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

Request For Supply Arrangement - Demande pour un arrangement en matière d'approvisionnement

Offer to: Department of Public Works and Government Services

We hereby offer to provide to Canada, as represented by the Minister of Public Works and Government Services, in accordance with the terms and conditions set out herein or attached hereto, the goods, services, and construction detailed herein and on any attached sheets.

Offre au: Ministère des Travaux publics et des Services
gouvernementaux

Nous offrons par la présente de fournir au Canada, représenté par le ministre des Travaux publics et des Services gouvernementaux, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Real Property Contracting
1713 Bedford Row
P.O. Box 2247/C.P.2247
Halifax, N.S./Halifax, (N.E.)
B3J 3C9
Halifax

Title - Sujet HEAVY CIVIL ENGINEERING	
Solicitation No. - N° de l'invitation E0225-141687/A	Date 2014-05-06
Client Reference No. - N° de référence du client 20141687	GETS Ref. No. - N° de réf. de SEAG PW-\$PWA-115-5078
File No. - N° de dossier PWA-3-70078 (115)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-06-17	Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT
Delivery Required - Livraison exigée SEE HEREIN	
Address Enquiries to: - Adresser toutes questions à: Allen (PWA), Tanya	Buyer Id - Id de l'acheteur pwa115
Telephone No. - N° de téléphone (902)496-5142 ()	FAX No. - N° de FAX (902)496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA HEAVY CIVIL ENGINEERING Canada	
Security - Sécurité This request for a Supply Arrangement does not include provisions for security. Cette Demande pour un arrangement 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

Solicitation No. - N° de l'invitation

E0225-141687/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pwa115

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

20141687

File No. - N° du dossier

PWA-3-70078

CCC No./N° CCC - FMS No/ N° VME

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

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

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PART 1 - GENERAL INFORMATION

1. Introduction

The Request for Supply Arrangements (RFSA) is divided into six parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Supplier Instructions: provides the instructions applicable to the clauses and conditions of the RFSA;
- Part 3 Arrangement Preparation Instructions: provides suppliers with instructions on how to prepare the arrangement to address the evaluation criteria specified;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the arrangement and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided; and
- Part 6 6A, Supply Arrangement, 6B, Bid Solicitation, and 6C, Resulting Contract Clauses:
- 6A, includes the Supply Arrangement (SA) with the applicable clauses and conditions;
 - 6B, includes the instructions for the bid solicitation process within the scope of the SA;
 - 6C, includes general information for the conditions which will apply to any contract entered into pursuant to the SA.

The Annexes include the Requirement and any other annexes.

Suppliers must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2008.

For services requirements, Suppliers in receipt of a pension or a lump sum payment must provide the required information as detailed in article 3 of Part 2 of the Request for Supply Arrangements (RFSA).

2. Summary

Public Works and Government Services Canada requires a Request for Supply Arrangements (RFSA) for the provision of Heavy Civil Engineering consulting services to locations in Atlantic Canada: Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland and Labrador. Any locations subject to any of the Comprehensive Land Claim Agreements are excluded.

The Heavy Civil Supply Arrangement includes the following Specialty Services:

- Civil /Municipal Engineering
- Structural Engineering
- Marine Engineering
- Coastal Engineering
- Highway and Transportation Engineering
- Traffic Engineering
- Geotechnical Engineering
- Landscape Architecture

The supply arrangement applies to following regions: provinces of Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland and Labrador.

Suppliers must identify the Specialty Service for each Region that they are proposing to provide under any resulting SA. It is not necessary to submit a separate arrangement for all Specialty Services to be issued an arrangement. If a supplier wishes to submit an arrangement for only a specific Specialty Service in a specific region, it may do so. There is no maximum to the number of Supply Arrangements that may be issued as a result of this RFSA.

Suppliers must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2008.

The Supply Arrangements will remain valid for a period of seven years or until such time as Canada no longer considers them to be advantageous to use them. The period for awarding contracts under the Supply Arrangement begins on the start date of the Supply Arrangement.

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

The resulting Supply Arrangements will not be used for deliveries within a Comprehensive Land Claims Settlement Area (CLCSA). All requirements for delivery within a CLCSA are to be submitted to the Department of Public Works and Government Services for individual processing.

3. Security Requirement

Suppliers are informed that there is a possibility that some solicitations against the Supply Arrangement might require that the supplier hold a valid Designated Organization Screening (DOS) issued by the Canadian Industrial Security Directorate (CISD) of Public Works and Government Services Canada (PWGSC) and that their personnel requiring access to sensitive work site(s) must hold a valid Reliability Status, granted or approved by CISD/PWGSC.

Should the successful suppliers not have the level of security indicated above, PWGSC shall sponsor the successful suppliers so CISD can initiate procedures for security clearance. CISD, by letter, shall forward documentation to the successful suppliers for completion.

Suppliers desiring such sponsorship should so indicate in their covering letter with their proposal.

Successful supplier(s) issued a Supply Arrangement as a result of this RFSA, not possessing the required security clearance at time of a solicitation, will be bypassed in the selection process as detailed in Part 6B. For all bid solicitations against this supply arrangement (Part 6C) it will be mandatory to meet the security requirements at the time of bid closing.

4. Debriefings

Suppliers may request a debriefing on the results of the request for supply arrangements process. Suppliers should make the request to the Supply Arrangement Authority within 15 working days of receipt of the results of the request for supply arrangements process. The debriefing may be in writing, by telephone or in person.

PART 2 - SUPPLIER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

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

Suppliers who submit an arrangement agree to be bound by the instructions, clauses and conditions of the RFSA and accept the clauses and conditions of the Supply Arrangement and resulting contract(s).

The 2008 (2014-03-01) Standard Instructions - Request for Supply Arrangements - Goods or Services, are incorporated by reference into and form part of the RFSA.

Subsection 5.4 of 2008, Standard Instructions - Request for Supply Arrangements - Goods or Services, is amended as follows:

Delete: sixty (60) days
Insert: one- hundred twenty (120) days

2. Submission of Arrangements

Arrangements must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the Request for Supply Arrangements.

Due to the nature of the Request for Supply Arrangements, transmission of arrangements by facsimile to PWGSC will not be accepted.

