting Authority, unless specified otherwise in the Standing Offer. The thirty (30) days' period will start upon receipt of the notification by the Contracting Authority and the withdrawal will be effective at the expiry of that period. The Consultant must fulfill any and all call-ups which are made before the expiry of that period.

The period of the Standing Offer may only be extended, or its usage increased, by the Contracting Authority issuing a revision to the Standing Offer in writing.

SP 3 PERIOD OF THE STANDING OFFER

The period for placing call-ups against the Standing Offer shall be for three (3) years commencing from the start date identified on the Standing Offer.

SP 4 CALL-UP LIMITATION

Each call-up against the Standing Offer will have a maximum limitation of expenditure of \$1,000,000.00 (HST included). The call-up limitation includes fees and all related disbursements.

SP 5 CALL-UP PROCEDURE

1. Services will be called-up as follows:

The Departmental Representative will establish the scope of services to be performed. For each individual Call-Up, consultants will be considered using a computerized distribution system. This system will track all call-ups assigned to each consultant and will maintain a running total of the dollar value of business distributed. The system will contain for each consultant an ideal business distribution percentage which has been established as follows; 43% of the business for the top ranked consultant, 32% for the 2nd ranked consultant, 25% for the 3rd ranked consultant. In the event fewer than three (3) consultants are successful, the undistributed % of business will be redistributed amongst the offerors being recommended using the following formula:

$$\text{Revised Distributions \%} = \frac{\text{pre-established \%}}{100 \text{ less the non distributed \%}} \times 100$$

The Consultant who is furthest under their respective ideal business distribution percentage in relation to the other consultants will be selected for the next call-up.

- b) The Consultant will be provided the scope of services and will submit a proposal to the Departmental Representative in accordance with the fixed hourly rates established under the Standing Offer. The Consultant's proposal shall include the category of personnel, name of personnel and the number of hours estimated/required to perform the services, as well as an estimate of proposed disbursements, if applicable. If for reasons beyond its control, the Consultant is unable to provide the services of an individual named in its proposal (submitted in response to the Request for Standing Offer), the Consultant may propose a substitute with at least the same qualifications and experience in the estimation of Canada. The Consultant must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Consultant: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default. If the Consultant is unable to provide a substitute with similar qualifications and experience, Canada may set aside the standing offer.
- c) For services from a Specialist Consultant that is not named or for which discipline is not identified in the Standing Offer, the Consultant's proposal shall include the category and name of personnel as well as their hourly rate(s) with the number of hours estimated/required by the Specialist Consultant to perform these services. A fixed fee or, where it is not possible or appropriate to agree upon a fixed fee, a time based fee to an upset limit will be established.
- d) For the preparation of bilingual documents, the Consultant shall estimate the required number of hours and multiply by the hourly rates established in the Standing Offer. If the services of a translation firm are required to produce bilingual documents, these costs shall be treated as a disbursement.
- e) A fixed fee or, where it is not possible or appropriate to agree upon a fixed fee, a time based fee to an upset limit will be established in accordance with the hourly rate(s) established in the Standing Offer.

- f) Standing Offer holders not possessing the required security clearance at time of call up, will be bypassed and PWGSC will proceed to the next consultant who possesses the required security clearance and it is furthest away from the ideal business distribution.

SP 6 INVOICING

1. For prompt processing of invoices, include the following information on each invoice for payment:

- a) PWGSC project number;
- b) Invoicing period with dates;
- c) Work done to justify invoice (short narrative) for services provided
- d) Summary of costs as follows:

Amount this invoice	(1)	Fees + GST = Total	
Total previous invoices	(2)	Fees + GST = Total	
Total invoiced to date	(1+2) = (3)	Fees + GST = Total	
Agreed fees	(4)	Fees + GST = Total	Amount to complete
(4-3) = (5)	Fees + GST = Total		
% Services completed this stage	(6)		

- e) Authorized signatures of the consultant and the date.

2. Include with each invoice for authorized disbursements, receipt of original invoices (or legible copies if originals cannot be supplied) for all items claimed.

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Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwl042

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

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File No. - N° du dossier

PWL-2-35048

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TERMS AND CONDITIONS

0220DA	General Conditions (GC)
0000DA	Supplementary Conditions (SC)
9998DA	Terms of Payment (TP)
9999DA	Consultant Services (CS)
2000DA	Calculation of Fees (CF)

0220DA**GENERAL CONDITIONS**

GC 1	Definitions
GC 2	Interpretations
GC 3	Not Applicable
GC 4	Assignment
GC 5	Indemnification
GC 6	Notices
GC 7	Suspension
GC 8	Termination
GC 9	Taking the Services Out of the Consultant's Hands
GC 10	Time and Cost Records to be Kept by the Consultant
GC 11	National or Departmental Security
GC 12	Rights to Intellectual Property
GC 13	Conflict of Interest and Values and Ethics Codes for the Public Service
GC 14	Status of Consultant
GC 15	Declaration by Consultant
GC 16	Insurance Requirements
GC 17	Resolution of Disagreements
GC 18	Amendments
GC 19	Entire Agreement
GC 20	Contingency Fees
GC 21	Harassment in the Workplace
GC 22	Taxes
GC 23	Changes in the Consultant Team
GC 24	Joint and Several Liability
GC 25	Not Applicable
GC 26	International Sanctions
GC 27	Code of Conduct and Certifications - Standing Offer and Contract

GC 1 Definitions

Applicable Taxes means 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;

Average Bank Rate means the simple arithmetic mean of the *Bank Rate* in effect at 4:00 p.m. Eastern Time each day during the calendar month which immediately precedes the calendar month in which payment is made;

Bank Rate means the rate of interest established from time to time by the Bank of Canada as the minimum rate at which it makes short term advances to members of the Canadian Payments Association;

Canada, Crown, Her Majesty or the Government means Her Majesty the Queen in right of *Canada*;

Construction Contract means a contract entered into between *Canada* and a *Contractor* for the construction of the Project;

Construction Contract Award Price means the price at which a *Construction Contract* is awarded to a *Contractor*;

Construction Cost Estimate means an anticipated amount for which a *Contractor* will execute the construction of the Project;

Construction Cost Limit means that portion of the total amount of Project funds which shall not be exceeded on construction of the Project;

Consultant means the party identified in the Standing Offer to perform the *Consultant Services* under the Standing Offer and any subsequent Call-up, and includes the officer or employee of the *Consultant* identified in writing by the *Consultant*;

Contracting Authority means the party identified on the front cover page, responsible for the establishment of the Standing Offer, its amendments, administration, and any contractual issues relating to individual call-ups;

Contractor means a person, firm or corporation with whom *Canada* enters, or intends to enter, into a *Construction Contract*;

Contract Price means the amount stated in the Call-Up to be payable to the *Consultant* for the *Services*, exclusive of *Applicable Taxes*;

Cost Plan means the allocation of proposed costs among the various elements of the Project, as described in the *Project Brief or Terms of Reference*;

Days means continuous calendar days, including weekends and statutory public holidays;

Departmental Representative means the officer or employee of *Canada* identified to the consultant in writing to perform the *Departmental Representative's* duties under each Call-Up;

Mediation is a process of dispute resolution in which a neutral third party assists the parties involved in a dispute to negotiate their own settlement;

Project Brief or Terms of Reference means a document describing in sufficient detail the *Services* to be provided by the *Consultant* to permit the *Consultant* to proceed with the *Services* and may include general project information, scope of the work, site and design data, and time plan, specifically related to the Project;

Project Schedule means a time plan, including the sequence of tasks, milestone dates and critical dates which must be met for the implementation of the planning, design and construction phases of the Project;

Services means the *Services* provided by the *Consultant* and the *Services* required for the project as set forth in the Standing Offer and subsequent Call-up documents;

Specialist Consultant means any Architect, Professional Engineer, or other specialist, other than the *Consultant*, engaged by *Canada* directly or, at the specific request of *Canada*, engaged by the *Consultant*;

Sub-Consultant means any Architect, Professional Engineer, or other specialist engaged by the *Consultant* for the *Services* included in the Standing Offer or any subsequent Call-up;

Technical Documentation includes designs, reports, photographs, physical models, surveys, drawings, specifications, computer software developed for the purpose of the Project, computer printouts, design notes, calculations, CADD (Computer-aided Design and Drafting) files, and other data, information and material, prepared, computed, drawn, or produced and operating and maintenance manuals either prepared or collected for the Project.

Total Estimated Cost, Revised Estimated Cost, Increase (Decrease) on Page 1 of the Contract or Contract Amendment means an amount used for internal administrative purposes only that comprises the *Contract Price*, or the revised *Contract Price*, or the amount that would increase or decrease the *Contract Price* and the *Applicable Taxes* as evaluated by the *Contracting Authority*, and does not constitute tax advice on the part of *Canada*.

GC 2 Interpretations

1. Words importing the singular only also include the plural, and vice versa, where the context requires;
2. Headings or notes in the Standing Offer shall not be deemed to be part thereof, or be taken into consideration in its interpretation;
3. "Herein", "hereby", "hereof", "hereunder" and similar expressions refer to the Standing Offer as a whole and not to any particular subdivision or part thereof.

GC 3 Not Applicable

GC 4 Assignment

1. The Call-Up shall not be assigned, in whole or in part, by the *Consultant* without the prior consent of *Canada*.
2. An assignment of the Call-Up without such consent shall not relieve the *Consultant* or the assignee from any obligation under the Call-up, or impose any liability upon *Canada*.

GC 5 Indemnification

1. The *Consultant* shall indemnify and save harmless *Canada*, its employees and agents, from losses arising out of the errors, omissions or negligent acts of the *Consultant*, its employees and agents, in the performance of the *Services* under the Call-up that may result from the Standing Offer.
2. The *Consultant's* liability to indemnify or reimburse *Canada* under the Standing Offer shall not affect or prejudice *Canada* from exercising any other rights under law.

GC 6 Notices

1. Any notice, request, direction, consent, decision, or other communication that is required to be given or made by either party pursuant to the Standing Offer, shall be in writing, and shall be deemed to have been effectively given when:
 - (a) served personally, on the day it is delivered;
 - (b) forwarded by registered mail, on the day the postal receipt is acknowledged by the other party; or
 - (c) forwarded by facsimile or other electronic means of transmission, one working day after it was transmitted.
2. The address of either party, or the person authorized to receive notices, may be changed by notice in the manner set out in this provision.

GC 7 Suspension

1. The *Departmental Representative* may require the *Consultant* to suspend the *Services* being provided, or any part thereof, for a specified or unspecified period.
2. If a period of suspension does not exceed sixty (60) *days* and when taken together with other periods of suspension does not exceed ninety (90) *days*, the *Consultant* will, upon the expiration of that period, resume the performance of the *Services* in accordance with the terms of the Standing Offer and the relevant Call-up, subject to any agreed adjustment of the time schedule as referred to in CS 3 of clause 9999DA, *Consultant Services*.
3. If a period of suspension exceeds sixty (60) *days* or when taken together with other periods of suspension, the total exceeds ninety (90) *days*, and:
 - (a) the *Departmental Representative* and the *Consultant* agree that the performance of the *Services* shall be continued, then the *Consultant* shall resume performance of the *Services*, subject to any terms and conditions agreed upon by the *Departmental Representative* and the *Consultant*, or
 - (b) the *Departmental Representative* and the *Consultant* do not agree that the performance of the *Services* shall be continued, then the Call-Up shall be terminated by notice given by *Canada* to the *Consultant*, in accordance with the terms of GC 8.
4. Suspension costs related to this clause are as outlined in TP 8 of clause 9998DA, *Terms of Payment*.

GC 8 Termination

Canada may terminate any Call-up at any time in its sole discretion, and the fees paid to the *Consultant* will be in accordance with the relevant provisions in TP 9 of clause 9998DA, Terms of Payment.

GC 9 Taking the Services Out of the Consultant's Hands

1. Canada may take all or any part of the *Services* out of the *Consultant's* hands and may employ reasonable means necessary to complete such *Services* in the event that:
 - (a) The *Consultant* has become insolvent or has committed an act of bankruptcy, and has neither made a proposal to the *Consultant's* creditors nor filed a notice of intention to make such a proposal, pursuant to the *Bankruptcy and Insolvency Act*, or
 - (b) the *Consultant* fails to perform any of the *Consultant's* obligations under the Standing Offer or any of the Call-ups or, in Canada's opinion, so fails to make progress as to endanger performance of the Standing Offer or any of its call-ups, in accordance with its terms.
2. If the *Consultant* has become insolvent or has committed an act of bankruptcy, and has either made a proposal to the *Consultant's* creditors or filed a notice of intention to make such a proposal, pursuant to the *Bankruptcy and Insolvency Act*, the *Consultant* shall immediately forward a copy of the proposal or the notice of intention to the *Contracting Authority*.
3. Before the *Services* or any part thereof are taken out of the *Consultant's* hands under GC 9.1(b), the *Departmental Representative* will provide notice to the *Consultant*, and may require such failure of performance or progress to be corrected. If within fourteen (14) days after receipt of notice the default is not corrected or corrective action is not initiated to correct such fault, Canada may, by notice, without limiting any other right or remedy, take all or any part of the *Services* out of the *Consultant's* hands.
4. If the *Services* or any part thereof have been taken out of the *Consultant's* hands, the *Consultant* will be liable for, and upon demand pay to *Canada*, an amount equal to all loss and damage suffered by *Canada* by reason of the non-completion of the *Services* by the *Consultant*.
5. If the *Consultant* fails to pay on demand for the loss or damage as a result of GC 9.4, *Canada* will be entitled to deduct and withhold the same from any payments due and payable to the *Consultant*.
6. If the *Services* or any part thereof are taken out of the *Consultant's* hands as a result of GC 9.1(b) and GC 9.3, the amount referred to in GC 9.5 shall remain in the Consolidated Revenue Fund until an agreement is reached or a decision of a court or tribunal is rendered. At that time the amount, or any part of it, which may become payable to the *Consultant* shall be paid together with interest from the due date referred to in TP 2 of clause 9998DA, Terms of Payment, and in accordance with the terms of the Standing Offer.
7. The taking of the *Services*, or any part thereof, out of the *Consultant's* hands does not relieve or discharge the *Consultant* from any obligation under the Standing Offer, the Call-up, or imposed upon the *Consultant* by law, in respect to the *Services* or any part thereof that the *Consultant* has performed.

GC 10 Time and Cost Records to be Kept by the Consultant

1. Time charged and the accuracy of the *Consultant's* time recording system may be verified by the *Departmental Representative* before or after payment is made to the *Consultant* under the terms and conditions of the Call up.
2. The *Consultant* shall keep accurate time and cost records and, if required for the purposes of the Standing Offer, shall make these documents available to the *Departmental Representative* who may make copies and take extracts therefrom.
3. The *Consultant* shall afford facilities for audit and inspection upon request and shall provide the *Departmental Representative* with such information as may be required from time to time with reference to the documents referred to in GC 10.2.
4. The *Consultant* shall, unless otherwise specified, keep the time sheets and cost records available for audit and inspection for a period of at least two (2) years following completion of the *Services*.
5. If the verification is done after payment by Canada, the *Consultant* agrees to repay any overpayment immediately upon demand.

GC 11 National or Departmental Security

1. If the *Departmental Representative* is of the opinion that the Project is of a class or kind that involves national or departmental security, the *Consultant* may be required:
 - (a) to provide any information concerning persons employed for purposes of the Standing Offer unless prohibited by law;
 - (b) to remove any person from the Project and its site if that person cannot meet the prescribed security requirements; and
 - (c) to retain the Project *Technical Documentation* while in the *Consultant's* possession in a manner specified by the *Departmental Representative*.
2. Notwithstanding the provisions of GC 12, if the Project is of a class or kind that involves national or departmental security, the *Consultant* shall not issue, disclose, discard or use the Project *Technical Documentation* on another project without the written consent of the *Departmental Representative*.

GC 12 Rights to Intellectual Property

1. Definitions

"Background" means all Technical Output that is not Foreground and that is proprietary to or the confidential information of the *Consultant*, the *Consultant's Sub-Consultants*, or any other entity engaged by the *Consultant* in the performance of the *Services*;

"Foreground" means any Invention first conceived, developed or reduced to practice as part of the *Services* and all other Technical Output conceived, developed, produced or implemented as part of the *Services*;

"IP Rights" means any intellectual property rights recognized by law, including any intellectual property right protected through legislation (such as that governing copyright, patents, industrial design, or integrated circuit topography) or arising from protection of information as a trade secret or as confidential information;

"Invention" means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter, whether or not patentable and without limiting the foregoing the term includes any unique design and construction system;

"Technical Output" means: (i) all information of a scientific, technical, or artistic nature relating to the *Services*, whether oral or recorded in any form or medium and whether or not subject to copyright, including but not limited to any Inventions, designs, methods, reports, photographs, physical models, surveys, drawings, specifications developed for the purpose of the Project; as well as (ii) computer printouts, design notes, calculations, CADD (Computer-aided Design and Drafting) files, and other data, information and material, prepared, computed, drawn, or produced for the purpose of the Project; and (iii) operating and maintenance manuals prepared or collected for the Project; and (iv) any buildings, built works, structures and facilities constructed as, or as part of, the Project. Technical Output does not include data concerned with the administration of the Standing Offer and/or Call-Up by Canada or the Consultant, such as internal financial or management information, unless it is a deliverable under the terms of the Standing Offer and/or Call-Up.

2. Identification and Disclosure of Foreground

The *Consultant* shall:

- (a) promptly report and fully disclose to Canada all Foreground that could be Inventions, and shall report and fully disclose to Canada all other Foreground not later than the time of completion of the *Services* or such earlier time as Canada or the Standing Offer and/or Call-Up may require, and
- (b) for each disclosure referred to in (a), indicate the names of all *Sub-Consultants* at any tier, if any, in which IP Rights to any Foreground have vested or will vest.

Before and after final payment to the *Consultant*, Canada shall have the right to examine all records and supporting data of the *Consultant* which Canada reasonably decides is pertinent to the identification of the Foreground.

3. IP Rights Vest with *Consultant*

Subject to articles GC 12.10 and GC 12.11 and the provisions of GC 11 National or Departmental Security, and without affecting any IP Rights or interests therein that have come into being prior to the Standing Offer and/or Call-Up or that relate to information or data supplied by *Canada* for the purposes of the Standing Offer and/or Call-Up, all IP Rights in the Foreground shall immediately, as soon as they come into existence, vest in and remain the property of the *Consultant*.

4. Ownership Rights in Deliverables

Notwithstanding the *Consultant's* ownership of the IP Rights in the Foreground that is a prototype, built work, building, structure, facility, model or custom or customized system or

equipment together with associated manuals and other operating and maintenance documents and tools, *Canada* shall have unrestricted ownership rights in those deliverables, including the right to make them available for public use, whether for a fee or otherwise, and the right to sell them.

5. Licence to Foreground

Without limiting any implied licences that may otherwise vest in *Canada*, and in consideration of *Canada's* contribution to the cost of development of the Foreground, the *Consultant* hereby grants to *Canada* a non-exclusive, perpetual, irrevocable, worldwide, fully-paid and royalty-free licence to exercise all IP Rights in the Foreground that vest in the *Consultant* pursuant to article GC 12.3, for the purpose of:

- (a) the construction or implementation of any building, built works, structures and facilities, contemplated by the Project;
- (b) the further development or alteration or evolution of any part of the constructed or implemented Project, including procurement of materials and components for this purpose;
- (c) the further development, modification (including additions or deletions), completion, translation, or implementation of the Foreground and any addition to it as *Canada* may require for the purposes of the completion, utilization and subsequent evolution of the Project;
- (d) the use, occupancy, operation, exploitation, maintenance, repair or restoration of the constructed or implemented or subsequently modified Project, including the procurement of replacement materials and components required for any such purpose; and
- (e) the publishing and transmission of reproductions of the Project or any part thereof in the form of paintings, drawings, engravings, photographs or cinematographic works, to the public, in hard copy or by any electronic or other means, except for copies in the nature of architectural drawings or plans.

6. Licence to Foreground for Other Projects

The *Consultant* hereby grants to *Canada* a non-exclusive, perpetual, world-wide, irrevocable licence to exercise all IP Rights that vest in the *Consultant* pursuant to paragraph GC 12.3 for the purpose of planning, designing and constructing or otherwise implementing any project other than the Project, and for any purpose set out in paragraph GC 12.5 as it relates to such other project. In the event that *Canada* exercises such IP Rights in another project, and provided that *Canada* does not already have equivalent rights under a previous contract or otherwise, *Canada* agrees to pay to the *Consultant* reasonable compensation determined in accordance with current industry practice and having regard to *Canada's* contribution to the cost of development of the Foreground. The *Consultant* shall ensure that in any sale, assignment, transfer or licence of any of the IP Rights that vest in the *Consultant* under the Standing Offer and/or Call-Up, the purchaser, assignee, transferee or licensee agrees to be bound by the terms of this provision and to accept reasonable compensation as is contemplated herein. The *Consultant* shall also ensure that any such purchaser, assignee, transferee or licensee of the IP Rights is required to impose the same obligations on any subsequent purchaser, transferee, assignee or licensee.

7. Licence to Background

Without limiting any implied licences that may otherwise vest in *Canada*, the *Consultant* hereby grants to *Canada* a non-exclusive, perpetual, irrevocable, worldwide, fully-paid and royalty-free licence to exercise such of the IP Rights in any Background incorporated into the *Services* or necessary for the performance of the *Services* as may be required

- (a) for the purposes contemplated in article GC 12.5 and GC 12.6;
- (b) for disclosure to any contractor engaged by *Canada*, or bidder for such a contract, to be used solely for a purpose set out in article GC 12.5 and GC 12.6;

and the *Consultant* agrees to make any such Background available to *Canada* upon request.

8. *Canada's* Right to Disclose and Sub-license

The *Consultant* acknowledges that *Canada* may wish to award contracts, which may include a competitive process, for any of the purposes contemplated in article GC 12.5, GC 12.6 and GC 12.7. The *Consultant* agrees that *Canada's* licence in relation to the IP Rights in the Foreground and in the Background, includes the right to disclose that Foreground and Background to bidders for such contracts, and to sub-license or otherwise authorize the use of that Foreground and Background by any contractor or consultant engaged by *Canada* for the purpose of carrying out such a contract.

9. *Consultant's* Right to Grant Licence

- (a) The *Consultant* represents and warrants that the *Consultant* has, or the *Consultant* shall obtain without delay, the right to grant to *Canada* the licence to exercise the IP Rights in the Foreground and the Background as required by the Standing Offer and/or Call-Up.
- (b) Where the IP Rights in any Background or Foreground are or will be owned by a *Sub-Consultant*, the *Consultant* shall either obtain a licence from that *Sub-Consultant* that permits compliance with articles GC 12.5, GC 12.6 and GC 12.7 or shall arrange for the *Sub-Consultant* to convey directly to *Canada* the same rights by execution of the form provided for that purpose by *Canada* no later than the time of disclosure to *Canada* of that Background and Foreground.

10. Trade Secrets and Confidential Information

The *Consultant* shall not use or incorporate any trade secrets or confidential information in any Foreground or Background used or created in performance of the Standing Offer and/or Call-Up.

11. *Canada* Supplied Information

- (a) Where performance of the *Services* involves the preparation of a compilation using information supplied by *Canada*, then the IP Rights that shall vest under paragraph GC 12.3 shall be restricted to the IP Rights in Foreground that are capable of being exploited without the use of the information supplied by *Canada*. All IP Rights in any compilation, the Foreground in which cannot be exploited without the use of such *Canada* supplied information shall vest in *Canada*. The *Consultant* agrees that the *Consultant* shall not use or disclose any *Canada* supplied information for any purpose other than completing the performance of the *Services*. The *Consultant* shall maintain the confidentiality of such information. Unless the Standing Offer and/or Call-Up otherwise expressly provides, the *Consultant* shall deliver to *Canada* all such information together with every copy, draft, working paper and note thereof that contains such

information upon the completion or termination of the Standing Offer and/or Call-Up, or at such earlier time as Canada may require.

- (b) If the *Consultant* wishes to make use of any *Canada* supplied information that was supplied for purposes of the Standing Offer and/or Call-Up, for the commercial exploitation or further development of any of the Foreground, then the *Consultant* may make a written request for a licence to exercise the required IP Rights in that *Canada* supplied information, to *Canada*. The *Consultant* shall give *Canada* an explanation as to why such a licence is required. Should *Canada* agree to grant such a licence, it shall be on terms and conditions to be negotiated between the parties including payment of compensation to *Canada*.

12. Transfer of IP Rights

- (a) If *Canada* takes the *Services* out of the *Consultant's* hands in accordance with GC 9 of the General Conditions, in whole or in part, or if the *Consultant* fails to disclose any Foreground in accordance with article GC 12.2, *Canada* may upon reasonable notice, require the *Consultant* to convey to *Canada* all of the IP Rights in the Foreground or in the case of a failure to disclose, all the IP Rights in the Foreground not provided. The IP Rights to be conveyed shall include the IP Rights in any Foreground that have vested or are to vest in a *Sub-Consultant*. In the case of IP Rights in Foreground which have been sold or assigned to a party other than a *Sub-Consultant*, the *Consultant* shall not be obligated to convey those IP Rights to *Canada*, but shall pay to *Canada* on demand an amount equal to the consideration which the *Consultant* received from the sale or assignment of the IP Rights in that Foreground or, in the case of a sale or assignment was not at arms length, the fair market value of the IP Rights in that Foreground, in each case including the value of future royalties or licence fees.
- (b) In the event of the issuance by *Canada* of a notice referred to in (a), the *Consultant* shall, at the *Consultant's* own expense and without delay, execute such conveyances or other documents relating to title to the IP Rights as *Canada* may require, and the *Consultant* shall, at *Canada's* expense, afford *Canada* all reasonable assistance in the preparation of applications and in the prosecution of any applications for, or any registration of, any IP Right in any jurisdiction, including without limitation the assistance of the inventor in the case of Inventions.
- (c) Until the *Consultant* completes the performance of the *Services* and discloses all of the Foreground in accordance with article GC 12.2, and subject to the provisions of GC 11 National or Departmental Security, the *Consultant* shall not, without the prior written permission of *Canada*, sell, assign or otherwise transfer title to the IP Rights in any of the Foreground, or license or otherwise authorize the use of the IP Rights in any of the Foreground by any person.
- (d) In any sale, assignment, transfer or licence of IP Rights in Foreground by the *Consultant* except a sale or licence for end use of a product based on Foreground, the *Consultant* shall impose on the other party all of its obligations to *Canada* in relation to the IP Rights in the Foreground and any restrictions set out in the Standing Offer and/or Call-Up on the use or disposition of the IP Rights in the Foreground (and, if applicable, the Foreground itself), including the obligation to impose the same obligations and restrictions on any subsequent transferee, assignee or licensee. The *Consultant* shall promptly notify *Canada* of the name, address and other pertinent information in regard to any transferee, assignee or licensee.

GC 13 Conflict of Interest and Values and Ethics Codes for the Public Service

1. The *Consultant* declares that the *Consultant* has no pecuniary interest in the business of any third party that would cause, or seem to cause, a conflict of interest in carrying out the *Services*, and should such an interest be acquired during the life of the Standing Offer, the *Consultant* shall declare it immediately to the *Departmental Representative*.
2. The *Consultant* shall not have any tests or investigations carried out by any persons, firms, or corporations, that may have a direct or indirect financial interest in the results of those tests or investigations.
3. The *Consultant* shall not submit, either directly or indirectly, a bid for any Construction Contract related to the Project.
4. The *Consultant* acknowledges that no individuals who are subject to the provisions of the Conflict of Interest Act, 2006, c. 9, s.2, the Conflict of Interest Code for Members of the House of Commons, the Values and Ethics Code for the Public Services, or all other codes of values and ethics applicable within specific organizations cannot derive any direct benefit resulting from the Standing Offer or subsequent Call-ups.
5. (a) The *Consultant* shall not be eligible to compete as a consultant or sub-consultant for a project which may result from the provision of the *Services* if the *Consultant* is involved in the development of a Project Brief or Terms of Reference, a Request for Proposal or similar documents for such project.

(b) The *Consultant* providing certain pre-design services (e.g. studies, analysis, schematic design) that do not involve the development of a Project Brief or Terms of Reference, a Request for Proposal or similar documents for such project may be eligible to compete as a consultant or sub-consultant for a project which may result from the provision of these services. The experience acquired by a *Consultant* who has only provided pre-design services, where the information / documentation resulting from these services is made available to other proponents, will not be considered by Canada as conferring an unfair advantage or creating a conflict of interest.

GC 14 Status of Consultant

The *Consultant* is an independent contractor engaged by Canada to perform the *Services*. Nothing in the Standing Offer through a Call-up is intended to create a partnership, a joint venture or an agency between Canada and the other party or parties. The *Consultant* must not represent itself as an agent or representative of Canada to anyone. Neither the *Consultant* nor any of its personnel is engaged as an employee or agent of Canada. The *Consultant* is responsible for all deductions and remittances required by law in relation to its employees.

GC 15 Declaration by Consultant

The *Consultant* declares that:

- (a) based on the information provided pertaining to the *Services* required under the Standing Offer, the *Consultant* has been provided sufficient information by the *Departmental Representative* to enable the *Services* required under the Standing Offer to proceed and is competent to perform the *Services* and has the necessary licences

and qualifications
Services; and

including the knowledge, skill and ability to perform the

(b) the quality of Services to be provided by the Consultant shall be consistent with generally accepted professional standards and principles.

GC 16 Insurance Requirements

1. General

- a) The Consultant shall ensure that appropriate liability insurance coverage is in place to cover the consultant and the members of the consultant team and shall maintain all required insurance policies as specified herein.
- b) The Consultant shall, if requested by the Contracting Officer at any time, provide to the Contracting Officer an Insurer's Certificate of Insurance and/or the originals or certified true copies of all contracts of insurance maintained by the Consultant pursuant to the provisions contained herein.
- c) The payment of monies up to the deductible amount made in satisfaction of a claim shall be borne by the Consultant.
- d) Any insurance coverages additional to those required herein that the Consultant and the other members of the consultant team may deem necessary for their own protection or to fulfill their obligations shall be at their own discretion and expense.

2. Commercial General Liability

- a) The insurance coverage provided shall not be less than that provided by IBC Form 2100, as amended from time to time, and shall have: a limit of liability of not less than \$5,000,000.00 per occurrence; an aggregate limit of not less than \$5,000,000.00 within any policy year.
- b) The policy shall insure the Consultant and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Public Works and Government Services as an Additional Insured, with respect to liability arising out of the performance of the Services.

3. Professional Liability

- a) The Professional Liability insurance coverage shall be in an amount usual for the nature and scope of the Services but, shall have a limit of liability of not less than \$1,000,000 per claim, and be continually maintained from the commencement of performance of the Services until five (5) years after their completion.
- b) The following provision must be incorporated into the conditions of the Consultant's Professional Liability insurance coverage: "Notice of Cancellation of Insurance Coverage: The Insurer agrees to give the Contracting Authority at least thirty (30) days'

prior written notice of any policy cancellation and before making any adverse material changes."

GC 17 Resolution of Disagreements

1. In the event of a disagreement regarding any aspect of the *Services* or any instructions given under the Standing Offer and subsequent Call-ups:
 - (a) The *Consultant* may give a notice of disagreement to the *Departmental Representative*. Such notice shall be promptly given and contain the particulars of the disagreement, any changes in time or amounts claimed, and reference to the relevant clauses of the Standing Offer and Call-up;
 - (b) The *Consultant* shall continue to perform the *Services* in accordance with the instructions of the *Departmental Representative*; and
 - (c) The *Consultant* and the *Departmental Representative* shall attempt to resolve the disagreement by negotiations conducted in good faith. The negotiations shall be conducted, first, at the level of the *Consultant's* project representative and the *Departmental Representative* and, secondly and if necessary, at the level of a principal of the *Consultant* firm and a senior departmental manager.
2. The *Consultant's* continued performance of the *Services* in accordance with the instructions of the *Departmental Representative* shall not jeopardize the legal position of the *Consultant* in any disagreement.
3. If it was subsequently agreed or determined that the instructions given were in error or contrary to the Standing Offer or Call-up, *Canada* shall pay the *Consultant* those fees the *Consultant* shall have earned as a result of the change(s) in the *Services* provided, together with those reasonable disbursements arising from the change(s) and which have been authorized by the *Departmental Representative*.
4. The fees mentioned in GC 17.3 shall be calculated in accordance with the Terms of Payment set out in the Standing Offer and the relevant Call-up.
5. If the disagreement is not settled, the *Consultant* may make a request to the *Departmental Representative* for a written departmental decision and the *Departmental Representative* shall give notice of the departmental decision within fourteen (14) days of receiving the request, setting out the particulars of the response and any relevant clauses of the Standing Offer or Call-up.
6. Within fourteen (14) days of receipt of the written departmental decision, the *Consultant* shall notify the *Departmental Representative* if the *Consultant* accepts or rejects the decision.
7. If the *Consultant* rejects the departmental decision, the *Consultant*, by notice may refer the disagreement to *Mediation*.
8. If the disagreement is referred to *Mediation*, the *Mediation* shall be conducted with the assistance of a skilled and experienced mediator chosen by the *Consultant* from a list of mediators

proposed by Canada, and departmental *Mediation* procedures shall be used unless the parties agree otherwise.

9. Negotiations conducted under the Standing Offer and any resulting Call-up, including those conducted during *Mediation*, shall be without prejudice.

GC 18 Amendments

The Standing Offer or any resulting Call-up may not be amended, or modified, nor shall any of its terms and conditions be waived, except by agreement in writing executed by the Consultant and the Contracting Authority.

GC 19 Entire Agreement

The Standing Offer and Call-up constitutes the entire and only agreement between the parties and supersedes all previous negotiations, communications and other agreements, whether written or oral, unless they are incorporated by reference in the Standing Offer and/or Call-up. There are no terms, covenants, representations, statements or conditions binding on the parties other than those contained in the Standing Offer and Call-up.

GC 20 Contingency Fees

The Consultant certifies that it has not, directly or indirectly, paid or agreed to pay and agrees that it will not, directly or indirectly, pay a contingency fee for the solicitation, negotiation or obtaining of the Standing Offer to any person, other than an employee of the Consultant acting in the normal course of the employee's duties. In this section, "contingency fee" means any payment or other compensation that depends or is calculated based on a degree of success in soliciting, negotiating or obtaining the Standing Offer and "person" includes any individual who is required to file a return with the registrar pursuant to section 5 of the Lobbying Act, 1985, c. 44 (4th Supplement).

GC 21 Harassment in the Workplace

1. The Consultant acknowledges the responsibility of Canada to ensure, for its employees, a healthy work environment, free of harassment. A copy of the Treasury Board policy, the Policy on the Prevention and Resolution of Harassment in the Workplace, which is also applicable to the Consultant, is available on the Treasury Board Web site.
2. The Consultant must not, either as an individual, or as a corporate or unincorporated entity, through its employees or subconsultants, harass, abuse, threaten, discriminate against or intimidate any employee, consultant or other individual employed by, or under contract with Canada. The Consultant will be advised in writing of any complaint and will have the right to respond in writing. Upon receipt of the Consultant's response, the Contracting Authority will, at its entire discretion, determine if the complaint is founded and decide on any action to be taken.

GC 22 Taxes

1. Federal government departments and agencies are required to pay *Applicable Taxes*.
2. *Applicable Taxes* will be paid by Canada as provided in the invoice submission. *Applicable Taxes* must be specified on all invoices as a separate item along with corresponding registration

numbers from the tax authorities. All items that are zero-rated, exempt or to which these *Applicable Taxes* do not apply must be identified as such on all invoices. It is the sole responsibility of the Consultant to charge *Applicable Taxes* at the correct rate in accordance with applicable legislation. The Consultant agrees to remit to appropriate tax authorities any amounts of *Applicable Taxes* paid or due.

3. The Consultant is not entitled to use Canada's exemptions from any tax, such as provincial sales taxes, unless otherwise specified by law. The Consultant must pay applicable provincial sales tax, ancillary taxes, and any commodity tax, on taxable goods or services used or consumed in the performance of the contract (in accordance with applicable legislation), including for material incorporated into real property.
4. In those cases where *Applicable Taxes*, customs duties, and excise taxes are included in the *Contract Price*, the *Contract Price* will be adjusted to reflect any increase, or decrease, of *Applicable Taxes*, customs duties, and excise taxes that will have occurred between bid submission and contract award. However, there will be no adjustment for any change to increase the *Contract Price* if public notice of the change was given before bid submission date in sufficient detail to have permitted the Consultant to calculate the effect of the change.
5. Tax Withholding of 15 Percent - Canada Revenue Agency

Pursuant to the Income Tax Act, 1985, c. 1 (5th Supp.) and the Income Tax Regulations, Canada must withhold 15 percent of the amount to be paid to the Consultant in respect of services provided in Canada if the Consultant is not a resident of Canada, unless the Consultant obtains a valid waiver from the Canada Revenue Agency. The amount withheld will be held on account for the Consultant in respect to any tax liability which may be owed to Canada.

GC 23 Changes in the *Consultant* team

1. Should an entity or person named in the Consultant's proposal as an entity or person who is to perform the *Services* or part of the *Services* be unable to perform or complete the *Services*, the *Consultant* shall obtain the concurrence of the *Departmental Representative* prior to performing or completing the *Services*, or entering into an agreement with another equally qualified entity or person to perform or complete the *Services*, such concurrence not to be unreasonably withheld.
2. In seeking to obtain the concurrence of the *Departmental Representative* referred to in paragraph 1, the *Consultant* shall provide notice in writing to the *Departmental Representative* containing:
 - (a) the reason for the inability of the entity or person to perform the *Services*;
 - (b) the name, qualifications and experience of the proposed replacement entity or person, and
 - (c) if applicable, proof that the entity or person has the required security clearance granted by *Canada*.
3. The *Consultant* shall not, in any event, allow performance of any part of the *Services* by unauthorized replacement entities or persons, and acceptance of a replacement entity or

person by the *Departmental Representative* shall not relieve the *Consultant* from responsibility to perform the *Services*.