3. Former Public Servant - Notification

Service contracts awarded to former public servants in receipt of a pension or a lump sum payment must bear the closest public scrutiny and reflect fairness in the spending of public funds. Therefore, the bid solicitation will require that you provide information that, were you to be the successful bidder, your status with respect to being a former public servant in receipt of a pension or a lump sum payment, will be required to report this information on the departmental websites as part of the published proactive disclosure reports generated in accordance with Treasury Board policies and directives on contracts with former public servants, [Contracting Policy Notice 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

4. Federal Contractors Program for Employment Equity - Notification

The Federal Contractors Program (FCP) for employment equity requires that some contractors make a formal commitment to Employment and Social Development Canada (ESDC) - Labour to implement employment equity. In the event that this Supply Arrangement would lead to a contract subject to the Federal Contractors Program (FCP) for employment equity, the bid solicitation and resulting contract templates would include such specific requirements. Further information on the Federal Contractors Program (FCP) for employment equity can be found on [ESDC-Labour's](#) website.

5. Enquiries - Request for Supply Arrangements

All enquiries must be submitted in writing to the Supply Arrangement Authority no later than seven (7) calendar days before the Request for Supply Arrangements (RFSA) closing date. Enquiries received after that time may not be answered.

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

6. Applicable Laws

The Supply Arrangement (SA) and any contract awarded under the SA must be interpreted and governed, and the relations between the parties determined, by the laws in force in Nova Scotia.

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

PART 3 - ARRANGEMENT PREPARATION INSTRUCTIONS

1. Arrangement Preparation Instructions

Canada requests that suppliers provide the arrangement in separately bound sections as follows:

Section I: Technical Arrangement (Six hard copies – one **unbound** original and five bound copies) and one soft copy on CD/DVD.

Section II: Certifications (one hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

1.1 Format Instructions

Canada requests that suppliers follow the format instructions described below in the preparation of the arrangement.

- a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- b) use a numbering system that corresponds to that of the Request for Supply Arrangements.
- c) Minimum font size – 11 point Times or equal
- d) Minimum margins -12 mm left, right, top and bottom
- e) Double-side submissions are preferred
- f) One (1) 'page' means one side of a 216mm x 279mm (8.5" x 11") sheet of paper
- g) 279mm x 432 mm (11" x 17") fold-out sheets for spreadsheets, organization charts, etc. will be counted as two pages.

The maximum number of pages (including text and graphics) to be submitted is as follows:.

Team Approach / Management of Services - Four (4) pages which INCLUDES the 1-page Curriculum Vitae of the identified Key Contact for the Supply Arrangement.

Past Experience of the Firm – for **each** Specialty Service being proposed, Four (4) x 1-page project descriptions. E.g., If submitting expertise in 3 Specialty Services, this Section is limited to 12 pages. If submitting expertise in all 8 Specialty Services the maximum page limit is 32 pages.

Key Personnel Expertise and Experience – for **each** Specialty Service being proposed, Three (3) x 1-page curriculum vitae, one (1) for each of the 3 proposed key personnel for each Service. E.g., If submitting expertise in 3 Specialty Services, this Section is limited to 9 pages. If submitting expertise in all 8 Specialty Services the maximum page limit is 24 pages.

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

- Covering letter
- Certifications requested in Part 5
- Front Page of the Request for Supply Arrangement document
- Front Page of the Revision(s) to the Request for Supply Arrangement document
- Matrix of Proposed Services and Proposed Geographical Areas

Any pages which extend beyond the above page limitation and any other attachments will be extracted from the arrangement and will not be evaluated. Please note that the page limitation will be applied to each deliverable – 1 page project descriptions, 1 page CVs, etc.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html)(<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, suppliers should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Arrangement

Suppliers must identify in their arrangement the Specialty Service and the geographical regions for which they wish to be considered.

In the technical arrangement, suppliers should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Certifications

Suppliers must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Arrangements will be assessed in accordance with the entire requirement of the Request for Supply Arrangements.

- (b) An evaluation team composed of representatives of Canada will evaluate the arrangements.

1.1. Technical Evaluation

The mandatory and point rated technical evaluations are included in Attachment 1.

2. Basis of Selection

The Basis of Selection is included in Attachment 1.

PART 5 - CERTIFICATIONS

Suppliers must provide the required certifications and associated information to be issued a supply arrangement (SA).

The certifications provided by suppliers to Canada are subject to verification by Canada at all times. Canada will declare an arrangement non-responsive, or will declare a contractor in default in carrying out any of its obligations under any resulting contracts, if any certification made by the Supplier is found to be untrue whether made knowingly or unknowingly during the arrangement evaluation period, or during the period of any supply arrangement arising from this RFSA and any resulting contracts.

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

1. Certifications Required Precedent to Issuance of a Supply Arrangement

1.1 Integrity Provisions – Associated Information

By submitting an arrangement, the Supplier certifies that the Supplier and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Arrangement of Standard Instructions 2008. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

1.2 Additional Certifications Required Precedent to Issuance of a Supply Arrangement

The certifications listed below should be completed and submitted with the arrangement, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Supply Arrangement Authority will inform the Supplier of a time frame within which to provide the information. Failure to comply with the request of the Supply Arrangement Authority and to provide the certifications within the time frame provided will render the arrangement non-responsive.

1.2.1 Status and Availability of Resources

SACC Manual clause S3005T (2008-12-12) Status and Availability of Resources.

1.2.2 Education and Experience

SACC Manual clause S1010T (2008-12-12) Education and Experience

Attachment 1

Arrangement Evaluation Procedures

Basis of Selection

E1: Mandatory Criteria

Each arrangement will be examined to determine that it meets all mandatory criteria: M1, M2 & M3. Arrangements which fail to meet the mandatory criteria will be given no further consideration and will be deemed non-compliant. Arrangements which meet all the mandatory criteria will proceed to E2.

E2: Point rated Technical Criteria

E2a Team Approach and Management of Services

Arrangements will be evaluated and scored in accordance with the point rated technical criteria described in R1. Arrangements that fail to meet the minimum score of 60 points will not be considered any further. The rating of R1 is performed on a scale of 100 points.

E2b. Specialty Services Qualification

Arrangements will be evaluated and scored in accordance with the point rated technical criteria described in R2 and R3. Arrangements that fail to meet the minimum score of 40 points on each R2 and R3 will not qualify for that specialty service. Arrangements that fail to meet the minimum combined score of 120 will not qualify for that Specialty Service. The rating for each R2 and R3 is performed on a scale of 100 points, for total combined maximum score of 200 points.

Only arrangements that have qualified in one or more Specialty Services will proceed to E3.

E3: Conditions Precedent to Issuance of Supply Arrangement

Each compliant Supplier will be given written notification to provide the information required in Part 5 Certifications required as a Condition Precedent to Issuance of Supply Arrangement, by a specified date and time, unless the information has already been provided in the RFSA submission. Should the supplier fail to provide all the information required by the date and time specified, the Supplier will be considered non-compliant and given no further consideration.

E4: Suppliers with Arrangements that comply with all the requirements of the Request for Supply Arrangement will be issued Supply Arrangements.

Mandatory Requirements

M1: Licensing, Certification or Authorization

The supplier shall be an engineer, licensed or eligible to be licensed to provide the necessary professional services to the full extent that may be required by provincial or territorial law in the province of Nova Scotia and/or New Brunswick and/or Prince Edward Island and/or Newfoundland and Labrador. If the supplier is licensed to practise in only one of the four provinces and indicates they can provide services in more than one province, then that supplier must be eligible and willing to be licensed in the province in which they are not licensed.

M2: Landscape Architects shall be registered or eligible to be registered as full members of the Atlantic Provinces Association of Landscape Architects (APALA).

M3: Suppliers must choose to qualify in at least one specialty service in at least one geographical region. A sample format is provided in Attachment 2, Matrix of Proposed Specialty Services.

Point Rated Technical Criteria

Arrangements meeting the mandatory requirements will be evaluated in accordance with the following criteria.

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

Higher consideration will be given to the appropriate significant involvement of senior personnel in key positions.

Specialty Services

Suppliers must choose to qualify in one or more of the Specialty Services. Only Suppliers that meet the minimum score in at least ONE Specialty Service will be eligible for issuance of a Supply Arrangement. Suppliers must demonstrate an acceptable level of experience in the Specialty Services they wish to qualify in order to be included in the Supply Arrangement for that service.

1. ***Civil/Municipal Engineering*** - Site Development; Grading and drainage design; Earthworks; Earth Dams - Design and/or Inspection/Safety Evaluation; Sedimentation control system design; Pavement Design; Water Systems(Piping, Pumping, Treatment, Storage); Sewage Systems (Collection Piping, Pumping stations, Treatment (including on-site systems)); Storm water Systems (Storm water piping, Channel and Culvert sizing); Hydrological Studies and/or Modeling (Hydraulic Design, Parking Lot Design/Pavement Design)
2. ***Structural Engineering*** - Building design (Structural Steel, Concrete, Masonry, Engineered Wood); Bridge Design (Precast Concrete Girder, Steel Plate Girder, Steel Trapezoidal Girder, Single and Multiple Span Structures); Miscellaneous Structures (Retaining Walls, Concrete pavement)
3. ***Marine Engineering*** - Marine Structures; Piled Structures (timber, steel pipe, steel H-); Timber Crib Structures; Concrete Caisson Structures; Steel Sheet Pile Structures; Floating Wharves
4. ***Coastal Engineering*** - Coastal Installations; Coastal Studies; Fixed Breakwaters; Floating Breakwaters; Revetments; Shoreline Protection
5. ***Highway and Transportation Engineering*** - Highway/Transportation Studies; Highway Design; Pavement Design; Pavement Management Systems
6. ***Traffic Engineering*** - Traffic Studies
7. ***Geotechnical Engineering*** - Geotechnical Investigations & Recommendations; Foundation Design (shallow and deep foundations)
8. **Landscape Architecture**

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Supplier Qualifications

R1: Team Approach / Management of Services

Maximum 100 pts Minimum 60pts

1. What we are looking for:

How the team will be organized in its approach and methodology in the delivery of the Required Services on a specific project. See Annex A, requirement for an example of the types of Required Services that may be requested on a project.

2. What the supplier should provide:

A description of the following:

- a. identify a Supply Arrangement Primary Contact; define roles and responsibilities; in addition provide a one page cv **(20 points)**
- b. Assignment of the resources and availability of back-up personnel; **(20 points)**
- c. Management and organization (reporting structure); **(10 points)**
- e. Quality control techniques; **(40 points)**
- f. Demonstration of how the team intends to meet the 'Project Response Time Requirements'; **(10 points)**

Specialty Services Qualification

For each proposed Specialty Services R2+R3 Maximum 200 pts Minimum 120 pts

R2 Past Experience of the Firm

Minimum 40 pts Maximum 100 pts

1. What we are looking for:

The supplier should demonstrate that over at least the past ten (10) years it has participated in a range of projects. The supplier's participation in these projects should have included the design of specific project features as described in the Specialty Services descriptions above as well as involvement at all stages of the design/construction process (preliminary, concept, detailed design and tendering and construction). An example of the Required Services that may be required on a specific project is provided in Annex A.

2. What the supplier should provide:

- a. For **each** of the following Specialty Services for **which the firm wishes to be qualified** provide a brief description of a maximum of four (4) relevant projects. Project descriptions are limited to one (1) page per project; pages exceeding this limitation will not be reviewed. If more than four projects are submitted, only the first four projects, in the order of appearance/received/presented, will be reviewed. Repair or rehabilitation projects may be submitted but this will be limited to one (1) of the (4) submitted projects per Specialty Service.

Specialty Services

1. Civil/Municipal Engineering
2. Structural Engineering
3. Marine Engineering
4. Coastal Engineering
5. Highway and Transportation Engineering
6. Traffic Engineering
7. Geotechnical Engineering
8. Landscape Architecture

Indicate the dates the services were provided for the listed projects; and **(20 points)**

- b. Scope of services rendered, project objectives, constraints and deliverables; and **(40 points)**
- c. Describe the accomplishments, achievements and experience either as a prime consultant or in a subconsultant capacity on projects. If the Supplier proposes to provide multidisciplinary services, which might otherwise be performed by a subconsultant, it should be reflected under this rated requirement. **(40 points)**

For each project provide the following client information - name, address, phone, fax and email of client contact at working level. If deemed necessary, references may be contacted to verify project details.

For projects which were carried in joint venture, indicate the responsibilities of each of the involved firms.

R3 Key Personnel Expertise and Experience **Minimum 40 pts Maximum 100 pts**

1. What we are looking for:

A demonstration that the supplier has key personnel with the capability, capacity and expertise in the Specialty Services that the supplier wishes to provide services in. Please provide expertise/experience information for at least 3 key personnel for each of the Specialty Services for which the supplier wishes to qualify. The curriculum vitae are limited to one (1) page per person per specialty; For example, if the same person is being proposed for multiple specialties, suppliers may submit multiple pages for this person, one for each of that person's specialties. Pages exceeding this one page per person per specialty limitation will not be reviewed.