4. The *Departmental Representative*, with the authority of Canada, may order the removal from the *Consultant* team of any unauthorized replacement entity or person and the *Consultant* shall immediately remove the entity or person from the performance of the *Services* and shall, in accordance with paragraphs 1. and 2., secure a further replacement.
5. The fact that the *Departmental Representative* does not order the removal of a replacement entity or person from the performance of the *Services* shall not relieve the *Consultant* from the Consultant's responsibility to meet all the Consultant's obligations in the performance of the *Services*.

GC 24 Joint and Several Liability

If at any time there is more than one legal entity constituting the *Consultant*, their covenants under the Standing Offer and/or Call-Up shall be considered to be joint and several and apply to each and every entity. If the *Consultant* is or becomes a partnership or joint venture, each legal entity who is a member or becomes a member of the partnership or joint venture or its successors is and continues to be jointly and severally liable for the performance of the work and all the covenants of the *Consultant* pursuant to the Standing Offer and/or Call-Up, whether or not that entity ceases to be a member of the partnership, joint venture or its successor.

GC 25 Not Applicable

GC 26 International Sanctions

1. Persons in Canada, and Canadians outside of Canada, are bound by economic sanctions imposed by Canada. As a result, the Government of Canada cannot accept delivery of goods or services that originate, either directly or indirectly, from the countries or persons subject to economic sanctions (<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>).
2. The Consultant must not supply to the Government of Canada any goods or services which are subject to economic sanctions.
3. The Consultant must comply with changes to the regulations imposed during the period of the Call-Up. The Consultant must immediately advise Canada if it is unable to perform the *Services* as a result of the imposition of economic sanctions against a country or person or the addition of a good or service to the list of sanctioned goods or services. If the parties cannot agree on a work around plan, the Call-Up will be terminated for the convenience of Canada in accordance with terms and conditions of the Standing Offer and/or Call-Up.

GC 27 Code of Conduct and Certifications - Standing Offer and Contract

1. The Consultant agrees to comply with the Code of Conduct for Procurement (<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>) and to be bound by its terms. In addition to complying with the Code of Conduct for Procurement, the Consultant must also comply with the terms set out in this section.

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2. The Consultant further understands that, to ensure fairness, openness and transparency in the procurement process, the commission of certain acts or offences may result in setting aside the Standing Offer and terminating for default any resulting contracts. If the Consultant made a false declaration in its proposal, makes a false declaration under the contract, fails to diligently maintain up to date the information herein requested, or if the Consultant or any of the Consultant's affiliates fail to remain free and clear of any acts or convictions specified herein during the period of the Standing Offer, such false declaration or failure to comply may result in the setting aside of the Standing Offer and the termination for default of any resulting contracts. The Consultant understands that a termination for default will not restrict Canada's right to exercise any other remedies that may be available against the Consultant and agrees to immediately return any advance payments.
 3. For the purpose of this section, everyone, including but not limited to organizations, bodies corporate, societies, companies, firms, partnerships, associations of persons, parent companies and subsidiaries, whether partly or wholly-owned, as well as individuals and directors, are Consultant's affiliates if:
 - a. directly or indirectly either one controls or has the power to control the other, or
 - b. a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the acts or convictions specified in this section which has the same or similar management, ownership, or principal employees, as the case may be.
 4. The Consultant must diligently maintain an up-to-date list of names by informing Canada in writing of any change occurring during the period of the Standing Offer and the period of any resulting contracts. The Consultant must also, when so requested, provide Canada with the corresponding Consent Forms.
 5. The Consultant certifies that it is aware, and that its affiliates are aware, that Canada may verify the information provided by the Consultant, including the information relating to the acts or convictions specified herein through independent research, use of any government resources or by contacting third parties.
 6. The Consultant certifies that neither the Consultant nor any of the Consultant's affiliates have directly or indirectly, paid or agreed to pay, and will not, directly or indirectly, pay a contingency fee to any individual for the solicitation, negotiation or obtaining of the Standing Offer and any call-ups made against the Standing Offer if the payment of the fee would require the individual to file a return under section 5 of the Lobbying Act.
 7. The Consultant certifies that no one convicted under any of the provisions under a) or b) are to receive any benefit under a contract arising from this Standing Offer. In addition, the Consultant certifies that except for those offences where a criminal pardon or a record suspension has been obtained or capacities restored by the Governor in Council, neither the Consultant nor any of the Consultant's affiliates has ever been convicted of an offence under any of the following provisions:

- a. paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*, or
 - b. section 121 (*Frauds on the government and Offeror subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud*) for fraud committed against Her Majesty or section 418 (*Selling defective stores to Her Majesty*) of the *Criminal Code of Canada*, or
 - c. section 462.31 (*Laundering proceeds of crime*) or sections 467.11 to 467.13 (*Participation in activities of criminal organization*) of the *Criminal Code of Canada*, or
 - d. section 45 (*Conspiracies, agreements or arrangements between competitors*), 46 (*Foreign directives*) 47 (*Bid rigging*), 49 (*Agreements or arrangements of federal financial institutions*), 52 (*False or misleading representation*), 53 (*Deceptive notice of winning a prize*) under the *Competition Act*, or
 - e. section 239 (*False or deceptive statements*) of the *Income Tax Act*, or
 - f. section 327 (*False or deceptive statements*) of the *Excise Tax Act*, or
 - g. section 3 (*Bribing a foreign public official*) of the *Corruption of Foreign Public Officials Act*, or
 - h. section 5 (*Trafficking in substance*), section 6 (*Importing and exporting*), or section 7 (*Production of substance*) of the *Controlled Drugs and Substance Act*.
8. In circumstances where a criminal pardon or a record suspension has been obtained, capacities restored by the Governor in Council, or leniency granted pursuant to a formal program (similar to the Competition Bureau's Leniency Program) for offences other than sections 121, 124, 380 for fraud committed against Her Majesty and 418 of the *Criminal Code of Canada* or offences under the *Financial Administration Act*, the Consultant must provide a certified copy of confirming documentation from an official source.

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pw1042

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

20131106

File No. - N° du dossier

PWL-2-35048

CCC No./N° CCC - FMS No/ N° VME

0000DA SUPPLEMENTARY CONDITIONS

SC 1 Supplementary Conditions

There are no supplementary conditions.

9998DA TERMS OF PAYMENT**TP 1 Fees**

1. Subject to the terms and conditions of the Standing Offer, and in consideration for the performance of the *Services*, Canada shall pay to the *Consultant* a sum of money calculated in accordance with the fee arrangements identified herein and in 2000DA.
2. The *Consultant's* fees are only payable when the *Consultant* has performed the *Services* as determined by the *Departmental Representative*. Payment in respect of a *Service*, or part of a *Service*, is not to be deemed a waiver of *Canada's* rights of set-off at law or under this Standing Offer for costs or expenses arising from default or negligence of the *Consultant*.
3. The maximum amount payable under a Call-Up, including fees and disbursements, shall not be exceeded, without the prior written authorization of the Contracting Authority.

TP 2 Payments to the Consultant

1. The *Consultant* shall be entitled to receive progress payments at monthly or other agreed intervals, subject to the limitations of the Call-up, if applicable. Such payments shall be made not later than the due date. The due date shall be the 30th day following receipt of an acceptable invoice.
2. An acceptable invoice shall be an invoice delivered to the *Departmental Representative* in the agreed format with sufficient detail and information to permit verification. The invoice shall also identify, as separate items:
 - (a) the amount of the progress payment being claimed for *Services* satisfactorily performed,
 - (b) the amount for any tax calculated in accordance with the applicable federal legislation, and
 - (c) the total amount which shall be the sum of the amounts referred to in TP 2.2(a) and TP 2.2(b).
3. The amount of the tax shown on the invoice shall be paid by *Canada* to the *Consultant* in addition to the amount of the progress payment for *Services* satisfactorily performed.
4. The *Departmental Representative* shall notify the *Consultant* within fifteen (15) days after the receipt of an invoice of any error or missing information therein. Payment shall be made not later than thirty (30) days after acceptance of the corrected invoice or the required information.
5. Upon completion of each Call-up, the *Consultant* shall provide a Statutory Declaration evidencing that all the *Consultant's* financial obligations for *Services* rendered to the *Consultant* or on the *Consultant's* account, in connection with the Call-up, have been satisfied.
6. Upon written notice by a *Sub-Consultant*, with whom the *Consultant* has a direct contract, of an alleged non payment to the *Sub-Consultant*, the *Departmental Representative* may provide the *Sub-Consultant* with a copy of the latest approved progress payment made to the *Consultant* for the *Services*.

7. Upon the satisfactory completion of all *Services*, the amount due, less any payments already made, shall be paid to the *Consultant* not later than thirty (30) *days* after receipt of an acceptable invoice, together with the Statutory Declaration in accordance with TP 2.5.

TP 3 Delayed Payment

1. If *Canada* delays in making a payment that is due in accordance with TP 2, the *Consultant* will be entitled to receive interest on the amount that is overdue for the period of time as defined in TP 3.2 including the day previous to the date of payment. Such date of payment shall be deemed to be the date on the cheque given for payment of the overdue amount. An amount is overdue when it is unpaid on the first day following the due date described in TP 2.1.
2. Interest shall be paid automatically on all amounts that are not paid by the due date or fifteen (15) *days* after the *Consultant* has delivered a Statutory Declaration in accordance with TP 2.5 or TP 2.7, whichever is the later.
3. The rate of interest shall be the *Average Bank Rate* plus 3 percent per year on any amount which is overdue pursuant to TP 3.1.

TP 4 Claims Against, and Obligations of, the Consultant

1. *Canada* may, in order to discharge lawful obligations of and satisfy lawful claims against the *Consultant* by a *Sub-Consultant*, with whom the *Consultant* has a direct contract, for *Services* rendered to, or on behalf of, the *Consultant*, pay an amount from money that is due and payable to the *Consultant* directly to the claimant *Sub-Consultant*.
2. For the purposes of TP 4.1 a claim shall be considered lawful when it is so determined:
 - (a) by a court of legal jurisdiction, or
 - (b) by an arbitrator duly appointed to arbitrate the said claim, or
 - (c) by a written notice delivered to the *Departmental Representative* and signed by the *Consultant* authorizing payment of the said claim or claims.
3. A payment made pursuant to TP 4.1 is, to the extent of the payment, a discharge of *Canada's* liability to the *Consultant* under a specific Call-up and will be deducted from any amount payable to the *Consultant* under any active Call-up.
4. TP 4.1 shall only apply to claims and obligations
 - (a) The notification of which has set forth the amount claimed to be owing and a full description of the *Services* or a part of the *Services* for which the claimant has not been paid. The notification must be received by the *Departmental Representative* in writing before the final payment is made to the *Consultant* and within one hundred twenty (120) *days* of the date on which the claimant
 - (1) should have been paid in full under the claimant's agreement with the *Consultant* where the claim is for an amount that was lawfully required to be held back from the claimant; or

(2) performed the last of the *Services* pursuant to the claimant's agreement with the *Consultant* where the claim is not for an amount referred to in TP 4.4(a)(1), and

(b) the proceedings to determine the right to payment of which shall have commenced within one year from the date that the notification referred to in TP 4.4(a) was received by the *Departmental Representative*.

5. *Canada* may, upon receipt of a notification of claim referred to in TP 4.4(a), withhold from any amount that is due and payable to the *Consultant* pursuant to a Call-up the full amount of the claim or any portion thereof.
6. The *Departmental Representative* shall notify the *Consultant* in writing of receipt of any notification of claim and of the intention of *Canada* to withhold funds pursuant to TP 4.5. The *Consultant* may, at any time thereafter and until payment is made to the claimant, post with *Canada*, security in a form acceptable to *Canada* in an amount equal to the value of the said claim. Upon receipt of such security *Canada* shall release to the *Consultant* any funds which would be otherwise payable to the *Consultant*, that were withheld pursuant to the provision of TP 4.5.
7. The *Consultant* shall discharge all lawful obligations and shall satisfy all lawful claims against the *Consultant* for *Services* rendered to, or on behalf of, the *Consultant* in respect of this Standing Offer at least as often as this Standing Offer requires *Canada* to discharge its obligations to the *Consultant*.

TP 5 No Payment for Errors and Omissions

The *Consultant* shall not be entitled to payment in respect of costs incurred by the *Consultant* in remedying errors and omissions in the *Services* that are attributable to the *Consultant*, the *Consultant's* employees, or persons for whom the *Consultant* had assumed responsibility in performing the *Services*.

TP 6 Payment for Changes and Revisions

1. Payment for any additional or reduced *Services* authorized by the Departmental Representative, prior to their performance, and for which a basis of payment has not been established at the time of execution of the Call-up, shall be in an amount or amounts to be determined by the Departmental Representative, acting reasonably, subject to these Terms of Payment.
2. Payment for additional *Services* not identified at the time of execution of the Call-up shall be made only to the extent that
 - (a) the additional *Services* are *Services* that are not included in stated *Services* in the Call-Up; and
 - (b) The additional *Services* are required for reasons beyond the control of the Consultant.

TP 7 Extension of Time

If, and to the extent that, the time for completion of the *Construction Contract* is exceeded or extended through no fault of the *Consultant* in the opinion of *Canada*, payment for the *Services* required for such extended period of the contract administration shall be subject to review and equitable adjustment by *Canada*.

TP 8 Suspension Costs

1. During a period of suspension of the *Services* pursuant to GC 7 of clause 0220DA, General Conditions, the *Consultant* shall minimize all costs and expenses relating to the *Services* that may occur during the suspension period.
2. Within fourteen (14) *days* of notice of such suspension, the *Consultant* shall submit to the *Departmental Representative* a schedule of costs and expenses, if any, that the *Consultant* expects to incur during the period of suspension, and for which the *Consultant* will request reimbursement.
3. Payment shall be made to the *Consultant* for those costs and expenses that, in the opinion of *Canada*, are substantiated as having been reasonably incurred during the suspension period.

TP 9 Termination Costs

1. In the event of termination of any Call-up pursuant to GC 8 of clause 0220DA, General Conditions, *Canada* shall pay, and the *Consultant* shall accept in full settlement, an amount based on these Terms of Payment, for *Services* satisfactorily performed and any reasonable costs and expenses incurred to terminate the Call-Up.
2. Within fourteen (14) *days* of notice of such termination, the *Consultant* shall submit to the *Departmental Representative* a schedule of costs and expenses reasonably incurred. The *Consultant* must ensure that it has mitigated its costs to the best of its ability.
3. Payment shall be made to the *Consultant* for those costs and expenses that in the opinion of *Canada* are substantiated as having been reasonably incurred after the date of termination.
4. The *Consultant* has no claim for damages, compensation, loss of profit, loss of opportunity, allowance or otherwise by reason of, or directly or indirectly arising out of, any action taken or termination notice given by *Canada* under GC8 Termination.

TP 10 Disbursements

1. Subject to any provisions specifically to the contrary in the Supplementary Conditions, the following disbursements reasonably incurred by the *Consultant*, that are related to the *Services* and approved by the *Departmental Representative*, shall be reimbursed to the *Consultant* at actual cost:
 - (a) reproduction and delivery costs of drawings, CAD files, specifications and other *Technical Documentation* specified in the Standing Offer and Project Brief;
 - (b) transportation costs for material samples and models, courier and delivery charges; for deliverables specified in the Standing Offer Brief;

- (c) Travel and Living Expenses: Firms are advised that any travel-related expenses associated with the delivery of services will be calculated from the applicable government location (listed below) and/or from the consultant's office to the project site, which ever is closer. Travel-related expenses will be paid (with prior approval of the Departmental Representative) in accordance with current Treasury Board Policy, which may be viewed at: http://www.tbs-sct.gc.ca/hr-rh/gtla-vgcl/index_e.asp

The central government locations as identified in Appendix "F" that will be used to calculate disbursements related to travel and living expenses to the project site are listed below:

Central Ontario: 4900 Yonge Street, Toronto, Ontario

Eastern Ontario: 86 Clarence Street, Kingston, Ontario

South Western Ontario: 457 Richmond Street, London, Ontario

Northern Ontario: 19 Lisgar St., Sudbury for projects east of 86° longitude ie. Sault Ste Marie, Sudbury, North Bay, Timmins and Kirkland Lake; 130 South Syndicate Ave., Thunder Bay for projects west of 86° longitude ie. Thunder Bay, Kenora, Fort Frances, Red Lake

- (d) Additional services' disbursements as authorized by the Departmental Representative, including Sub-Consultants and Specialists, required in support of the requested services under a call-up and which cannot be covered under the fixed hourly rate established under the Standing Offer such as diving inspections, drilling/coring contractor, barge rental, material and/or in-situ testing services etc. The cost for these services shall be administered as follows;

i) Unless otherwise authorized by the Departmental Representative, the above mentioned disbursements shall be obtained through competitive bidding with a minimum of two (2) quotes. Copies of all quotes shall be submitted together with the Consultant proposal for the call-up; or

ii) The disbursements shall be evaluated such that, in the event that competitive quotes are not obtained, the Consultant shall submit copies of invoices from other projects to help demonstrate the quote to be a fair, reasonable and competitive price.

- (e) other disbursements made with the prior approval of the *Departmental Representative*.

2. The following costs shall be included in the fees required to deliver the consultant services and shall not be reimbursed separately;

- (a) Standard office expenses such as any photocopying, computer costs, Internet, long distance telephone and fax, including that between the Consultant's main office and branch offices or between the Consultant's offices and other team members offices;
- (b) Plotting;
- (c) Presentation material;
- (d) Travel time;
- (e) Local project office.

3. Disbursements shall be Project related and shall not include expenses that are related to the normal operation of the Consultant's business. The amounts payable, shall not exceed the amount entered in the Call-up, without the prior authorization of the Departmental Representative.

9999DA CONSULTANT SERVICES**CS 1 Services**

The *Consultant* shall perform the *Services* described herein and in any subsequent Call-up, in accordance with the terms and conditions of this Standing Offer.

CS 2 Standard of Care

In performing the services, the Consultant shall provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices and procedures developed by professional bodies in the performance of the services at the time when and the location in which the *Services* are provided.

CS 3 Time Schedule

The *Consultant* shall:

- (a) submit in a timely manner to the *Departmental Representative*, for approval, a time schedule for the *Services* to be performed, in detail appropriate to the size and complexity of the Project, and in a format as requested by the *Departmental Representative*;
- (b) adhere to the approved time schedule and, if changes in the approved time schedule become necessary, indicate the extent of, and the reasons for such changes, and obtain the approval of the *Departmental Representative*.

CS 4 Project Information, Decisions, Acceptances, Approvals

- 1. The *Departmental Representative* shall provide, in a timely manner, project information, written decisions and instructions, including acceptances and approvals relating to the *Services* provided by the *Consultant*.
- 2. No acceptance or approval by the *Departmental Representative*, whether expressed or implied, shall be deemed to relieve the *Consultant* of the professional or technical responsibility for the *Services* provided by the *Consultant*.

CS 5 Changes in Services

The *Consultant* shall:

- (a) make changes in the *Services* to be provided for the Project, including changes which may increase or decrease the original scope of *Services*, when requested in writing by the *Departmental Representative*; and
- (b) prior to commencing such changes, advise the *Departmental Representative* of any known and anticipated effects of the changes on the *Construction Cost Estimate*, *Consultant fees*, *Project Schedule*, and other matters concerning the Project.

CS 6 Codes, By-Laws, Licences, Permits

The *Consultant* shall comply with all statutes, codes, regulations and by-laws applicable to the design and where necessary, shall review the design with those public authorities having jurisdiction in order that the consents, approvals, licences and permits required for the project may be applied for and obtained.

CS 7 Provision of Staff

The *Consultant* shall, on request, submit to the *Departmental Representative* for approval, the names, addresses, qualifications, experience and proposed roles of all persons, including principals, to be employed by the *Consultant* to provide the *Services* identified in the Call-up and, on request, submit any subsequent changes to the *Departmental Representative* for approval.

CS 8 Sub-Consultants

1. The *Consultant* shall:
 - (a) prior to any Call-up notify the *Departmental Representative* of any other sub-consultants with whom the *Consultant* intends to enter into agreements for part of the *Services* and, on request, provide details of the terms, and *Services* to be performed under the said agreements and the qualifications and names of the personnel of the *Sub-Consultants* proposed to be employed on any Call-up;
 - (b) include in any agreements entered into with sub-consultants such provisions of this Standing Offer as they apply to the *Sub-Consultants'* responsibilities; and
 - (c) upon written notice by a *Sub-Consultant*, with whom the *Consultant* has a direct contract, inform the *Sub-Consultant* of the *Consultant's* obligations to the *Sub-Consultant* under this Standing Offer.
2. The *Departmental Representative* may object to any *Sub-Consultant* within six (6) days of receipt of notification given in accordance with CS 8.1(a) and, on notification of such objection, the *Consultant* shall not enter into the intended agreement with the *Sub-Consultant*.
3. Neither an agreement with a *Sub-Consultant* nor the *Departmental Representative's* consent to such an agreement by the *Consultant* shall be construed as relieving the *Consultant* from any obligation under this Standing Offer or subsequent Call-ups, or as imposing any liability upon *Canada*.

CS 9 Cost Control

If the *services* required under a call-up are for a construction project, the following will apply:

1. Throughout Project development, the *Construction Cost Estimate* prepared by the *Consultant* shall not exceed the *Construction Cost Limit*.
2. In the event that the *Consultant* considers that the *Construction Cost Estimate* will exceed the *Construction Cost Limit*, the *Consultant* shall notify the *Departmental Representative* and
 - (a) if the excess is due to factors under the control of, or reasonably foreseeable by the *Consultant*, the *Consultant* shall, if requested by the *Departmental Representative*, and at no additional cost to *Canada*, make such changes or revisions to the design as

may be necessary to bring the *Construction Cost Estimate* within the *Construction Cost Limit*; or

(b) if the excess is due to factors that are not under the control of the *Consultant*, changes or revisions may be requested by the *Departmental Representative*. Such changes or revisions shall be undertaken by the *Consultant* at *Canada's* expense, and the cost involved shall become an amount to be mutually agreed, prior to performance of the said changes or revisions.

3. If the lowest price obtained by bid process or negotiation exceeds the *Construction Cost Limit*, and if the excess is due to reasons within the control of, or reasonably foreseeable by the *Consultant*, the *Consultant* shall, if requested by the *Departmental Representative*, and without additional charge, be fully responsible for revising the Project scope and quality as required to reduce the construction cost and shall modify the construction documents as necessary to comply with the *Construction Cost Limit*.

2000DA CALCULATION OF FEES**CF 1 Fee Arrangement(s) for Services**

1. The fee to be paid to the *Consultant* for the *Services* pursuant to any Call-up shall be determined by one or more of the following methods:
 - (a) Fixed Fee:
The fixed fee will be established by multiplying the applicable hourly rate(s) by the number of hours, negotiated and agreed to by the *Departmental Representative* and the *Consultant*.
 - (b) Time Based Fee to an Upset Limit:
An upset limit will be established by the *Departmental Representative*, and the *Consultant* will be paid for actual work performed using the applicable hourly rate(s) for such work.
2. Maximum Amount(s) Payable
The maximum amount(s) that applies (apply) to the *Services* to be carried out at the fixed hourly rates shall be as specified in the Call-up, which amount(s) shall not be exceeded without the prior authorization of the *Departmental Representative* with the approval of Canada.

CF 2 Payments for Services

1. Payments in respect of the fixed fee shall be made upon satisfactory performance of the *Services* but such payments shall not exceed the amount(s) as specified in the Call-up, for each *Service*.
2. Payments in respect of the time based fee arrangement shall be made upon satisfactory performance of the *Services* but such payments shall not exceed the amount(s) as specified in the Call-up, for each *Service*.
3. Progress payments, in respect of all fee arrangements, shall be made in accordance with TP 2 in clause 9998DA, Terms of Payment, of the Standing Offer, but such payments shall not exceed the value of the fee indicated for each *Service* under consideration.
4. If, for reasons attributable to the *Consultant*, a price cannot be obtained by a tender or negotiation within the *Construction Cost Limit*, or acceptable to the *Departmental Representative* for the award of the *Construction Contract*, the *Consultant* shall be entitled to receive payment for the tender call, bid evaluation and construction contract award *Services*, only when the requirements of CS 9.3, in clause 9999DA, Consultant Services and Departmental Responsibilities, have been met.

Solicitation No. - N° de l'invitation

EQ754-131106/A

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

20131106

Amd. No. - N° de la modif.

File No. - N° du dossier

PWL-2-35048

Buyer ID - Id de l'acheteur

pwl042

CCC No./N° CCC - FMS No/ N° VME

STANDING OFFER BRIEF

Agreement Description (AD)

Agreement Administration (AA)

Required Services (RS)

AGREEMENT DESCRIPTION (AD)

AD 1 Introduction

AD 1.1 General Objectives

AD 1.2 Consultant Team

AD 1 INTRODUCTION

AD 1.1 GENERAL OBJECTIVES

The services rendered by the Consultant will be in support of PWGSC Civil/Geotechnical Engineering and Material Testing services for civil structures in the Ontario Region. Individual commissions will provide support to Government of Canada (GC) Departments and Agencies and may include one or more of the Required Services listed in RS 2 related to the Civil/Geotechnical Engineering and Material Testing. Firms will provide expertise in most, if not all, of the Required Services listed in RS 2.

Please be advised that, in general, Civil/Geotechnical Engineering and Material Testing Services provided must be complete in that they identify all major issues that will have a significant impact on the project. This will promote a surprise-free environment which will enhance the success of project implementation. Also, please note that the Canadian Federal Government continues to ensure that sustainable development principles are built into the policy of the federal organizations. The Consultant will be expected to incorporate sustainable design principles in their project solutions.

AD 1.2 CONSULTANT TEAM

AD 1.2.1 The Consultant team for this Standing Offer must be capable of providing geotechnical engineering and material testing services to carry out inspections, investigations, monitoring and analyses of civil works of all materials (concrete, steel, wood, stone, soil etc.) including all components such as approaches, embankments, abutments, wing walls, slopes, retaining walls, slabs, decks, superstructures, substructures, barriers, railings, curbs, mooring system, berthing system etc. The Consultant team must be capable of developing support for civil engineering tender documents for the design of new and/or repair/rehabilitation of existing civil engineering works including but not limited to the following:

- Bridges
- Dams
- Buildings
- Airport facilities
- Water and sewage Treatment Plant
- Storm Water Management facilities
- Road, pavements
- Small Craft Harbour facilities
- Ferry terminal, public wharves, docks and piers shore protection, river bank naturalization and stabilization
- Breakwaters and retaining structures
- Dredging material analysis
- timber crib, steel sheet piling and H-piling, reinforced concrete support structures (e.g. pile caps, beams, fascia, retaining walls and wharf decks
- Utility

AD 1.2.2 The consultant team must be capable of providing the following services but not limited to the following:

- Site characterization and hazard mapping
- Utility locates, permits and clearances and Traffic Control Plans
- Subsurface investigations and baseline reports for boreholes and test pits for both land and underwater and comprehensive laboratory services
- Groundwater Monitoring and Instrumentation
- Temporary and Permanent Dewatering
- Hydro geological Studies
- Geotechnical Analysis - seepage, bearing capacity, settlement, slope stability analysis, instrumentation and monitoring
- Seismic risk analysis, liquefaction assessment and earth quake engineering
- Design of shallow and deep foundations, including various types of piles
- Deep foundations full scale static and dynamic load testing
- Aggregate Management - prospecting and selection of borrow areas.
- Concrete mix designs and testing and report for air, slump, concrete compressive strength and field concrete coring.
- Mortar / grout cubes testing and report.
- Soil and aggregate compaction testing including nuclear denosometer.
- Field sampling of asphalt materials, asphalt plate sample, field asphalt compaction testing
- Laboratory soil testing including but not limited to sieve analysis, standard proctor test, and modified proctor test.
- Asphalt testing – asphalt content and gradation test, full Marshall testing, laboratory percent air void test and Superpave Performance Grade (PG) asphalt testing.
- Contaminates soil and groundwater testing and analysis.
- Reinforcement steel inspection before concreting as required.
- Structural steel inspection including welding and bolting inspection and report..

AGREEMENT ADMINISTRATION (AA)

AA 1 General Information

- AA 1.1 Roles and Responsibilities
- AA 1.2 Coordination with Departmental Representative
- AA 1.3 Health and Safety
- AA 1.4 Project Response Time Requirements
- AA 1.5 Official Languages

AA 2 Functional Requirements

- AA 2.1 Design Codes, Regulations and Reference Documents
- AA 2.2 Project Delivery Approach
- AA 2.3 Media
- AA 2.4 General Project Deliverable
- AA 2.5 Acceptance of Project Deliverables

AA 1 GENERAL INFORMATION

AA 1.1 ROLES AND RESPONSIBILITIES

AA 1.1.1 DEPARTMENTAL REPRESENTATIVE

1. The Project Manager assigned to the project is the Departmental Representative.
2. The Departmental Representative, as determined on a project by project basis, has overall responsibility for the progress of the project, including management, administration and coordination of the activities as set out in this document.

AA 1.1.2 CONSULTANT

1. The Consultant shall be responsible for the project delivery of the Consultant Team's services, including management, administration, coordination and reporting of the activities by the Consultant Team as set out in this document.
2. The Consultant shall be responsible for gathering and identifying the needs and incorporating those needs into the required project deliverables.
3. The Consultant shall establish and maintain, throughout the duration of each project, a team capable of effectively delivering the services described in this document.
4. The Consultant shall deliver the project within the time frame and assigned budget in accordance with the approved plan agreed to by the Departmental Representative.
5. Upon execution of the Consultant Call-Up, the Consultant shall be responsible for producing all work described in the Call-up document, in a conscientious and professional manner.
6. The Consultant shall coordinate project requirements with any other adjacent and site-related works that may be underway.

AA 1.1.2.1 GENERAL INSTRUCTIONS

For any of the Required Services listed in RS2, the Consultant shall:

1. Attend/Chair regular project status meetings during the life of the project and prepare and distribute minutes in a timely fashion.
2. Submit bi-weekly project progress reports to the Departmental Representative.
3. **When the client requests a change that may alter the scope of work or add to the cost of the project, and/or the cost of services, request approval of the Departmental Representative prior to incorporation in the design.**

AA 1.2 COORDINATION WITH DEPARTMENTAL REPRESENTATIVE

The Consultant shall:

1. Carry out services in accordance with approved documents and directions given by the Departmental Representative.
2. Correspond only with the Departmental Representative at the times and in the manner dictated by the Departmental Representative.
3. Ensure all communications carry the appropriate Project Title, Project Number and File Number depending on the project particulars.
4. Advise the Departmental Representative of any changes that may affect schedule or budget or are inconsistent with instructions or written approvals previously given. The consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding.

AA 1.3 HEALTH AND SAFETY

1. PWGSC recognizes its obligation to protect health and ensure safety of all persons working on projects for which it manages consultant and construction contracts. It also recognizes that federal occupational health and safety legislation places certain specific responsibilities upon PWGSC as the employer and on Other Government Departments as owners of the work place.
2. In order to meet those responsibilities, PWGSC insists that their consultants implement due diligence to help ensure that roles and responsibilities assigned under Part II of the Canada Labour Code and the Canada Occupations Health and Safety Regulations are implemented and observed when involving consultant staff to undertake works on federal sites and work places.

AA 1.4 PROJECT RESPONSE TIME REQUIREMENTS

1. The Consultant shall respond to a request for Proposal for a Call-Up by the proposal submission deadline, as determined by the Departmental Representative. The proposal submission deadline will be established based on the size and complexity of project. Canada reserves the right to contract separately with other firms/consultants should the Consultant fail to meet the submission deadline in a timely manner.

2. The Consultant must be able to demonstrate the availability of adequate resources within their proposed team(s) to deliver the scope of services outlined in this Standing Offer in a timely fashion.

3. It is a requirement of all projects covered under this Standing Offer that the prime Consultant and their proposed sub-Consultants are personally available to attend meetings and respond to inquiries within 72 hours of being given notice by the Departmental Representative.

AA 1.5 OFFICIAL LANGUAGES

This Standing Offer requires services in the English language.

AA 2 FUNCTIONAL REQUIREMENTS

AA 2.1 DESIGN CODES, REGULATIONS AND REFERENCE DOCUMENTS

1. The standards, codes and regulations to be used for the design and construction of civil works shall be the latest edition of the following (including all amendments, supplements and revisions thereto):
 - National Building Code of Canada 2010 (NBCC 2010)
 - Ontario Building Code 2012
 - Canadian Standards Association
 - Canadian Geotechnical Society (CGS)
 - Canadian Foundation Engineering Manual 2006, 4th ed. (CFEM 4th ed.)
 - American Society for Testing and Materials (ASTM)
 - International Society for Rock Mechanics (ISRM)
 - CAN/CSA-S6 Canadian Highway Bridge Design Code;
 - Guidelines Inspection and Maintenance Marine Facilities;
 - PWGSC Bridge Inspection manual 2010, (BIM)
 - Canada and Provincial Occupational Health and Safety Regulations;
 - Federal and Provincial Environmental Regulations;
 - CAN/CSA-A23.3: Design of Concrete Structures;
 - CAN/CSA-S16: Limit States Design of Steel Structures;
 - CSA-086: Engineering Design in Wood
 - Canada Labour Code, Part II Occupational Health and Safety (including latest revisions of all regulations);
 - Provincial and Municipal Traffic Acts and Regulations;
 - Navigable Waters Protection Act.
 - Dam Safety Guidelines 2007 / latest version
 - Canadian Standards Association
 - Canadian Geotechnical Society (CGS)
 - Canadian Foundation Engineering Manual
 - American Society for Testing and Materials (ASTM)
 - International Society for Rock Mechanics (ISRM)
2. Unless otherwise directed, consultant shall comply with Appendix "D" Doing Business with A&E document. The Consultant shall comply with all statutes, codes, regulations, and by-laws applicable to the design and where necessary, shall review the design with those public authorities having jurisdiction in order that the consents, approvals, licenses and permits required for the project may be applied for and obtained.
3. The Consultant has the option of consulting other design codes and is expected to utilize new developments in Civil / Marine Engineering whenever they appear appropriate in accordance

with proper engineering practice but must provide documented evidence of suitability satisfactory to the Departmental Representative.

AA 2.2 PROJECT DELIVERY APPROACH

1. Unless otherwise specified in the Call-up, the traditional design-tender-build approach will be used. The consultant may be required to prepare the tender package and ensure full coordination.
2. PWGSC will tender contracts through several contracting authorities.

AA 2.3 MEDIA

The Consultant shall not respond to requests for project related information or questions from the media. Such inquiries are to be directed to the Departmental Representative.

AA 2.4 GENERAL PROJECT DELIVERABLE

1. Where deliverables and submissions are required under the Call-Ups, they shall be submitted in accordance with the Standing Offer.
2. All specifications and drawings will be generated and distributed in the format using layering and file protocols as prescribed in the "Doing Business with A&E Ontario Region Standing Offer", Appendix D to the Standing Offer.
3. Unless otherwise indicated in the Call-Up or in the Standing Offer, provide six (6) copies of all deliverables plus one electronic version in a format using PWGSC operational platforms such as: Lotus (WordPro, Lotus 123, Approach), MS, AutoCAD 2011 and NMS 2.02.02BEdit +. In addition, provide PDF electronic copy of all final reports and contract documents. All submissions and electronic documents shall be stamped by a **Professional Engineer (P.ENG)**

All documents (drawings and specification) are to be produced in accordance with PWGSC document "Doing Business with A&E Ontario Region - Standing Offer" attached at Appendix D or the applicable document depending on project requirements. All documents are to be produced in the amounts and types shown below and at the project delivery stage described in each individual Call-up.

Reports (Investigations, Studies and Heritage Recording)	hard copies	CADD files	PDF File
No. of copies:	.....6.....	.....1.....	.....1.....

Design Concept Documents	hard copies	CADD files	PDF File
No. of copies:	.....6.....	.....1.....	.....1.....

Design Development Documents	hard copies	CADD files	PDF File
No. of copies:	.....3.....	.....1.....	.....1.....

Construction Documents
No. of copies:

hard copies	CADD files	PDF File	NMS spp file
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33% complete3.....1.....1.....	
66% complete3.....1.....1.....1.....
99% complete3.....1.....1.....1.....
100% complete3.....1.....1.....1.....

Tender Documents

No. of copies:

	hard copies	CADD files	PDF File	NMS spp file
Drawings	.....1.....	.....1.....	.....1.....	
Specifications	...1 bound...	.....1.....	.....1.....	.....1.....
Specifications	...1 unbound..			

Record Documents	hard copies	CADD files	PDF File	NMS spp file
No. of copies	.....1.....	.....1.....	.....1.....	.....1.....

The schedule for the delivery of services will be determined at the time of each individual Call-up.

AA 2.5 ACCEPTANCE OF PROJECT DELIVERABLES

1. While PWGSC acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles PWGSC to review work. PWGSC reserves the right to reject undesirable or unsatisfactory work. The Consultant must obtain Departmental Representative acceptances during each of the project stages.
2. Acceptances indicate that based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices, and that overall project objectives are being satisfied.
3. The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the contract.
4. PWGSC acceptances do not prohibit rejection of work, which is determined to be unsatisfactory at later stages of review. If progressive design development or time / cost / risk updates or technical investigation reveals that earlier acceptances must be withdrawn (as a result of undiscovered Consultant mistake, error or disregard of requirements/requests), the Consultant is responsible for redesigning work and resubmitting for acceptance at the Consultant's cost
5. Acceptances by the Client / Users and other agencies and levels of government must be obtained to supplement PWGSC acceptances. The Consultant shall assist the Departmental Representative in securing all such acceptances and adjust all documentation as required by such authorities when securing acceptance.

REQUIRED SERVICES (RS)**RS 1 INTRODUCTION**

1. Call-Ups may include any or all of the following services. Specific services will be identified in each call-up:

RS 2 SCOPE OF SERVICES

- RS 2.1 Required Services
 - RS 2.1.1 Investigations, Studies and Reports
 - RS 2.1.2 Design Concept
 - RS 2.1.3 Design Development
 - RS 2.1.4 Construction Documents, Pre-Tender Construction Cost Estimate and Project Schedule
 - RS 2.1.5 Tender Call, Bid Evaluation and Construction Contract Award
 - RS 2.1.6 Construction and Contract Administration
 - RS 2.1.7 Post Construction Warranty Review

RS 2.1 REQUIRED SERVICES**RS 2.1.1 INVESTIGATIONS, STUDIES AND REPORTS**

Note: This Service(s) could consist of (A) a Preliminary Investigation, or (B) a Detailed Investigation, or (C) Special Studies, or any combination, as specified in the Terms of Reference.

RS 2.1.1.A Preliminary Investigation**RS 2.1.1.A.1 Existing data**

The Consultant shall:

1. Identify, obtain, review and analyze existing documentation pertinent to the project including past geotechnical reports;
2. Identify, obtain, review and analyze reports and publications related to the site, provide interpretation of topographic maps, geology maps, geological hazards (landslides, rock slope stability, etc.), air photos; seismic site classification, etc.
3. Identify local, provincial, national authorities having jurisdiction;
4. Identify all applicable codes, regulations and standards;
5. Identify any missing information needed to complete the investigation services required in the Project Brief and/or the Terms of Reference.

RS 2.1.1.A.2 Data collection and analysis

The Consultant shall:

1. Conduct site reconnaissance, inspections, surveys, measurements, studies, evaluations, etc. to acquire all pertinent information;
2. Interview operational personnel and occupants/users, as required, to confirm operational and functional requirements;
3. For existing structures analyse all pertinent project data identified in the Terms of Reference to:
 - └ Assess condition and performance the foundation members, retaining structures, underground structures, etc., of the asset, as well as their impact on its functionality;
 - └ Verify compliance with all applicable codes, regulations and standards;
 - └ Verify compliance with the requirements of local, provincial and national authorities having jurisdiction;

└ Respond to specific requirements (e.g.: determine causes of technical problems, confirm structural integrity of foundation members, retaining structures, underground structures, assess seismic resistance, etc.);

RS 2.1.1.A.3 Technical Report, Options and Cost Estimates

The Consultant shall prepare and submit to the Departmental Representative for approval, a technical report that:

1. Describes the approach and results of investigations, studies, inspections, surveys, measurements, evaluations;
2. Presents the results of all data analyses and compliance verifications;
3. Identifies a minimum of 3 options or alternative remedial measures, to deal with deficiencies and meet project requirements;
4. Describes, in broad terms, the pros and cons of each option and how well each one responds to project requirements;
5. Provides Class D estimates (order of magnitude) of engineering and construction costs, including life-cycle costs, associated with each option;
6. Describes, in broad terms, project scheduling implications associated with each option;
7. Provides recommendation on next steps, and prepares a program for future detailed geotechnical investigation.

RS 2.1.1.B Detailed investigation

RS 2.1.1.B.1 Existing data

The Consultant shall:

1. Identify, obtain, review and analyze existing documentation pertinent to the project including past geotechnical reports;
2. Identify, obtain, review and analyze reports and publications related to the site, provide interpretation of topographic maps, geology maps, geological hazards (landslides, rock slope stability, etc.), air photos; seismic site classification, etc.
3. Identify local, provincial, national authorities having jurisdiction;
4. Identify all applicable codes, regulations and standards;
5. Identify any missing information needed to complete the Pre-design services required in the Project Brief and/or the Terms of Reference;

RS 2.1.1.B.2 Data collection and analysis

The Consultant shall unless specified otherwise carry out data collection and analysis according to RS 2.1.1.A.2:

Specifically, geotechnical site investigation will consist of:

- a. Field work
 - └ Drilling and sampling
 - └ Excavating test pits and sampling
 - └ Field testing
 - └ Geophysical testing
- b. Laboratory work to establish:
 - └ Soil and rock index properties
 - └ Strength and deformation characteristics
 - └ Hydraulic conductivity

RS 2.1.1.B.3 Technical Report, Options and Cost Estimates

The Consultant shall prepare and submit to the Departmental Representative for approval, a technical report that:

1. Describes the approach and results of investigations, studies, inspections, surveys, measurements, evaluations;
2. Presents the results of all data analyses and compliance verifications;
3. Provides recommendations for input to the design of the specified built works including but not limited to:
 - └ Type of foundations and optimum founding elevation
 - └ Bearing capacity for shallow and deep foundations and an estimate of settlement
 - └ Methods of foundation installation
 - └ Frost protection
 - └ Underground structures
 - └ Stabilization of existing foundation members (e.g. underpinning)
 - └ Excavation in soils and rocks and any limitations due to adverse soil/rock conditions
 - └ Lateral support parameters for earth retaining structures
 - └ Mitigating effects of excavation on adjacent structures
 - └ Pavement design of roads and parking lots
 - └ De-watering of excavations
 - └ Slope stability (in soils and rocks)
 - └ Seismic parameters
 - └ Soil stabilization/improvement
 - └ Soil compaction
 - └ Instrumentation
4. Identifies a minimum of 3 options or alternative remedial measures, to deal with deficiencies and meet project requirements;
5. Describes, in broad terms, the pros and cons of each option and how well each one responds to project requirements;
6. Provides Class D estimates (order of magnitude) of engineering and construction costs, including life-cycle costs, associated with each option;
7. Describes, in broad terms, project scheduling implications associated with each option;
8. Provides recommendation on next steps, additional study needs, etc.

RS 2.1.1.C Special studies

RS 2.1.1.C.1 Services

The Consultant shall as required conduct special studies such as:

- └ Special dynamic analysis beyond that required by codes such as ground/foundation response
- └ Numerical analysis of stresses and deformations (2-D and 3-D) in foundations
- └ Blasting test
- └ Site selection
- └ Slope stability
- └ Monitoring requirements

RS 2.1.1.C.2 Technical Report, Options and Cost Estimates

The Consultant shall prepare and submit to the Departmental Representative for approval, a technical report that contains all services as in RS 2.1.1.A.3 applicable to the special study.

RS 2.1.1.D Verification (when RS 2.1.1.A / RS2.1.1.B / RS2.1.1.C has been prepared by others)

As directed by the Departmental Representative, the work below will sometimes be in support of other Consultants contracted separately with the Departmental Representative. In such cases, the Consultant shall first review all previous Preliminary and Detailed investigations on the site, and subsequently propose any further study required to supplement the existing information for the purposes of the subject project.

RS 2.1.1.D.1 Analysis of project requirements

The Consultant shall first review all previous Preliminary and Detailed investigations on the site, and subsequently propose any further study required to supplement the existing information for the purposes of the subject project, as listed in RS 2.1.1.A above.

RS 2.1.1.D.2 Deliverables

1. Review results of all previous Preliminary and Detailed investigations on the site, and prepare a report summarizing conclusions.
2. Prepare as required, a proposal for any further geotechnical investigation required to supplement the existing information for the purposes of the subject project, as listed in RS 2.1.1.A above.
3. Update, as required for investigation if required. Submit for review, revise, resubmit for final approval

RS 2.1.2 CONCEPT DESIGN

As directed by the Departmental Representative, the work below will sometimes be in support of other consultants contracted separately with the Departmental Representative.

RS 2.1.2.1 General Requirements

The Consultant shall review Pre-Design Documents, analyse options and prepare Concept Design Documents in sufficient detail to:

1. To translate the Project Requirements into design parameters;
2. Illustrate the design concept and demonstrate compliance with the Project Requirements;
3. Develop preliminary Construction Cost Estimates;
4. Confirm the feasibility of the project;
5. Recommend an option for further Design Development.

RS 2.1.2.2 Option Analysis

The Consultant shall:

1. Review the options identified at the Pre-design stage and recommend, for the Departmental Representative's approval, any other option that should be explored and analysed further;
2. For each option to be further explored, as confirmed by the Departmental Representative:
 - └ complete a detailed analysis and describe how the option responds to project requirements, as well as Client functional needs;
 - └ explore possible technical and environmental strategies which are viable and have potential for development;
 - └ identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts;
 - └ advise on alternative procurement and construction strategies to create efficiencies wherever possible;
 - └ produce class 'C' cost estimates for the various options, including life-cycle costs;
 - └ assess the impacts the option may have on the Project Implementation Strategy and Schedule including constructability, project phasing and duration.
3. recommend one option for further Design Development with all supporting background and technical justifications.

RS 2.1.2.3 Concept Design Deliverables

The Consultant shall prepare and submit to the Departmental Representative for approval:

1. A detailed option analysis report covering the elements outlined in RS 2.1.2.2 Option Analysis;
2. Concept design drawings of geotechnical elements including: plan views, elevations, sections, explanatory sketches and notes, analytical diagrams, etc.
3. Class C estimates of engineering and construction costs, as well as life-cycle costs, associated with each option;

4. A preliminary Project Implementation Strategy and Schedule that include, without being limited to, such elements as:

- └ Key activities and milestones including critical deadlines, delivery items requiring long lead time, etc., that are required for the effective delivery of the project deliverables
- └ Time frames for submissions, reviews and approvals;
- └ The co-ordination with work of other disciplines (architectural, mechanical, etc.)
- └ An assessment of the impacts the various options may have on Project Implementation Strategy and Schedule including constructability, project phasing and duration.

RS 2.1.3 DESIGN DEVELOPMENT

As directed by the Departmental Representative, the work below will sometimes be in support of other consultants contracted separately with the Departmental Representative.

RS 2.1.3.1 General Requirements

Based on the approved Pre-Design Documents, the Consultant is required to further develop one of the options presented at the Pre-Design stage. The Departmental Representative will confirm in writing the option for which Design Development is required.

The Consultant shall review Pre-Design Documents and develop the design of the option approved by the Departmental Representative, to the level of detail necessary to:

1. Define the scope, the intent and the character of the entire project;
2. Update the Cost Estimates;
3. Facilitate design review, discussions and decisions;
4. Present, as required, the design to government officials, to Clients, or to any other authorities having jurisdiction;
5. Obtain the necessary approvals from all stakeholders and the Departmental Representative to proceed to the development of Construction Documents.

RS 2.1.3.2 Design Deliverables

The Consultant shall prepare and submit to the Departmental Representative for approval:

1. Design development drawings as further described under RS 2.1.3.3;
2. A list of all National Master Specifications (NMS) sections to be used;
3. A Class "B" Construction Cost Estimate based on the Design Development Documents;
4. An updated Cost Plan including an assessment of potential project risks and mitigation measures;
5. Presentation material needed to obtain any design approvals that may be required from government officials, Clients, or any other authorities having jurisdiction;
6. A detailed Project Implementation Strategy and Schedule that includes, without being limited to, such elements as:
 - └ Key activities and milestones including critical deadlines, delivery items requiring long lead time, etc., that are required for the effective delivery of the project deliverables;
 - └ Time frames for submissions, reviews and approvals;
 - └ Co-ordination with work of other disciplines, as applicable (architectural, structural, etc.);
 - └ Constructability assessment and advice on construction strategy and duration;
 - └ Recommendations on project phasing

RS 2.1.3.3 Design Development Drawings

Without being limited to the following, Design Development Drawings shall:

1. Include plans, elevations, sections and perspectives views of all foundation elements and support systems for rock excavation (underground and open) to be detailed in Construction Drawings;
2. Indicate modifications to existing structures or new structural systems, types of foundation, and all other pertinent details;
3. Identify geotechnical constraints that may affect construction;
4. Present, in the general notes, a summary of the results of any earthquake resistance

assessments that may have been done, as well as actions included in the design to improve earthquake resistance;

5. Include, as required, supporting drawings from other disciplines that may affect the geotechnical design development (e.g. architectural).

RS 2.1.4 CONSTRUCTION DOCUMENTS, PRE-TENDER CONSTRUCTION COST ESTIMATE AND PROJECT SCHEDULE

As directed by the Departmental Representative, the work below will sometimes be in support of other consultants contracted separately with the Departmental Representative.

RS 2.1.4.1 Stages of Document Preparation

Based on the approved Design Development Documents, the Consultant is required to prepare Construction Documents including drawings, specifications, cost estimates and schedules.

Stages of Construction Document preparation are defined as follows:

1. 33% indicates technical completeness of all working documents;
2. 66% indicates substantial technical development of the project - well advanced engineering plans, details, schedules and specifications;
3. 99% is the submission of complete Construction Documents ready for final technical reviews and approvals;
4. Final Submission incorporates all revisions required in the 99% review and is intended to provide PWGSC with complete Construction Documents for tender call.

RS 2.1.4.2 Document Development and Reviews (all Stages)

The Consultant shall, for each document preparation stage described in RS 2.1.4.1:

1. Prepare and submit, for the Departmental Representative's review and approval, construction drawings and specifications, as well as an updated Construction Cost Estimates;
2. Provide written response to all review comments and incorporate them, as appropriate, into subsequent stages of Construction Documents;
3. Ensure all construction documents are co-ordinated with documents from other disciplines, or sub-consultants that may be involved in the project;
4. Attend technical and production meetings that may be arranged by Departmental Representative or the Consultant, for the review of construction documents at the 33%, 66%, and 99% stages; prepare minutes of the meetings and distribute copies to all participants;
5. Submit plans and specifications at the appropriate stages, and obtain approvals from Authorities having jurisdiction (e.g. municipal or provincial governments, etc.);
6. Clarify any special project implementation strategies (e.g. phased construction).
7. Review the foundation drawings for conformance to the geotechnical report recommendations if requested by the design engineer

RS 2.1.4.3 Final Construction Document Submission

1. Complete sets of final construction drawings and specifications,
2. A final Construction Cost Estimate (Class "A") based on the approved construction documents, together with a cost breakdown;
3. A Risk Management Plan covering the construction phase of the project.

RS 2.1.5 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

As directed by the Departmental Representative, the work below will sometimes be in support of other consultants contracted separately with the Departmental Representative.

RS 2.1.5.1 Tender Documents

The Departmental Representative shall be responsible for the production of the required number of copies of the tender documents and for such other documents as are necessary for tender call purposes.

After acceptance of the final submission of the Construction Documents by the Departmental Representative, the Consultant shall prepare and provide:

1. Three (3) complete sets of the approved tender drawings: one (1) hard copy; signed and sealed and two (2) electronic copies (one in native format and one in PDF format);
2. (3) sets of the approved specifications, two (2) electronic copies (one in native format and one in PDF format) and one hard copy properly bound and covered;

The Consultant shall deliver Electronic Version of Drawings and Specifications as follows:

1. Electronic true copies of the final submission drawings and specifications must be provided on one or multiple CD-ROM in Portable Document Format (PDF) in accordance with the User Manual on Directory Structure and Naming Convention Standard for Construction Tender Documents on CD-ROM included in Appendix D - Doing Business with A&E Ontario Region;
2. The PDF files should to the greatest extent possible be derived from the native software in which they were created and must not have any password protection and printing restrictions. A reference guide "Basic reference Guide on Converting Construction Drawings in Portable Document Format "PDF)" providing basic information on the conversion of construction drawings in PDF, is included in Appendix D - Doing Business with A&E Ontario Region - Standing Offers.
3. Electronic true copies of drawings and specifications are for tendering purposes only and do not require to be signed and sealed. The original signed and sealed hard copy of drawings and specifications will be the version used by the successful contractor for construction and building permit purposes.
4. Electronic Version of Addenda, where needed, shall be in electronic format (PDF) without password protection and printing restrictions.

RS 2.1.5.2 Tender Call

The Consultant shall:

1. Provide the Departmental Representative with all information required by tenderers to fully interpret the Construction Documents;
2. Attend tenderers briefing meeting(s) (i.e. Job Showing), upon request;
3. Prepare addenda based on questions arising in such meetings for issue by the Contracting Authority. The Contracting Authority will issue the addenda to all participants;
4. Keep full notes of all inquiries during the bidding period and submit same to Project Manager at the end, for PWGSC records.

RS 2.1.5.3 Bid Evaluation and Construction Contract Award

The Departmental Representative shall be responsible for issuing tender documents and arranging for the receipt of tenders and awarding of the Construction Contract.

The Consultant shall, upon request, assist tender evaluation by providing advice on such elements as:

1. The completeness of tender documents in all respects;
2. The technical aspects of the tenders;
3. The effect of alternatives and qualifications which may have been included in the tender;
4. The tenderers capability to undertake the full scope of work;
5. The availability of adequate equipment to carry out the work;
6. The examination and report on any cost and schedule impact created by the issue of tender / contract addenda;
7. Information to support price negotiations;
8. Assistance to the Departmental Representative should PWGSC decide to re-tender the project.

RS 2.1.6 CONSTRUCTION & CONTRACT ADMINISTRATION

The work below will frequently be in support of, and in collaboration with a Prime Consultant contracted separately with the Departmental Representative.

RS 2.1.6.1 Intent

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

RS 2.1.6.2 Construction Schedule

The Consultant shall:

1. As soon as practical after the award of the Construction Contract, request from the Departmental Representative a Contractor's detailed construction schedule, and, after review for conformity with the Project Schedule, forward two (2) copies of the construction schedule to the Departmental Representative;
 2. Monitor and report to the Departmental Representative the progress of the construction; and
 3. Notify the Departmental Representative of any known and anticipated delays which may affect the completion date of the Project, and keep accurate records of the causes of delays.
- Only the Departmental Representative may approve any request for Time Extensions. The Departmental Representative shall evaluate all requests from the Contractor for time extensions, and shall issue directions to the Contractor and the Consultant.

RS 2.1.6.3 Construction Meetings

The Consultant shall:

1. At the request of the Departmental Representative attend construction meetings as required;
2. Maintain a record of the proceedings of such meetings;
3. Attend special meetings when unforeseen problems are encountered during the foundation construction or excavation;
4. Review alternative or remedial proposals involving geotechnical considerations
5. Assist in resolving problems with unexpected soil/rock conditions on site.

RS 2.1.6.4 Clarification and Interpretation

The Consultant shall provide clarification and interpretation of the construction documents in written or graphic form, to the Contractor for the proper execution and progress of the construction as and when necessary.

RS 2.16.5 Shop Drawings

The Consultant shall:

1. On behalf of the Departmental Representative, request and obtain from the Contractor all shop drawings as specified in the construction documents;
2. Review in a timely manner the shop drawings provided by the Contractor to determine conformity with the general concept and intent of the construction documents and indicate to the Contractor such conformance with the general concept or lack thereof;
3. Provide the Departmental Representative with one (1) copy when such conformity is confirmed;
4. On completion of project, forward three (3) copies of reviewed and approved shop drawings to the Departmental Representative. Ensure that shop drawings include the project number and are recorded in sequence.

RS 2.1.6.6 Testing and Inspections

The Consultant shall:

1. Recommend the need for, and review, test reports of materials or construction;
2. Recommend quality assurance testing to be undertaken during construction, evaluate the results and advise the Departmental Representative accordingly;
3. Advise the Departmental Representative when portions of the work must be inspected prior to being covered up. Conduct these inspections in a timely manner at the request of the Departmental Representative;
4. Advise the Departmental Representative when observed material or construction fails to comply with the requirements of the Construction Contract;

5. Assist the Departmental Representative in evaluating invoices from testing firms for services performed.

6. Typical required services will include (as applicable to the requirements of each Call-Up):

Quality assurance testing and inspections:

Foundation Subgrade Inspection

Pile Driving Inspection

Load Test Supervision

Fill Compaction Testing

Pavement Subgrade Testing

Field and laboratory testing of soils and rocks

Monitoring contaminates soil and groundwater testing and analysis

Reinforcement steel inspection before concreting as required

Structural steel inspection including welding and bolting inspection and report

Slope Stability Monitoring

Field Instrumentation-Settlement

Blast monitoring during excavation and/or seismic risk analysis;

Evaluation of instrumentation data

Survey of existing buildings and structures prior to and during construction

Monitoring - during construction and long-term (e.g. vibration during excavation)

Design changes

Geotechnical engineering work resulting from changes to the project, such as changes in scope, complexity, diversity or magnitude of the project;

Review of design drawings or specifications prepared by others to determine suitability;

Review of alternative designs or products after completion of the Contract Documents;

Review of the contractor's methods, procedures and construction equipment with respect to the effect on the project;

Review of construction methodology and reporting to the owner

Evaluation of contractor's proposed method of foundations, review of shop drawings, shoring, etc

Review of alternative designs or products after completion of the Contract Documents;

Work resulting from corrections or revisions required because of errors or omissions in construction by the contractor;

Special specifications - the geotechnical engineer may provide special clauses to be included in the specifications where unusual soil, rock or groundwater conditions exist.

Design review or field observations of shoring or bracing for excavations and building or underpinning of adjacent structures;

RS 2.1.6.7 Site Visits

The Consultant shall:

1. Make all necessary visits to the site to determine, on an adequate sampling basis, whether this work is in conformity with the construction documents;
2. Record and report to the Departmental Representative on the progress, non-conformities and deficiencies observed during each site visit, and provide the Departmental Representative lists of these deficiencies;
3. Recommend the action to be taken.

RS 2.1.6.8 Changes to Construction Contract

The Consultant shall:

1. Submit all requests and recommendations for changes to the Construction Contract and their implications to the Departmental Representative for approval;
2. Obtain from the Departmental Representative the Contractor's quotations for contemplated changes, review the prices for acceptability, assess the effect on construction progress, and submit recommendations to the Departmental Representative.

3. Prepare Contemplated Change Notices (CCN) and Change Order (CO) and submit to the Departmental Representative for approval and processing

Only the Departmental Representative has the authority to change the scope or price of the Construction Contract. The Departmental Representative shall issue to Change Orders for all approved changes.

RS 2.1.6.9 Contractor's Progress Claim

The Consultant shall on behalf of the Departmental Representative:

1. Request from the Contractor a cost breakdown of the Construction Contract Award Price in detail appropriate to the size and complexity of the Project, or as may otherwise be specified in the Construction Contract, and submit the cost breakdown to the Departmental Representative prior to the Contractor's first progress claim;
2. Examine progress claims in a timely manner and, if acceptable, certify the progress claims for work completed and materials delivered pursuant to the Construction Contract, and submit them to the Departmental Representative for approval and processing;
3. If the construction is based on unit prices, measure and record the quantities of labour, materials and equipment involved for the purpose of certifying progress claims;
4. Submit a construction schedule progress report with each progress claim.

RS 2.1.6.10 Interim Completion of the Project

The Consultant shall:

1. Review the construction with the Departmental Representative and the Contractor, and record all unacceptable and incomplete work detected;
2. Request from the Contractor, review for completeness and adequacy and provide the Departmental Representative with, all operation and maintenance manuals and any other documents or items to be provided by the Contractor, in accordance with the Construction Contract;
3. Prepare and submit to the Departmental Representative for approval and processing, and as a basis for payment to the Contractor, an Interim Certificate of Completion as required by the Construction Contract, together with supporting documents properly signed and certified.

RS 2.1.6.11 As-built and Record Drawings

The Consultant shall, before issuance of the Final Certificate of Completion:

1. On behalf of the Departmental Representative obtain any marked-up construction drawings and as-built drawings from the Contractor;
2. Prepare and provide the Departmental Representative with a complete set of record drawings of the type and number as specified;
3. Verify that record drawings are suitable for microfilming, incorporating all recorded changes to the original working drawings based on as-built prints, drawings and other information provided by the Contractor, together with change orders and site instructions;
4. Verify that record drawings are labelled "Record", dated and signed by the Consultant, and provide also a marked-up copy of the specifications recording changes related thereto.

RS 2.1.6.12 Final Completion of the Project

The Consultant shall:

1. Advise the Departmental Representative when the construction has been completed in general conformity with the Construction Contract;
2. Make a final review of the construction with the Departmental Representative and the Contractor and, if satisfactory, prepare and submit to the Departmental Representative for approval and final payment to the Contractor, a Final Certificate of Completion as required by the Construction Contract, together with supporting documents properly signed and certified, including manufacturers' and suppliers' warranties.

RS 2.1.6.13 Resident Site Services during Construction

Depending on the type of project, the Departmental Representative may specify, in the Terms of Reference for engineering services, the need for Resident Site Services during construction. Where such services are required; the Consultant shall appoint a qualified Resident Construction Services Representative for the duration of the construction stage of the project.

Without being limited to the following, the Resident Construction Services Representative shall:

1. Represent the full time or part time presence of the Consultant on the construction site;
2. Inspect and monitor all phases of the construction work, and report any discrepancies to the Departmental Representative for appropriate action;
3. Neither authorize nor request any change in the work which would constitute a change in design or in the value of the contract. Any requests for such changes must be submitted to the Departmental Representative for approval;
4. Verify quantities of materials received on site and record work progress, including photographs as required;
5. Maintain a daily log of inspections and issue a weekly written report to the Consultant for distribution as directed by the Departmental Representative
6. Prepare other reports or surveys as may be requested by the Departmental Representative through the Consultant.
7. Supervise installation of instruments which monitor behaviour of the structure during construction and after its completion.

RS 2.1.7 POST-CONSTRUCTION WARRANTY REVIEW

The work below will frequently be in support of, and in collaboration with a Prime Consultant contracted separately with the Departmental Representative.

The Consultant shall:

1. Review if requested, during the Contractor's warranty period, any defects reported by the Departmental Representative;
2. 30 days prior to the expiry of any warranty period, visit the site, and record any defects observed or reported;
3. At the end of any warranty period, carry out a final review of the Project and report to the Departmental Representative the status of defects. If the Departmental Representative accepts the rectification of the defects, a notice of "Final Warranty Inspection" shall be issued to the contractor.

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwl042

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

20131106

File No. - N° du dossier

PWL-2-35048

CCC No./N° CCC - FMS No/ N° VME

SUBMISSION REQUIREMENTS AND EVALUATION (SRE)

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

SUBMISSION REQUIREMENTS AND EVALUATION

SRE 1 GENERAL INFORMATION

1.1 Reference to the Selection Procedure

An 'overview of the selection procedure' can be found in General Instructions to Proponents (GI 9).

1.2 Submission of Proposals

The Proponent is responsible for meeting all submission requirements. Please follow detailed instructions in "Submission of Proposals", General Instructions to Proponents (GI 10)

1.3 Calculation of Total Score

For this Standing Offer the Total Score will be established as follows:

Technical Rating x 70%	=	Technical Score (Points)
<u>Price Rating x 30%</u>	=	<u>Price Score (Points)</u>
Total Score		Max. 100 Points

SRE 2 PROPOSAL REQUIREMENTS

2.1 Requirement for Proposal Format

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

1. Submit one (1) bound original plus five (5) bound copies of the proposal
2. Paper size should be - 216mm x 279mm (8.5" x 11")
3. Minimum font size - 11 point Times or equal
4. Minimum margins - 12 mm left, right, top, and bottom
5. Double-sided submissions are preferred
6. One (1) 'page' means one side of a 216mm x 279mm (8.5" x 11") sheet of paper
7. 279mm x 432 mm (11" x 17") fold-out sheets for spreadsheets, organization charts etc. will be counted as two pages.
8. The order of the proposals should follow the order of the Request for Standing Offer SRE 3 section.

2.2 Specific Requirements for Proposal Format

The maximum number of pages (including text and graphics) to be submitted for the Rated Requirements under SRE 3.2 is thirty-five (35) pages.

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

- Covering letter
- Declaration/Certifications Form (Appendix A)
- Code of Conduct Certifications (Appendix A - Annex AA)
- Price Proposal Form (Appendix B)
- Team Identification Form (Appendix C)
- Front page of the Request for Standing Offer document
- Front page of revision(s) to the Request for Standing Offer document
- Table of Contents
- Tabs/Page Dividers (Provided they are free of text and graphics)

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

SRE 3 SUBMISSION REQUIREMENTS AND EVALUATION

3.1 MANDATORY REQUIREMENTS

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

3.1.1 Declaration/Certifications Form

Proponents must complete, sign and submit the following:

1. Appendix A, Declaration / Certifications Form as required.

3.1.2 Licensing, Certification or Authorization

The Proponent shall be authorized to provide Civil / Geotechnical engineering services must be 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 Ontario.

You must indicate current license or how you intend to meet the provincial licensing requirements.

3.1.3 Code of Conduct Certifications - Consent to a criminal record verification

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

3.1.4 Consultant Team Identification

The consultant team to be identified must include the following:

Proponent (prime consultant): Civil / Geotechnical engineer

Information required - name of firm, key personnel to be assigned to the standing offer. For the prime and sub-consultant/specialist(s) 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 - Limitation of Submissions).

The consultant team is to be identified in Appendix C - Team Identification.

3.2 RATED REQUIREMENTS

Proposals meeting the mandatory requirements will be evaluated in accordance with the following criteria. The clarity of the proposal writing will form part of the evaluation (use of language, document structure, conciseness and completeness of the response):

3.2.1 Comprehension of the Scope of Services

1. What we are looking for:
A demonstration of the understanding of the overall requirements for services, including specific deliverables, expected approaches, technical expectations, and coordination requirements, especially in delivering government projects.
2. What the Proponent should provide:
 - (a) scope of services - detailed list of services;
 - (b) summary of your proposed typical work breakdown structure, i.e. resources assigned, time schedule, level of effort;
 - (c) broader goals (federal image, sustainable development, sensitivities);
 - (d) risk management strategy;
 - (e) project management approach to working with PWGSC (understanding of PWGSC management structure, Client environment, standing offer process, working with the government in general);

3.2.2 Team Approach / Management of Services

1. What we are looking for:
How the team will be organized in its approach and methodology in the delivery of the Required Services.
2. *What the Proponent should provide:*
A description of:
 - (a) Roles and responsibilities of key personnel;
 - (b) Assignment of the resources and availability of back-up personnel;
 - (c) Management and organization (reporting structure);
 - (d) Description of the firm's approach to responding to the individual call-ups which will arise as a result of this standing offer;
 - (e) Quality control techniques;
 - (f) Demonstration of how the team intends to meet the 'Project Response Time Requirements' ;
 - (g) Conflict resolution.

3.2.3 Past Experience

1. *What we are looking for:*
Demonstration that over at least the past five (5) years, the Proponent or its senior personnel has participated in a range of projects requiring a full scope of services in accordance with the Required Services (RS) section. The firm's participation in these projects should have involved the scope of services listed in the Required Services (RS) section.

2. *What the Proponent should provide:*
 - (a) A brief description of a maximum of four (4) significant projects completed / undertaken over the last five (5) years by the Proponent, or its senior personnel;
 - (b) For the above projects, include the names of senior personnel and project personnel who were involved as part of the project team and their respective responsibilities, as well as the scope, and budget per discipline;
 - (c) Indicate the dates the services were provided for the listed projects;
 - (d) Scope of services rendered, project objectives, constraints and deliverables; and
 - (e) Client references - name, address, phone and fax of client contact at working level. Reference checks may be completed if deemed necessary.
3. The Proponent (as defined in General Instructions GI 20) 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.
4. Please indicate those projects which were carried out in joint venture and the responsibilities of each of the involved firms in each project.

3.2.4 Senior Personnel Expertise and Experience

1. *What we are looking for:*
A demonstration that the Proponent has senior personnel in-house with the capability, capacity and expertise in each area listed in the Required Services (RS) section.
2. *What the Proponent should provide: (approximately two (2) pages per senior personnel)*
 - (a) submit two (2) c.v.'s of senior personnel. Each curriculum vitae should clearly indicate the years of experience the senior personnel has in the provision of the services specified in the Required Services (RS) section; and
 - (b) Identify the personnel's years of experience with the firm;
 - (c) professional accreditation; and
 - (d) accomplishments/achievements/awards.
3. In-house personnel means personnel within the Proponent's organization (see definition of Proponent in General Instructions GI 20). Past expertise and experience of personnel not within the Proponent's (or joint venture Proponent's) organization will not be considered in the evaluation.

3.2.5 Project Personnel Expertise and Experience

1. *What we are looking for:*
A demonstration that the Proponent has project personnel in-house with the capability, capacity and expertise to provide the required services and deliverables listed in the Required Services (RS) section.
2. *What the Proponent should provide:*
 - (a) submit two (2) c.v.'s of project personnel which will perform the majority of the work resulting from the individual Call-ups. Each curriculum vitae should clearly indicate the years of experience the project personnel has in the provision of the services specified in the Required Services (RS) section;

- (b) Identify the personnel's years of experience with the firm;
 - (c) professional accreditation; and
 - (d) Accomplishments/achievements/awards.
3. In-house personnel means personnel within the Proponent's organization (see definition of Proponent in General Instructions GI 20). Past expertise and experience of personnel not within the Proponent's (or joint venture Proponent's) organization will not be considered in the evaluation.

3.2.6 Hypothetical Projects

1. *What we are looking for:*

Describe the approach and methodology that you would employ to deliver the project in a general written response only.

The clarity of the report writing will form part of the evaluation (use of language, document structure, conciseness and completeness of the response).

2. *What the proponent should provide for each hypothetical project:*

- (a) description of the approach and methodology that you would employ to solve the problem;
 - (b) summary of your proposed work breakdown structure, i.e. scope of work, resources assigned, time schedule, level of effort in terms of number of hours of all identified resources;
 - (c) appropriateness of assigned resources;
 - (d) project management approach to working with PWGSC (understanding of PWGSC management structure, Client environment, Standing Offer process, working with the government in general);
 - (e) problem-solving methodology (client involvement, PWGSC involvement, other government agency involvement, creative approaches to solving problems).
- identify areas of particular concern or issues in implementing the work.
Calculation of a fee for the provision of these services is not required.

3. The Facts:

When responding to the following hypothetical fact situation, be advised that the hypothetical is to be used for evaluation purposes only. Areas and details in the hypothetical are provided only to give the proponent sufficient material from which to develop an outline of their approach and methodology to the resolution of the issues.

PROJECT 1

1. Situation

An environmental dredging project is planned for a sheltered harbour on Lake Ontario. The wave heights seldom exceed 0.6m feet in the harbour and have a maximum height of 0.9m at the work location. Previous investigations show preliminary depths of the sediment and soil layers. The depth of water varies from 3.0 metres to 10.0 metres.

The soft sediments vary from sandy silts to silt with undrained shear strengths varying between 0kPa and 10kPa.

The sediments are highly contaminated with PAH's (Polycyclic Aromatic Hydrocarbons) and metals. The area to be dredged is approximately 50 hectares (assumed to be a roughly square shape) and the dredge material is to be hydraulic dredged and transported to a confined disposal facility (CDF). The area is divided into 150 dredge unit areas and each unit will be sounded and sampled after dredging to check the dredge levels and the chemistry below the dredge levels (by others). Existing data show that the underlying silty clay layer is not contaminated.

The underlying silty clay has an undrained shear strength of between 20 kPa and 30kPa.

The soft sediments bathymetry shows slopes of 0% to 5% and the underlying clay shows slopes of 0% to 3%.

2. General Requirements

Because of the lack of detailed information, there is a concern that in dredging the contaminated sediments, excessive amounts of the underlying clay will be dredged and transported hydraulically to the CDF. Excessive amounts of dredged clay will consequently reduce the CDF's ability to contain the maximum amount of contaminated sediments. Detailed information regarding the thickness of sediment and the elevation of the underlying clay is therefore required, in order to complete the dredge plan. Sediment chemistry is required at the sediment/underlying silty clay layer. A PAH value of 100mg/l was chosen as the threshold between areas that require dredging and areas that do not require dredging.

3. Scope of work

Describe your firm's approach and methodology in describing a proposal for a detailed pre-construction field investigation and report including:

- a) A work plan for a sampling program to determine dredge depths, elevations and chemistry (PAH threshold only). An approximate dredging cost is \$20 per cubic metre and a budget cost for the sampling and chemical testing is \$300,000.
- b) Comments on adequacy of coverage using the above funds.
- c) A description of possible sampling methods, equipment and methods of truthing the field results obtained.
- d) A description of the marine equipment to be used for the work.
- e) A description of the reporting method, in order for others to calculate sediment and clay volumes. Fee costs for the report are not required.

PROJECT 2

Situation

A single span prestressed concrete bridge, 30 metres long and 9 metres wide, was constructed approximately 15 years ago. The bridge carries one lane of traffic with a pedestrian walkway over a river with a maximum water depth of 9 metres at the bridge mid-span. The bridge runs in an east-west direction.

The superstructure consists of nine (9) precast prestressed concrete girders 838 mm deep, supporting 125 mm thick reinforced concrete deck topping. The prestressed concrete girders are supported by elastomeric bearings on reinforced concrete abutments. The abutments are enclosed by a steel sheet

pile ballast wall. There is a concrete apron between the abutments and the ballast walls. As-built drawings of the structure and foundation are not available.

At the East Bridge Abutment, the top of the sheet piles have rotated away from the face of the abutment by 100 to 150 mm over a 2800 mm height. The concrete apron has settled approximately 200 mm at the sheet pile ballast wall and has pulled away from the face of the abutment by 150 mm. The top of the bearing anchor bolts on the abutment have rotated towards the ballast wall.

PWGSC has engaged a bridge engineer to determine if the bridge is safe. Based on the observations, the bridge engineer has closed the bridge pending an investigation. The Bridge engineer has requested PWGSC engage a geotechnical consultant to provide the work listed below.

Scope of Work:

Provide a geotechnical program of work to investigate the possible causes of the problems encountered at the East Abutment and determine whether the East Abutment has stabilized.