2. What the supplier should provide:

- Submit curriculum vitae of key personnel. Each curriculum vitae should clearly indicate the years of experience the key personnel has in the provision of the services specified in the Specialty Service that the Supplier wishes to provide services. Indicate the professional accreditation of the key personnel; and **(30 points)**
- Identify the personnel's years of experience, the number of years with the firm; and **(50 points)**
- Accomplishments/achievements/awards. **(20 points)**

Evaluation Summary

Criterion	Sub-criterion	Weight Factor	Rating 0,2,4,6,8 or 10	Weighted Score
R1: Team Approach / Management of	a	2	0-10	0-20
	b	2	0-10	0-20
	c	1	0-10	0-10
	d	4	0-10	0-40
	e	1	0-10	0-10
To be considered further, suppliers must achieve a minimum R1 Rating of 60 points out of the 100 points available.				
R2 Past Experience of the Firm	a	4	0-10	0-40
	b	4	0-10	0-40
	c	2	0-10	0-20
R3 Key Personnel Expertise and Experience	a	3	0-10	0-30
	b	5	0-10	0-50
	c	2	0-10	0-20
To qualify for a specialty service the supplier must achieve a minimum rating on each R2 and R3 of 40 points out of the 100 points available and a minimum of 120 out of the 200 points available on the combined Rating (R2+R3).				





Generic Evaluation Table

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

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

Attachment 2
Matrix of Proposed Speciality Services

Supplier: _____

Specialty Service	Geographic Region			
	Nova Scotia	New Brunswick	Prince Edward Island	Newfoundland and Labrador
				
1.Civil/Municipal Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Structural Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Marine Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Coastal Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Highway and Transportation Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Traffic Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Geotechnical Engineering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Landscape Architecture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART 6 - SUPPLY ARRANGEMENT AND RESULTING CONTRACT CLAUSES

A. SUPPLY ARRANGEMENT

1. Arrangement

The Supply Arrangement covers the Work described in the Requirement at Annex A.

2. Security Requirement

- 2.1** There is no security requirement applicable to this Supply Arrangement. The security requirement will be determined at time a bid solicitation is issued under the Supply Arrangement.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Supply Arrangement and resulting contract(s) by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2020 (2014-03-01) General Conditions - Supply Arrangement - Goods or Services, apply to and form part of the Supply Arrangement.

3.2 Supply Arrangement Reporting

The Supplier must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Supply Arrangement. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card.

The Supplier must provide this data in accordance with the reporting requirements detailed in Annex C. If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Supplier must still provide a "NIL" report.

The data must be submitted on a quarterly basis to the Supply Arrangement Authority.

The quarterly reporting periods are defined as follows:

- 1st quarter: April 1 to June 30;
- 2nd quarter: July 1 to September 30;
- 3rd quarter: October 1 to December 31;
- 4th quarter: January 1 to March 31.

The data must be submitted to the Supply Arrangement Authority no later than 30 calendar days after the end of the reporting period.

4. Term of Supply Arrangement

4.1 Period of the Supply Arrangement

The period for awarding contracts under the Supply Arrangement is from _____ to _____.

5. Authorities

5.1 Supply Arrangement Authority

The Supply Arrangement Authority is:

Tanya Allen
Supply Specialist
Public Works and Government Services Canada
Atlantic Region, Acquisitions
1713 Bedford Row
P.O. Box 2247
Halifax, NS B3J 3C9

E-mail address: tanya.allen@pwgsc-tpsgc.gc.ca
Telephone: 902-496-5142
Facsimile: 902-496-5016

The Supply Arrangement Authority is responsible for the issuance of the Supply Arrangement, its administration and its revision, if applicable.

5.2 Supplier's Representative

Name: _____
Title: _____
Address: _____

Email: _____
Telephone: _____
Fax: _____

6. Identified Users

The Identified User is: Real Property - Professional & Technical Services, Public Works
Government Services Canada, Atlantic Region.

7. On-going Opportunity for Qualification

A Notice will be posted once a year on the Government Electronic Tendering Service (GETS) to allow new suppliers to become qualified. Existing qualified suppliers, who have been issued a supply arrangement, will not be required to submit a new arrangement.

8. Priority of Documents

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

- a. the articles of the Supply Arrangement;
- b. the general conditions 2020 (2014-03-01), General Conditions - Supply Arrangement - Goods or Services
- c. Annex A, Requirement;

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- d. Annex B, Matrix of Specialty Services
- e. Annex C, Reporting;
- f. Annex D, Doing Business
- g. the Supplier's arrangement dated _____.

9. Certifications

9.1 Compliance

The continuous compliance with the certifications provided by the Supplier in its arrangement and the ongoing cooperation in providing associated information are conditions of issuance of the Supply Arrangement (SA). Certifications are subject to verification by Canada during the entire period of the SA and of any resulting contract that would continue beyond the period of the SA. If the Supplier does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Supplier in the arrangement is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and suspend or cancel the Supply Arrangement.

10. Applicable Laws

The Supply Arrangement (SA) and any contract resulting from the SA must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____.

11. Insurance

SACC Manual Clause R1250D (2012-07-16) General Condition (GC) 9 - Indemnification and Insurance

B. BID SOLICITATION

1. Bid Solicitation Documents

The bid solicitation will contain as a minimum the following:

- (a) Security requirements;
- (b) a complete description of the Work to be performed;
- (c) R1410T, General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal Subsection 4 and 5 of Section GI1 Code of Conduct and Certifications – Proposal, is amended as follows:

Subsections 04 and 05 of Section 01, Integrity Provisions – Proposal, of the General Instruction (GI) – Architectural and/or Engineering Services – Request for Proposal R1410T incorporated by reference above are deleted in their entirety and replaced with the following:

4. Bidders who are incorporated or who are a sole proprietorship, including those bidding as a joint venture, have already provided a list of names of all individuals who are directors of the Bidder, or the name of the owner, at the time of submitting an arrangement under the Request for Supply Arrangement (RFSA). These bidders must diligently inform Canada in writing of any changes affecting the list of directors during this procurement process as well as during the contract period.

5. Canada may, at any time, request that a bidder provide properly completed and Signed Consent Forms (**Consent to a Criminal Record Verification form - PWGSC-TPSGC 229**) for any or all individuals mentioned above within a specified time frame. Failure to provide such consent forms and associated information within the time frame provided, or failure to cooperate to the verification process, will result in the bid being declared non-responsive.

- (d) Bid preparation instructions;
- (e) Instructions for the submission of bids (address for submission of bids, bid closing date and time);
- (f) Evaluation procedures and basis of selection;
- (g) Certifications;

Federal Contractors Program (FCP) for Employment Equity - Notification

Integrity Provisions – Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Proposal of General instruction – Architectural and/or Engineering Services- Request for Proposal R1410T. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

- (h) Conditions of the resulting contract.

2. Bid Solicitation Process

2.1 Proposals will be solicited for specific requirements within the scope of the Supply Arrangement (SA) from suppliers who have been issued a SA.

A bid solicitation will be posted on the Government Electronic Tendering Service (GETS) or will be e-mailed directly supplier, depending on the selection methodology selected.

2.2 Selection Process:

The responsibility of the bid solicitation process and award of contracts will depend on the estimated value of the proposed service as follows: Identified Users (Part6A, 6. Identified Users) for requirements less than \$75,000 and PWGSC (Acquisitions) for all other requirements.

For each requirement, the Identified User or PWGSC will request a technical/financial proposal from the SA Holders for the services.

The evaluation procedures and basis of selection for each requirement under the SA will be unique to each bid solicitation issued.

Identified users will sign and approve the contracts when they are responsible for the selection process.

Identified Users must determine whether they have the delegation of authority in order to proceed with any of the following thresholds. If Identified Users do not have delegation of authority to proceed, the requirement must be submitted to PWGSC Contracting Authority for processing.

Treasury Board Approval will be required in the event the recommended contractor for award is a Former Public Servant (FPS) as identified under the policy and the contract value is \$25,000 and over (applicable taxes included) for non-competitive requirements and \$100,000 and over (applicable taxes included) for competitive requirements.

Identified Users may award contracts to Suppliers qualified in the applicable Service Stream(s) only in accordance with the following:

The geographical location of the project will be determined by the physical location of the work and not the government department or PWGSC office requesting the services. If more than one Specialty Services is proposed then the selection process will be determined as follows:

- a) The Specialty Service with the higher percentage of the overall estimated value will be used.
- b) In the case where the estimated value of the Specialty Services are the same than suppliers qualified in both Specialty Services will be used in the selection process. If no suppliers are qualified in the geographical region the selection will be expanded to include all geographical areas. If there are still no suppliers qualified in both Specialty Services PWGSC will start the selection process again using their choice of one of the two Specialty Services.

2.2.1 For all requirements less than \$75,000(applicable taxes included)

Identified users will select a minimum of two Suppliers from the list of Suppliers in the geographical location of the project qualified in the proposed Specialty Service(s).

- Selecting, by name, two Suppliers on the list; or
- Selecting by name one Supplier and rotationally selecting one from the list; or
- Rotationally selecting two Suppliers from the list
- meet the security requirement of the proposed service, if applicable

If there are not enough suppliers to meet the minimum selection criteria the selection process will be expanded to include all geographical areas. The selection process would be repeated with the expanded list of suppliers.

The following forms will be used for the first page of the bid solicitation document and the first page of the resulting contract document. These forms are available on the [Electronic Forms Catalogue](http://publiservice-app.tpsgc-pwgsc.gc.ca/forms/text/search_for_forms-e.html) (http://publiservice-app.tpsgc-pwgsc.gc.ca/forms/text/search_for_forms-e.html) Web site.

PWGSC-TPSGC 9400-3, Bid Solicitation
PWGSC-TPSGC 9400-4, Contract.

The solicitation documents will be distributed directly to the selected SA Holder by the Identified User.

2.2.2 For all requirements estimated greater than \$75,000 up to \$150,000 (applicable taxes included)

For each requirement, a Notice of Proposed Procurement will be posted on the Government Electronic Tendering Systems (GETS). The solicitation would be restricted to selected suppliers.

PWGSC will select a minimum of three Suppliers from the list of Suppliers in the geographical location of the project qualified in the proposed Specialty Service(s).

- Selecting, by name, one Supplier on the list and rotationally selecting two from the list; or
- Rotationally selecting three Suppliers from the list
- meet the security requirement of the proposed service, if applicable

If there are not enough suppliers to meet the minimum selection criteria the selection process will be expanded to include all geographical areas. The selection process would be repeated with the expanded list of suppliers.

The solicitation documents will be distributed directly to the selected suppliers by PWGSC.

Bidders will be provided with a minimum of ten (10) calendar days in which to respond to the Request for Proposal.

2.2.3 For all requirements estimated greater than \$150,000 to \$400,000 (applicable taxes included)

For each requirement, a Notice of Proposed Procurement will be posted on the Government Electronic Tendering Systems (GETS). The solicitation would be restricted to selected suppliers

PWGSC will select a minimum of four Suppliers from the list of Suppliers in the geographical location of the project qualified in the proposed Specialty Service(s).

- Selecting, by name, one Supplier on the list and rotationally selecting three from the list; or
- Rotationally selecting four Suppliers from the list
- meet the security requirement of the proposed service, if applicable

The solicitation documents will be distributed directly to suppliers by PWGSC.

Bidders will be provided with a minimum of fifteen (15) calendar days in which to respond to the Request for Proposal.

2.2.4 For requirements greater than \$400,000 (applicable taxes included)

For each requirement, a Notice of Proposed Procurement will be posted on the Government Electronic Tendering Systems (GETS). The solicitation would be restricted to suppliers with a Supply Arrangement.

The solicitation documents will be distributed directly to interested suppliers by PWGSC.

Bidders will be provided with a minimum of twenty-one (21) calendar days in which to respond to the Request for Proposal.

C. RESULTING CONTRACT CLAUSES

1. General

The conditions of any contract awarded under the Supply Arrangement will be in accordance with the resulting contract clauses of the template used for the bid solicitation.

For any contract to be awarded using the templates in the Annexes:

- (a) For requirements less than 100K, the below listed general conditions will apply to the resulting contract;
 - R1210D (2014-03-01), General Conditions (GC) 1 - General Provisions
 - R1215D (2011-05-16), General Conditions (GC) 2 - Administration of the Contract
 - R1220D (2011-05-16), General Condition (GC) 3 - Consultant Services
 - R1225D (2012-07-16), General Condition (GC) 4 - Intellectual Property
 - R1230D (2012-07-16), General Condition (GC) 5 - Terms of Payment
 - R1235D (2011-05-16), General Condition (GC) 6 - Changes
 - R1240D (2011-05-16), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2012-07-16), General Condition (GC) 8 - Dispute Resolution
 - R1650D (2012-07-16), General Condition (GC) 9 - Indemnification and Insurance

- (b) For requirements greater than \$100K, the below listed general conditions will apply to the resulting contract.
 - R1210D (2014-03-01), General Condition (GC) 1 - General Provisions
 - R1215D (2011-05-16), General Condition (GC) 2 - Administration of the Contract
 - R1220D (2011-05-16), General Condition (GC) 3 - Consultant Services
 - R1225D (2012-07-16), General Condition (GC) 4 - Intellectual Property
 - R1230D (2012-07-16), General Condition (GC) 5 - Terms of Payment
 - R1235D (2011-05-16), General Condition (GC) 6 - Changes
 - R1240D (2011-05-16), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2012-07-16), General Condition (GC) 8 - Dispute Resolution
 - R1250D (2012-07-16), General Condition (GC) 9 - Indemnification and Insurance