3.3 EVALUATION AND RATING

1. Proposals that are responsive (i.e. which meet all the mandatory requirements set out in the Request for Standing Offer) will be reviewed, evaluated and rated by a PWGSC Evaluation Board. In the first instance, price envelopes will remain sealed and only the technical components of the proposal will be evaluated in accordance with the following to establish Technical Ratings:

Criterion	Weight Factor	Rating	Weighted Rating
Comprehension of the Scope of Services	1.5	0-10	0 - 15
Team Approach / Management of Services	1.5	0 - 10	0 – 15
Past Experience	1.5	0 - 10	0 – 15
Senior Personnel Expertise and Experience	1.5	0 - 10	0 – 15
Project Personnel Expertise and Experience	1.5	0 - 10	0 – 15
Hypothetical Projects	2.5	0 - 10	0 - 25
Total	10.0		0-100

Generic Evaluation Table

The PWGSC Evaluation Board will evaluate the strengths and weaknesses of the Proponent's response to the evaluation criteria and will rate each criterion between 0 and 10 using the generic evaluation table below:

	INADEQUATE	WEAK	ADEQUATE	FULLY SATISFACTORY	STRONG
0 point	2 points	4 points	6 points	8 points	10 points
Did not submit information which could be evaluated.	Lacks complete or almost complete understanding of the requirements.	Has some understanding of the requirements but lacks adequate understanding in some areas of the requirements.	Demonstrates a good understanding of the requirements.	Demonstrates a very good understanding of the requirements.	Demonstrates expert understanding of the requirements.
	Weaknesses cannot be corrected.	Generally doubtful that weaknesses can be corrected.	Weaknesses can be easily corrected.	No significant weaknesses.	No apparent weaknesses.
	Proponent lacks qualifications and experience.	Proponent does not have minimum qualifications and experience.	Proponent has minimum 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 all 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 project's needs.	Sample projects generally not related to this project's needs.	Sample projects generally related to this project's needs.	Sample projects directly related to this project's needs.	Leads in sample projects directly related to this project's needs.
	Extremely poor, insufficient to meet performance requirements.	Little capability to meet performance requirements.	Minimum acceptable capability, should meet minimum performance.	Satisfactory capability, should ensure effective results.	Superior capability, should ensure very effective results.

To be considered further, proponents **must** achieve a minimum weighted rating of fifty (50) out of the hundred (100) points available for the rated technical criteria as specified above.

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

SRE 4 PRICE OF SERVICES

All price proposal envelopes corresponding to responsive proposals which have achieved the pass mark of fifty (50) points are opened 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 will receive no further consideration.

The remaining price proposals are rated as follows:

1. The lowest price proposal receives a Price Rating of 100
2. 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.
3. 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 is 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	70	0 - 70
Price Rating	0 - 100	30	0 - 30
Total Score		100	0 - 100

The proposals will be ranked in order from the highest to the lowest using the total score (technical plus price). The proponents submitting the highest ranked proposals will be recommended for issuance of a standing offer. In the case of a tie, the Proponent submitting the lower price for the services will be selected. Canada reserves the right to issue up to three (3) Standing Offers.

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 "Submission of Proposals", General Instructions to Proponents (GI 10).

- | | |
|---|---|
| <input type="checkbox"/> Declaration / Certifications Form | - completed and signed form provided in Appendix A |
| <input type="checkbox"/> Code of Conduct Certifications/Consent to a Criminal Record Verification | - list of directors and consent form for each individual named in the list, see Appendix A - Annex AA |
| <input type="checkbox"/> Team Identification Form | - see typical format in Appendix C |
| <input type="checkbox"/> Proposal | - one (1) original + five (5) copies |
| <input type="checkbox"/> Front page of Request for Standing Offer | - completed and signed |
| <input type="checkbox"/> Front page of Revision(s) to a Request for Standing Offer | - completed and signed |

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In a separate envelope:

☐ Price Proposal form

- one (1) completed and signed form provided in
Appendix B submitted in a separate envelope

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APPENDIX A

DECLARATION/CERTIFICATIONS FORM

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Declaration / Certifications Form (page 1 of 5)

Name of Proponent:

Street Address:

Mailing Address (if different than street address)

City:

City:

Prov./Terr./State:

Prov./Terr./State:

Postal/ZIP Code:

Postal/ZIP Code:

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/ _____

Prof. Engineers:

Other Professionals _____

Technical Support _____

Other _____

Declaration / Certifications Form (page 2 of 5)

Federal Contractors Program for Employment Equity - Certification

I, the Proponent, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a proposal non-responsive, or may set-aside a Standing Offer, or will declare a consultant in default, if a certification is found to be untrue, whether during the proposal evaluation period, during the Standing Offer period, or during the contract period. Canada will have the right to ask for additional information to verify the Proponent's certifications. Failure to comply with such request by Canada will also render the proposal non-responsive, may result in the Standing Offer set-aside, or will constitute a default under the contract.

For further information on the Federal Contractors Program for Employment Equity visit [HRSDC-Labour's website](#).

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

Complete both A and B.

A. Check one of the following:

- ☐ A1. The Proponent certifies having no work force in Canada.
- ☐ A2. The Proponent certifies being a public sector employer.
- ☐ A3. The Proponent certifies being a federally regulated employer being subject to the Employment Equity Act.
- ☐ A4. The Proponent certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).
- ☐ A5. The Proponent certifies having a combined workforce in Canada of 100 or more employees; and
 - ☐ A5.1. The Proponent certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with HRSDC-Labour.

OR

- ☐ A5.2. The Proponent certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to HRSDC-Labour. As this is a condition to issuance of a standing offer, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to HRSDC-Labour.

B. Check only one of the following:

- ☐ B1. The Proponent is not a Joint Venture.

OR

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

Declaration / Certifications Form (page 3 of 5)

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 with FPS, proponents must provide the information required below before the issuance of a standing offer.

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

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

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

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

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Proponent a FPS in receipt of a pension? YES () NO ()

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

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

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

Declaration / Certifications Form (page 4 of 5)**Work Force Adjustment Directive**

Is the Proponent a FPS who received a lump sum payment pursuant to the terms of a Work Force Adjustment Directive? YES () NO ()

If so, the Proponent must provide the following information:

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

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including the Goods and Services Tax or Harmonized Sales Tax.

Declaration / Certifications Form (page 5 of 5)

Name of Proponent:

This Declaration forms part of the offer.

Education, Professional Accreditation and Experience:

All statements made with regard to the education, professional accreditation and the experience of individuals proposed for providing services under the Standing Offer are accurate and factual, and we are aware that Canada reserves the right to verify any information provided in this regard and that untrue statements may result in the proposal being declared non-responsive. Should a verification by Canada disclose untrue statements, Canada shall have the right to treat any standing offer resulting from this solicitation as being in default and to terminate it accordingly.

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.

Name (print): _____**Capacity:** _____**Signature** _____**Telephone Number:** () _____**Fax Number:** () _____**E-mail:** _____**Date:** _____

During proposal evaluation period, PWGSC contact will be with the above named person.

This Appendix A should be completed and submitted with the proposal, but may be submitted afterwards as follows: if any of these required certifications is not completed and submitted with the proposal, the Contracting Authority will so inform the Proponent and provide the Proponent with a time frame within

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which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the proposal non-responsive.

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APPENDIX A

ANNEX AA

CODE OF CONDUCT CERTIFICATIONS

(see attached)

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

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APPENDIX B

PRICE PROPOSAL FORM

APPENDIX B - PRICE PROPOSAL

INSTRUCTIONS

1. Complete the price proposal form and submit in a separate sealed envelope, with the Proponent's name, Solicitation Number, and "Price Proposal Form" typed on the outside.
2. Price proposals are not to include HST and will be evaluated in Canadian Dollars.
3. Proponents are not to alter or add information to the form.
4. In order to ensure that fair and competitive hourly rates are received, the following requirements must be strictly adhered to: Proponents **must** provide an hourly rate for **each** category of personnel. In the event that the firm consists of fewer personnel than listed, provide an hourly rate that corresponds with each position listed. The hourly rate provided must be equal to or greater than the hourly rate provided for the position listed below it. For example, if the firm does not have an Intermediate Personnel, the hourly rate provided must be equal to or greater than the hourly rate provided for the Junior Personnel. **There must be neither no \$0 value nor NIL value. Failure to insert an hourly rate for each category of personnel will render your proposal non-responsive.**
5. In order to ensure that fair and competitive unit prices are received, the following requirements must be strictly adhered to: Proponents **must** provide a unit price for **each** category of service. **There must be neither no \$0 value nor NIL value. Failure to insert a unit price for each category of service will render your proposal non-responsive.**
6. The Fixed Hourly Rates and Unit Prices shall govern in establishing the Total Extended Amounts and/or Subtotals. Any arithmetical errors in this Appendix will be corrected by Canada
7. The hourly rates identified for all disciplines, including sub-consultants and specialists and unit prices for all laboratory services will be for the duration of the Standing Offer.
8. Fixed hourly rates for each category are to be provided in column B and are then multiplied by the weight factor in column A (provided for evaluation purpose only).
9. **Calculation of Total Evaluated Price**
For this Standing Offer the Total Evaluated Price (Price Proposal) will be established as follows:

$$\begin{array}{l} \text{Labour Category Subtotal} \times 70\% \\ + \text{Laboratory Services Subtotal} \times 30\% \\ \hline \text{Total Evaluated Price} \end{array}$$

ONTARIO REGION

Name of Proponent: _____

Address: _____

1. LABOUR CATEGORY

Category of Personnel	Weight Factor (A)	Fixed Hourly Rate (B)	Total (A X B)
1.1 Project Manager/Principal Engineer	5	\$	\$
1.2 Senior Engineer	20	\$	\$
1.3 Intermediate Engineer	30	\$	\$
1.4 Junior Engineer	15	\$	\$
1.5 Geologist/Hydrogeologist	10	\$	\$
1.6 Technologist	15	\$	\$
1.7 Administrative Support	5	\$	\$
Subtotal for 1. Labour Category	100		\$

2. LABORATORY SERVICES

Category of Service	Unit Price
A. Soils and Aggregates	Cost Per Test
2.1 Standard Proctor (6 in. Test, total 6 tests)	\$
2.2 Sieve Analysis	\$
2.3 Hydrometer Analysis	\$
2.4 Water Content	\$
B. Concrete	Cost Per Report
2.5 Compressive Strength Tests and Reports (Assume 10 test, standard cast cylinder, field report and report)	\$
C. Asphalt	Cost Per Test
2.6 Asphalt Content	\$
2.7 Aggregate Gradation	\$
2.8 Full Marshal Compaction and Bulk Density	\$
2.9 Asphalt Air Voids	\$
D. Equipment Rental – Field Testing	Cost Per Day
3.0 Drilling (Rig) Mobilization and Rental Charges	\$

Solicitation No. - N° de l'invitation

EQ754-131106/A

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

20131106

Amd. No. - N° de la modif.

File No. - N° du dossier

PWL-2-35048

Buyer ID - Id de l'acheteur

pwl042

CCC No./N° CCC - FMS No/ N° VME

Subtotal for 2. Laboratory Services (A+B+C+D)

\$

TOTAL EVALUATED PRICE

	Sub-Total	Weight Factor	Total
1. Labour Category	\$	70	\$
2. Laboratory Services	\$	30	\$
Total Evaluated Price (Price Proposal)			\$

Signature of Consultant or Joint Venture Consultants.

.....
Signature

.....
signature

.....
Capacity

.....
capacity

.....
Signature

.....
signature

.....
Capacity

.....
capacity

END OF PRICE PROPOSAL FORM

Solicitation No. - N° de l'invitation

EQ754-131106/A

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

20131106

Amd. No. - N° de la modif.

File No. - N° du dossier

PWL-2-35048

Buyer ID - Id de l'acheteur

pwl042

CCC No./N° CCC - FMS No/ N° VME

APPENDIX C

TEAM IDENTIFICATION

TEAM IDENTIFICATION**INSTRUCTIONS**

1. Complete the Consultant Team Identification in the format provided below, including the following information for each identified team member of the Consultant Team; Name, Category Personnel and Provincial Professional Licensing Status.
2. Provide short C.V.s for each identified team member. C.V.s should have sufficient detail to explain experience in the respective discipline(s).
3. C.V.s provided under Appendix C - Team Identification, will not form part of the evaluation or page limitation identified under the SRE 3.2 Rated Requirements section, and are to appear under the Appendix C section only.

Please note, the SRE 3.2 Rated Requirements section has a separate requirement which includes the provision of C.V.s for evaluation purposes.

I. Prime Consultant (Proponent): Civil/Geotechnical Engineer**Firm:**

Name

Key Individuals:

1. Name
2. Category of Personnel (i.e. Principal, Senior, Intermediate)
3. Provincial professional Licensing status.
.....
.....

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwl042

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

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

20131106

PWL-2-35048

APPENDIX D

DOING BUSINESS WITH A&E ONTARIO REGION

STANDING OFFER

(see attached)

Solicitation No. - N° de l'invitation

EQ754-131106/A

Amd. No. - N° de la modif.

File No. - N° du dossier

PWL-2-35048

Buyer ID - Id de l'acheteur

pwl042

CCC No./N° CCC - FMS No/ N° VME

APPENDIX E

PERFORMANCE EVALUATION

CONSULTANT PERFORMANCE EVALUATION REPORT FORM

(CPERF)

(see attached)

Solicitation No. - N° de l'invitation

EQ754-131106/A

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pwl042

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

20131106

File No. - N° du dossier

PWL-2-35048

CCC No./N° CCC - FMS No/ N° VME

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 , SELECT - Consultant Performance Evaluation Report (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913-1.pdf>), is used to record the performance.

APPENDIX F

ONTARIO REGION -

GEOGRAPHIC BOUNDARIES BY COUNTY

<u>REGIONS OF ONTARIO</u>			
<u>Central</u>	<u>Eastern</u>	<u>South Western</u>	<u>Northern</u>
		Brant	
Dufferin	Frontenac	Bruce	Algoma
Durham	Hastings	Elgin	Cochrane
Haliburton	Lanark	Essex	Kenora, east of 90° longitude, ETZ
Kawartha Lakes	Leeds and Grenville	Grey	Sudbury
Muskoka	Lennox and Addington	Haldimand	Thunder Bay
Nippising	Prescott and Russell	Halton	Timiskaming
Northumberland	Prince Edward	Waterloo	
Parry Sound	Refrew	Wellington	ETZ = Eastern Time Zone
Peel	Stormont Dundas and Glengarry	Hamilton Wentworth	
Peterborough		Huron	Kenora, west of 90° longitude, CTZ
Simcoe		Ken	Rainy River
Toronto		Lambton	
Victoria		Middlesex	CTZ = Central Time Zone
York		Niagara	
		Oxford	
	excludes the municipality	Perth	
	of Ottawa-Carlton	Manitoulin	

Doing Business with A&E

Ontario Region

Standing Offer

Table of Content:

Section 1.....General

Section 2.....Architectural Design

Section 3.....Landscaping and Site Development

Section 4.....Specification Brief

Section 5.....Marine

Section 6.....Risk Management

Section 7A.....Civil Design

Section 7B.....Bridge Design

Section 7C.....Geotechnical

Section 8.....Structural Design

Section 9.....Mechanical Design

Section 10A..... Electrical Work Procedures

Section 10B..... General Electrical Design

**Section 10C..... General Electrical Design (CSC) Correctional Service
Canada**

Section 11.....Cost Planning and Control

Section 12.....Elemental Cost Analysis

Section 13.....Time Management

Section 14.....Drawing Conversion to Portable Document Format (PDF)

SECTION 1 GENERAL DESIGN, DOCUMENTATION AND SUBMISSION STANDARDS

1.1 Introduction

The purpose of this document is to help the consultants to perform their work while dealing with the Ontario Region of PWGSC. It is to complement the requirements stated in the main body of the RFP or the RFSO, in particular in the Project Brief and the Required Services sections. This document elaborates on specific items that are particular to the Ontario Region but in no way does it supersede the main clauses of the RFP or the RFSO.

The Consultant is responsible to ensure they receive from the PWGSC Project Manager, an updated copy of Appendix D current at the time of the call up on the standing offer.

1.2 Document Management

All project documents are to be electronically distributed to project stakeholders through the use of a commercially available, secure internet, web based browser software application system. Documents must be distributed in pdf format, with an e-mail notification system to stakeholders. Individual pdf files must not exceed 4MB. Version and document control features are required to enable review of previous documents issued. The document system must be managed and operated by the consultant, who shall control secure access rights to project stakeholders identified by the PWGSC Project Manager.

1.3 Sustainability

Use sustainable design principles to achieve a minimum building performance rating of:

1. New construction projects are to meet the standards of LEED Gold.
2. Major renovation projects ($\pm 5M$ of construction cost) are to meet the standards of LEED Silver.
3. Heritage building projects are to meet the standards of "Sustainability Rating System for Heritage Buildings and Sites".
4. For all other projects, the principles of sustainability shall be followed.

Comply with PWGSC- Strategic Framework for Sustainability in Buildings, April 1, 2012.

1.4 Drawings

The drawings are complementary to the specification. They should describe the extent of work. Do not rely on a mandatory site visit to complete the information. Notes such as "verify on site", "as instructed", "to be determined on site by Departmental Representative", will not generate accurate bids and may result in unnecessarily high bid prices. The drawings shall allow the Bidders to bid accurately and calculate all quantities. If quantities are impossible to show (i.e. cracks to be repaired) give a quantity for bid purposes.

Construction drawings should be strictly technical drawings, fully detailed and dimensioned, clearly and accurately drawn, complete with all necessary descriptive notes. On all drawings present the work to be done as clearly as possible. Draw details at sufficient scales to eliminate doubt as to the method of construction, materials and quantities required. Required sheet order: plans; elevations; main sections; and details. Avoid wasted space but ensure that sheets are not overcrowded or difficult to read.

Do not submit blank sheets in progress sets of drawings issued for review.

The terminology used should be consistent throughout the drawings and specification.

Design on a modular basis to take advantage of dimensional standardization and co-ordination.

Drawings have to be in metric only even if the project is to renovate an old building. Any references to imperial units will not be accepted.

Consultants MUST follow the "PWGSC CADD Standards" attached at the end or available electronically at:

- PWGSC's ftp site: <ftp://ftp.pwgsc.gc.ca/rps/Specifications/Drawings/CADD%20Standards/>
- On the web, at: <http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html>
(this document refers to NCR contacts)

When prepared by Consultants, the final drawings (original) shall bear the Professional's seal and signature.

1.5 Standard Drawing Information

PWGSC will provide the following standard items to the consultants with respect to CADD

- AutoCAD format Borders (14 sizes)
- Site legend w/ symbols
- AutoCAD plotting ctb (colour table) files
- Graphic Bar Scales and North Arrow in AutoCAD format
- AutoCAD template files

1.6 Detail / Section numbers

Use the 3-part "bubble" provided in the supplied borders to reference details, sections, etc. The 3-part "bubble" will contain the detail / section number, the number of the drawing where it is required and the number of the drawing where it is detailed. This pattern MUST be adhered to.

1.7 Presentation Requirements

Present drawings in sets comprising the applicable architectural, interior design, structural, mechanical, electrical, landscaping and civil drawings in that order. All drawings shall be of uniform standard size. Print with black lines on white paper. Staple or otherwise bind prints into sets. Where presentations exceed 20 sheets, the drawings for each discipline may be bound separately for convenience and ease of handling.

1.8 Title Sheets

Title sheets may be used at the Consultant's discretion, for design presentations or on large sets of Construction drawings.

1.9 Indices

Provide an index at the front of each set of drawings. Where a large number of sheets are involved, place the index on a title sheet or at the front of each set of the various disciplines. Include drawing indices in the specifications after the Table of Contents.

1.10 Legends

Provide a legend of symbols, abbreviations, references, etc., on the front sheet of each set of drawings or, in large sets of drawings, immediately after the title sheet and index sheets. Coordinate abbreviations and acronyms with PWGSC Section 01 42 13.

1.11 Drawing Notes

Indicate all materials, systems and products on the drawings by means of numbered notes.

Demolition Notes:	note number in a 7mm square box
Construction Notes:	note number in a 7mm diameter circle
Revision Notes:	note number in a 7mm triangle
Assembly Notes:	note number in a 10mm hexagon

adjacent to the appropriate location on the plan, section or detail with an arrow connecting the box, circle, triangle or hexagon to the specific material, system or product indicated on the drawing. Provide a list of drawing notes relating to the sequentially numbered notes on the right hand side of the drawing sheet adjacent to the title block. Minimum text size: 2mm. Do not repeat text that is already in the SACC or specification.

1.12 North Points

On all plans include a north point. Orient all plans in the same direction for easy cross referencing. Wherever possible, lay out plans so that the north point is at the top of the sheet.

1.13 Abbreviation Standards

Use text abbreviations with discretion, to ensure that there will be no misunderstanding on the drawings. Follow abbreviation list provided as part of specification standards from the ftp site. Co-ordinate with PWGSC Section 01 42 13 Abbreviations and Acronyms.

1.14 Drawing Symbols

Follow generally accepted drawing conventions, understandable by the construction trades, if more symbols are required than are provided by PWGSC.

1.15 Drawing Scale

For all drawings, including details, provide a graphic scale for each drawing and detail. PDF files shall be created to full plotted scale.

1.16 As-Built and Record Information

As-built information is received from the Contractor. It contains drawings, specifications, shop drawings, submittals, samples, etc. It is noted as such by the Contractor.

Record drawings and specifications are updated originals prepared by the Consultants based on the information supplied by the Contractor in the as-built.

1.17 Shop Drawing Submittal Log

Fill in and submit the PWGSC Ontario Region Shop Drawing Submittal Log with each application for

payment. Shop Drawing Submittal Log is available in MS Excel from the PWGSC ftp site at:
<ftp://ftp.pwgsc.gc.ca/rps/Specifications/Master%20Schedules%20and%20Small%20Drawings/EXCEL/>

1.18 Bid Documents Format

All bid documents will be submitted by the consultant in the bid document files native electronic format as well as .pdf format, as follows:

PDF Properties:

1. Each pdf file must be of a uniform and standard pdf paper size within the contents of each file.

Drawings:

1. Each drawing is to be converted to a PDF file. 1 drawing per file.
2. The file shall be named with the drawing number and then the title of the drawing from the drawing title block (e.g. A01 - Architectural Cover Page)

Specifications:

1. The complete Project Specification is to be converted to one PDF file, with a pdf page size of 8.5" x 11", portrait orientation.. One (1) PDF per complete project specification, all Divisions. The file shall be named with the project number and then the word Specification (e.g. R.123456.001 Specification).
2. Where tables or schedules within the Specification do not conform to the 8.5" x 11" format, they are to be converted to PDF files of the appropriate sheet size and included in the submission as appendices. Identify such files as appendices in the Specification Table of Contents.
3. Any amendments shall be converted to a PDF file. Text should be converted into one file. Drawings shall be one drawing per PDF file. The name for each text file shall be "Amendment Number #." The name for each amendment drawing file shall be "Amendment Number # - Drawing XXX" (where XXX is the name of the drawing).

Creation of CD/DVDs (when specifically requested):

1. The files above shall be burned onto CD/DVD(s).
2. When the PDFs are burned onto the CD/DVD, folders shall be created. The folders will be "Drawings", "Specifications", and "Amendments". The Plans and Specifications - Table of Contents PDF will reside at the uppermost level with the three folders.
3. CD/DVDs should be labeled with the following information:
 - a) Description from the Drawing Title Block
 - b) Project Number
 - c) Solicitation Number
 - d) "Original Solicitation" OR "Amendment #X" OR "Addenda # X"
 - e) Number of CDs in this grouping (e.g. 1 of 3)

1.19 Principles of PWGSC Contract Documents

PWGSC's contract documents are based on common public procurement principles. PWGSC does not use Canadian Construction Document Committee (CCDC) documents. The terms and conditions are prepared and issued by PWGSC as well as other related bidding and contractual documents.

For information, the clauses are available on the following web sites: SACC at
<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

and the CAD standards at <http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html> . Any questions should be directed to the PWGSC Project Manager.

1.20 Quality Assurance

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

Submissions of the project manual that do not comply with the RFP design and submission requirements, and/or are not compliant to the current codes and standards may be subject to written complaints to the consultant's licensing and accreditation bodies such as the, OAA, AC (formerly RAIC), PEO, CIQS, AATO, OACETT, CSC - Construction Specifications Canada, consultant's liability insurance carrier, etc.

1.21 Fit-up Standards

The design for general-purpose office space accommodation for all Government of Canada departments or agencies is to follow and conform to the latest Fit-Up Standards including the selection of systems, materials, furnishings and equipment. Obtain the latest version of the "Government of Canada Workplace 2.0 Fit-Up Standards" from the PWGSC Project Manager.

Note that the breakdown of the cost estimate at each stage of delivery should reflect the funding accountabilities for the components of an accommodation project as described in the "A3.3 Fit-Up Components and Funding Accountabilities" chart in the "Government of Canada Workplace 2.0 Fit-Up Standards", i.e. Base building cost vs. Fit-Up Standard cost vs. other cost.

1.22 Heritage Value

The Treasury Board Heritage Building Policy states "Departments must manage buildings they administer so as to conserve their heritage character throughout their life cycles." Any modification considered to a Government of Canada building or site should value its architectural character, no matter how old or how new the building or site may be.

For a federal (Government of Canada) building that is designated as classified or recognized by the Federal Heritage Building Review Office (FHBRO), implement the project following a conservation approach based on accepted principles and practices as described in the "Standards and Guidelines for the Conservation of Historic Places in Canada."

1.23 Barrier Free Design for Disabled

Design buildings and grounds to make them accessible and usable by disabled persons, unless otherwise required in the Project Brief. Conform to CAN/CSA-B651-04(R2010), including making buildings and other facilities accessible to persons with a range of physical, sensory and cognitive disabilities. Adhere to specific client requirements as directed, and Correctional Service Canada (CSC) policy on accessibility for CSC projects.

Also conform to Treasury Board of Canada Secretariat Accessibility Standard for Real Property, web link: <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12044§ion=text>

1.24 Minimum Codes and Standards

The most stringent requirements of the following codes and standards shall apply:

National Building Code of Canada.
National Fire Code of Canada.
National Plumbing Code of Canada.
Canada Labour Code Part II (Occupational Safety and Health).
Fire Commissioner of Canada Standards.
Federal Boiler Emission Regulations.
Federal Environment Code of Practices.
PWGSC Federal Office Building Standards.
Treasury Board of Canada Secretariat Standards and Directives.
Canadian Electrical Code.
Canadian Standards Association Specifications, Standards and Guidelines.
ANSI, ASHRAE, ASTM, AWMAC, FM, MPI, TSSA, ULC etc. Standards, Guidelines and Handbooks.
Model National Energy Code of Canada for Buildings.
Provincial Codes, Municipal Codes/By-Laws and Utility Authority Codes.

Additional codes and standards are detailed in the sections for specific disciplines.

1.25 Operating Costs

Operating costs must be kept to a minimum and reflect the projected operating costs in the Cost Plan. This is to be achieved by compliance with the Energy Budget, selection of materials and equipment, requiring the minimum of operating personnel, and building finishes for easy maintenance, etc..

SECTION 2 ARCHITECTURAL DESIGN

2.1 Review

All designs must be reviewed by the Department and conform to the requirements of the Project Brief.

2.2 Principles

The Department expects the Consultant to maintain a high standard of architectural design, based upon recognized contemporary design principles. All design elements, planning, architectural, engineering and landscaping, must be fully co-ordinated, and consistent in adherence to good design principles.

2.3 Economy

Design strictly within the budget and in accordance with sound investment economics and operating and maintenance expenditures.

Design for the optimum ratio of net usable space to outside gross areas.

2.4 Flexibility

Design for maximum flexibility in immediate and future use of space. Where possible, devise a building grid with column spacing, fenestration and service runs suited to flexible interior space arrangements.

2.5 Future Extension

Design for future extension as determined by the Departmental Representative and ensure that permanent spaces, such as service rooms and duct spaces, etc., are sized for future additional capacity.

2.6 Quality

Quality of materials and construction methods shall be commensurate with the type of building and the budget. Avoid experimental materials. Take into account the total life-cycling of the building.

2.7 Regulations

Design shall comply with applicable Federal, Provincial and Municipal regulations and codes. In case of conflict, the most stringent requirements apply.

2.8 Design

The Department expects imaginative design and good aesthetic expression throughout all projects. Design shall be compatible with adjacent buildings, or with the existing building in extension work.

2.9 Required Space

Provide all rooms required to within 10% of the approved areas. Deviation from this requirement may entail redesign.

2.10 Ancillary Space

Provide washrooms, janitor's rooms, furnace rooms, electrical panel and transformer rooms, storage rooms, freight and garbage holding areas, duct spaces and other building service space not specifically listed in the Project Brief, but essential to the efficient operation of the building.

2.11 Fit-up Standards

In accordance with Section 1.

2.12 Heritage Value

In accordance with Section 1.

2.13 Barrier Free Design for Disabled

In accordance with Section 1.

2.14 Colour Schemes

All colour schemes require PWGSC approval. Submit schemes in duplicate well in advance and so as not to delay the work of the Contractor. Colour schemes should include all surfaces and materials to be coloured on site, plus any items provided with a colour finish or texture during prefabrication. Indicate any untreated or natural-finish surfaces contributing to the overall aesthetic appearance of the project. To fully illustrate the scheme, provide PWGSC with actual samples (colour chips, material samples, etc..) of interior finishes that are to be installed. Revise the scheme if necessary to obtain final PWGSC approval. Ensure that the Contractor carries out the approved scheme. One copy of the approved scheme will be retained by PWGSC for verification of the final results on site.

2.15 Codes and Standards

In accordance with Section 1.

SECTION 3 LANDSCAPING AND SITE DEVELOPMENT

3.1 General Design

The general design of the site and the landscaping layout is subject to the overall design requirements covered in the Project Brief.

Although the Department does not require elaborate and costly landscape layouts, the visual appearance of the external environment is considered of functional importance, forming a logical continuation of the building design. Relate all elements to each other, to human scale and to their general surroundings.

Include with concept submission a realistic representation of the proposed site lay-out. Provide cross-sections to indicate the 3-dimensional relationship.

3.2 Existing Features

Preserve existing site features and integrate them with the new site design. This pertains not only to the use of existing trees, shrubs, rock and water, but also includes those elements, vistas, other buildings, outside the property lines which may have influence on the total space composition.

Insure preservation of all useful topsoil and the protection of all areas, grades, watercourses, etc. which should not be interfered with during construction operations.

The use of existing trees must depend on their health, life expectancy and risk of damage during construction. Their root systems, and the immediate grade above, should remain undisturbed. If changes of grade are required close to a tree, provide the proper measures for its continued health.

Obtain copy of "Tree and Shrub Preservation" Section 32 01 90.33 from the NMS Specification System and use as part of project specification.

3.3 Site Layout

Design the site layout simultaneously with that of the building(s) to ensure optimum compatibility. Take into account all services, and areas scheduled for future building expansion, etc.

Use hard and soft landscaping to create desirable space organization, open and close areas, privacy, enclosure, exposure or emphasis of certain site aspects, views, etc. Co-ordinate the character and massing of grading, trees, shrubs, site structures, etc. with that of the building(s) and adjacent property.

Employ water efficient landscaping, maximize open space to reduce heat island effect in keeping with sustainable site guidelines. Take into account climatic factors, orientation, prevailing winds, snow drifting and the microclimate.

Control soil erosion, airborne dust generation and waterway sedimentation during construction activities.

Provide proper access and clearance to suit FCC and local fire regulations.

Face main entrances and main walkways towards the sun (south) to maximize ice- free conditions. This also applies to entrance canopies, balconies, and barrier-free parking.

3.4 Maintenance

Design to assure easy economical maintenance to suit an equipment-oriented maintenance program.

Arrange grading to ensure fast drainage, but avoid steep slopes. If these are inevitable, use a ground cover that reduces maintenance to a minimum. Avoid deep ditches with steep sides.

Where possible arrange planting, screening, berms, etc. to inhibit snow drifting that may occur across walkways, roads and parking areas.

In regions subject to heavy snowfall arrange roads and parking areas to allow maneuvering of fast moving snow plows. Provide storage space for snow beside parking lots.

Allow sufficient room for tractor power mowers, snow removers, etc. to maneuver. Keep grass areas large and simple with no awkward inaccessible corners.

Consider the use of mowing strips adjacent to all buildings, fences, etc. These are paved strips 380 mm wide to accommodate power mower wheels.

Provide adequate watering facilities. Generally hose bibbs, strategically placed, are sufficient for Federal projects. Underground sprinkler systems may only be used where justified by the complexity of the design, importance of the project, drought possibilities, etc. and as approved by the Departmental Representative.

Provide adequate on-site, under-cover storage facilities for maintenance equipment.

3.5 Circulation

Design the site circulation to provide for:

- .1 Pedestrian movement, including the disabled. (wheelchair, walker, scooter. Long white cane, etc.)
- .2 Automobile movement, unloading and parking, convenient highway access.
- .3 Service vehicles, convenient highway access, loading, unloading, turning and short term parking.
- .4 Bicycle parking.
- .5 Public transportation, drop-off and loading zones, when required.

Provide sufficient pedestrian areas to accommodate all traffic during peak circulation periods.

Keep the road system for vehicles to a minimum and avoid unnecessary paving of large areas. Provide visitors parking and barrier-free parking near main entrances, with convenient drop-off zones. Public transportation loading zones should preferably be close to building entrances. Bus traffic, when planned for on the site, should not interfere with peak traffic flow from parking areas.

3.6 Walkways

Walkways, including pedestrian ramps, shall be of non-slip concrete or asphalt, minimum 1500 mm wide; 1800 mm wide where mechanical snow removal equipment is to be used.

At least one walkway should give adequate access for disabled persons to each building. Basically this means that a wheelchair, power wheelchair, scooter, or a person who uses crutches, a walker, a long white cane or a guide dog can travel easily from the street or parking lot right into the building without having to

negotiate raised curbs, steps or steep gradients, etc. Conform to CAN/CSA-B651-04(R2010), Accessible Design for the Built Environment.

Provide ample hard surfacing at building entrances. Consider the use of alternative surfacing such as hard-baked bricks, asphalt, paving blocks, concrete slabs with coloured or textured finishes. Surfaces shall stand up to snow removal operations and de-icing agents.

3.7 Parking

Conform to local zoning ordinances.

Provide adequate parking for staff, visitors and service vehicles, and as required in the Project Brief.

Locate parking areas where they will not detract from the aesthetics of the building and landscaping, but will still be easily accessible and functional. Limit the walking distance to building entrances to 150 m. Up to 250 m may be approved in extreme circumstances. City of Toronto Accessibility Design Guidelines article 1.2.5 Parking, Policy, "Designated accessible parking space(s), whether external or internal, should be provided within 30 m of the main accessible entrance and/or any other accessible entrances." Check local bylaws for the municipality where the project is located.

Avoid large single parking lots. Use landscaped islands, screen planting and trees, providing they do not interfere with driver's vision or with snow removal and storage. Locate walks clear of the overhang of cars parked up to curbs. Use hard surfacing under such overhangs. Provide preferred parking for vanpools and carpools. Provide service areas large enough to maneuver trucks without excessive pavement. Minimize the need for backing-up.

At major bus stops with frequent stops and starts, consider concrete paving the bus stop if the street has asphalt paving.

3.8 Snow Clearing

Design for ease of snow removal. Incorporate adequate snow storage areas, clear of low planting and graded for good run-off. Avoid the use of unnecessary curbs where snowfall is heavy, limit parking lots to 175 cars or less, and not more than 60 m in length, with storage areas at one end and/or on grass covered islands. Where snow storage space is limited, design lots slightly oversize to allow for temporary snow storage. Artificial mounds should not aggravate snow drifting problems, particularly across walks or paved areas.

3.9 Grading and Drainage

Design finished grades to provide positive drainage of all lawns and paved areas, with a minimum of 2% for lawn areas. Allow no drainage of surface water onto neighbouring property unless approved by the Departmental Representative.

Use stormwater design principles for quality and quantity control of stormwater run off and ensure accepted pre-development peak discharges are not exceeded while promoting infiltration.

Treat unpaved slopes steeper than 3:1 (33%) with ground cover, riprap or use retaining walls. Grass is not recommended.

Consider the design value of grading to enhance visual effects and to achieve economy in the use of on-site material, although this may not be the prime consideration. Avoid the need to move large volumes of soil.

On-site material may be used to create visual barriers or mounds, acting as screens for the deflection of wind and noise, and for the guiding of traffic in desired directions. Use mounds only if the site is large enough to permit long naturally blending slopes. Round off the tops and bottoms of all slopes to avoid sharp transitions.

Design for fast drainage of areas where snow will be stockpiled. Direct the drainage towards gutters to minimize the effect of de-icing agents on lawns. Allow no drainage over sidewalks.

Locate ditches, swales and flumes where they will not detract from the visual effect of the site. Where their use or depths would be excessive, provide catchbasins. Design ditches to handle maximum run-off, but make them as shallow as possible for ease of maintenance.

Provide against possible ice blocking of drain/catch basin by having two drains not too far apart, thereby mitigating ponding of water on driveways and parking lots.

3.10 Retaining Walls

Maintain a realistic cost relationship between foundation and above-ground construction of low retaining walls and walls for planters. Consider alternatives such as dry stone walls, concrete cribbing, flat foundation on gravel filled trench. Riprap may be used if compatible with the project.

3.11 Miscellaneous Site Features

Design miscellaneous site features to complement the overall site treatment and relate their design and use of material to the main building(s). Common items are as follows:

Site structures: Co-ordinate the design, location and elevation of all supporting site structures such as transformers, kiosks, gas valves, storage bins for sand, de-icing agents, etc., to ensure compatibility with all project features. Large projects may require storage space for maintenance equipment and covered lunchroom facilities for personnel.

Planters: These may be included on large paved areas near entrances and in courtyards. Where they form part of a permanent structure, specify sufficient insulation to reduce frost penetration from the sides. Provide for a 150 mm layer of clean gravel and drainage holes. Locate holes to avoid straining walls or pavement and specify a geotextile to separate gravel and topsoil.

Fencing and walls: Co-ordinate the design of perimeter fencing, walls, site screens, decorative walls, etc., with the general landscaping treatment.

For ease of grass cutting, avoid use of retaining walls. Consider "sloping green carpet".

Furniture: Cater for public and/or personnel use of the site by provision of seating facilities, litter bins, drinking fountains, etc., as anticipated.

Car heater outlets: These should be inconspicuous and solidly supported. Their location shall not interfere with parking and snow removal. Use only when special permission for their use has been granted.

Signs: Base traffic signs on the "FIP - Federal Identity Program Manual" and the "Canadian Uniform Sign Manual" available from "Roads and Transportation Association of Canada", 875 Carling Avenue, Ottawa, Ontario. Conform to sign requirements for disabled persons. All signs shall be bilingual, simple, easy to read, consistent in mounting heights and not used unnecessarily.

Outdoor lighting: Provide outdoor lighting at strategic points, near entrance steps, walkways, loading ways, parking areas, and at those locations where regular evening traffic can be expected. Refer to the Project Directive for any special requirements for floodlighting, emergency and security lighting, etc. that may be required. Employ light pollution reduction strategies and apply zone specific classifications to determine site lighting criteria for safe light levels.

Flagpoles: Locate in prominent positions clearly visible to the public and generally related to the main entrance - at grade or attached to the face of the building directly above or near the main entrance, preferably inclined at approximately 45° from the wall face or where this is not possible, vertical to the wall face. Flagpoles must be easily accessible to permit operation under all weather conditions, and may require either paved approaches and steps if at grade level, or simple window or wall opening access if mounted on the building and not directly accessible from grade.

Select flagpole size from the following list, as appropriate:

Flagpole	Flagpole Length	Flag Size (NIC)
Free Standing	5 m to 7.750 m	914 mm x 1829 mm
Flagpole	9 m to 10.750 m	1143 mm x 2286 mm
Wall mounted	12.250 m to 13.750 m	1372 mm x 2793 mm
(Vertical)	15.250 m to 16.750 m	1600 mm x 3200 mm
Wall mounted	2.500 m to 3.750 m	914 mm x 1829 mm
(Outrigger, non braced)	4.500 m	1143 mm x 2286 mm

Flags shall not be included in construction contract (NIC).

Use only standard aluminum manufactured products complete with standard non-fouling hardware for ease of operation. Ensure that all flagpoles are properly protected against lightning. Illumination of flags: Not required on non-designated buildings. Designation shall be given by the Under Secretary of State, through Departmental Representative.

Special Features: Any special design features such as fountains, pools, elaborate courtyards, etc., require justification in terms of the project size, importance, prestige value, location and use, etc. and must be approved by the Departmental Representative.

3.12 Fine Artwork

Where fine artwork is planned for the building exterior or to be free-standing on the site, its location and surroundings must be properly and continuously co-ordinated by the Consultant with the Artist. The location of the artwork and the nature of its surroundings, approaches, viewpoints, etc., must achieve the optimum artistic effect. As a general rule, keep the artwork's surroundings simple and inconspicuous.

3.13 Topsoil, Lawns and Planting

Refer to appropriate sections of the PWGSC Ontario Region amended National Master Specification and PWGSC In House Specification Sections 31 23 10, 31 23 11, 31 23 12 and 32 90 00. Copies are available upon request.

Existing site topsoil shall be re-used.

Plant material must be from areas with similar climatic conditions to the site, unless otherwise permitted in writing by the Departmental Representative. Planting plans should incorporate plant types best suited to the site, and most likely to transplant successfully and to give vigorous growth within the second year following transplant. The use of container stock is encouraged.

Avoid using trees for foundation planting, especially trees with long fibrous roots.

3.14 Instant Landscaping

This is preferred, and means basically the special use of plant material to achieve an immediate landscaped effect as follows:

By planting trees and shrubs sufficiently large to guarantee quick establishment and vigorous growth. Do not, however, specify trees of such sizes that cost becomes prohibitive and survival doubtful.

By mass-planting of limited varieties.

By close spacing plant, etc. which can be thinned out later.

By planting fast growing trees in combination with slower growing, more permanent varieties. The faster growing trees may be thinned out or removed in later years when the permanent planting is large enough.

Reduce potable water consumption for landscape irrigation by adopting sustainable site principles such as recycled rainwater, and plant species factor.

SECTION 4 SPECIFICATION BRIEF

4.1 Purpose of Section

The purpose of this document is to state specification policy and to provide a framework, format and reference information to assist the specifier in developing the project specifications. It gives additional detail to the information in the NPMS Specification Brief.

4.2 Definition

A specification is a written instruction describing type and quality of materials, products, equipment and fixtures; quality of workmanship; methods of fabrication, installation and erection; standards, test and code requirements; and specific sizes of materials. By contrast, the construction drawings present quantities of work and materials, dimensions, locations, form and building details, and show the scope of work.

4.3 Legal Status

Specifications are part of the legal contract between the Contractor and the Owner. They provide the basis for accepting or rejecting workmanship or products on site.

4.4 Division 00 - General Instructions to Bidders, General Conditions, Etc.

Read and understand the applicable General Instructions to Bidders, General Conditions and other related Division 00 contract documents listed in 4.14.

The SACC Manual references for Division 00 are available on the internet at:
<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R> or
<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/rese-eng.jsp>

Construction Contract Administration Forms are available at:
http://publiservice-app.tpsgc-pwgsc.gc.ca/forms/text/search_for_forms-e.html
for federal government employees; and

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

See the document entitled “Construction Contract Administration Forms Real Property Contracting”.

4.5 National Master Specification

The National Master Specification (NMS) is a bilingual (English and French) database of master construction specification sections which is owned and managed by PWGSC. It was created in 1975 as a joint effort between several Government of Canada departments and Construction Specifications Canada. The text consists of wording likely to be required for a wide range of construction and/or renovation projects.

In preparing project specifications, the Consultant shall use the latest release of the NMS amended by PWGSC Ontario Region to the maximum extent to which it is applicable, as per PWGSC RPB Real Property Branch Policy on the Use of the National Master Specification NMS 2012 formerly Departmental Policy 039/2001-05-01, TB Minute 732202, subject to the Consultant's overriding responsibility for the final content of the project specification. Use PWGSC Ontario Region amended NMS sections and PWGSC

Ontario Region Master Specifications: Architectural, Structural, Mechanical and Civil Minor Works and In-House specification masters available by copying down from the ftp site. The Consultant shall edit, assign new section numbers, amend, and supplement the PWGSC Ontario Region Amended NMS as the Consultant deems necessary to produce an appropriate project specification free from conflict and ambiguity, i.e. new sections not presently included in the NMS database. The Consultant shall be responsible for the cost of processing the project specifications in NMS Professional Specification Editing Software or MS Word 2010 using the Consultant's own or sub-contracted typing/word processing facilities.

The Consultant shall be responsible for all proofreading. Both the NMS and PWGSC Ontario Region Master Specifications follow CSC/CSI MasterFormat 2012 numbering. As of January 2005, the NMS renumbered the entire database in line with MasterFormat 2004 and now MasterFormat 2012 which uses 6, 8 and 10 digit section numbers instead of the previous 5 digit numbers, consisting of two numbers, a hard or connecting space, two more numbers, a hard or connecting space and two more numbers (for example, 01 11 00 instead of 01110). MasterFormat 2012, 2011, 2010 and 2004 divides the work into 50 divisions instead of the previous 16 divisions. In March 2007 the NMS began including 8 digit section numbers, consisting of two numbers, a hard or connecting space, two more numbers, a hard or connecting space, two more numbers, a period and two more numbers (for example, 01 11 00.01).

The Consultant is responsible for obtaining from any authorized supplier, the NMS User's Guide, and an updated version of the NMS specification sections that the Consultant requires in preparing the project specification. Use of the NMS system shall not relieve the Consultant of the responsibility for conforming to the approved time schedule.

4.6 Regional Guide Specifications

The Centre of Expertise, in some regions, maintains abridged versions of some NMS specifications and a number of other short form guide specifications for materials and equipment not covered by the NMS. These are available from the regional Specifications Offices.

The Consultant shall obtain the region's amended version of Division 01, which also includes requirements peculiar to the Region. The Consultant shall ensure that the Regional requirements of Division 01 sections appropriate to the project are incorporated into the appropriate NMS Division 01 sections. The PWGSC amended Division 01 sections on the ftp site already contain these revisions. Other regional abridged and short form specifications may be used at the Consultant's or the department's option. These are available on the ftp site.

As in the case with the NMS, the Consultant shall be entirely responsible for project specification accuracy, applicability of content, completeness, and correctness, whether or not prepared using the abridged or short form guide specifications referred to herein. This includes using reference standards designations, dates, titles and technical content current as of the date of bidding. Consult the various standards writing organizations web sites.

4.7 Specification Organization

Section Titles, Numbers and Format: Since its inception, the NMS structure has been and continues to be based on the "MasterFormat 2012" Master List of Section Titles and Numbers and SectionFormat 2008 which are jointly produced by the Construction Specifications Institution of the United States and Construction Specifications Canada. The 2012 NMS is currently based on MasterFormat 2012.(50 Divisions, 6 and 8 digit Section Numbers).

Type of Section: Narrowscope sections describing single units of work are preferred for more complex work; Broadscope sections may be more suitable for less complex work.

Format: Use the NMS wide page or 1/3 - 2/3 format consistently throughout the specification.

4.8 Specifying Materials

The practice of specifying actual brand names, trade names, model numbers, etc., is against departmental policy except for very special circumstances. Some NMS sections incorporate trade names. For PWGSC delete the trade names from the NMS. The method of specifying materials and the use of trade names shall be as stated hereunder, and in the following order of preference:

- Specify by using recognized standards such as those produced by CGA, CGSB, CSA, and ULC, or by trade associations such as AWI/AWMAC/WI, CRCA, MPI and TTMAC. Use Canadian standards wherever possible.
- Where CGSB Qualified Product Lists are available that identify materials that meet requirements of relevant CGSB Standards, specify to restrict supply of materials to those on such lists.
- Current lists are available from: Canadian General Standards Board Sales Centre,
 - OTTAWA, Ontario K1A 1G6
 - Telephone: (613) 941-8703
 - Fax: (613) 941-8705
- Where no standards exist, specify by a non-restrictive, non-trade name "prescription" specification or by a "required performance" specification.
- Where no standards exist and where a suitable non-restrictive, non-trade name "prescription" specification or a "required performance" specification cannot be developed, specify by trade name. Include all trade names available under WTO, NAFTA and other trade agreements, of materials acceptable for the purpose intended, and in the case of equipment, identify by model number. The name, telephone number and web site of the manufacturer and distributor must also be included.
- Obtain written approval from the Departmental Representative's designated PWGSC Project Manager before: adding or deleting from list of trade names specified in NMS sections or PWGSC master specifications; specifying trade names in lieu of "prescription" or "performance" method used in NMS sections; or specifying trade names when writing "custom" (not NMS) sections.

Additionally, use trade names:

- Where only one specific material will fulfill the exact requirements of the project.
- Where specific materials are required to match existing materials.
- On projects of a special nature due to an unusual function or timing requirement such as emergency repairs.

List all trade names of materials acceptable for the purpose and make reference to the Instructions to Bidders for the method of approving alternative materials. Where trade names are specified in an 'Acceptable material' sub-paragraph following the complete generic performance criteria specification, list all available WTO, NAFTA and other trade agreements (not just Canadian) manufacturer's, their model numbers, the distributors and the complete telephone numbers including area code, fax number and website.

The Consultant shall read and apply the trade agreement clauses applicable to the project which are listed in the NAFTA article 1007 Technical Specifications, the WTO article VI Technical Specifications, and in the Agreement on Internal Trade Chapter 4 - General Rules Article 401: Reciprocal Non-Discrimination.

On certain projects, trade names or manufacturers' numbers may be included in the Hardware Section, as specifically instructed in writing by the RCMP Security Engineering Branch or Correctional Service Canada. Use the following format as a sub paragraph following the performance criteria paragraphs. Set up trade name acceptable material specifications as follows:

Acceptable Material:

1. ABC Co. Model [], manufactured by 123 Inc. 416-555-1234 fax 416-555-2234 www.123.com, distributed by 456 Inc 416-555-5678 fax 416-555-5566 www.456.com.
2. DEF Co. Model [], manufactured by 123 Inc. 416-555-1234 fax 416-555-2234 www.123.com, distributed by 456 Inc 416-555-5678 fax 416-555-5566 www.456.com.
3. GHI Co. Model [], manufactured by 123 Inc. 416-555-1234 fax 416-555-2234 www.123.com, distributed by 456 Inc 416-555-5678 fax 416-555-5566 www.456.com.
4. Alternative Materials: Approved by amendment in accordance with Instructions to Bidders. (Or instead of this wording with each list of trade names, include the following in Part 1 of Specification Sections in which trade names appear "Acceptable Materials: Where materials are specified by trade name refer to the General Instructions to Bidders for procedure to be followed in applying for approval; SACC Manual Clause ID R2410T for G14 Approval of Alternative Materials, or, SACC Manual Clause ID R2710T for G16 Approval of Alternative Materials.")

The reference to the General Instructions to Bidders in the above examples is necessary to remove any suggestion of partiality and to ensure that all suppliers are aware of the provision for alternative proposals during the tendering period. Do not use such phrases as "or equal", "similar to", "equivalent to", "to match" to provide for alternative materials. Use language identified in the NMS User's Guide.

Identify material as in product literature. Specific types and model numbers are required.

Do not use variations on above methods of specifying by trade name. One example is use of the phrase "Acceptable Manufacturers".

While this establishes the names of manufacturers who are acceptable it does not ensure that the actual material involved will be acceptable. Moreover, it does not allow for competition because there is no tie-in with the Instructions to Bidders which deal only with alternative "materials".

4.9 Standards

The following is a partial list of internet websites that may be used to check for the most current publications of standards that might be referenced in the construction specification document.

AA: www.aluminum.org
AAMA: www.aamanet.org
AMCA: www.amca.org
ANSI: www.ansi.org
API: www.techstreet.com/info/api.html#hist
ARI: www.ari.org
ASHRAE: www.ashrae.org
ASME: www.asme.org
ASTM: www.astm.org
AWMAC: www.awmac.com
BIFMA: www.bifma.com
CGA: www.cga.ca
CGSB: www.pwgsc.gc.ca/cgsb/home/estore-e.html
CRCA: www.roofingcanada.com
CSA: www.csa.ca
CSDMA: www.csdma.org
EIA: www.eia.org
IEEE: www.ieee.ca

ISA: www.isa.org
ISO: www.iso.ch
OPSS and OPSD: <http://www.raqsa.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage>
MIA: www.marble-institute.com
MPI: www.specifypaint.com
NAAMM: www.naamm.org
NEMA: www.nema.org/
NFPA: www.nfpa.org/catalog/catalog_home.asp?cookie%5Ftest=1
NLGA: www.nlga.org
NSSN: www.nssnorg
SAE: www.sae.org
SCC: www.scc.ca/indexe.html
SMACNA: www.smacna.org
SSPC: www.sspc.org
TIA: www.tiaonline.org
TTMAC: www.ttmac.com
ULC: www.ulc.ca/standards
UL: www.ul.com

General reference of standards: www.cssinfo.com/search.html and www.techstreet.com

For metal manufacturers: www.retailsource.com/index.html

For other website addresses of industry trade and manufacturer associations, use internet advanced searches.

Standards within NMS sections are not always the most current. The responsibility to ensure that the latest standards current as of the date of bidding are used remains the responsibility of the consultant; include current standard designation, date, title and technical content.

The NMS Secretariat can also be reached on the web at www.nms-ddn.ca

4.10 Canadian Materials

Specify Canadian materials to the fullest extent procurable, consistent with proper economy and the expeditious carrying out of the work. Consider km from raw material source and fabricated product source to project. Coordinate with latest LEED and Green Globes requirements, the PWGSC Green Policy and any client's green policy.

4.11 Cash Allowances

Construction contract documents should be complete and contain all of the requirements for contractual work. Cash allowances are to be used only under exceptional circumstances (i.e. utility companies) where no other method of specifying is appropriate. Obtain the Departmental Representative's designated PWGSC Project Manager's approval to use cash allowances. Use Section 01 21 00 Allowances (formerly section 01210 in MasterFormat 1995) of the NMS to specify cash allowances.

Refer to Section 6 Risk Management and Sections 11 and 12 Cost Planning and Control.

4.12 Extended Warranties

It is the policy of PWGSC's Real Property Contracting Directorate (RPCD) to avoid extending warranties more than 24 months. Where it is necessary to extend the twelve month warranty period provided for in the General Conditions of the Contract, use the following wording in Part 1 of the applicable technical sections, under the heading "Warranty":

- "For the work of this Section [] the 12 months warranty period prescribed in General Conditions GC3.13 Warranty and Rectification of Defects in Work is extended to 24 months."
- Where the extended warranty is intended to apply to a particular part of a specification section modify the above as follows: "For [insulating glass units] the 12 month ... [] months."

Parts of the work for which extended warranties may be required are those, such as roofing and waterproofing, in which, based on past performance, defects are likely to appear after the twelve month warranty period provided for in the General Conditions.

4.13 Terminology

Use the term "Departmental Representative" instead of PWGSC, Engineer, Owner, Consultant or Architect. Departmental Representative means the officer or employee of Her Majesty who is designated pursuant to the Bid and Acceptance Form and includes a person specially authorized by the Departmental Representative to perform, on the Departmental Representative's behalf, any of the Departmental Representative's functions under the contract and is so designated in writing to the Contractor. Wherever options: [Engineer], [Architect], [Consultant], [Owner], [Design Builder], [Departmental Representative] appears in NMS Sections, select the words "Departmental Representative". Use metric units.

The terminology used shall be consistent throughout the drawings and specifications.

4.14 Specification Documentation

Front and Back Cover: by Department.

Amendments (if required): by Consultant. Department to provide format, and to sign and distribute.

Special amendments: by Department, copies of the current special amendments are available from the regional Specifications Section.

Instructions to Bidders: by Department.

Bid and Acceptance Form: by Department.

Standard Construction Contract Documents for Major Works: by Department, consisting of:

General Instructions to Bidders, SACC Manual Clause ID R2710T

Bid and Acceptance Form,

GC1 General Provisions, SACC Manual Clause ID R2810D

GC2 Administration of the Contract, SACC Manual Clause ID R2820D

GC3 Execution and Control of the Work, SACC Manual Clause ID R2830D

GC4 Protective Measures, SACC Manual Clause ID R2840D

GC5 Terms of Payment, SACC Manual Clause ID R2850D

GC6 Delays and Changes in the Work, SACC Manual Clause ID R2860D

GC7 Default, Suspension or Termination of the Contract, SACC Manual Clause ID R2870D

GC8 Dispute Resolution – Arbitration (Generally for Contracts between \$100,000 and \$5,000,000), SACC Manual Clause ID R2880D
GC8 Dispute Resolution – Mediation (Generally for Contracts greater than \$5,000,000), SACC Manual Clause ID R2882D
GC9 Contract Security, SACC Manual Clause ID R2890D
GC10 Insurance, SACC Manual Clause ID R2900D
Insurance Terms, SACC Manual Clause ID R2910D
Fair Wages and Hours of Labour - Labour Conditions, SACC Manual Clause ID R2940D (formerly R0203D Labour Conditions "D")

Allowable Costs for Contract Changes Under GC6.4.1, SACC Manual Clause ID R2950D
and for Minor Works: by Department, consisting of:

General Instructions to Bidders under \$100,000, SACC Manual Clause ID R2410T
Bid and Acceptance Form,
GC1 General Provisions, SACC Manual Clause ID R2810D
GC2 Administration of the Contract, SACC Manual Clause ID R2820D
GC3 Execution and Control of the Work, SACC Manual Clause ID R2830D
GC4 Protective Measures, SACC Manual Clause ID R2840D
GC5 Terms of Payment under \$100,000, SACC Manual Clause ID R2550D
GC6 Delays and Changes in the Work, SACC Manual Clause ID R2860D
GC7 Default, Suspension or Termination of the Contract, SACC Manual Clause ID R2870D
GC8 Dispute Resolution (Generally for Contracts under \$100,000), SACC Manual Clause ID R2884D
GC9 Insurance under \$100,000, SACC Manual Clause ID R2590D
Fair Wages and Hours of Labour - Labour Conditions SACC Manual Clause ID R2940D (formerly R0203D Labour Conditions "D")
Allowable Costs for Contract Changes Under GC6.4.1, SACC Manual Clause ID R2950D

The SACC Manual references for Division 00 are available on the internet at <http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/rqqr.do?lang+eng&sec0=5&sec1=R>

Documents listed are incorporated by reference only. The SACC Manual references for Division 00 are available on the internet as specified in clause 4.4.

New Terms:

- The term "Canada" shall henceforth be used in place of "Her Majesty", "Minister" and "Engineer".
- The term "Departmental Representative" is defined as the person exercising the roles and attributes of Canada under the contract and replaces the term "Engineer".
- The term "Certificate of Substantial Performance" replaces the term "Interim Certificate of Completion".
- The term "Certificate of Completion" replaces "Final Certificate of Completion".

List of Contents, Index of Specification and Divisions 01 to 50 (MasterFormat 2012) (formerly 01 to 16 under MasterFormat 95) and Drawings: by Consultant based on attached examples.

4.15 Typing Format

Refer to the NMS for approved wide page and 1/3-2/3 page format and numbering method. Use consistent format throughout the project specification. Print on 216 mm x 280 mm (8-1/2" x 11") white bond paper, 11 or 12 point TT Courier New font. Do not use smaller fonts as they are not legible.

Every page shall have the Project Number, the Section title, the six digit Section number, the page number and the project date. Obtain sample from the specification reviewer before proceeding with specifications. The header and/or footer shall not show the consultant's name and address, the project title or the project street address.

The Consultant shall hand over specifications in both hard paper copy and soft electronic copy compatible with **NMSEdit Professional version 3.00.01G** or **MS Word 2010** and **PDF** on CD/DVD/USB/ftp of the project specifications, title page, amendments, etc. Verify the software version currently in use at PWGSC on award of consulting contract. Submit small drawings, i.e. abbreviations, room, colour, door and hardware schedules, notes, unit price tables when applicable, etc. in MS Excel/MS Word or Lotus 123 as per PWGSC Ontario Region electronic masters.

4.16 FTP File Transfer Protocol

PWGSC Ontario Region master specifications and PWGSC Ontario Region amended NMS sections are available to copy to your computer from our ftp site at **ftp://ftp.pwgsc.gc.ca/** Navigate through folders:

- **rps/Specifications /Master Specifications/NMSEdit Professional Master Specs/** or
- **rps/Specifications /Master Specifications/RTF Master Specs** or
- **rps/Specifications /Master Specifications/PDF Master Specs.**

Copy contents of the NMSEdit Professional or RTF Master Specifications folder to your computer. These master specifications are to be used to create your project specification document.

4.17 Printing and Binding

The Department is responsible for printing and binding. Provide Department with one sided, camera ready paper original of specification. In NMS Professional with 11 point font, use binding margins 0.75 Left and 0.75 right and page width of 6.74. With 12 point font use binding margins 0.50 Left and 0.50 right. Ensure pdf files have the correct binding margins for two sided printing.

4.18 Bidding Information

Instructions to Bidders: Provide Department with a list of significant trades including costs. The Department will then determine which trades, if any, will be tendered through the Bid Depository.

Bid and Acceptance Form: Provide Department with a list of unit, separate, and alternative prices to be included.

Amendments: Provide Department with amendment in Departmental format in MS Word and pdf. The term Addenda was discontinued in June 2007. This terminology is currently under review.

4.19 PWGSC Ontario Region Master Specifications

One electronic copy of each applicable PWGSC section will be provided by PWGSC, Ontario Region, by ftp site. The PWGSC Ontario Region Master Specifications and Ontario Region amended NMS master specifications are available by copying/downloading from **ftp.pwgsc.gc.ca/rps/specifications**. These .spp specifications are only compatible with **NMSEdit Professional v3.00.01G** or later specification processing software and the **rtf** version for **MS Word** is somewhat compatible with other word processing software. Verify software version currently in use at PWGSC on award of consulting contract. Masters are also available in **pdf** on the ftp site.

PWGSC Ontario Region will supply small drawing masters, i.e., abbreviations, room, colour, door and hardware schedules, notes, etc. in Lotus 123 and MS Excel/Word.

Contact PWGSC Ontario Region, Senior Specification Officer, Cathy Ferren-Palmer at 416-512-5971 or by email at Cathy.Ferren-Palmer@pwgsc-tpsgc.gc.ca or Dan Covey at 416-512-5942 or by email at Dan.Covey@pwgsc-tpsgc.gc.ca. Files are stored in NMS Professional specification writing software, rtf, pdf, and are not available in any other word processing formats. You can save the specifications in other formats but you must submit your projects specifications to PWGSC Ontario Region in file formats compatible with NMS Professional as a *.spp file, rtf or MS Word doc/docx. You can download the PWGSC specification masters from the ftp site specified in 4.16 above.

4.20 Fixed/Stipulated Price Contract - Lump Sum Contract

Use the 'Bid and Acceptance Form - Lump Sum'. Delete all "Measurement for Payment", "Measurement Procedures" and "Payment Procedures" paragraphs from Heavy Civil Engineering sections of NMS, if such sections are used with other sections of NMS for Lump Sum Contracts.

4.21 Unit Price Contract

Use the 'Bid and Acceptance Form - Unit Price'. The majority of Heavy Civil engineering projects are tendered as Unit Price Contracts. To accommodate this, the Heavy Civil sections of the NMS include unit price measurements under Part one of each section in "Measurement Procedures".

The remaining sections of the NMS and PWGSC Ontario Region in-house masters are written for fixed price contracts and therefore do not include "Measurement Procedures" clauses. When combining both systems in a project, ensure only one method of payment is specified.

Unless otherwise instructed by the Departmental Representative's designated PWGSC Project Manager, contracts are written for heavy civil engineering are written on the Unit Price basis and Payment Procedures paragraphs apply. Add the Measurement Procedures paragraphs to the remaining sections when combining with Heavy Civil Engineering sections.

4.22 Combined Lump Sum and Unit Price Contract

Use the 'Bid and Acceptance Form - Combined Price' when a portion of the work involves unit prices. The unit price table should only be used for labour, tooling or materials when the quantity cannot be accurately determined prior to execution of the work. The unit price table is not to be used to obtain a cost breakdown for lump sum work.

4.23 Fire Protection Policies and Standards

Consult and comply with the Federal Fire Protection and Standards and Other Documents as published by Human Resources and Skills Development Canada. Documents can be found at:
http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/index.shtml

4.24 Designated Substances

For existing buildings and all sites, include the Designated Substances Survey report results in Division 01. Edit the project site conditions list extensively in Section 01 35 29.06. Save the Designated Substances Survey as a separate pdf. If hardcopy is included in the project manual, bind into the specification as an appendix. This will satisfy the requirements of the Occupational Health and Safety Act and Regulations for

Construction Projects, Revised Statutes of Ontario 1990, Chapter O.1 as amended, O. Reg. 213/91 as amended and O. Reg. 490/09, Designated Substances.

4.25 WHMIS

Comply with the requirements of the Workplace Hazardous Materials Information Systems (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and the provision of material safety data sheets acceptable to Labour Canada.

4.26 PCB Disposal

Comply with Ontario Regulation 309. Use PWGSC amended NMS specification Section 02 84 00 Management of Toxic Waste.

4.27 Environmental Requirements

Comply with Federal and Provincial Acts, Codes, Regulations, Guidelines and Codes of Practice including but not limited to:

- CEPA - Canadian Environmental Protection Act 1988.
- Federal Halocarbon Regulations 2003 and EPAM.
- Guidelines for Emissions from Commercial/Industrial Boilers and Process Heaters; Code of Practice for the Reduction of CFC Emissions from Refrigeration and Air Conditioning Systems 1990; New Source Performance Standards for Stationary Combustion Turbines 1990; CEPA Guidelines for Storage Tanks Containing Petroleum Products 1992; CCME Code of Practice for UST Systems Containing Petroleum Products 1989.
- FA - Fisheries Act.
- TDGA - Transportation of Dangerous Goods Act.
- NWPA - Navigable Waters Protection Act.
- MBCA - Migratory Birds Convention Act.
- PCPA - Pest Control Products Act.
- IRIA - International River Improvements Act.
- ECOLOGO - Environment Canada, Environmental Choice Program, Guidelines and Certified Products Lists.

4.28 Waste Disposal

Comply with waste reduction plans, recycling, reuse, sale to reuse stores, etc. as specified in PWGSC Ontario Region masters. Co-ordinate section 01 11 01 with 02 42 92 in MasterFormat 2012 for minor works and sections 01 74 20 etc. in MasterFormat 2012 with 02 42 92, 02 42 93 and 02 41 Series and 02 42 Series sections in MasterFormat 2012 for major works.

Use deconstruction rather than demolition to the maximum extent possible. The goal is to divert 90 to 95% of deconstruction, demolition and construction waste from landfill. Carefully deconstructed items shall be reused, recycled, sold to reuse stores, factory refurbished, etc. in accordance with the waste reduction workplan.

Specify as many details as possible of the waste reduction workplan in the Contract Documents. Do not leave it up to the Contractor to decide. Where the destination of products is known, specify where the material is going with name, complete street address, phone number and email address. Refer to PWGSC Ontario Region Sections 02 41 19 and 02 42 92 Deconstruction of Structures for detailed deconstruction specs, and Section 02 42 93 Deconstruction and Waste Products Workplan Summary.

4.29 Door Hardware

Door hardware shall be specified and scheduled using the ANSI/BHMA numbers and symbols for type, grade, function, finish, etc. in accordance with PWGSC specifications, NMS specifications, and the Door and Hardware Institute - DHI "Sequence and Format for the Hardware Schedule, June 1984". Use the Lotus 123 or MS Excel/Word small drawing files listed above. Other formats WILL NOT be accepted. Project files must be compatible with our storage and retrieval systems such as DM/EDRM.

Do not use trade names and/or manufacturer's model numbers in the hardware specifications or schedules unless directed to do so IN WRITING by the Departmental Representative for specialty hardware items.

4.30 Epoxy Coatings

Use PWGSC Ontario Region Section 09 96 00 for all epoxy and urethane floor, wall and ceiling coatings.

4.31 Painting

Specify paints using the MPI - Master Painters Institute, Architectural Painting Specification Manual, latest edition plus amendments.

Lead paint: use PWGSC amended NMS Sections 02 83 10, 02 83 11, 02 83 12, 02 83 15 or 02 83 20.

Repainting of heavy civil structures/bridges, etc., use Section 09 97 17 with MOT and SSPC/NACE standards.

4.32 Sealants

Use PWGSC Section 07 90 00 Joint Sealing and Lotus 123 or MS Excel spreadsheet. Specify Environmental Choice Program, Ecologo sealants. Use SWRI validated sealants to the maximum extent possible.

4.33 Asbestos Abatement

Comply with Ontario Regulations 278/05 for asbestos abatement and Regulation 309 to transport, deliver and deposit asbestos waste. Use PWGSC amended NMS Sections 02 82 00.01, 02 82 01.02 and 02 82 00.03 as required.

4.34 Projects with a 33%, 66% and 100% Submission

33% Submission: submit hard copy to Departmental Representative for:

- List of Contents for all divisions and sections in this project.

66% Submission: submit hard copy and electronic copy to the Departmental Representative for:

- List of Contents for all divisions, Division 01 sections and a rough edit of specialty sections, such as, Asbestos Abatement, Guano Removal, Removal and Disposal of Underground Fuel Oil Tanks, Lead Paint Removal, Finish Hardware, Epoxy Flooring and Automatic Controls.
- One hard copy and one pdf of the Designated Substances Survey Report.
- One copy of draft Hardware Schedule, Door and Frame Schedule, and Door and Frame Types.
- One hard copy of window calculations from AAMA/WDMA/CSA-101/I.S.2/A440-08, North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights and AAMA/WDMA/CSA-101/I.S.2/ A440S1-09, Canadian Supplement to AAMA/WDMA/CSA- 101/I.S.2/A440-08, North American

Fenestration Standard/Specification for Windows, Doors and Unit Skylights - Figure A.1 Checklist for Selecting Performance Levels for Windows, Doors, and Unit Skylights, revised July 2009.

100% Submission: submit hard copy and electronic copy compatible with NMSEDT PROFESSIONAL or MS Word or rtf and in PDF format (one NMS Professional spp or MS Word doc/docx or rtf and one pdf for whole spec) to the Departmental Representative for:

- Final Specification Title Sheet, List of Contents and all specification sections.

4.35 Projects with a 50% and 100% Submission

50% Submission: submit hard copy to Departmental Representative for:

- List of Contents for all divisions and sections in this project, Division 01 sections and a rough edit of specialty sections, such as, Asbestos Abatement, Guano Removal, Removal and Disposal of Underground Fuel Oil Tanks, Lead Paint Removal, Finish Hardware, Epoxy Flooring and Automatic Controls. (one NMS Professional spp or MS Word doc/docx or rtf and one pdf for whole spec)
- One hard copy and one pdf of the Designated Substances Survey Report.
- One copy of draft Hardware Schedule, Door and Frame Schedule, and Door and Frame Types.
- One hard copy of window calculations from AAMA/WDMA/CSA-101/I.S.2/A440-08, North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights and AAMA/WDMA/CSA-101/I.S.2/A440S1-09, Canadian Supplement to AAMA/WDMA/CSA- 101/I.S.2/A440-05, North American Fenestration Standard/Specification for Windows, Doors and Unit Skylights - Figure A.1 Checklist for Selecting Performance Levels for Windows, Doors, and Unit Skylights, revised July 2009.

100% Submission: submit hard copy and electronic copy compatible with NMSEDT PROFESSIONAL or MS Word or rtf and in PDF format (one NMS Professional spp or MS Word doc/docx or rtf and one pdf for whole spec) to the Departmental Representative for:

- Final Specification Title Sheet, List of Contents and all specification sections.

4.36 As-Built and Record Specifications

Submit paper copy and electronic copy compatible with NMSEDT PROFESSIONAL or MS Word or rtf and in PDF format to the Departmental Representative of as-built and record specifications. (one NMS Professional spp or MS Word doc/docx or rtf and one pdf for whole spec)

4.37 Specification List of Contents Example

SPECIFICATIONS: Note that NMS Edit Professional or MS Word macros creates the list of contents.

<u>DIVISION</u>	<u>SECTION</u>	<u>NO. OF</u>	<u>PAGES</u>
<u>DIVISION 01 - GENERAL REQUIREMENTS</u>			
01 11 00	SUMMARY OF WORK.....		15
<u>DIVISION 02...</u>	List all Sections and number of pages.		
<u>DIVISION 03...</u>			
<u>DIVISION 04...</u>			
<u>DIVISION 05...</u>			

...continue to DIVISION 50 The List of Contents is generated automatically by NMS Professional or MS Word macros.

4.38 Quality Assurance/Quality Control and Non-Compliant Documents

Submissions of the project manual that do not comply with the RFP design and submission requirements including Appendix D - Doing Business Section 4 Specification Brief, and/or are not compliant to the current codes and standards may be subject to written complaints to the consultant's licensing and accreditation bodies such as the, OAA, AC(formerly RAIC), PEO, CIQS, AATO, OACETT, CSC - Construction Specifications Canada, consultant's liability insurance carrier, etc.

Consultants shall submit the names and qualifications of all specification writers in each discipline that have worked on the project, including the total number of hours each individual has charged to the project.

SECTION 5 MARINE

5.1 General

All design criteria shall be in accordance with the current edition of reference codes and standards.

For material properties (both physical and chemical), methods of fabrication, tests, etc. reference should be made to the latest editions of CSA the Canadian Standards Association Standards and CGSB the Canadian General Standards Board Specifications, give the standard number and date of the issue, etc.

5.2 Regulations

Design shall comply with applicable Federal, Provincial and Municipal regulations and codes. In case of conflict, the most stringent requirements apply.

5.3 Design for Marine Engineering

PWGSC Review: The design alternatives and costs shall first be reviewed by PWGSC who will involve other regulatory bodies in the review as required.

All Marine Engineering Designs must comply with current Federal and Provincial Acts, Codes, Regulations, Guidelines and Codes of Practice including but not limited to:

- National Building Code of Canada (NBC).
- Ontario Building Code (OBC) .
- Canadian Concrete, Steel, Wood, Aluminum, other relevant Codes and marine and dredging best practices.

The Consultant shall discuss design loads with Public Works and Government Services Canada Marine Engineers before formulating his proposals.

The Consultant shall submit marine proposals for consideration and review by Public Works and Government Services Canada. These proposals shall contain the following information:

- General description of the project.
- Design loads.
- Comparative cost analysis of alternative layouts.
- Recommended layout.

Prior to commencement of working drawings, the Consultant shall submit for consideration by Departmental Representative the following data:

- Design criteria for marine structures.
- Site access and dredging and dredge disposal alternatives.
- Other relevant information as necessary.

The Consultant shall include on the drawings:

- Design criteria and assumptions.
- Design live loads, including berthing and mooring loads for the structures.
- Foundation design bearing pressures..

5.4 Soils Investigation

A soils report and/or sediment sampling report will be prepared for PWGSC. PWGSC will require the marine consultant to establish what additional soil testing information is required immediately after approval of the concept design. The consultant shall arrange for final soils investigator acceptable to the Department.

5.5 Drawings

Drawings shall be produced in accordance with Section 1.

5.6 Specifications

Specifications in accordance with Section 4.

Comply with Section 4, Article 4.20 for lump sum contracts, Article 4.21 for unit price contracts, or Article 4.22 for combined lump sum and unit price contracts.