ANNEX A

REQUIREMENT

1.0 Proposed Services

The required services may include, but are not limited to the following:

1. **Civil/Municipal Engineering** - Site Development; Grading and drainage design; Earthworks; Earth Dams - Design and/or Inspection/Safety Evaluation; Sedimentation control system design; Pavement Design; Water Systems(Piping, Pumping, Treatment, Storage); Sewage Systems (Collection Piping, Pumping stations, Treatment (including on-site systems)); Storm water Systems (Storm water piping, Channel and Culvert sizing); Hydrological Studies and/or Modeling (Hydraulic Design, Parking Lot Design/Pavement Design)
2. **Structural Engineering** - Building design (Structural Steel, Concrete, Masonry, Engineered Wood); Bridge Design (Precast Concrete Girder, Steel Plate Girder, Steel Trapezoidal Girder, Single and Multiple Span Structures); Miscellaneous Structures (Retaining Walls, Concrete pavement)
3. **Marine Engineering** - Marine Structures; Piled Structures (timber, steel pipe, steel H-); Timber Crib Structures; Concrete Caisson Structures; Steel Sheet Pile Structures; Floating Wharves
4. **Coastal Engineering** - Coastal Installations; Coastal Studies; Fixed Breakwaters; Floating Breakwaters; Revetments; Shoreline Protection
5. **Highway and Transportation Engineering** - Highway/Transportation Studies; Highway Design; Pavement Design; Pavement Management Systems
6. **Traffic Engineering** - Traffic Studies
7. **Geotechnical Engineering** - Geotechnical Investigations & Recommendations; Foundation Design (shallow and deep foundations)
8. **Landscape Architecture**

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2.0 Project Brief / Terms of Reference/Required Services

To follow is an example of a Project Brief/Terms of Reference/Required Services that may be required for the proposed service(s) detailed in Annex A, 1.0 Proposed Services. The actual Required Service(s) (RS) requested will be detailed in the bid solicitation document and will vary depending on the scope of the project. It may include all RSs, a single RS or a combination of RSs.

SAMPLE

GENERAL PROJECT OBJECTIVES

GPO 1 PROJECT OBJECTIVES

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

GPO 1.1 Design Principles - General

1. PWGSC expects the Consultant to maintain a high standard of engineering design, based upon recognized industry design principles. All design elements, planning, and engineering, must be fully coordinated and consistent in adherence to good design principles.

2. The level of quality is to be consistent with Government of Canada policies and guidelines as well as all other similar designed works performed for the Government of Canada.

3. The projects are to be implemented in a sustainable environmentally responsible manner.

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

5. Design for maximum flexibility to meet immediate and future needs.

GPO 1.2 Sustainable Development

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

GPO 1.3 Code Compliance

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

GPO 1.4 Risk Management

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

GPO 1.5 Health and Safety

1. Public Works and Government Services Canada (PWGSC), recognizes the responsibility to ensure the health and safety of all persons on Crown construction projects and the entitlement of both federal employees and private sector workers to the full protection afforded them by occupational health and safety regulations.

2. In keeping with the responsibility and in order to enhance health and safety protection for all individuals on federal construction sites, PWGSC voluntarily complies with the applicable provincial/territorial construction health and safety acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

3. The Consultant will be required to develop site specific Health and Safety Plans for their personnel while working on projects awarded under the Supply Arrangement. Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

Health and Safety Plan shall include the following components:

- 1 List of health risks and safety hazards identified by hazard assessment.
- 2 Control measures used to mitigate risks and hazards identified.
- 3 On-site Contingency and Emergency Response Plan as specified below.
- 4 On-site Communication Plan as specified below.

On-site Contingency and Emergency Response Plan shall include:

- 1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
- 2 Evacuation Plan: prior to entering the Work Site confirm escape routes, marshalling areas, and location of fire fighting equipment.
- 3 Emergency Contacts: name and telephone number of officials from:
 - 1 Departmental Representative.
 - 2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - 3 Local emergency resource organizations.
 - 4 Harmonize Plan with Facility's Emergency Response and

Evacuation Plan. Departmental Representative will provide pertinent data including name of PWGSC and Facility Management contacts.

On-site Communication Plan:

- 1 Procedures for sharing of work related safety information to subconsultants, including emergency and evacuation measures.
 - 2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- Address all activities of the Work including those of subconsultants.

Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever a new subconsultant arrives at Work Site.

Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

GPO 1.6 PWGSC Standards and Procedures

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

GPO 2 ISSUES

GPO 2.1 Major Cost Issues

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

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

GPO 2.2 Major Time Issues

Issue: Out of Service Time Frame
It is imperative that the out of service time frame for the various projects as a result of construction be minimized as much as possible. Program operations and time frames will govern the particular allotted time frame for construction through the identified solicitation.

GPO 2.3 Major Operational Issues

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

PROJECT ADMINISTRATION

PA 1 INTENT

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

PA 1.1 Coordination

- The Project Manager assigned to the project is the Departmental Representative.
- The Project Manager is directly concerned with the project and responsible for its progress. The Project Manager is the liaison between the Consultant, Public Works and Government Services Canada and the Client Departments.
- Public Works and Government Services Canada administers the project and exercises continuing control over the Consultant's work during all phases of development. Unless directed otherwise by the Project Manager, the Consultant obtains all Federal requirements and approvals necessary for the work. The Consultant shall:
 - Carry out services in accordance with approved documents and directions given by the Project Manager;
 - Prior to starting any project, obtain the Project Manager's approval of sub-consultant(s). Upon receipt from the Project Manager of written confirmation that the proposed sub-consultant(s) are acceptable, execute the solicitation;
 - Ensure all communications carry the PWGSC's Project Title, Project Number and File Number, Callup Number, WBS Number;
 - Advise the Project Manager of any changes that may affect schedule or budget or are inconsistent with instructions or written approvals previously given. The Consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding.