5.7 Testing and Inspection

A Departmental Representative may be appointed and paid by PWGSC to ensure that the work is performed in accordance with Plans and Specifications and to maintain records of the blow counts for each pile (if applicable).

A testing company will be engaged for testing materials material used in the works, including environmental testing, where necessary.

5.8 As-Built and Record Information

As-built information shall be submitted by the Contractor and shall contain drawings, specifications, shop drawings, submittals, samples, etc. As-built submittals shall be noted as such by the Contractor.

Record drawings and specifications are updated originals prepared by the Consultants based on the information supplied by the Contractor in the as-built.

Provide an Environmental Mitigation Record report for the project.

5.9 Work Measurement for Unit Price Contracts

Measure and record quantities of labour and materials involved, if work is based on unit prices, for verification of monthly progress claims and the Final Certificate of Measurement.

When a Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

Record number of workers on site and hours worked daily.

5.10 Bid Documents Format:

Bid documents format shall be produced in accordance with Section 1.

SECTION 6 RISK MANAGEMENT

The Consultant will provide the necessary information required by the Departmental Representative to create and update the Risk Management Plan throughout the project.

6.1 Definitions

Procurement Plan:

Formal submission for approval to enter into a contract and composed of a (1) cost estimate of the requirement (including cash allowances, and design, estimating and inflation allowances), (2) a contingency and, (3) an anticipated amendment amount.

Allowances:

Additional resources included in an estimate to cover the cost of known but undefined requirements for an individual activity, work item, account or sub account: design allowance, estimating allowance, inflation allowance and other allowances specifically identified are part of a cost estimate

Cash Allowances:

A specific amount to be used for specific work item or service.

- Cash Allowance Construction: additional resources included in an estimate to cover the cost of known but undefined requirements whose probability of occurrence is high. This allowance is specifically identified in a cost estimate.
- Cash Allowance Consultant: additional services included in an estimate to cover the cost of known but undefined requirements whose probability of occurrence is high. This allowance is specifically identified in a cost estimate.

Risk Allowance:

Anticipated monetary value of risk events, due to the complexity of the project, market conditions, competitiveness, and timing of project; contingencies are likely to happen and do not form part of cost estimates.

Anticipated Amendments:

This is basically the pre-authorization of amending authority to a certain level. Individual contract amendments within this authority must still be approved by the appropriate level of contracting authority.

The total amount of the Anticipated Amendment to a project cost estimate is determined as the summation of the Expected Monetary Value of risk events reasonably expected to occur during the life cycle of a project.

Risk Management:

The art and science of identifying, analyzing, and responding to risk factors throughout the life of a project and in the best interests of its objectives. (PMBOK)

Risk Event:

A discrete occurrence that may effect the project for better or worse (i.e. late delivery of a piece of equipment is a "risk event" that may cause a schedule delay).

Probability:

The likelihood that an event will occur (i.e. Low, Medium, High).

Impact:

The result of the occurrence of an event on the project either positive or negative. (i.e. a schedule delay as a result of late delivery of a piece of equipment may have a high negative impact on a project; increased access to a construction site due to early departure of occupants in an office space may have a positive impact on a project).

The Impact of individual Risk Events can be qualified as low, medium, high or quantified in terms of time, cost (immediate cost or in-service cost (O&M)) or performance.

High risk*: A project (or element of a project) may be assessed as high risk if one or more hazards exist in a significant way and, unless mitigated, would result in probable failure to achieve project objectives.

Medium risk*: A project (or element of a project) may be assessed as medium risk if some hazards exist but have been mitigated to the point that allocated resources and focused risk management planning should prevent significant negative effect on the attainment of project objectives.

Low risk*: A project (or element of a project) should be assessed as low risk if hazards do not exist or have been reduced to the point where routine project management control should be capable of preventing any negative effect on the attainment of project objectives.

*per Treasury Board Secretariat Manuals Chapter 2-2 Project Management

EMV: Expected monetary value of risk event (i.e. cost or saving to the project if risk event occurs)

6.2 Risk Management Checklist

Probability, impact, overall risk, risk response and risk allowance are to be determined for each item listed below which is applicable to the project. Applicable items will be identified by the Departmental Representative.

Resources External to Project Management Team

- ◆ Planning Resources and Performance
 - errors and omissions
 - low accuracy of estimates (allowances)
 - data inadequacies
 - level of liability insurance
 - potential for misinterpretation / misunderstanding of documents
 - planning inexperience
- ◆ Construction Resources Required & Performance
 - level of liability insurance
 - design versus execution methods
 - suitability of execution methods to design
 - commissioning issues (start up / turnover difficulties)
 - contractor construction strategy
 - reputation of contractor
 - contractor financial stability
 - contractor inexperience
 - resources obtained less qualified than desired
 - availability / suitability / performance of resource

Project Scope Delivery

- ◆ Delivery of Specified Requirement

- accuracy of client requirements in terms of cost/ schedule / performance / quality and ability to interface with existing environment
- conflicting client priorities
- low level of client knowledge
- Y2K compliance
- ◆ Unstated Client Requirements
- completeness of client requirements in terms of cost/ schedule / performance / quality and ability to interface with existing environment
- restricted working conditions
- opportunities for changes / positive impact
- ◆ Stakeholder Requirements, Stated and Unstated
- low involvement of user groups in scope of definition
- interface with existing systems
- restricted working conditions
- operational needs

Site / Asset / Building Actual Conditions

- ◆ Actual Physical Environment
- availability / accuracy of as built documentation and existing condition reports
- high variability / low stability of soils
- potential for soil contamination
- presence of hazardous materials
- availability / access to site
- presence of other contractors on site
- climate (winter conditions, rain, wind, water levels)

Government / PWGSC / Client / Context

- ◆ Impact on Adjacent Areas Actual
- impact on adjacent areas (land / tenants/ traffic / operations)
- ◆ Impact from External Sources
- legal lawsuits, patent rights, licensing, etc.
- political impacts including visibility of project
- social sensibilities
- potential strikes
- market risks
- bad press (media coverage)
- ◆ Impact from Unanticipated Regulatory Change
- environmental legislation and environmental screening
- potential changes to Acts, Codes and Regulations
- municipal building / occupancy permit issues
- ◆ Procedures Known
- suitability of bid documents
- suitability of contracting method
- delays in bidding process
- client internal coordination
- change order process

Plan Approval / Design Reviews

- approvals may be required from Client, PWGSC, Treasury Board, FHBRO, Fire Commissioner, Police, Emergency Services, Municipalities, Cities, etc.
- absence of Investment Analysis
- unstable / changing client organization

- heritage building issues
- health and safety issues
- potential for “hold orders”
- design review delays (client / PWGSC / TBS / other)
- approval delays (client / PWGSC / TBS / other)

SECTION 7A CIVIL DESIGN

7A.1 Review

All designs must be reviewed by the Department and conform to the requirements of the Project Brief or Terms of Reference.

7A.2 Principles

The Department expects the Consultant to maintain a high standard of civil design, based upon recognized contemporary design principles. All design elements, planning, civil and municipal engineering and landscaping, must be fully co-ordinated, and consistent in adherence to good design principles.

7A.3 Economy

Design strictly within the budget and in accordance with sound investment economics and operating and maintenance expenditures.

7A.4 Quality

Quality of materials and construction methods shall be commensurate with the type of infrastructure and the budget. Avoid experimental materials. Take into account the total life-cycling of the infrastructure.

7A.5 Regulations

Design shall comply with applicable Federal, Provincial and Municipal regulations and codes. In case of conflict, the most stringent requirements apply.

7A.6 Design General

PWGSC Review: The design alternatives and costs shall first be reviewed by PWGSC who will involve other regulatory bodies in the review as required.

Environment Canada Approval: The design shall satisfy Environment Canada. Public Works and Government Services Canada will arrange for a review of the proposed alternative and the design work through the office of Environment Canada, Federal Program Division. Environment Canada will arrange to have the design reviewed by other agencies.

Client Review: As the client is the user of the site and systems, and must maintain it in good working order to the satisfaction of all regulatory agencies, it is essential to involve the client through all the stages of review and decision.

7A.7 Design for Civil and Municipal Engineering

All Civil and Municipal Engineering Designs must comply with current Federal and Provincial Acts, Codes, Regulations, Guidelines and Codes of Practice including but not limited to:

- Guidelines for Canadian Drinking Water Quality (GCDWQ), 2008.
- Safe Drinking Water Act 2003-(SDWA).
- Recommended Standards for Water Works, (Ten State Standards) - 2007 Edition.
- Recommended Standards for Bathing Beaches, (Ten State Standards) - 1990 Edition
- Recommended Standards for Individual Sewage System, (Ten State Standards) - 1980 Edition

- Recommended Standards for Waste Water Facilities, (Ten State Standards) - 2004 Edition
- Recommended Standards for Swimming Pool Design and Operation, (Ten State Standards) - 1996 Edition.
- American Waterworks Association (AWWA) Standards.
- National Building Code of Canada (NBC).
- Ontario Building Code (OBC).
- Canada Standards Association (CSA).
- American Society for Testing and Materials International (ASTM).
- Canadian Environmental Protection Act (CEPA) -1999.
- Transportation of Dangerous Goods Act (TDGA)-1992.
- Canadian General Standards Board (CGSB).
- OPSS Ontario Provincial Standard Specifications (OPSS).
- OPSD Ontario Provincial Standard Drawings (OPSD).
- Canada Labour Code, Part II.
- National Fire Code of Canada (NFC).
- National Plumbing Code (NPC).
- Underwriter Laboratories of Canada (ULC).
- American National Standards Institute (ANSI) NSF/60 and NSF/61.
- National Fire Protection Association (NFPA).
- Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, Environment Canada (Most Current version).
- Federal Environmental Assessment Process, Environment Canada.

Use the current versions of Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) to maximum extent possible.

Province of Ontario:

- .1 Occupational Health and Safety Act and Regulations for Construction Projects, Revised Statutes of Ontario 1990, Chapter O.1 as amended, O. Reg. 628/05 as amended, Designated substance-Asbestos on construction projects and in buildings & repairs operations, O. Reg. 278/05.
- .2 Workplace Safety and Insurance Act, 1997.

Provincial/Territorial guidelines and regulations govern, except where they are less stringent than those of the federal government, such as the following:

- Ontario Ministry of the Environment (MOE) (Effluent criteria, Certificate of Approval of Sewage and Water Works, Air).
- Ontario Ministry of Natural Resources (MNR).
- Ontario Ministry of Labour (MOL).
- Technical Standards and Safety Act (TSSA).
- Digester Gas Code CAN/CGA-B105-M93(R2007).
- Ontario Regulation 346 - General Air Pollution

Ontario Ministry of the Environment Design Guidelines (Most current versions)

1. Guidelines for the Design of Water Treatment Works.
2. Guidelines for the Design of Sewage Treatment Works.
3. Guidelines for the Design of Sanitary Sewage Systems.
4. Guidelines for the Design of Storm Sewers.
5. Guidelines for the Design of Water Distribution Systems.
6. Guidelines for the Design of Water Storage Facilities.
7. Noise and Air Emission Guidelines.

Other Applicable Regulations or Acts

1. Regulations for Construction Projects.
2. Workplace Hazardous Material Information System (WHMIS) Regulation, R.R.O. 1990, Reg. 860 (as amended by O. Reg. 356/91; and O. Reg. 36/93).
3. Occupational Health and Safety Act, Regulations for Construction projects, O. Reg. 213/91 (as am. By O. Reg. 631/94), Part II – General Construction.
4. Occupational Health and Safety Act, Industrial Establishments Regulation, R.R.O. 1990, Reg. 851 as amended, Part I – Safety Regulations.
5. Canada Labour Code, Canada Occupational Safety and Health Regulations, SOR/86-304, as amended, Part XI – Confined Spaces.
6. Technical Standards and Safety Act, 2000 (TSSA).
7. National Fire Protection Association (NFPA).

7A.8 Barrier Free Design for Disabled

In accordance with Section 1.

Design grounds to make them accessible and usable by disabled persons, unless otherwise required in the Project Brief. Conform to CAN/CSA-B651-04(R2010), Accessible Design for the Built Environment and for CSC projects, the Correctional Service Canada policy on accessibility. This includes making buildings and other facilities accessible to persons with a range of physical, sensory and cognitive disabilities.

7A.9 Drawings

Drawings shall be produced in accordance with Section 1.

7A.10 Specifications

Specifications in accordance with Section 4.

Comply with Section 4, Article 4.20 for lump sum contracts, Article 4.21 for unit price contracts, or Article 4.22 for combined lump sum and unit price contracts.

7A.11 As-Built and Record Information

In accordance with Section 1.

7A.12 Bid Documents Format

In accordance with Section 1.

7A.13 Work Measurement for Unit Price Contracts

Measure and record quantities of labour and materials involved, if work is based on unit prices, for verification of monthly progress claims and the Final Certificate of Measurement.

When a Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

Record number of workers on site and hours worked daily.

SECTION 7B BRIDGE DESIGN

7B.1 General

For general and technical requirements for Bridge design, refer to following documents:

- Request for Standing Offer for Bridges
- Standing Offer for Bridges.

SECTION 7C GEOTECHNICAL

7C.1 General

All design criteria shall be in accordance with the current edition of reference codes and standards in effect on the date of tendering.

For material properties (both physical and chemical), methods of fabrication, tests, etc. reference should be made to the latest editions of CSA the Canadian Standards Association Standards and CGSB the Canadian General Standards Board Specifications, give the standard number and date of the issue, etc.

7C.2 Regulations

Design shall comply with applicable Federal, Provincial and Municipal regulations and codes. In case of conflict, the most stringent requirements apply.

7C.3 Review, Investigation and Design

All geotechnical, material and testing reports must be reviewed by the PWGSC and conform to the requirements of the Project Brief and/or Terms of Reference.

7C.4 Design for Geotechnical Engineering

PWGSC Review: The design alternatives and costs shall first be reviewed by PWGSC who will involve other regulatory bodies in the review as required.

All Geotechnical Engineering must comply with current Federal and Provincial Acts, Codes, Regulations, Guidelines and Codes of Practice including but not limited to:

- National Building Code of Canada (NBC).
- Ontario Building Code (OBC).
- Canadian Standards Association (CSA).
- Canadian Geotechnical Society (CGS).
- American Society for Testing and Materials (ASTM).

The Consultant shall discuss proposed design loads and structures with Public Works and Government Services Canada before formulating his proposals.

The Consultant shall submit geotechnical proposals for consideration and review by Public Works and Government Services Canada. These proposals shall contain the following information:

- General description of the project.
- Design soil capacity.
- Comparative cost analysis of alternative layouts.
- Recommended layout.

Prior to commencement of working drawings, the Consultant shall submit for consideration by Departmental Representative the following data:

- Design criteria.
- Site access and dredging and dredge disposal alternatives.
- Other relevant information as necessary.

The Consultant shall include on the drawings:

- Design criteria and assumptions.
- Design loads for the structures.
- Foundation design bearing pressures.

7C.5 Soils Investigation

A soils report and/or sediment sampling report will be prepared for PWGSC. PWGSC will require the geotechnical consultant to establish what additional soil testing information is required immediately after approval of the concept design. The consultant shall arrange for final soils investigator acceptable to the Department.

7C.6 Drawings

Drawings shall be produced in accordance with Section 1.

7C.7 Specifications

Specifications in accordance with Section 4.

Comply with Section 4, Article 4.20 for lump sum contracts, Article 4.21 for unit price contracts, or Article 4.22 for combined lump sum and unit price contracts.

7C.8 Testing and Inspection

A Departmental Representative may be appointed and paid by PWGSC to ensure that the work is performed in accordance with Plans and Specifications and to maintain records, for example, the blow counts for each pile, toe-pin elevation, etc.

A testing company will be engaged for testing materials material used in the works, including environmental testing, where necessary.

7C.9 As-Built and Record Information

As-built information shall be submitted by the Contractor and shall contain drawings, specifications, shop drawings, submittals, samples, etc. As-built submittals shall be noted as such by the Contractor.

Record drawings and specifications are updated originals prepared by the Consultants based on the information supplied by the Contractor in the as-built.

Provide an Environmental Mitigation Record report for the project.

7C.10 Work Measurement for Unit Price Contracts

Measure and record quantities of labour and materials involved, if work is based on unit prices, for verification of monthly progress claims and the Final Certificate of Measurement.

When a Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

Record number of workers on site and hours worked daily.

7C.11 Bid Documents Format

Bid documents format shall be produced in accordance with Section 1.

SECTION 8 STRUCTURAL DESIGN GENERAL REQUIREMENTS

8.1 General

All design criteria shall be in accordance with the current edition of National Building Code of Canada, its supplements and the relevant Canadian Standards Association Standards. If local or municipal codes and by-laws are more stringent, they shall take precedence.

For material properties (both physical and chemical), methods of fabrication, tests, etc. reference should be made to the latest editions of CSA the Canadian Standards Association Standards and CGSB the Canadian General Standards Board Specifications, give the standard number and date of the issue, etc.

8.2 Design

The Consultant shall discuss design loads with Public Works and Government Services Canada Structural Engineers before formulating his proposals.

The Consultant shall submit structural system proposals for consideration and review by Public Works and Government Services Canada. These proposals shall contain the following information:

- General description of the building.
- Design loads.
- Comparative cost analysis of several alternative structural systems, comprising superstructure and foundations.
- Recommended structural systems, compatible with the other systems proposed, i.e., architectural, mechanical, electrical, etc.

Prior to commencement of working drawings, the Consultant shall submit for consideration by Departmental Representative the following data:

- Design and location of expansion joints with temperature ranges, etc. as assumed.
- Design criteria for basement and retaining wall.
- Methods of shoring for excavations.
- Provisions for interfacing for phased construction projects.
- Other relevant information as necessary.

Public Works and Government Services Structural Engineers may require the submission of detailed analysis and design of any structural components, with sufficient time allowed for their review and approval before their inclusion on the drawings.

The Consultant shall submit at the completion of the design, a legible set of neatly bound notes with contents indexed. These notes shall provide the detailed analysis and design of all the significant aspects of the structure including the following.

- Design criteria and assumptions.
- Design live loads and dead loads throughout the structure, in adequate detail to permit the check of individual areas.
- Column, elevator core and footing design gravity loads throughout the building, including separation of dead loads, live loads and reduced live loads.
- Footing loads.
- Lateral forces and lateral forces analysis.
- Torsion analysis.
- Aspects of the design, other than those listed above, which Government Services or the Consultant would place in any especially important category.

8.3 Soils Investigation

A preliminary soils report will be prepared for PWGSC and copies will be made available as soon as they are ready. PWGSC will require the structural consultant to establish what additional soil testing information is required immediately after approval of the concept design. The consultant shall arrange for final soils investigator acceptable to the Department. The cost will be borne by the Department.

The soil consultant's recommendations, discussions, considerations, requirements and conclusions shall be submitted separately from soil data.

Drawings and diagrams forming part of soil data shall not exceed 216 mm x 279 mm in size or multiples thereof.

8.4 Live Loads

Floor areas to be used for General Office purposes, whether open-landscaped or divided by moveable partitions, shall be designed for a uniformly distributed live load of 3 kPa plus a uniformly distributed 1 kPa moveable partition allowance.

In the design of any floor slab, beams or girders, the 3 kPa uniformly distributed live load shall not be modified by reduction factors based on tributary area.

In the calculation of live loads on columns, no reduction factor for tributary area shall be applied to the uniformly distributed live load, for the top two office floors of multi-storey buildings.

Basement, main floor, corridors, assembly areas and fire refuge areas shall be designed for a uniformly distributed live load of 5 kPa.

Normal file registry areas shall be designed for a uniformly distributed live load of 5 kPa.

Mechanical equipment rooms and storage areas shall be designed for a minimum of 7.5 kPa.

For roof snow loading, Wind Exposure Factor shall be taken as 1.0.

8.5 Structural Drawings

Drawings shall be fully dimensioned. Weighted lines shall be employed and sections shall be cross-referenced, using the "PWGSC CADD Standards".

The following drawings shall be provided:

- Foundation plan.
- Floor and Roof Framing Plans.
- Column schedules containing the following information:
 - Datums as noted on structural plans.
 - Column loads at footings (dead and live).
 - Column sizes.
 - Vertical reinforcement, ties, dowels, etc.
 - Baseplate and anchor bolt details.
 - Size and footings.
- Live loads, partition, ceiling, floor finish and mechanical equipment allowances.
- Type of waterproofing and details to show effectiveness of same.
- General notes, including:

- Design Codes used.
- Lateral forces.
- Allowable bearing pressures.

8.6 Testing and Inspection

A resident Departmental Representative may be appointed and paid by PWGSC to ensure that the structure is built in accordance with Plans and Specifications and to maintain records of the blow counts for each pile (if applicable).

A testing company will be engaged and paid for by PWGSC for testing concrete, soils compaction, pile load tests (if applicable) and structural steel work (e.g. bolting, welding, etc.)

The structural consultant will be expected to make periodic visits to the site, as later agreed with the Departmental Representative.

8.7 As-Built and Record Information

In accordance with Section 1.

SECTION 9 MECHANICAL DESIGN

9.1 General

Read and understand the applicable General Conditions listed in Section 4.

This section stipulates the standards for design of building HVAC, fire protection, and plumbing systems.

Provide systems to meet the design requirement with least annual owning and operating cost.

Mechanical systems shall be compatible and co-ordinated with the architectural, structural, electrical and other project systems.

Systems and equipment shall be fail-safe consistent with required reliability of service.

Provide heating, ventilation and air conditioning systems that:

- Have the flexibility and capacity required to meet the requirements of intended use of space after the premises have been occupied.
- Have individual temperature controls and start/stop schedules for each room and each zone which have unique load variations and occupied hours.
- Have the capability of introduction of 100% outside air to permit flushing out the building, dilution of contaminants, and use of "free cooling" for energy conservation.

Provide plumbing systems in compliance with the National Plumbing Code and Ontario Plumbing Code.

Provide fire protection systems to meet the requirements of the Fire Commissioner of Canada Standards, the National Fire Code and Canada Labour Code.

9.2 Project Specifics

Refer to the Project Brief.

The Consultant shall review the operational requirements and applicable code requirements.

The Consultant shall develop alternative schemes with sufficient documentation to support the recommended systems and equipment for providing mechanical services to meet the requirements.

For office renovation projects, the Consultant shall review existing mechanical installation and documentation. Assess, evaluate, and make recommendations, for the upgrade of existing mechanical systems to accommodate new office layout.

9.3 System Applications

In accordance with project requirements, justify system selection and its design on the basis of performance, service and maintenance, and the total owning and operating cost.

Systems shall be capable of automatically maintaining space comfort conditions for all building load variations during the heating and cooling seasons.

Use outdoor air as free cooling source whenever economically feasible.

Avoid recirculation of exhaust air with outside air by properly locating intakes and outlets.

Use heat recovery systems for all air exhausted when such measures prove to be economical, as determined by life cycle costing.

9.4 Building Loads and Energy Estimates

Building load calculations and energy estimates shall be carried out using a computerized load and energy simulation program. This shall be a commercially available program and approved for use by PWGSC. Refer to Required Services (RS) sections for additional requirements.

The energy analysis program shall simulate all energy consumed in the building on a hourly basis for a full year.

The building energy analysis with input and output summaries shall be submitted with the concept design submission; revise and resubmitted with the design development submission and each of the 30%, 66%, and 99% construction document submissions. The updating shall reflect all the latest architectural and engineering changes to the project.

9.5 Energy Consumption Budget

Energy consumption budgets shall be established for all building projects.

Investigate and present for review a minimum of three viable and different concept options for each project. The options shall be evaluated based on building life cycle costs which will include initial capital cost plus annual energy operation and maintenance costs.

The analyses shall be based on annual energy consumptions and take into account climatic data, building architecture, clients' operational requirements and system and equipment data. Total energy consumed in the building shall be expressed in kWh per m².

Design HVAC systems to exceed Model National Energy Code of Canada for Building 2011.

9.6 Codes and Standards

In accordance with Section 1.

9.7 Federal Halocarbon Regulations (FHR 2003) and Environmental Protection Alternative Measures (EPAM)

All Consultants, Contractors and Subcontractors responsible for undertaking work related to equipment containing halocarbons are to be aware of the requirements prescribed under the Federal Halocarbon Regulations, 2003, and are to ensure compliance to the FHR 2003 as part of the EPAM.

9.8 Fire Protection Requirements

In addition to the National Building Code, Ontario Building Code, National Fire Code and NFPA Standards, fire protection is subject to the requirements of Fire Commissioner of Canada Standards issued by HRDC - Labour Program/Fire Protection for general storage, fire extinguishers and sprinkler systems.

Comply with the requirements of the Fire Commissioner of Canada. Fire protection systems are to be subject to the final inspection and test of the Fire Commissioner of Canada.

9.9 Plumbing Requirements

Provide complete plumbing systems including sanitary and storm drainage, domestic hot and cold water piping, and plumbing fixtures.

Drinking fountains shall be bi-level and shall provide drinking water at less than 13°C and shall be located no more than 30 m from any workstation on each and every floor.

Provide adequate supply of domestic hot water at constant temperature of 38°C to lavatories, showers and sinks.

Plumbing systems shall conform to the requirements of the National Plumbing Code 2005 and Ontario Plumbing Code 2010.

9.10 Heating, Ventilation, and Air Conditioning (HVAC) Requirements

Outside Design Criteria: Take outside design conditions from National Building Code and base on January 1% outdoor Winter design and July 2.5% outdoor Summer design temperatures.

9.11 Space Comfort Standards

General:

- The following comfort standards apply to air conditioning in general office type occupancy where sedentary adult activity may be expected. Requirements for other types of occupancy or for environments related to standards other than for human comfort to be as per latest published data in ASHRAE handbooks.
- Outdoor air ventilation rates shall be based on the latest edition of ASHRAE Standard 62.1-2004 "Ventilation for Acceptable Indoor Air Quality" unless special requirements or regulations dictate otherwise.
- Unless noted otherwise, conform to or exceed CSA Z204-94(R1999), "Guideline for Managing Indoor Air Quality in Office Buildings".

Temperatures:

- During occupied periods, and in the occupied zone, a minimum temperature of 21°C when heating, and a maximum of 24°C when cooling shall be maintained. The rate of change of dry bulb temperature is not to exceed 2°C per hour within the specified limits. The vertical temperature difference measured from 100 mm and 1700 mm above finished floor shall not exceed 3°C.
- The occupied zone is defined as the space volume between the floor and 1800 mm from the floor and more than 600 mm from walls or perimeter heating/cooling equipment.
- The average conductive heat loss at winter design temperature combining both glass and wall heat losses from zone exterior surfaces should not exceed 25 watts/m².
- Provide wall fin radiation heaters below all exterior windows in the building.
- Floor surface temperature: between 18°C and 29°C.

Relative Humidity:

- Maintain relative humidity between 30% (winter design) and 60% (summer design) at any point in an occupied zone.
- Rate of change of relative humidity at any point in the occupied zone is not to exceed 20% RH per hour within the above specified limits.

Filtration:

- All supply air (i.e. recirculated air plus outside air) shall pass through filters having ASHRAE minimum efficiency of MERV II or better.

Ventilation:

- Ventilation is defined as the supply of clean, odour and contaminant free air to a space in sufficient quantities to dilute and remove space generated air contaminants and odours and to maintain the occupant oxygen requirements.
- Generally, outside air is considered to be contaminant free air suitable for ventilation purposes. Outside air intakes shall not be located in the vicinity of loading dock or any high pollutant area. Exhaust air outlets shall be properly located to prevent entrainment in outside air intakes.
- Except for outdoor make-up air to replace exhaust air, ventilation requirements are related to people. A ventilation rate of 10.0 L/s of outside air per person is adequate for occupant comfort, provided sufficient total air is circulated in the space to dilute contaminants. The ventilation rate calculated on a per occupant basis is not to be less than 1.0 L/s/m² of gross zone floor area.
- Measurement of CO₂ concentration: Provide CO₂ sensor in the space or in the return air stream for monitoring CO₂ concentration. CO₂ sensor shall not be used by the air flow controls to reduce the outside air flow rate to below the minimum requirement of 10 L/s per person.

Air Circulation:

- Total primary air supply for general occupancy areas to be designed at not less than 4 L/s/m² of floor area or 6 air changes per hour.
- Total primary air supply to high occupant density areas, i.e. conference rooms, board rooms, high density workstation areas (high density occupancy is defined as a workstation with its foot print being less than 10m²), etc. to be designed at not less than 7.7 L/s/m² of floor area or 10 air changes per hour.
- Maintain air motion at velocities between 0.05 m/s and 0.15 m/s during Winter heating operation, and between 0.05 m/s and 0.23 m/s during Summer cooling operation in an occupied zone unless noted otherwise.

Acoustic Duct Liner:

- The air side of duct liner shall be coated with acrylic coating treated with anti-microbial agent to resist microbial growth.

As a minimum, office areas with regular density occupancy (the net occupiable space of each workstation is greater than 10 m²) shall have HVAC zoning as follows for individual zone temperature controls:

- Each private office.
- Maximum of 50 m² perimeter area with the same load profile along the same exposure. Perimeter area is defined as an area within 5 m of the outside wall.
- Maximum of 100 m² interior area with the same load profile.

Mechanical exhaust systems shall be provided to meet the following minimum requirements:

- Washroom or Janitor Closet: 10 L/s per m² of floor area; at least 25 L/s per sanitary fixture.
- Shower Room: 10 L/s per m² of floor area; at least 20 L/s per shower head.
- Enclosed Parking Garage: 7.5 L/s per m².
- Conform to current Canada Labour Code Part II.
- Make-up air for the above exhaust systems may be obtained from the adjacent corridors and offices.
- Provide dedicated exhaust systems for photocopier areas to maintain VOCs concentration not to exceed 3mg/ m³ , and exhaust directly to the outdoors.
- Provide a separate exhaust facility with individual speed control and ON/OFF switch for the lunch room.
- Maintain negative air pressures within the garage area in relation to surrounding building areas.

Mechanical system noise shall conform to the following Noise Criteria (NC) levels:

Conference, meeting rooms	25-35 NC
Teleconference rooms	25 NC max.

Private offices	25-35 NC
General open area offices	30-40 NC
Public area, corridors	40-45 NC

- Noises shall be free from annoying, recognizable characteristics such as rumble, hiss, tones, and variability of noise patterns.

9.12 Lan Room A/C

Provide continuous air conditioning to maintain temperature in LAN rooms and telecommunication rooms not to exceed 24°C at all times (24 hours/7 days per week).

9.13 TAB

Testing, adjusting and balancing of air distribution and hydronic systems performed by the Contractor shall be verified. The Consultant shall verify the results of not less than 20% of all reported measurements.

9.14 Building Automatic Control System Requirements

The networked Building Automation Systems (BAS) including the building Energy Monitoring and Control System (EMCS) shall be designed by a qualified control systems specialist recognized in this field.

As a minimum the drawings and specifications for the controlled systems shall include:

- An English language narrative sequence of operation.
- Mechanical control schematics.
- EMCS network architecture.
- DDC Input/Output Point Schedules in PWGSC format.

At the preliminary design briefing the Consultant shall obtain a copy of the current PWGSC Automatic Control System Master Specification Sections. The Consultant shall review and edit the PWGSC Automatic Control System Master Specifications.

9.15 Commissioning

PWGSC Commissioning Manager (or its representative) will overview all commissioning activities, review and approve all commissioning documents, overview Functional Performance Testing and O&M Training, and review the accuracy of all reported results. Commissioning shall be done to the approval of the PWGSC Commissioning Manager.

Unless noted otherwise, the Design Consultant shall have an overall responsibility for preparation of design intent and design criteria documents, preparation of Commissioning Specifications, preparation of commissioning plan, system startup verification form, functional performance test forms, review of shop drawings, inspection of construction, verification of commissioning testing including installation testing, equipment starting and testing, system starting and testing, review TAB reports, review and approval of "As built" drawings and O&M Manuals, preparation of Systems Operating Manual, Maintenance Manual, and preparation of Commissioning Report.

Refer to Required Services (RS 7) for the additional commissioning responsibilities and key commissioning activities of the Design Consultant.

9.16 Drawing Requirements

Refer to PWGSC CADD Standards.

Numbering, size, symbols, title blocks, etc.:

- Number sheets consecutively, commencing with the Plot or Site Dwg. as M-1. Show the mechanical subject in the appropriate title block space, e.g. "Plumbing and Drainage", "Heating", "Air Conditioning and Ventilation", "Sprinkler System", "Details", etc.
- Do not combine Plumbing and Heating on one drawing unless the size and simplicity of the project make this feasible.
- Mechanical drawings shall be the same size as the Architectural Final Working Drawings for the project. Generally, the required size of pre-printed sheets for Working Drawings will be determined by the Departmental Representative.
- Room and area reference on mechanical drawings must in all cases show the room designation as used on "Room Finish Schedule".
- Consolidate notes on the right-hand side of the sheet.

Scale and room identification:

- Scale: All drawings must be legible and must include sufficient information to permit accurate bidding and installation.
- When the scale of plans is 1:50 all branches of the mechanical work (plumbing, air-conditioning, heating, etc.) may be shown on one plan, provided that these systems are not too complex.
- When the scale of plans is 1:100 a separate set of floor plans shall be made for each branch of the mechanical work, except that heating and air conditioning may be shown on one set of plans.
- A scale of plans smaller than 1:100 shall not be used.
- All boiler rooms, machine rooms, equipment rooms, etc. and all congested areas shall be fully detailed on the plans, and sections with all equipment that might be involved in interferences shown, and drawn to a scale not smaller than 1:50.
- Identical floors: Where floors are identical architecturally, typical floor plans may be used for mechanical work only where the complete floor is identical and riser diagrams clearly show all changes involved. Typical plans are not allowed, i.e. no "similar wings", "right-or-left-handed".
- Room numbers: Show all room numbers on mechanical drawings to facilitate co-ordination and cross-reference with those shown on architectural and electrical drawings.

Drawing Requirements:

- Each set of drawings, namely, plumbing, heating, air conditioning, etc. must give scales, floor elevations and compass points, column grids, column numbers and titles. The elevation of the lowest floor shall be shown. Drawings shall show elevation of all main pipes and ducts.
- Piping riser diagrams and system flow diagrams shall be provided for all multi-storey buildings and shall include all piping sizes not clearly indicated on floor plans and details. Single line piping diagrams shall be provided to indicate connections to all system components, together with pipe size schedules where various sizes of units employ the same diagram. Flow diagrams shall show all equipment in true sequence showing piping, valves, control valves, strainers, pressure gauges, thermostats, etc. Identify equipment on these diagrams using nomenclature corresponding to that used in the appropriate equipment schedules.
- When using three or more similar pieces of equipment, all pertinent information as to size, capacity, etc. shall be shown in a schedule.
- Cross sections of mechanical rooms shall relate to the operator's view in mechanical room. Clearly diagram each system to show intent of system and method of operation and control.

Piping and Ducting Location:

- The piping and ducting shall be shown, as nearly as possible, in the location where it is to be actually installed. Conceal all piping, ducting and other services in ceilings, chases, shafts, furred out spaces or partitions, except in basement or storage areas not occupied by personnel.

- Piping of any description shall not be located in any space used as switchboard (switch-gear) or transformer room or electrical closet.
- As far as possible, no piping or ductwork shall be run above switchboards, motor control centres or surface mounted panelboards located in mechanical equipment rooms. Where piping for any service must run above such equipment, a drip pan shall be specified.
- Water and waste pipes shall not be located in exterior walls where there is danger and freezing.
- Pipes, ducts or other utilities shall not be embedded in the fireproofing of any column or other structural member or between the fireproofing and the structural member protected.

Pipe Sleeves: The structural or the architectural drawings must show the pipe sleeves for all pipes passing through footings of exterior walls below grade. The elevations of sleeves must be given.

Waterproofed Floors:

- Where floors are waterproofed, all pits, cleanout manholes, trenches, etc. shall be kept to a minimum, i.e. thicken slab to contain waste pipes under basement or in the case of large drains, consider waterproofed trenches.
- Drainage piping required in slabs subjected to hydrostatic pressure shall be co-ordinated with the structural design.

Checking of Drawings:

- Drawings must be checked for completeness, clarity, interferences with structural features and with electrical equipment, and agreement with the architectural drawings.
- A large part of the checking, particularly the interferences between the mechanical and electrical systems and the structural features, can be made during the preparation of the drawings.

"As Built" Drawings and Specifications: Specify that each mechanical subcontractor shall record, on one set of white prints all changes, alterations, as well as any additions as covered by authorized "Change Orders" at the same time approval is received from the prime Consultant. This shall include rerouted lines, located ducts, valves and equipment.

9.17 Specification Requirements

Specifications in accordance with Section 4.

At the 33% submission of working documents, provide outline specifications for all systems and principle system components and equipment. Provide the outline specifications with manufacturers literature about principal equipment and system components proposed for use in this project.

The specifications with table of contents shall consist of typed and edited PWGSC Ontario Region amended NMS and in house specification sections.

9.18 Design Submission Requirements

Design Concept Submission:

- Submit design intent and design criteria document. Provide the following information for each room in the building:
 - User's function and requirements.
 - Estimated maximum occupancy.
 - Indoor summer design conditions.
 - Indoor winter design conditions.
 - Outdoor air supply ventilation rate per person.

Provide a description of proposed mechanical options. Provide the following information for each proposed option:

- An economic and technical explanation of the reason for the proposed mechanical systems.
- A copy of building energy analysis with input and output summaries.

Design Development Submission:

- Produce the preliminary designs based on the approved concept.
- Provide system flow diagrams and EMCS network architecture. Describe the mechanical systems, the components of each system, the operation of each system, and the updated energy analysis summaries.