PA 1.2 Coordination with Sub-Consultants

The consultant shall:

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

PA 1.3 General Project Deliverables

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<p>1. Where deliverables and submissions include summaries, reports, drawings, plans or schedules, <u> </u> hard copies shall be provided plus <u> </u> copy shall be provided in electronic format as follows unless approved otherwise in Appendices. Electronic format shall mean:</p> <p>(1) For written reports and studies: Microsoft Word and PDF; (2) For Spreadsheets, and budgets: Microsoft Excel and PDF; (3) For Presentations: Microsoft Power Point; (4) For Drawings: AutoCad 2012 (*.dwg) refer to Doing Business; (5) For Specifications: Either most recent version NMS Edit or MS Word as specified by the project manager; (6)</p> <p>Note: All specifications must be developed starting with an unedited copy of the NMS and edited as appropriate for the specifics of the project. Edits of previously edited sections of the NMS are not acceptable.</p> <p>(7) For Schedules (Time Plans) Microsoft Project; (8) For GIS ARCGIS refer Doing Business.</p> <p>PA 1.4 Lines of Communication 1. Correspond only with the Project Manager or named designate(s) at the times and in the manner dictated by the Project Manager. The Consultant shall not communicate with the client department unless so authorized in writing by the Project Manager.</p> <p>2. During construction tender call, Public Works and Government Services Canada conducts all correspondence with bidders and makes the contract award.</p> <p>3. After contract award the Consultant shall follow communication protocol call as received from PWGSC.</p> <p>PA 1.5 Media The Consultant shall not respond to requests for project related information or questions from the media. Such enquiries are to be directed to the Project Manager.</p> <p>PA 1.6 Meetings 1. The Project Manager shall arrange meetings as required per solicitation relative to project scope and phase of work, for members of project team, including representatives from: (1) Client Department; (2) Public Works and Government Services Canada; (3) Consultants.</p>	<p>2. The Consultant shall attend the meetings, record the issues and decisions and prepare and distribute minutes within 48 hours of the meeting.</p> <p>PA 1.7 Project Response Time It is a requirement of this Request for Supply Arrangement that the Prime Consultant and their proposed Sub-consultants should be personally available to attend meetings within 48 hours, in the locality of the place of the work and to respond to inquiries within 24 hours of the Project Manager's request, from the date of the award of the solicitation until final inspection and turnover.</p> <p>PA 1.8 Submissions, Reviews and Approvals For each solicitation, work in progress may be reviewed by the Project Manager as well as a minimum, the following:</p> <p>PWGSC in-house resources:</p> <ul style="list-style-type: none"> • <u>Submission Format</u>: drawings and specifications; • <u>Submission Schedule</u>: Submissions are reviewed at a time to be arranged with 10 days notice when completed work has been forwarded to the Project Manager; • <u>Expected Turnaround Time</u>: 2 weeks; • <u>Number of Submissions</u>: until approval has been received. <p>Design review committee:</p> <ul style="list-style-type: none"> • <u>Submission Format</u>: reports, drawings and specifications, and oral presentations; • <u>Submission Schedule</u>: Submissions are reviewed at a time to be arranged with 10 days notice; • <u>Expected Turnaround Time</u>: 2 weeks; • <u>Number of Submissions</u>: until approval has been received. <p>Reviews and approvals will be established at the time of issuing a solicitation and the below table is provided for example purposes only.</p>	

2. If the project requirements are such that the Prime Consultant is asked to provide a sub consultant team, the proposed sub consultant names are to be submitted to the Project Manager for approval, prior to their being engaged for the work.
3. The RS sections following are intended to show the level of effort required for a 'full service' package. Individual solicitations will include a scope of services required for that specific project, which may or may not include all of the services noted in the sections below. Services that are required for a specific solicitation are to follow the guidelines as set out herein.

RS 1.0 PRE-DESIGN SERVICES

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

RS 1.1 Feasibility Studies / Options Analysis

1.1.1 Intent

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

1.1.2 Scope and Activities

Feasibility Study includes as a minimum:

1. Attend project start up meeting:
 - (1) Visit the site, investigate and analyze the needs of the project;
 - (2) Investigate the requirements for the particular site, including existing and new technologies;
 - (3) Analyze the project requirements/program;
 - (4) Review all available existing material related to the site;

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

A = Approval

R = Review

REQUIRED SERVICES

General Scope of Services:

1. Be advised that services provided must be complete in that they identify all major issues that will have a significant impact on the project. This will promote a surprise-free environment which will enhance the success of project implementation.

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<p>(5) Investigate and analyze all applicable codes, regulations standards as a minimum: National Building Code, Canada Labour Code, NFPA, Provincial Occupational Health and Safety Act, Medical Research Council; Environmental and DFO acts and regulations.</p> <p>2. Evaluate existing infrastructure including: municipal, civil, environmental, mechanical, electrical and structural systems, functional adaptability, code compliance, hazardous and non-hazardous waste;</p> <p>3. Identify and verify all authorities having jurisdiction over the project;</p> <p>4. Establish a policy for this project to minimize environmental impacts consistent with the project objectives and economic constraints, and the application of the <i>Canadian Environmental Assessment Act (CEAA)</i>;</p> <p>5. Review the proposed project milestones for verification that all dates are achievable;</p> <p>6. Review the cost plan/budget for verification that the costs are realistic and achievable; and</p> <p>7. Prepare recommendations on the feasibility of the project.</p>	<p>1. A written statement which describes various criteria and data for a project including design objectives, site requirements and constraints, equipment and systems, and requirements. The purpose of this stage is to describe the requirements which must be met to satisfy the requirements of the project. The process seeks to answer the following questions:</p> <ol style="list-style-type: none"> (1) What is the nature and scope of the problem? (2) What information is required to develop a proper engineering solution to the problem? (3) How much and what type of construction is needed? (4) What are the future requirements of this site <p>1.2.2 Scope and Activities</p> <ol style="list-style-type: none"> 1. In preparing a functional program, the Consultant's main task is to examine the project/ site in detail so as to define the clients needs and objectives. These requirements will establish criteria for evaluating potential design solutions and other strategic alternatives. 2. The Consultant must understand: <ol style="list-style-type: none"> (1) The impacts of the project on the environment; (2) The social impacts of its program on the community; (3) The impacts on the existing infrastructure; (4) Long term maintenance requirements and operational needs. 3. The Consultant shall then develop approximate sketches and technical requirements for the proposed works including: <ol style="list-style-type: none"> (1) Details for proposed works; (2) Environmental criteria; (Note: It is not the intent of this Supply Arrangement to procure Environmental Assessment services from this Consultant. However, on many projects, environmental criteria, identified by others, may need to be incorporated into the design.) 4. The Consultant shall also advise Project Manager on alternatives, such as the engineering and financial implications of various options. The Consultant shall assist in assessing the advantages or benefits - and the disadvantages or costs - of each alternative. 	<p>1.2.3 Deliverables:</p> <ol style="list-style-type: none"> 1. The final Project Review is a report including as a minimum: <ol style="list-style-type: none"> (1) Site requirements; (2) Explicit space requirements for the future of the site including: Definition of the function of each type of infrastructure; b) The functional relationships between different types of infrastructure or areas; c) Site and sketch of the different infrastructures; d) Special technical requirements of each of the items.
<p>Options Analysis as a minimum:</p> <ol style="list-style-type: none"> 1. Test the feasibility study recommendations using a minimum of three (3) options, schematic (sketch) only; 2. Pro/ Cons of each option; 3. Financial analysis (Class 'D') including life cycle analysis and best value for operation and maintenance; 4. Indication of the preferred option. 	<p>1.1.3 Deliverables:</p> <ol style="list-style-type: none"> 1. Comprehensive summary of the requirements, conditions, feasibility and options analysis, demonstrating an understanding of the scope of work, including: <ol style="list-style-type: none"> (1) Report on existing infrastructure including its condition, deficiencies and life expectancy; (2) Report on existing facilities and systems requirements; (3) Report on all applicable codes, regulation, standards and authorities having jurisdiction; (4) Report on potential environmental impact, sustainability and the whether there is a need for further environmental assessment; (5) Report on recommendations and options analysis; (6) Confirmed or adjusted project cost and time plans; (7) Written identification of the problems, conflicts or other perceived information/clarity assumptions for the acknowledgment of the project manager; (8) Report on Class 'D' Order of Magnitude Cost for each option. 	<p>RS 1.2 Project Approach</p> <p>1.2.1 Intent</p>