Submissions of Construction Documents:

- The 33% submission shall include floor plans showing routing of major HVAC, plumbing and fire protection systems, piping riser diagrams and system flow diagrams, EMCS network architecture, outline mechanical specifications, and the updated energy analysis summaries.
- The 66% submission shall include updated 33% submission plus mechanical room layout drawings, mechanical control schematics, DDC Input/Output Point Schedules, equipment schedules, and mechanical specification sections, and the updated energy analysis summaries.
- The 99% submission shall include: Plans and Specifications detailing the requirements for the construction. Updated design intent and design criteria document. Updated energy analysis summaries.

Refer to Required Services (RS) for additional requirements.

9.19 As-Built and Record Information

In accordance with Section 1.

SECTION 10A ELECTRICAL WORK PROCEDURES

10A.1 Site Characteristics

Visit the site and evaluate its characteristics.

10A.2 Meetings and Schedule

Attend all meetings throughout the entire Work project development period.

Assist in establishing work schedules for electrical work compatible with other disciplines.

10A.3 Concept Submission

Submit information necessary to allow evaluation of the basic design concept with the Concept Submission.

Submit drawings illustrating the final concept including:

- Distribution diagram showing single line diagrams to distribution centres.
- Floor plans complete with locations of major electrical equipment and distribution centres.
- Lighting layouts.
- Power outlets.
- Ceiling distribution systems for lighting, power and telecommunications.
- Elevator control room plan and preliminary details.
- List of standard PWGSC details to be utilized.
- Telephone rooms, conduits and telecommunication cable systems requirements and layout.

Provide draft specification sections. Request PWGSC Ontario Region amended NMS and in house master specification sections suitable for the project for guidance.

Provide the initial cost estimate of electrical work for the Project Cost Plan in accordance with Sections 11 and 12.

10A.4 Design Synopsis

Provide a design synopsis with the final concept design, describing the electrical work in sufficient detail for assessment and approval by the Departmental Representative.

10A.5 Working Documents

Upon approval of the final design concept start the working documents; drawing sizes, lettering, electrical symbols, etc. to match the architectural.

10A.6 Design Submission

Provide drawings showing advanced development of the following:

- Single line diagram of the power circuits with their metering and protection, including:
- Complete rating of equipment.
- Ratios and connections of CT's and PT's.
- Description of relays when used.
- Maximum short circuit levels on which design is based.
- Identification and size of services.

- Connected load and estimated maximum demand on each load centre.
- Electrical plans with:
 - Floor elevations and room identification.
 - Legend of all symbols used.
 - Circuit numbers at outlets and control switching identified.
 - All conduit and wire sizes except for minimum sizes which should be given in the specification.
 - A panel schedule with loadings for each panel.
 - Telephone conduits system layout for ceiling/floor distribution.
 - Intercom system empty conduit layout.
 - Riser diagrams for lighting, power, telephone and telecommunication cable systems, fire alarm and other systems.
 - Elementary control diagrams for each system.
 - Schedule for motor and controls.
 - Complete lighting layout and fixture schedule clearly indicating methods of circuiting, switching and fixture mounting.
 - Electric heating layout and schedule.

Provide the following data:

- Total connected load.
- Maximum demand and diversity factors.
- Sizing of standby load.
- Short-circuit requirements and calculations showing the ratings of equipment used.

Provide draft specifications.

Provide an intermediate cost estimate in accordance with Sections 11 and 12.

10A.7 100% Submission

This should be complete working documents subject to final review by the Departmental Representative. Provide the following:

- Complete working drawings and specification for bidding purposes.
- Final cost estimate in accordance with Sections 11 and 12.

10A.8 Final Submission

After review of the 100% documents by the Department, make all required revisions and provide the following:

- Bid documents in accordance with Section 1.
- Confirmation of final cost estimate in accordance with Sections 11 and 12.

10A.9 Inspection Authority Submission

Submit and obtain approval on plans and specifications required by the Inspection Authority before bid call.

10A.10 Bid Call Period

Provide necessary advice to the Departmental Representative during bid calls, including amendments, bid evaluation, etc.

10A.11 Construction, Instruction and Supervision

Attend the Construction Briefing Meeting and subsequent project meetings as necessary. Inspect electrical work and materials and provide constant supervision of construction to ensure compliance with the contract documents.

Participate in the interim and final inspection process.

Assist in the electrical portion of the project schedule.

10A.12 Progress Reports and Payment Claims

Report weekly to the Prime Consultant on the progress of electrical work.

Examine Contractor's claims for electrical work and advise the Prime Consultant.

10A.13 Inspection Certificates

Prior to take-over, obtain from the Contractor all inspection certificates confirming that installed electrical work conforms with specifications and regulations.

10A.14 Operation and Maintenance Manuals

Review Operation and Maintenance Data Manuals submitted by the Contractor.

Prepare and submit to the Departmental Representative, Preventive Maintenance Manuals and Operation Instructions Manuals, in accordance with RFP.

10A.15 As-Built and Record Information

In accordance with Section 1.

SECTION 10B ELECTRICAL DESIGN GENERAL ELECTRICAL DESIGN

10B.1 Design Basis

Base the electrical design on providing the following features at the most economical cost, considering both investment and operating expenditures:

- Safety to personnel during operation and maintenance.
- Ease of maintenance for equipment maintained by non-specialized personnel.
- Flexibility and reliability of electrical services.
- Proper co-ordination of all elements of the system as to:
 - Insulation levels.
 - Interrupting capacities.
 - Protective relaying.
 - Mechanical strength.
- Energy conservation with respect to system and equipment and their operation.

10B.2 Codes and Standards

In accordance with Section 1.

Electrical work to conform with the Canadian Electrical Code CSA C22.1-2012, Part 1, Ontario Electrical Safety Code 2012 and all bulletins, Canada Labour Code Parts IV and VI and applicable local codes and regulations.

Require CSA certification on equipment.

Specify applicable standards for equipment, i.e., EEMAC, CSA, ULC, ASTM, NFPA, ANSI, etc.

10B.3 Materials and Equipment

Require Canadian products where economically feasible. Avoid specifying trade names.

Specify that within 30 days after contract award the Contractor submits for approval of the Departmental Representative 5 complete lists of all materials and equipment that he intends to use in the Contract.

10B.4 Fees and Permits

Specify that the Contractor pay fees and obtain permits as required by authorities having jurisdiction.

10B.5 Nameplates

For major equipment specify plastic white on black sandwich type nameplates be attached with metal screws; letters to be minimum 10 mm high.

Use plastic nameplates (adhesive-applied) for receptacle and switch cover plates in laboratories and other work areas.

Provide the Contractor with co-ordinated nameplate titles.

10B.6 Poke Through Wiring

Electrical power to any floor area is to be supplied from electrical panels on that floor to avoid the use of "poke through" wiring.

10B.7 Incoming Electrical Services

Underground: generally, underground service is preferred and use where required to conform to local practice. Cable and installation should be to the approval of the local Power Supply and Inspection Authorities. Provide spare ducts for future additions or maintenance.

Overhead: overhead service may be economically acceptable for small buildings.

Carry out economic analysis and submit:

- An analysis of the capital investment on equipment and long-term electrical energy cost for purchasing energy at utility voltage level against purchasing energy at higher voltage levels, taking into account energy losses in equipment such as service transformers.
- An estimate of the equipment and installation cost for the proposed electrical system.
- A calculation for the interest, at the current interest rate as furnished by Bank of Canada, on the difference in investment on alternative concepts of the electrical system.

Primary service equipment: Include protective devices, instrument transformers, metering equipment and other requirements of the local Supply Authority.

Well in advance discuss with the local PUC the size and type of service required. Obtain from the PUC the three phase symmetrical short circuit fault level at the incoming end of their service to determine the interrupting capacity of their service equipment.

Obtain from the local PUC data regarding point of connection, service characteristics and requirements, extent and cost of work provided by the Authority, type of service required (overhead or underground), whether a transformer vault is required and reasons therefore, and the best method of metering (primary or secondary, etc.).

Obtain approval from the local Supply Authority and Inspection Authority having jurisdiction for the proposed service entrance equipment, switchgear, duct-manhole systems, transformers, overhead systems and associated equipment.

Existing services: obtain locations of all buried service such as electrical, telephone lines, water and sewer lines, gas mains, etc. Specify that the Contractor take adequate protective measures before any digging operations commence.

Duct systems: determine the size and location of incoming ducts for electricity, telephones, fire alarms, etc., and indicate them in the working documents.

10B.8 Transformer

Dry type transformers are preferred for primary voltages of 5 kV or lower where insulation, co-ordination and protection satisfactory to the Power Supply Authority can be obtained. Provide lightning arrestors.

Liquid cooled transformers are preferable above 5 kV although dry type may be used if approved by the Power Authority. Check BIL requirements.

Establish transformer noise levels which will not cause interference in working areas.

Specify standards to establish quality, tests and performance.

10B.9 Capacity of Electrical Service

Allow for 100% lighting load plus an appropriate demand factor on the remaining load based on operating characteristics.

The main service should provide for minimum 50% expansion.

10B.10 Transformer Vaults

Allow for future expansion.

Provide an independent ventilation system (gravity where possible) with intake and exhaust direct to the outside.

10B.11 Switchgear Assemblies

Use metal-enclosed assemblies with drawout circuit breakers where current, voltage and short circuit characteristics are within their limits.

Incorporate H.R.C. current limiting fuses into circuit breakers on circuits requiring high short circuit protection.

Provide a co-ordination study to justify selection of fuses and breakers.

Specify standards to establish quality, tests and performance.

10B.12 Distribution Levels

Submit for Departmental approval a study of load requirements taking into account the overall plan.

120/240 volt power may be required to serve specific items of equipment.

A 208Y/120 volt, three-phase, four-wire system for lighting, receptacles and power is usually satisfactory for smaller buildings.

From the load and type of building make an economic study to determine if the use of a 600/347 volt system is warranted.

10B.13 Panelboards

Use circuit breaker type panelboards for motors, power equipment and lighting.

Circuit breakers to be of the bolt-on type. Multiple breakers to have single handle. Tie-bars not allowed.

Switch and fuse units may be used for high short circuit protection.

Specify standards to establish quality, tests and performance.

Mains or bussing to be made of copper.

Specify that each circuit shall be clearly labeled in a typewritten directory with a clear plastic cover.

Branch circuit panelboards to be fitted with lock type doors.

Specify minimum interrupting capacity rating.

Include a minimum of 20% spare breakers, and in laboratory and workshop areas provide space for 30% more.

Recessed panelboards should have additional spare, empty conduits extending to ceiling spaces.

Comply with PWGSC Advisory Notice on Counterfeit-Labelled Moulded Case Circuit Breakers issued June 28, 2012.

10B.14 Wiring Methods

Specify that either rigid steel or aluminum conduit be used for panel feeders, for 600 volt equipment, and in other locations required by the Canadian Electrical Code and local regulations.

PVC or FRE conduit may be used for underground work. Conduit embedded in concrete must not be aluminum.

Electrical metallic tubing, EMT, may be used in locations approved by the Canadian Electrical Code and local regulations. Provide insulated green ground conductor in EMT conduits.

For motors and equipment subject to vibrations or movement provide flexible connections of liquid-tight flexible metal conduit.

Specify conduits to be installed neatly with adequate bracing and clearances from adjacent equipment, and maintaining watertight penetration of walls and floors.

Wire size to be No. 12 AWG minimum for power or lighting circuits. Minimum conduit size for power and lighting circuits shall be 20 mm dia.

Conductors to be copper.

Conceal conduit and wiring in finished areas.

Permanent tags should be provided to feeders at pull and junction boxes.

10B.15 Ceiling Distribution System

Power System:

- Provide an electrical distribution system above the suspended T-bar ceiling with duplex receptacles to accommodate downfeed service poles. A minimum of (4) four duplex receptacles shall be spaced at 3.5 m (maximum) center to center, both ways. Connect no more than six (6) receptacles to a 15A circuit.
- Identify each receptacle with the panel and circuit number on red dymo tape.
- Receptacle boxes shall be securely fastened to the slab above and must not be installed more than 600 mm above T-bar ceiling.
- An insulated ground wire shall be installed in each conduit and grounded to the common panel ground.

- Where electrified screens are installed, provide a power distribution system in the ceiling space complete with junction boxes to Code requirement, one for each 40 square meter area with 208/120V, 3 Ph, 8 wire 4 circuit system in each box.

10B.16 Equipment Connections

Indicate on the working drawings wiring for motors, control equipment and other electrical equipment installed under other Divisions. Do not include low voltage (below 50 volts) wiring.

Extend wiring to equipment furnished by the Department.

10B.17 Switches and Receptacles

Switches for lighting to be specification grade AC rated 15/20 ampere, 120/347 volts, ganged where possible and mounted at maximum 1200 mm centre from finished floor.

Receptacles to be specification grade U-ground type, triple wiping contacts, rated 15 A, 125 volt, mounted minimum 400 mm centre above finished floor.

In lunch room provide above the counter two 15 A, 125 V duplex receptacles; each to be split wired and with a pilot light and switch.

In laboratory and shop areas:

- In areas where benches or counter tops may be located receptacles not part of the furniture should be mounted 1.0 m above the floor and spaced 1.5 m apart.
- Use a minimum of one 30 A, 240 volt receptacle per laboratory.
- Connect not more than 2 duplex receptacles to a circuit for bench receptacles.

Ratings of other receptacles as indicated or required.

10B.18 Corrosion Resistant Finishes

Cover plates, surface-mounted outlet boxes, etc., located in areas where corrosive materials may be used must have suitable corrosion resistance. In laboratories, ensure that finishes on electrical equipment cover plates and surface mounted outlet boxes match the finishes on mechanical fittings.

10B.19 Motor

Co-ordinate control sequences to provide starters and other auxiliary control equipment with the proper characteristics and features to obtain the performance intended.

Provide disconnect switches, starters and auxiliary control equipment which are not an integral part of packaged units described in equipment specifications but which are required for performance and sequence of operation of equipment specified under other Divisions.

Motors 400 W and over are to be three-phase.

Check that the voltage drop due to motor starting is within limits acceptable to the local utility. If required, use a reduced- voltage starter.

Provide motors with thermal-overload protection of the manual reset type. Built-in overloads in the motor are not acceptable. Specify that protection be co-ordinated with motor characteristics.

Single phase motors to be controlled by manual starters and not by tumbler switches. Motor starters are not to be supplied from lighting panelboards if at all possible.

Automatic-control devices such as thermostats, floats or pressure switches may control the starting and stopping of motors directly, if designed and rated for that purpose, otherwise use a magnetic starter.

When a manual-automatic operation is required, use a "Manual-off-Automatic" selector switch. Connect the selector switch so that only the normal automatic regulating control devices will be bypassed when the switch is in manual position. Connect safety control devices, such as low or high pressure cutouts, high temperature cutouts, motor overload, etc., in the control circuit in both the Manual and Automatic positions of the selector switch.

For three-phase motor starters provide:

- Magnetically operated motor starter.
- Fused control transformer for all 110 volt control.
- Manual-off-Automatic selector switch where remote control is used.
- Preferred: combination starters. Acceptable: starters with separate disconnect devices.
- Motor starter disconnecting devices to be manually operated and to be load-break fused switches or air circuit breakers.

Control devices in individual special purpose enclosures should be mounted in groups.

Co-ordinate all motor controls with the Mechanical Consultant.

10B.20 Motor Control Centres

Use motor control centers where they provide an economical and practical grouping of controls. Centres should be free-standing structures. Use combination starters. Mount centres on continuous mounting channels on raised concrete pads. Wall mount type may be used for groups of up to four starters. Identify each circuit by a black laminated plastic nameplate with white letters. Specify control centres as per EEMAC Standard for class and type.

10B.21 Motor Equipment Feeders

In open equipment areas consider the advantages of running motor equipment feeders from overhead rather than up through floor slabs.

10B.22 Underfloor Ducts or Raised Floors

Underfloor duct or raised floor systems for power, telephones and intercom may be used in office areas, but not in laboratory areas. Submit a cost estimate and preliminary layout at Concept Stage Submission, if considered feasible.

10B.23 Telecommunication Systems

Provide an empty conduit system for voice and data communication systems directly from the main building communications room or the building communications riser room on the same floor to the communications room in the tenant space to suit.

Where plenum cable system is provided for voice and data communication systems in the ceiling space, ensure that these cables are properly supported from the structural ceiling slab and not laid on top of ceiling tiles.

Where required for security and/or physical protection purposes, provide an empty zone conduit system for telephone and data communication systems with each zone conduit serving a bay area of maximum 50 m². Provide 50 mm EMT conduits with plastic end bushings and nylon pull strings. Provide long radius 90a bends and pulling points as required by telecommunication systems companies.

10B.24 Intercommunication Systems

Provide an intercom system or empty conduit system only for an intercom system. Submit proposed layout at the Design Stage Submission.

10B.25 Elevators

Conform to the National Building Code, Canada Labour Code Part IV, local regulations, ASME A17.1-2010/CSA B44-10 Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks and, CAN/CSA-B651-04(R2010), Accessible Design for the Built Environment or CAN/CSA-B355-09 Lifts for Persons with Physical Disabilities.

Provide elevators, dumbwaiters, and escalators only where they can be justified as functional requirements of the building.

Where groups of units are involved, submit an elevator analysis to indicate the performance of the system proposed.

Direct plunger hydraulic elevators may be used for elevators serving 2 or 3 stops provided ground conditions do not introduce serious difficulties in installing the cylinder.

Provide fire fighters service if required by the codes.

10B.26 Clocks

Provide manual reset clocks and clock outlets in strategic areas such as main lobbies, corridors, general offices and conference rooms. Use an automatically supervised clock system in large buildings where economically justified.

10B.27 Fire Alarm System

General: Depending on the size of the building provide a fire alarm system in accordance with the National Building Code and Treasury Board Personnel Management Manual, Occupational Safety and Health, Chapter 3-4 "Standards for Fire Alarm Systems" 01-02-92. Installation to CAN/ULC-S524-06. Verification of Alarm System to CAN/ULC-S537-04. Inspection and Testing of Alarm System to CAN/ULC-S536-04.

Fire alarm system to be multiplex or hardwired to suit the project. Submit cost comparison with preliminary layout at concept stage submission.

10B.28 Voice Communication System

Conform to requirements of the National Building Code and the Treasury Board Manual, Personnel Management Manual, Occupational Safety and Health, Chapter 3-4, Standard for Fire Alarm System, 01-

02-92. Depending on the size of the building, provide a voice communication system in conjunction with the fire alarm system.

The design, inspection and testing is to be subject to the approval of the FC.

10B.29 Standby Power

If a standby electrical generating set is required provide specific requirements here.

Provide a standby electrical generating set to supply emergency power for 12 hours minimum.

Emergency power supply shall be in accordance with CAN/CSA-C282-09, Emergency Electrical Power Supply for Buildings.

Enclose generator room with non-combustible materials having a 2 hour fire rating and by Underwriters Laboratories labeled 1-1/2 hour fire rated doors.

Install diesel engine in accordance with the requirements of the NFPA 37-2010.

Fuel supply and piping system is to be in accordance with National Fire Code of Canada, NFC 2010.

Standby lighting, power panels and circuits shall be provided for future connection to standby generator even if generator is not required at the design stage.

Receptacles connected to emergency system to be colour coded red for ready identification.

10B.30 Lighting General

Lighting systems to be designed to provide the required illumination levels with ease of luminaire relocation, lighting control and lighting maintenance with no damage occurring to components. Refer to PWGSC Office Lighting Design Standard and Application Guidelines, April 2012 for detailed information not contained in this section.

Ceiling surfaces to have a 80% minimum reflectance, a minimum NRC rating of 0.8 as per ASTM C423-09a test standard titled Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

Leave a minimum ceiling depth of 220 mm for ceiling recessed luminaire installation, unless otherwise determined by PWGSC.

Submit co-ordination drawings showing worst cases of ceiling space requirements and clearances for structural, mechanical and electrical components.

Provide exterior security lighting for drives, walks, parking areas, entrance/exit doors and other strategic locations. Exterior lighting to be controlled by timer or photocell. Provide manual by-pass switches.

Provide the Department with detail calculations of light intensities to support the design.

10B.31 Lighting Levels

For each room or area determine the task performed and provide minimum maintained average illumination levels to meet Labour Canada Regulations and PWGSC Standard, IESNA recommended

lighting levels and Tables 1 and 2 attached at the bottom of this section. These levels may be achieved by using non-uniform task ambient lighting layouts.

In cases where visual task description, furniture layout and office layout is unavailable, a minimum base illumination level of 750 lux average maintained over the entire work space is to be used.

Minimum to average illumination ratio to be 0.8 or better over the entire working area.

Provide local switching for enclosed rooms, e.g., private offices, conference rooms, training rooms, etc. For large areas provide local switching arrangements to conveniently control and conserve energy.

10B.32 Lighting Power Allowances

Conform to ANSI/ASHRAE 90.1-2010 (SI) requirements.

While individual areas may deviate from the ANSI/ASHRAE recommended values, the total power budget for lighting shall not exceed 22 watts per square metre, unless otherwise determined by PWGSC.

10B.33 Energy Consumption

Conform to ANSI/ASHRAE 90.1-2010 (SI) requirements.

10B.34 Luminaires

Fluorescent luminaires is preferred for indoor applications. Depending on the luminaire design, these luminaires shall be capable of accommodating up to 76 mm high metal louvres. The use of incandescent luminaires is limited to applications where questions of aesthetics, ultraviolet emission and lighting control requires it. Use compact fluorescent lamps where possible.

The use of HID luminaires is limited to support and utility spaces. Special dispensation of this use limitation can be obtained from the PWGSC Regional Electrical Engineer, provided the requirements of PWGSC requirements are met.

For outdoor applications the use of HID luminaires is preferred.

Illustrate all fixtures on the working drawings or standard details sheets and specify in detail the quality of material, construction and standard of performance required. Manufacturer's name and catalogue numbers are not allowed in contract documents.

Specify fluorescent luminaires either 300 mm or 500 mm width to suit ceiling modules for recessed installation.

10B.35 Ballasts

For fluorescent fixtures, use electronic type, rapid start, energy efficient, high power factor, with THD not exceeding 15, and sound rated A ballasts, having low current crest factor (less than 1.8) and wired to maximize energy efficiency. Electronic ballasts must be the type approved by PWGSC, Provincial and local Hydro authorities for energy efficiency and harmonic criteria.

HID's ballasts to meet or exceed the performance requirements of ANSI C82.4-2002, and to be suitable for the lamp and temperature specified.

10B.36 Lamps

Provide lamps of the best quality available. Generally, fluorescent lamps to be rapid start, 32 watts T8 3500 K. Incandescent lamps are to be for 130 volt operation. Specify initial and average lumens and rated life.

Specify 3500 K fluorescent lamps for new installations and major renovations.

10B.37 Lighting Controls

Manual controls:

- These may be line switches, low voltage switches, time switches, photo controls and contactors. They should be located to maximize convenience and load control.
- Circuit breakers and light contactors are not to be used as localized manual lighting controls.

Microprocessor lighting controls:

- May be operated from a central master control unit, have field distributed control panels for zone control and local "on-off" controls. Programming functions can be assigned from the main console unit and/or assigned from field control panels. Local control can be achieved via a wall switch or telephone line.

10B.38 Emergency Lighting

Provide sufficient emergency lighting to permit a safe evacuation. Emergency lighting systems must be installed in accordance with Canada Labour Code Part IV and PWGSC Standard Office Lighting Design Standard and Application Guidelines, April 2012.

Emergency battery lighting units must be performance certified by CSA as meeting CSA C22.2 No.141-10, Emergency Lighting Equipment.

10B.39 Exit Signs

Exit and paths of exit travel are to be indicated by electrically illuminated full panel bilingual exit signs. Size of lettering to meet the National Building local Fire Department and CAN/CSA-C860-11, and photoluminescent exit signs to CAN/ULC-S572-10. Performance of Internally Lighted Exit signs requirements. Connect electrified Exit Signs to emergency power system.

If there is no provision for a standby generator, connect to emergency battery units.

10B.40 Heating

Co-ordinate heating with mechanical and architectural design. If electrical heating is used, ensure that the heating units specified provide the required wattage but do not exceed specified values. Integrate the heating controls with the total environmental aspect of the building.

10B.41 Transient Voltage Surge Suppressors (TVSS)

TVSS is to be fully applicable for the purpose of protecting all facility AC electrical circuits from the hazardous effects of transient voltages. These transients may be generated externally by lightning induced energies, utility load factor corrections, and substation switching or they can be internally generated due to inductive and/or capacitive load switching.

10B.42 Lightning Protection

Determine the necessity of installing lightning protection. If required, provide protection to meet CAN/CSA-B72-M87(R2008), latest provincial Lightning Rods Act, provincial or local regulation, the requirements of Provincial Fire Marshal.

10B.43 Security System

Provide an alarm system against unauthorized entry of the premises and certain secure areas. Use door switches and alarms plus an electronic intrusion alarm system.

10B.44 Lighting Levels

Table 1 - Recommended Levels of Illumination (Interior).

TABLE 1

Illumination levels for interior office spaces, expressed as minimum acceptable values of maintained average horizontal lux levels over

- a) the working plane at each work station and
- b) at floor level for support spaces. Refer to IESNA Illuminance Surveying techniques for field measurements.

Description of Task	Illumination (lx) 10 lx = 1 dalx
High Contrast Visual Task (4) (7)	600
Low Contrast Visual Task (5) (7)	1,000
VDT use (3)	300-500 (1)(2)
Filing work (6)	300
Circulation areas immediate to task areas	200
Public spaces, lounges, waiting areas	100-200
Notice Boards	300
Conference, training rooms	300-600 (1)
Corridors	100
Cafeteria - dining (9)	75
Cafeteria - food display, serving, cashier (9)	300
Food preparation (9)	500
Washrooms (8)	200
Powder room - grooming (8)	300
Stairways	100

Note

- (1) Provide flexible and/or dimmable lighting levels.
- (2) VDT task in conjunction with paper oriented task requiring greater illumination will conform to the requirements of the latter.
- (3) For guidance in lighting design for VDT spaces see publication PWGSC Design Guide "Office Lighting for Video Display Terminals".
- (4) Typically found in private offices, clerical work and accounting offices.
- (5) Typically found in drafting offices, mapping and artwork offices.
- (6) Typically visual tasks of high contrast and large size, or tasks of intermittent visual nature.
- (7) For general office spaces with undetermined task use 750 lux and a minimum to average ratio of 0.8. and is the actual sink top.
- (8) The reference plane is the actual sink top.

(9) The reference plane is the actual table top, counter top or serving surface.

10B.44 Lighting Levels

Table 2 - Recommended Levels of Illumination (Exterior).

TABLE 2

Illumination levels for exterior commercial office building spaces, expressed as minimum acceptable values of maintained average horizontal lux levels over usable area and at pavement level. Refer to IESNA Illuminance Survey techniques for field measurements.

Description of Task	Illumination Level (lux) (1)	Uniformity Ratio
OPEN PARKING		
Vehicular traffic low activity	10	4:1
Vehicular traffic, moderate-high activity	20	4:1
Vehicular intersections	30	3:1
Pedestrian walkways	10	N/A
Pedestrian walkways and vehicular intersection	30	3:1
Other area	10	N/A
COVERED PARKING		
General parking and pedestrian areas	50	4:1
Ramps and corners	100	3:1
Entrance area (Note 2)	500	N/A
BUILDING FLOODLIGHTING		
Building façade (vertical illumination)	100-300	4:1

Note

1. Provide photocell control with manual bypass.
2. The entrance area is defined as the portal or physical entrance to the covered portion of the parking structure and 15 m beyond the edge of the covering into the structure.

10B.45 As-Built and Record Information

As-built information is received from the Contractor. It contains drawings, specifications, shop drawings, submittals, samples, etc. It is noted as such by the Contractor.

Record drawings and specifications are updated originals prepared by the Consultants based on the information supplied by the Contractor in the as-built.

SECTION 10C GENERAL ELECTRICAL DESIGN (CSC) Correctional Service Canada

10C.1 Design Basis

Base the electrical design on providing the following features at the most economical cost, considering both investment and operating expenditures:

- Safety to personnel during operation and maintenance.
- Ease of maintenance for equipment maintained by non-specialized personnel.
- Flexibility and reliability of electrical services.
- Proper co-ordination of all elements of the system as to:
 - Insulation levels
 - Interrupting capacities
 - Protective relaying
 - Mechanical strength
- Energy conservation with respect to system and equipment and their operation.

10C.2 Codes and Standards

In accordance with Section 1.

Electrical work to conform with the Canadian Electrical Code CSA C22.1-2012, Part 1, Ontario Electrical Safety Code 2012 and all bulletins, Canada Labour Code Parts IV and VI and applicable local codes and regulations.

- Require CSA certification on equipment.
- Specify applicable standards for equipment, i.e., EEMAC, CSA, ULC, ASTM, NFPA, ANSI, etc.
- Correctional Service Canada Technical Criteria Document.
- The following Correctional Service Canada specifications:

CSC/DTE 80027 Issue 3	General Specification for Fixed Point Security Alarm for use in Federal Correctional Institutions.
CSC/DTE 77041 Issue 7	Statement of Work for Electronic Systems for the Correctional Service of Canada Institutions.
CSC/DTE 80006 Issue 6	Quality Control Specifications for the installation of Electronic Systems in Federal Correctional Institutions.
CSC/DTE 77013 Issue 4	Functional Specification for a closed circuit television system for use in Correctional Institutions.
DTE-02:02	Monochrome, Charged-Coupled Device (CCD) closed Circuit Television Camera.
DTE-02:03	Color, Charged-Coupled Device (CCD) closed Circuit Television Camera.
CSC/DTE 77018 Issue 4	Functional Specification for an Inmate Cell Call System for use in Federal Correctional Institutions.

10C.3 Materials and Equipment

Require Canadian products where economically feasible. Avoid specifying trade names and manufacturer's catalogue numbers.

Specify that within 30 days after tender award the Contractor submits for approval of the Departmental Representative, 5 complete lists of all materials and equipment that he intends to use in the Contract.

10C.4 Fees and Permits

Specify that the Contractor pay fees and obtain permits as required by authorities having jurisdiction.

10C.5 Nameplates

For major equipment specify plastic white on black sandwich type nameplates be attached with metal screws; letters to be minimum 10 mm high.

Use plastic nameplates (adhesive-applied) for receptacle and switch cover plates in laboratories and other work areas.

Provide the Contractor with coordinated nameplate titles.

10C.6 Poke Through Wiring

Electrical power to any floor area is to be supplied from electrical panels on that floor to avoid the use of "poke through" wiring.

10C.7 Transformer

Dry type transformers are preferred for Types primary voltages of 5 kV or lower where insulation, co-ordination and protection satisfactory to the Power Supply Authority can be obtained. Provide lightning arrestors.

Liquid cooled transformers are preferable above 5 kV although dry type may be used if approved by the Power Authority. Check BIL requirements.

Establish transformer noise levels which will not cause interference in working areas.

Specify standards to establish quality, tests and performance.

10C.8 Capacity of Electrical Service

Allow for 100% lighting load plus an appropriate demand factor on the remaining load based on operating characteristics.

The main service should provide for minimum 50% expansion.

10C.9 Transformer Vaults

Allow for future expansion.

Provide an independent ventilation system (gravity where possible) with intake and exhaust direct to the outside.

10C.10 Distribution Levels

Submit for Departmental approval a study of load requirements taking into account the overall plan.

120/240 volt power may be required to serve specific items of equipment.

A 208Y/120 volt, three-phase, four-wire system for lighting, receptacles and power is usually satisfactory for smaller buildings.

From the load and type of building make an economic study to determine if the use of a 600/347 volt system is warranted.

10C.11 Panelboards

Use circuit breaker type panelboards for motors, power equipment and lighting.

Circuit breakers to be of the bolt-on type. Multipole breakers to have single handle. Tie-bars not allowed.

Switch and fuse units may be used for high short circuit protection.

Specify standards to establish quality, tests and performance.

Mains or bussing to be made of copper.

Specify that each circuit shall be clearly labeled in a typewritten directory with a clear plastic cover.

Branch circuit panelboards to be fitted with lock type doors.

Specify minimum interrupting capacity rating.

Include a minimum of 20% spare breakers, and in laboratory and workshop areas provide space for 30% more.

Recessed panelboards should have additional spare, empty conduits extending to ceiling spaces. Comply with PWGSC Advisory Notice on Counterfeit-Labelled Moulded Case Circuit Breakers issued June 28, 2012.

10C.12 Wiring Methods

Specify that rigid steel conduit be used for panel feeders, for 600 volt equipment, and in other locations required by the Canadian Electrical Code and local regulations.

PVC or FRE conduit may be used for underground work. Conduit embedded in concrete must not be aluminum.

Electrical metallic tubing, EMT, may be used in locations approved by the Canadian Electrical Code and local regulations. Provide insulated green ground conductor in EMT conduits.

For motors and equipment subject to vibrations or movement provide flexible connections of liquid-tight flexible metal conduit.

Specify conduits shall be installed neatly with adequate bracing and clearances from adjacent equipment, and maintaining watertight penetration of walls and floors.

Wire size shall be No. 12 AWG minimum for power or lighting circuits. Minimum conduit size for power and lighting circuits shall be 20 mm dia.

Conductors shall be copper.

Conceal conduit and wiring in finished areas.

Permanent tags should be provided to feeders at pull and junction boxes.

10C.13 Ceiling Distribution

In the ceiling space of office areas install a system of duplex receptacles to provide power to power poles. Minimum of 3 duplex receptacles to be placed on a grid of 3 m x 3 m. Connect no more than 6 duplex receptacles to a circuit.

Evaluate the flexibility and economics of providing a system of empty conduits to facilitate the distribution of telephone and telecommunications cables, or the installation of a cable tray system with cables approved for use in return air plenum.

Evaluate the versatility, convenience, technical and economic performance of available ceiling wiring systems, including the use of metal raceway and plug-in distribution system.

10C.14 Equipment Connections

Indicate on the working drawings wiring for motors, control equipment and other electrical equipment installed under other Divisions. Do not include low voltage (below 50 volts) wiring.

Extend wiring to equipment furnished by the Department.

10C.15 Switches and Receptacles

Switches for lighting to be specification grade AC rated 15/20 ampere, 120/347 volts, ganged where possible and mounted at 1400 mm centre from finished floor.

Receptacles to be specification grade U-ground type, triple wiping contacts, rated 15 A, 125 volt, mounted 300 mm above finished floor.

In lunch room provide above the counter two 15 A, 125 V duplex receptacles; each to be split wired and with a pilot light and switch.

In laboratory and shop areas:

- In areas where benches or counter tops may be located receptacles not part of the furniture should be mounted 1.0 m above the floor and spaced 1.5 m apart.
- Use a minimum of one 30 A, 240 volt receptacle per laboratory.
- Connect not more than 2 duplex receptacles to a circuit for bench receptacles.

Ratings of other receptacles as indicated or required.

10C.16 Corrosion Resistant Finishes

Cover plates, surface-mounted outlet boxes, etc, located in areas where corrosive materials may be used must have suitable corrosion resistance. In laboratories, ensure that finishes on electrical equipment cover plates and surface mounted outlet boxes match the finishes on mechanical fittings.

10C.17 Motor Controls

Co-ordinate control sequences to provide starters and other auxiliary control equipment with the proper characteristics and features to obtain the performance intended.

Provide disconnect switches, starters and auxiliary control equipment which are not an integral part of packaged units described in equipment specifications but which are required for performance and sequence of operation of equipment specified under other Divisions.

Motors 400 W and over are to be three-phase.

Check that the voltage drop due to motor starting is within limits acceptable to the local utility. If required, use a reduced- voltage starter.

Provide motors with thermal-overload protection of the manual reset type. Built-in overloads in the motor are not acceptable. Specify that protection be co-ordinated with motor characteristics.

Single phase motors to be controlled by manual starters and not by tumbler switches.

Motor starters are not to be supplied from lighting panelboards if at all possible.

Automatic-control devices such as thermostats, floats or pressure switches may control the starting and stopping of motors directly, if designed and rated for that purpose, otherwise use a magnetic starter.

When a manual-automatic operation is required, use a "Manual-off-Automatic" selector switch. Connect the selector switch so that only the normal automatic regulating control devices will be bypassed when the switch is in manual position. Connect safety control devices, such as low or high pressure cutouts, high temperature cutouts, motor overload, etc, in the control circuit in both the Manual and Automatic positions of the selector switch.

For three-phase motor starters provide:

- Magnetically operated motor starter.
- Fused control transformer for all 110 volt control.
- Manual-off-Automatic selector switch where remote control is used.
- Preferred: combination starters. Acceptable: starters with separate disconnect devices.
- Motor starter disconnecting devices to be manually operated and to be load-break fused switches or air circuit breakers.

Control devices in individual special purpose enclosures should be mounted in groups.

Co-ordinate all motor controls with the Mechanical Consultant.

10C.18 Motor Control Centers

Use motor control centers where they provide an economical and practical grouping of controls. Centres should be free-standing structures. Use combination starters. Mount centres on continuous mounting channels on raised concrete pads. Wall mount type may be used for groups of up to four starters. Identify each circuit by a black laminated plastic nameplate with white letters. Specify control centres as per EEMAC Standard for class and type.

10C.19 Motor Equipment Feeders

In open equipment areas consider the advantages of running motor equipment feeders from overhead rather than up through floor slabs.

10C.20 Telephone and Data Communication Systems

Provide an empty conduit system for the telephone and data communication systems.

10C.21 Intercommunication Systems

Provide an intercom system or empty conduit system only for an intercom system. Submit proposed layout at the Design Stage Submission.

10C.22 Clocks

Provide manual reset clocks and clock outlets in strategic areas such as main lobbies, corridors, general offices and conference rooms. Use an automatically supervised clock system in large buildings where economically justified.

10C.23 Fire Alarm System

General: Provide a fire alarm system in accordance with CSC Technical Criteria, the National Building Code and Treasury Board Personnel Management Manual, Occupational Safety and Health, Chapter 3-4 Standards for Fire Alarm Systems. Installation to CAN/ULC-S524-06. Verification of Alarm System to CAN/ULC-S537-04. Inspection and Testing of Alarm System to CAN/ULC-S537-04.

Fire alarm system to be compatible with the existing fire alarm system of the Institution. Submit cost comparison with preliminary layout at concept stage submission.

10C.24 Standby Power

Provide a standby electrical generating set to supply emergency power for 12 hours minimum.

Emergency power supply shall be in accordance with CSA-C282-09, Emergency Electrical Power Supply for Buildings.

Enclose generator room with non-combustible materials having a 2 hour fire rating and by Underwriters Laboratories labeled 1-1/2 hour fire rated doors.

Install diesel engine in accordance with the requirements of the NFPA 37-2010, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.

Fuel supply and piping system is to be in accordance with National Fire Code of Canada, NFC 2010.

Standby lighting, power panels and circuits shall be provided for future connection to standby generator even if generator is not required at the design stage.

Receptacles connected to emergency system to be colour coded red for ready identification.

10C.25 Lighting General

Lighting systems to be designed to provide the required illumination levels with ease of luminaire relocation, lighting control and lighting maintenance with no damage occurring to components. Refer to PWGSC Office Lighting Design Standard & Application Guidelines, April 2012, for detailed information not contained in this section.

Ceiling surfaces to have a 80% minimum reflectance, a minimum NRC rating of 0.8 as per ASTM C423-09a test standard titled Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

Leave a minimum ceiling depth of 220 mm for ceiling recessed luminaire installation, unless otherwise determined by PWGSC.

Submit co-ordination drawings showing worst cases of ceiling space requirements and clearances for structural, mechanical and electrical components.

Provide the Department with detail calculations of light intensities to support the design.

10C.26 Lighting Levels

For each room or area determine the task performed and provide minimum maintained average illumination levels to meet Canada Labour Code and PWGSC Standard, IESNA recommended lighting levels and Tables 1 and 2 attached at the bottom of this section. These levels may be achieved by using non-uniform task ambient lighting layouts.

In cases where visual task description, furniture layout and office layout is unavailable, a minimum base illumination level of 750 lux average maintained over the entire work space is to be used.

Minimum to average illumination ratio to be 0.8 or better over the entire working area.

Provide local switching for enclosed rooms, e.g., private offices, conference rooms, training rooms, etc. For large areas provide local switching arrangements to conveniently control and conserve energy.

10C.27 Lighting Power Allowances

Conform to Model National Energy Code of Canada for Buildings 2011.

Whilst individual areas may deviate, the total power budget for lighting shall not exceed 22 watts per square meter, unless otherwise determined by PWGSC.

10C.28 Energy Consumption

Conform to ANSI/ASHRAE-90.1-2010(SI) Energy Standard for Buildings Except Low-Rise Residential Buildings.

10C.29 Luminaires

Fluorescent luminaires is preferred for indoor applications. Depending on the luminaire design, these luminaires shall be capable of accommodating up to 76 mm high metal louvers. The use of incandescent luminaires is limited to applications where questions of aesthetics, ultraviolet emission and lighting control requires it. Use compact fluorescent lamps where possible.

The use of HID luminaires is limited to support and utility spaces. Special dispensation of this use limitation can be obtained from the PWGSC Regional Electrical Engineer, provided the PWGSC requirements are met.

For outdoor applications the use of HID luminaires is preferred.

Illustrate all fixtures on the working drawings or standard details sheets and specify in detail the quality of material, construction and standard of performance required. Lenses to be ULC certified. Manufacturer's names and catalogue numbers are not allowed.

Fluorescent light fixtures should generally be 2 lamp. Specify either 300 mm or 500 mm width to suit ceiling modules for recessed installation.

10C.30 Ballasts

For fluorescent fixtures, use electronic type, rapid start, energy efficient, high power factor, with THD not exceeding 15, and sound rated A ballasts, having low current crest factor (less than 1.8) and wired to maximize energy efficiency. Electronic ballasts must be the type approved by PWGSC, Provincial and local Hydro authorities for energy efficiency and harmonic criteria and suitable for T-8 lamps.

HID's ballasts to meet or exceed the performance requirements of ANSI C82.4-2002 and to be suitable for the lamp and temperature specified.

10C.31 Lamps

Provide lamps of the best quality available. Generally, fluorescent lamps to be rapid start, 32 watts T8 3500 K. Incandescent lamps are to be for 130 volt operation. Specify initial and average lumens and rated life.

Specify 3500 K fluorescent lamps for new installations and major renovations.

10C.32 Lighting Controls

Manual controls:

- These may be line switches, low voltage switches, time switches, photocontrols and contactors. They should be located to maximize convenience and load control.
- Circuit breakers and light contactors are not to be used as localized manual lighting controls.

Microprocessor lighting controls:

- May be operated from a central master control unit, have field distributed control panels for zone control and local "on-off" controls. Programming functions can be assigned from the main console unit and/or assigned from field control panels. Local control can be achieved via a wall switch or telephone line.

10C.33 Emergency Lighting

Provide sufficient emergency lighting to permit a safe evacuation. Emergency lighting systems must be installed in accordance with Canada Labour Code Part IV, PWGSC Office Lighting Design Standard & Application Guidelines and CSC Technical Criteria.

Emergency battery lighting units must be performance certified by CSA as meeting CSA C22.2 No.141-10, Emergency Lighting Equipment.

10C.34 Exit Signs

Exit and paths of exit travel are to be indicated by electrically illuminated full panel LED bilingual exit signs. Size of lettering to meet the National Building Code and the local Fire Department and CAN/CSA-C860-11 and photoluminescent exit signs to CAN/ULC-S572-10. Connect electrified Exit Signs to emergency power system. If there is no provision for a standby generator, provide additional sockets and lamps and connect to emergency battery units.

10C.35 Heating

Co-ordinate heating with mechanical and architectural design. If electrical heating is used, ensure that the heating units specified provide the required wattage but do not exceed specified values. Integrate the heating controls with the total environmental aspect of the building.

10C.36 Security System

Provide an alarm system against unauthorized entry of the premises and certain secure areas. Use door switches and alarms plus an electronic intrusion alarm system.

10C.37 Fixed Point Alarm System

[Provide a] [Modify existing] fixed point alarm system.

System must be compatible with the existing Pyrotronics system.

10C.38 CCTV System

[Provide a] [Modify existing] closed circuit television (CCTV) system.

10C.39 Cell Call System

[Provide a] [Modify existing] cell call system.

System must be compatible with the existing system.

10C.40 Illumination Levels Interior

TABLE 1

Illumination levels for interior office spaces, expressed as minimum acceptable values of maintained average horizontal lux levels over a) the working plane at each work station and b) at floor level for support spaces. Refer to IESNA Illuminance Surveying techniques for field measurements.

<u>Description of Task</u>	<u>Illumination (lx)</u> <u>10 lx = 1 dalx</u>
High Contrast Visual Task (4)(7)	500
Low Contrast Visual Task (5)(7)	1,000
VDT use (3)	300-500 (1)(2)
Filing work (6)	300
Circulation areas immediate to task areas	200
Public spaces, lounges, waiting areas	100-200
Notice Boards	300
Conference, training rooms	300-600 (1)
Corridors	100
Cafeteria - dining (9)	75
Cafeteria - food display, serving, cashier (9)	300
Food preparation (9)	500
Washrooms (8)	200
Powder room - grooming (8)	300

Stairways 100

Note

- (1) Provide flexible and/or dimmable lighting levels.
- (2) VDT task in conjunction with paper oriented task requiring greater illumination will conform to the requirements of the latter.
- (3) For guidance in lighting design for VDT spaces see publication PWGSC Design Guide "Office Lighting for Video Display Terminals".
- (4) Typically found in private offices, clerical work and accounting offices.
- (5) Typically found in drafting offices, mapping and artwork offices.
- (6) Typically visual tasks of high contrast and large size, or tasks of intermittent visual nature.
- (7) For general office spaces with undetermined task use 750 lux and a minimum to average ratio of 0.8. and is the actual sink top.
- (8) The reference plane is the actual sink top.
- (9) The reference plane is the actual table top, counter top or serving surface.

10C.41 Illumination Levels Exterior

TABLE 2

Illumination levels for exterior commercial office building spaces, expressed as minimum acceptable values of maintained average horizontal lux levels over usable area and at pavement level. Refer to IESNA Illuminance Survey techniques for field measurements.

Description of Task Level	Illumination Level (lux) (1)	Uniformity Ratio
OPEN PARKING		
Vehicular traffic low activity	10	4:1
Vehicular traffic, moderate-high activity	20	4:1
Vehicular intersections	30	3:1
Pedestrian walkways	10	N/A
Pedestrian walkways and vehicular intersection	30	3:1
Other area	10	N/A
COVERED PARKING		
General parking and pedestrian areas	50	4:1
Ramps and corners	100	3:1
Entrance area (Note 2)	500	N/A
BUILDING FLOODLIGHTING		
Building facade (vertical illumination)	100-300	4:1

Notes:

- (1) Provide photocell control with manual bypass.
- (2) The entrance area is defined as the portal or physical entrance to the covered portion of the parking structure and 15 m beyond the edge of the covering into the structure.

SECTION 11 CONSTRUCTION COST PLANNING AND CONTROL

11.1 Agreement Requirements

The Consultant Agreement requires the Consultant to monitor the project construction cost from commencement of his work through to post- construction evaluation of the completed project.

11.2 Cost Plan

The project cost plan is an application of cost criteria to the design, establishing a reasonable economic relationship between cost, quality, utility and appearance. It confirms the feasibility of producing the required accommodation within the construction cost limit, and provides a means of subsequent checking and control of overall expenditure.

The Cost Plan defines a certain amount of money for a certain quality of project in relation to the Basic Requirements.

11.3 Cost Control

Provide cost control services during the design and construction documents development and during Bid period and initiate corrective action to ensure that the estimated project construction cost remains within the approved construction cost limit/budget.

Advise the Departmental Representative immediately if changes are required due to revised client requirements, etc. impact the Construction Cost Limit. Do not proceed with these changes until authorized by the Departmental Representative.

11.4 Classes of Estimates - Definitions

CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

A- PWGSC and Treasury Board

In its dealings with Treasury Board on matters of project approvals, PWGSC uses two classes of estimates: indicative and substantive. The indicative estimate is the first one that is used (chronology-wise) and serves as the basis of Preliminary Project Approval by the Treasury Board. This estimate is also referred, within PWGSC, as a class "D" estimate. The substantive estimate is the second one that is used (again, chronology-wise) and serves as the basis of Effective Project Approval by the Treasury Board. This estimate is also referred, within PWGSC, as a class "B" estimate.

B- PWGSC and Consultant Agreements (for architects and engineers)

In its dealings with architects and engineers, PWGSC uses four classes of estimates: classes "D", "C", "B" and "A". The Class "D" estimate is the first one that is used (chronology wise) and serves as the basis of the Construction Cost Estimate upon which an agreement between PWGSC and an architectural/engineering (A&E) consulting firm is entered into. The class "D" estimate is prepared by PWGSC and is used by the A&E firm during its performance of the 'Analysis of the Project Brief'. (This estimate compares to the indicative estimate). The Class "C" estimate is prepared by the firm as part of the 'Design Concept'. The Class "B" estimate is prepared by the firm as part of the 'Design Development'. (This estimate compares to the substantive estimate).

The Class “A” estimate is prepared by the firm as part of the ‘Construction Documents, Pre-Bid Construction Cost Estimate and Project Schedule’. Definitions of classes “D”, “C”, “B” and “A” are as follows.

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

Class “D” Estimate

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

Class “C” Estimate

This estimate is prepared at the end of the Design Concept stage and is based on updated user requirements, general description of the end built works, preliminary site information and existing conditions, production, and takes into consideration construction experience and market conditions as well as basic implementation logistics. It includes costs for design, documentation, and construction supervision. Expected degree of accuracy: 15%.

Class “B” Estimate

This estimate is prepared at the end of Preliminary Design and is based upon data (on cost, time and construction) of a level of precision as is typically available when the design of the major systems and sub-systems of the facility (including outline specifications and preliminary drawings and models), as well as when the results of all site or installation investigations are completed. This estimate also makes allowance for all costs resulting from the anticipated schedule, expected market conditions and suitable level of contingencies. This estimate is used to establish the substantive estimate required by Treasury Board for Effective Project Approval. Expected degree of accuracy: 10%.

Class “A” Estimate

This estimate is based on the “B” estimate which has been updated concurrently with the development of Construction Documents and is submitted as a final pre-bid estimate. It requires that project systems be designed and specified to near completion, and is based on a realistic construction schedule and accurate labour and material costs. This is the final estimate before bid call or construction start. Typically, the total forecast is presented in elemental format and includes all actual associated fees and costs. Expected degree of accuracy: 5%.

The Cost Plan must be within the authorized budget. Intermediate and Final Estimates should remain within the Cost Plan, unless (changes due to revised client requirements, etc., are authorized by the Department. Advise the Department immediately if such changes occur.

11.5 Construction Cost Estimate Submissions

Provide the following Construction Cost Estimate Submissions:

- A Class "C" Estimate with each Design Concept Submission. The Consultant will also submit Class 'C' estimate for various options thus facilitating Departmental Representative's decision re: selecting the best options. The Consultant's submission will include variance analysis between the construction cost limit and Consultant's Class 'C' estimate with justification/substantiation of variances.
- A Class "B" Estimate with the Design Development and Outline Specifications of Design Systems Submission. The Consultant's submission will include variance analysis between the construction cost limit and Consultant's Class 'C' estimate with justification/substantiation of variances.
- An updated Class "B" Estimate with each submission of the updated Construction Documents at each stage of production specified, i.e. at 66% completion. Each submission will include variance analysis.
- A Class "A" Estimate with the 100% complete stage Construction Document.
- Each Class "C" Estimate shall consist of a completed Elemental Cost Analysis Form.
- Each Class "A" or "B" Estimate submission shall comprise of a completed Elemental Cost Analysis Form and the back-up sheets showing each Sub-Element Item of the work quantified and priced.

11.6 Cost Advice

Provide cost advice, during the design stage, between cost estimate submissions. Evaluate cost of various options, as required, to facilitate Department's decision.

Provide cost advice during the construction stage. Prepare cost estimates for every change based on Contemplated Change Notice and submit to Departmental Representatives. This will assist in deciding on whether to proceed with a change or to assess Contractor's quotation. Evaluate Contractor's quotation and recommend for approval by Departmental Representatives.

11.7 Cost Estimating Specialist

A Cost Consultant, employing Quantity Surveyors, shall provide the cost planning and estimating service for this project.

or

On staff or sub-consultant Quantity Surveyors or other Cost Estimating Specialists shall be used to perform the cost planning service for this project.

Provide details of the Cost Estimating Specialist's qualifications and experience for approval.

11.8 Cost Plan - Definition

The Cost Plan is the construction cost estimate approved for funding for this project. This is the Class "B" Estimate that is prepared from the Preliminary Drawings and Outline of Design Systems.

The Cost Plan defines a certain amount of money for a certain quality of building in relation to the Basic Floor Area Requirements.

11.9 Classes of Estimates - Definitions

- Classes of Estimates are defined as follows:
Class "D" Estimate: a cost estimate based upon unit costs derived from another building of similar type.
- Class "C" Estimate: a cost estimate based upon concept drawings, which represent one possible solution to the design of the project.
- Class "B" Estimate: a cost estimate based upon design development documents and an outline of design systems, or, 25%, 66%, to 95% complete Construction documents.
- Class "A" Estimate: a cost estimate based upon 100% complete construction documents, or, bid documents.

The Cost Plan must be within the authorized budget. Intermediate and Final Estimates should remain within the Cost Plan, unless (changes due to revised client requirements, etc., are authorized by the Department. Advise the Department immediately such changes occur.

11.10 Project Cost Analysis Form

Submit costing information on the standard Analysis Form Project Cost Analysis form (see Sample). Include as much detail as possible, including back-up sheets showing each Sub-Element Item of the work quantified and priced.

11.11 Outside Gross Area and Volume Measurement

To be measured in accordance with publication by the Canadian Institute of Quantity Surveyors "Measurement of Buildings by Area and Volume".

11.12 Construction Elements

The following clauses provide a brief explanation of the construction elements listed in the Project Cost form Elemental Analysis.

11.13 Element No. A1 Substructure

A11 Normal foundations: foundation walls, footings and associated items, below lowest floor level.

A12 Basement: excavation and backfill.

A13 Special foundations: foundation items of a costly or abnormal nature that are customarily kept separate from Elements 1.1 and 1.2. These include: dewatering, underpinning; shoring; sheet piling; caissons; waterproofing; extra cost for rock excavation.

11.14 Element No. A2 Structure

A21 Lowest floor: lowest structural floor construction, including supporting beds and layers.

A22 Upper floor: upper floor construction, including columns.

A23 Roof: structural roof construction, including columns.

11.15 Element No. A3 Exterior Cladding

A31 Walls below ground floor: exterior walls, from top of the normal foundations level to ground floor level. Basement walls may be taken down to footings, provided that this dimension is not more than 300 mm. below basement floor level.

A32 Walls above ground floor: exterior walls, from ground floor level to roof level. Include opening forming items. Parapet walls may be included, when materials are similar.

A33 Windows: windows and associated items, installed into openings in exterior walls.

A34 Roof covering: weatherproof roof finish and other items applied to roof structure, including parapets.

Exterior doors and screens: exterior doors, frames, hardware and associated items, together with glazed screens at entrances, installed into openings in exterior walls.

A35 Projections and recessed: items of work resulting from projections to, or recesses from, the general line of the exterior wall face. Typical items include: projecting balconies in their entirety; additional items resulting from recess balconies; canopies attached to the building; sunshades; soffits and framing to building overhangs; soffits, fascias and associated framing; eavestroughs and downpipes.

11.16 Element No. B1 Interior Partitions and Doors

B11 Permanent partitions: internal permanent walls and partitions, and the framing component of framed partitions. Include opening forming items.

Glazed partitions: interior glazed partitions and screens, including doors and frames of similar materials.

B12 Movable partitions: interior movable partitions, including doors and frames of similar materials and the same proprietary make.

B12 Interior doors: interior doors, frames, hardware and associated items, installed into openings in interior walls and partitions.

11.17 Element No. B2 Interior Finishes

B21 Floor finishes: floor finishes, other items and sleepers, applied on floor structures, in an interior space.

B22 Ceiling finishes: ceiling finishes, other items strapping and framing, applied to underside of, or beneath, structures, over an interior space.

B23 Wall finishes: wall finishes, other items and strapping, applied to exterior walls, interior walls, partitions or partition framing, in an interior space.

11.18 Element No. B3 Fittings and Equipment

B31 Fittings and fixtures: built in items of a general nature. These include: miscellaneous metal items; cabinet work; chalkboards; tackboards; toilet partitions; washroom accessories; directories; lockers; shelving; rolling shutters; loading dock devices.

B32 Equipment: built in items to provide a specialized service. These include: kitchen and cafeteria; laboratory; hospital; gymnasium; cranes and hoists.

B33 Elevators and escalators: elevators and B34 escalators and other similar devices to move people and materials within a building.

11.19 Element No. C1 Mechanical

C11 Plumbing and drainage: service systems to supply, heat, condition, distribute, use, collect and discharge water.

C12 Fire protection: service systems to provide built-in fire protection.

C13 Heating: service systems to provide heating for the building.

C13 Ventilating and air conditioning: service systems to supply, condition, distribute, ventilate and exhaust air.

C13 Refrigeration: service systems to provide refrigeration.

C13 Special equipment and piping: specialized service systems. These include: vacuum; compressed air; medical gases; fuel storage and supply; engine exhaust; central lubrication equipment; central liquid soap dispensing.

C14 Building controls: provision of controls to other service systems.

Mechanical overhead and profit: Mechanical Subcontractors' overhead and profit items, which include applicable General Conditions items.

11.20 Element No. C2 Electrical

C21 Service systems provided by the Electrical Subtrade, for a building.

C21 Electric power: service systems to generate, supply, distribute and ground electric power.

C21 Uninterrupted power: service systems to provide an uninterrupted supply of electrical power.

C22 Electric lighting: service systems to provide electric lighting.

C22 Electric heating: service systems to provide electric heating for the building.

C23 Fire alarm: service systems to provide fire detection and alarm.

C23 Communications: service systems to provide for sound, imaging and data communication by electronic means.

Electrical overhead and profit: Electrical Subcontractor's overhead and profit items, which include applicable General Condition items.

11.21 Element No. D1 Site Development

D11 Site work: development of the site, outside the building footprint area, of an Architectural or Structural nature.

D12 Mechanical site services: service systems of a Mechanical Subtrade type, including associated items, to the site, and up to one metre from the building perimeter.

D13 Electrical site services: service systems provided by the Electrical Subtrade, including associated items, to the site, and up to the exterior surface of the building.

11.22 Element No. D2 Ancillary Work

D21 Demolition: demolition of existing buildings on site to make way for new construction work.

D22 Alterations: alterations to an existing building, which will become part of, or all of, the new facility.

11.23 Element No. Z1 Overhead and Profit

Z11/Z12 General Contractor's overhead and profit items, which include General Condition items.

11.24 Element No. Z2 Contingencies

Z21 Design development contingency: an allowance to provide for changes to, and development of, the project design, from the date of the estimate to the 100% complete working drawings and specifications stage. This contingency does not include for a basic and substantial change to the project initiated by the building owner.

Z22 Escalation contingency: an allowance to provide for forecasted variation in cost due to passing of time, from the date of the estimate to the anticipated bid date.

Z23 Escalation-during Construction: Once the Contract is signed, no escalation is applied.

Z24 Permits/Approvals: Municipal Building Permit; TSSA approval; HVAC permit, etc.

Z25 Construction Contingency-during construction. Department's allowance to cover unforeseen conditions and changes occurring during construction.

Z26 LEED Gold: 12% of Construction cost.

11.25 Contact

For more information contact Mr. Spencer Jeyarajan 416-512-5945, fax 416-512-5535. Internet e-mail: spencer.jeyarajan@pwgsc-tpsgc.gc.ca

SECTION 12 ELEMENTAL COST ANALYSIS

Project Name: _____

Project Number: _____ Region: _____

Project Manager: _____

Consultants - Architectural: _____
Structural: _____
Mechanical: _____
Electrical: _____
Cost: _____

Design Stage Submission: _____
Class of Estimate: _____
Date of Cost Estimate Submission: _____
Basic Floor Area Requirements: _____
Gross Floor Area of New Construction: _____
Gross Floor Area of Renovations: _____

Project:		PUBLIC WORKS AND GOVERNMENT SERVICES CANADA				Report Date:		
Location:		Ontario Region				Page No.:		
Owner:		ELEMENTAL CONSTRUCTION COST SUMMARY				Bldg. Type:		
Consultant:						GFA		
Element	Ratio to GFA	Elemental Cost		Elemental Amount		Rate per m2		%
		Quantity	Unit Rate	Sub-Total	Total	Sub-Total	Total	
A SHELL								
A1 SUBSTRUCTURE								
A11 Foundations								
A12 Basement Excavation								
A13 Special Conditions								
A2 STRUCTURE								
A21 Lowest Floor Construction								
A22 Upper Floor Construction								
A23 Roof Construction								
A3 EXTERIOR ENCLOSURE								
A31 Walls Below Grade								
A32 Wall Above Grade								
A33 Windows & Entrances								
A34 Roof Coverings								
A35 Projections								
B INTERIORS								
B1 PARTITIONS & DOORS								
B11 Partitions								
B12 Doors								
B2 FINISHES								
B21 Floor Finishes								
B22 Ceiling Finishes								
B23 Wall Finishes								
B3 FITTINGS & EQUIPMENT								
B31 Fittings & Fixtures								
B32 Equipment								
B33 Elevators								
B34 Escalators								
C SERVICES								
C1 MECHANICAL								
C11 Plumbing & Drainage								
C12 Fire Protection								
C13 HVAC								
C14 Controls								
C2 ELECTRICAL								
C21 Services & Distribution								
C22 Lighting, Devices & Heating								
C23 Systems & Ancillaries								
NET BUILDING CONSTRUCTION ESTIMATED COST - EXCLUDING SITE								
D SITE & ANCILLARY WORK								
D1 SITE WORK								
D11 Site Development								
D12 Mechanical Site Services								
D13 Electrical Site Services								
D2 ANCILLARY WORK								
D21 Demolitions								
D22 Alterations								
NET BUILDING CONSTRUCTION ESTIMATED COST - INCLUDING SITE								
Z1 GENERAL REQUIREMENTS & FEE								
Z11 General Requirements								
Z12 Fee								
TOTAL CONSTRUCTION COST ESTIMATE - EXCLUDING CONTINGENCIES								
Z2 ALLOWANCES								
Z21 Design & Pricing Allowance								
Z22 Escalation-until tender call								
Z23 Escalation-during construction								
Z24 Permits/Approvals								
Z25 Construction Contingency								
Risk Factors								
TOTAL CONSTRUCTION COST ESTIMATE -INCLUDING CONTINGENCIES + RISK FACTORS								
GOODS & SERVICES TAX								

SECTION 13 TIME MANAGEMENT

13.1 Time Management, Planning, and Control

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

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

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

13.2 Schedule Design

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

When building a Control System you must consider:

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

13.3 Schedule Development

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

13.4 Work Breakdown Structure

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

The WBS is as follows:

Level 1	Project Title (NPMS)
Level 2	Project Stage (NPMS)
Level 3	Project Phase (NPMS)
Level 4	Processes to meet Deliverables/Control Points Milestones (NPMS)

Level 5	Sub-Processes and Deliverables in support of Level 4
Level 6	Discrete activities. (Work Package)

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

13.5 Major and Minor Milestones

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

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

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

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

13.6 Activities

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

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

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

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

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

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

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

13.7 Project Logic

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

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

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

13.8 Activity Duration

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

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

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

13.9 Activity List

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

13.10 Milestone List

A Milestone List identifies all project Major and Minor milestones.

13.11 Master Schedule

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

13.12 Detailed Project Schedule

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

13.13 Schedule Review and Approval

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

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

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

13.14 Schedule Monitoring and Control

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

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

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

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

13.15 Progress Reports

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

The Progress Report includes:

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

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

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

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

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

13.16 Exception Report

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

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

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

1. Scope Change: Identifying the nature, reason and total impact of all identified and potential project scope changes affecting the project.

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

13.17 Standard Submissions

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

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

13.18 Schedule Outputs and Reporting Formats

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

Progress Reports:

Paper Size: Letter

Paper Format: Portrait

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

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

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

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

Exception Reports:

Paper Size: Letter

Paper Format: Portrait

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

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

Paper Size: Letter

Paper Format: Landscape

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

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

Work Breakdown Structure (indent tree):

Paper Size: Letter

Paper Format: Portrait

Columns: WBS Code, WBS Name, Duration, Cost estimate, start and finish dates.
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Activity Lists:

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

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

Milestone Lists:

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

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

Master Schedule (Bar Chart):

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

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

Detailed Project Schedules (Bar Chart):

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

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

SECTION 14 DRAWING CONVERSION TO PORTABLE DOCUMENT FORMAT (PDF)

Issued by: Real Property Contracting Directorate

PWGSC

May 2005 Last Updated: 2012-06-20 by PWGSC - Ontario Region

Preface

Portable Document Format (PDF) is the standard format for documents that are posted on the Government Electronic Tendering System (GETS). Architectural and Engineering Consultants shall supply, in addition to native format files, electronic copies of drawings and specifications in PDF format for tendering Government of Canada (GoC) construction projects.

Create PDF drawing and specification files derived from the native software in which they were created. Scanning is only permissible in special circumstances, such as cases where no electronic version of a drawing being included in a construction tender package exists.

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

14.1 Printer Drivers

Adobe Acrobat provides two different printer drivers that are able to convert CADD drawing into PDF format; Acrobat PDF Writer and Acrobat Distiller. It is recommended that Acrobat Distiller be used to create PDF file of architectural and engineering drawings due to their size and complex graphical nature.

14.2 PDF Files Settings

Security:

Files must not be password protected and must allow printing.

Drawing Orientation:

The final PDF drawing files must be displayed on the screen in the same direction that the users are intended to view them.

Font Type:

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

Resolution:

Since the PDF files will be used for printing, it is recommended to select 600 dots per inch (dpi).

Scale:

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

14.3 Scanning

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

14.4 Final Checklist

When the drawing file has gone through the PDF conversion, open and verify the following:

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

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

14.5 Additional Information

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



SELECT - CONSULTANT PERFORMANCE EVALUATION REPORT FORM (CPERF)
SELECT - FORMULAIRE DU RAPPORT D'ÉVALUATION DU RENDEMENT DE L'EXPERT-CONSEIL (FREREC)

Contract Number - N° du contrat	Project Number - N° du projet	Client Reference Number - N° de référence du client
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Description of work - Description des travaux

Firm's Name - Nom de l'entreprise

Firm's Address - Adresse de l'entreprise

Project Manager - Gestionnaire de projet		Contract Information - Information sur le contrat	
Name - Nom		Contract Award Amount Montant du marché adjugé	Contract Award Date Date de l'adjudication du marché
Telephone No. - N° de téléphone	Fax No. - N° de télécopieur	Final Amount - Montant Final	Contract Completion Date Date d'achèvement du contrat
Cell No. - N° de cellulaire		No. of Amendments - Nombre de modifications	
E-Mail Address - Adresse électronique			

DESIGN - CONCEPTION	Category - Catégorie	Scale Echelle	Points Pointage
This is the rating of the quality of the design. Voici l'évaluation de la qualité de la conception.	Unacceptable - Inacceptable	0 - 5	<input type="text"/> <input type="checkbox"/> N/A S/O
	Not Satisfactory - Non satisfaisant	6 - 10	
	Satisfactory - Satisfaisant	11 - 16	
	Superior - Supérieur	17 - 20	
QUALITY OF RESULTS - QUALITÉ DES RÉSULTATS			
This is the rating of the quality of not only the final deliverable but also the deliverables throughout the various stages of the project. Voici l'évaluation de la qualité du produit final, mais aussi des produits à livrer aux diverses étapes du projet.	Unacceptable - Inacceptable	0 - 5	<input type="text"/> <input type="checkbox"/> N/A S/O
	Not Satisfactory - Non satisfaisant	6 - 10	
	Satisfactory - Satisfaisant	11 - 16	
	Superior - Supérieur	17 - 20	
MANAGEMENT - GESTION			
This is the rating of how the project was managed including the project delivery, and overall consultant services. Voici l'évaluation de la façon dont le projet a été géré, y compris l'exécution du projet et la prestation de l'ensemble des services d'expert-conseil.	Unacceptable - Inacceptable	0 - 5	<input type="text"/> <input type="checkbox"/> N/A S/O
	Not Satisfactory - Non satisfaisant	6 - 10	
	Satisfactory - Satisfaisant	11 - 16	
	Superior - Supérieur	17 - 20	
TIME - DÉLAIS			
This is the rating of time planning and schedule control. Voici l'évaluation de la planification du temps et du contrôle du calendrier.	Unacceptable - Inacceptable	0 - 5	<input type="text"/> <input type="checkbox"/> N/A S/O
	Late - En retard	6 - 10	
	On time - À temps	11 - 16	
	Ahead of Schedule - En avance sur le calendrier	17 - 20	
COST - COÛT			
This is the rating of the quality of cost planning and control during the life of the project. Voici l'évaluation de la qualité de la planification et du contrôle des coûts pendant la durée du projet.	Unacceptable - Inacceptable	0 - 5	<input type="text"/> <input type="checkbox"/> N/A S/O
	Not Satisfactory - Non satisfaisant	6 - 10	
	Satisfactory - Satisfaisant	11 - 16	
	Superior - Supérieur	17 - 20	
Total points Total du pointage			0 / 100

Comments - Commentaires

PWGSC TPSGC	Name - Nom	Title - Titre	Signature	Date
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INSTRUCTIONS AND ADDITIONAL INFORMATION (SELECT - Consultant Performance Evaluation Report)
INSTRUCTIONS ET RENSEIGNEMENTS SUPPLÉMENTAIRES (SELECT - Rapport d'évaluation du rendement de l'expert-conseil)

DESIGN - CONCEPTION

The following items should be considered:

- Understanding of the project objectives and constraints
- Thoroughness of and logical approach in problem analysis and exploration of alternatives
- Appropriateness of concept and sensitivity to context (physical and non-physical, image, site, geography, function, client, etc.)
- Functional/technical requirements: effectiveness of concept in providing for functional and technical requirements, including flexibility and expansion
- Aesthetic/spatial qualities and/or engineering "elegance"
- Functional performance for users: efficiency, safety, comfort and convenience, ease of operation and maintenance including engineering and architectural support elements/services
- Building science and engineering technology: equipment and construction systems, materials selections and detailing conducive to efficient construction and good life-cycle performance/economics; judgment in balancing between use of new technology vs. reliance on proven technology

Il faut tenir compte des éléments suivants :

- Compréhension des objectifs et des contraintes du projet
- Rigueur de l'analyse des problèmes et de l'approche logique utilisée et recherche de solutions de rechange
- Pertinence du concept et sensibilité au contexte (physique et non physique, image, site, géographie, fonction, client, etc.)
- Exigences fonctionnelles et techniques : efficacité du concept pour répondre aux exigences fonctionnelles et techniques, y compris la souplesse et l'expansion
- Qualités relatives à l'esthétique et à l'espace et/ou «élégance» technique
- Rendement fonctionnel pour les utilisateurs : efficacité, sécurité, confort, commodité, facilité de fonctionnement et d'entretien, y compris les éléments ou services de soutien à l'architecture et au génie
- Science du bâtiment et techniques de l'ingénieur : équipement et procédés de construction, sélection et description des matériaux favorisant la construction efficace et un bon rapport rendement/prix pendant la durée de vie; jugement pour équilibrer l'utilisation de nouvelles technologies et de technologies éprouvées

QUALITY OF RESULTS - QUALITÉS DES RÉSULTATS

The following items should be considered:

- Responsiveness to PWGSC/Client input
- Coverage of all aspects of process (all technical issues addressed, approval authorities, departmental procedures, etc.)
- Quality of studies including: comprehensive investigation work, logical analysis, firm and substantiated recommendations, clarity of presentation
- Quality of working documents (completeness, accuracy, co-ordination)
- Quality control on construction
- Contract administration - correctness, timeliness

Il faut tenir compte des éléments suivants :

- Réceptivité aux suggestions de TPSGC et du client
- Traitement de tous les aspects du processus (toutes les questions techniques, les pouvoirs d'approbation, les procédures ministérielles, etc.)
- Qualité des études, y compris : examen complet des travaux à effectuer, analyse logique, recommandations fermes et justifiées, clarté de la présentation
- Qualité des documents de travail (complets, exacts et coordonnés)
- Contrôle de la qualité relative à la construction
- Administration du contrat - exactitude, rapidité

MANAGEMENT - GESTION

The extent to which the firm takes charge of and effectively manages the work has a direct effect on the inputs required of PWGSC. Consideration should be given to:

- Delivery of a comprehensive, reliable and effective service in a responsive, orderly and "surprise free" manner
- Appropriate understanding of the Consultant role, within the context of PWGSC's operating environment and objectives and of the needs of the project
- Application of initiative, judgement and attentiveness in providing services
- Management of Consultant team: leadership, efficiency, fairness, and ensuring proper level of service
- Co-ordination of sub-consultants, if applicable
- Sensitivity of external factors: awareness of current conditions in the building industry and in the local community, and use of this information for the benefit of the project

La mesure dans laquelle l'entrepreneur assume efficacement la gestion des travaux a une incidence directe sur les services qu'on attend de TPSGC. Il faut tenir compte des éléments suivants :

- Prestation d'un service complet, fiable et efficace de façon souple, ordonnée et «sans surprise»
- Bonne compréhension du rôle de l'expert-conseil dans le contexte de l'environnement opérationnel de TPSGC et compte tenu des objectifs et des impératifs du projet
- Initiative, jugement et attention dans la fourniture des services
- Gestion de l'équipe d'experts-conseils : leadership, efficacité, équité et prestation d'un niveau de service adéquat
- Coordination du travail des sous-expert-conseil, s'il y a lieu
- Sensibilité aux facteurs externes : connaissance des conditions actuelles dans l'industrie du bâtiment et dans la collectivité locale et utilisation de cette connaissance dans l'intérêt du projet

TIME - DÉLAIS

For the purpose of evaluating the firm's time performance, consideration must be given to conditions beyond the firm's control including PWGSC / Contractor / Client Performance. The Project Manager is to consider whether the following was provided:

- Timely and accurate progress reporting
- On-schedule delivery of services in every stage

En ce qui a trait à l'évaluation du respect des délais par l'entreprise, il faut tenir compte des conditions indépendantes de la volonté de celle-ci, y compris du rendement de TPSGC, de l'entrepreneur et du client. Le gestionnaire de projet doit évaluer si les éléments suivants ont été fournis :

- Présentation de rapports d'avancement précis dans les délais prescrits
- Prestation des services dans les délais requis à toutes les étapes

COST - COÛT

The following items should be considered:

- Management of the design development within cost plan
- Timeliness of estimating and cost plan monitoring
- Final project estimate vs. Actual (established at award)
- Application of value engineering to design decisions, if applicable
- Appropriate balance of cost between estimate elements

Il faut tenir compte des éléments suivants :

- Gestion de l'élaboration de la conception dans le cadre du plan financier
- Rapidité de l'estimation et surveillance du respect du plan financier
- Estimation finale par rapport à l'estimation actuelle (faite au moment de l'attribution du contrat)
- Application de l'ingénierie de la valeur aux décisions de conception, s'il y a lieu
- Bon équilibre des coûts entre les éléments de l'estimation