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<p>(1) Financial requirements and a preliminary "Order of Magnitude "Class 'D' budget; (2) Scheduling and time frame for the project; (3) Other requirements including: f) Regulatory issues; g) Other requirements from Authorities having Jurisdiction; h) Community goals and concerns; i) Ecological and environmental concerns. (1) A recommended construction delivery method (traditional design-bid-build, design-build, construction management),</p>	<p>1.3.3 Deliverables 1. Implementation strategy 2. Time Plan (Schedule)</p> <p>RS 1.4 Site Condition Reports and Performance Audits</p> <p>1.4.1 Intent 1. The purpose of this stage is to evaluate a site in order to determine the most appropriate management strategy for the retention, maintenance and/or retrofit / renewal of the infrastructure in order to satisfy current and future client requirements. 2. The cyclical review of infrastructure consists of the performance of a range of major evaluation and analysis studied: (1) Management Plans (2) Condition Reports (3) Performance Reviews (4) Serviceability 3. The scope of these cyclical reviews provides, in general terms an examination of inventory performance in five major areas: (1) Operational Performance (2) Functional Performance (3) Financial Performance (4) Technical Performance (5) Environmental Performance</p> <p>1.4.2 Scope and Activities</p> <p>1.4.2.1 Project Start-up A Start-Up Meeting will be held at the time and place to be determined by the Project Manager.</p> <p>1.4.2.2 Research Phase This phase represents the site pre-inspection review of the existing documentation in order to confirm the range of information available and to identify any missing components or areas of concern which will require special attention during the next phase - Infrastructure review.</p> <p>1.4.2.3 Infrastructure review 1. The Consultant team will undertake a detailed review of the current performance conditions of the infrastructure with respect to: (1) Operational, Functional, Technical and Financial Performance. 2. The Consultant team will review pertinent information provided on the current performance conditions of the infrastructure with respect to Environmental performance.</p>	
<p>RS 1.3 Implementation Strategy and Schedule</p> <p>1.3.1 Intent The purpose of this stage is to detail an implementation strategy to meet the project goals and objectives.</p> <p>1.3.2 Scope and Activities The Consultant shall complete the following as a minimum: 1. Prepare a detailed implementation strategy that documents, in a report, all activities, milestones and deliverables required for the effective delivery of the project including time frames for submissions, reviews and approvals; 2. Prepare a project schedule that identifies, in a graphic format such as Critical Path Method (CPM) or Program Evaluation Review Technique (PERT), all activities, milestones including critical deadlines, long lead delivery items and drop dead dates, required for the effective delivery of the project deliverables, including time frames for submissions, reviews and approvals; 3. The Implementation Strategy and Schedule described above shall include as a minimum: (1) Site Master Plan; (2) Sequencing of project tasks including items not included as part of constructed works; (3) Move sequencing; (4) Client construction requirements (i.e. Security and training, etc.); (5) Construction strategy; (6) Advise the Project Manager of any changes to the scope that may affect schedule or are inconsistent with instructions or written approvals previously given. The Consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding; (7) Submit the Implementation Strategy and Schedule for review. Revise as required. Resubmit for final approval. The original approved schedule will become the "Baseline" schedule to monitor project progress; (8) Throughout the project, monitor critical path and deadlines for submissions, revisions and approvals and as a minimum submit monthly updates.</p>		

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

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

1.4.2.4 Report Development

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

1.4.3 Deliverables

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

RS 1.5 Infrastructure Evaluation & Recommendations Reports

1.5.1 Intent

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

1.5.3 Deliverables

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

RS 1.6 Engineering/ Geotechnical or Other Investigations

1.6.1 Intent

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

1.6.2 Scope and Activities

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

1.6.3 Deliverables

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

RS 1.7 Environmental Protection Requirements

1.7.1 Intent

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<p>The purpose of this stage is to outline the requirements for discharge off site, erosion control and water management, environmental protection, waste management and permitting.</p> <p>1.7.2 Scope and Activities Prepare a report that identifies environmental protection requirements and make appropriate recommendations.</p> <p>1. Prepare requirements for a water management, waste management and environmental protection plans for construction and post construction stages.</p> <p>1.7.3 Deliverables Submit report for review, revise as required and resubmit for final approval.</p> <p>RS 1.8 Order of Magnitude Class 'D' (Indicative) Cost Reports</p> <p>1.8.1 Intent The purpose of this stage is to provide an indication of the total cost of the project, based on the user's functional requirements to the degree known at the time. It is based on historical cost data for similar work, suitably adjusted for such factors as: effect of inflation, location, risk, quality, size and time. All related factors affecting cost are considered to the extent possible. Such an estimate is strictly an indication (rough order of magnitude) of the project total cost and completion date. This estimate is used to establish the indicative estimate required by Treasury Board for Preliminary Project Approval. Expected degree of accuracy: 20%.</p> <p>1.8.2 Scope and Activities:</p> <p>1. Cost Planning: Specific tasks include as a minimum: (1) Prepare cost plans from project briefs, preliminary concepts or other preliminary information; (2) Prepare cost analysis; (3) Prepare option analysis and "what if" scenarios; (4) Provide advice and recommendations on project planning in order to achieve the most cost effective project sequence; (5) Identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts; (6) Advise on alternative procurement and construction strategies to create efficiencies wherever possible; (7) Identify, forecast and analyze project-related issues including possible market shortages and potential price fluctuations.</p> <p>2. Cost Estimating: Develop cost estimates of projects: (1) Prepare order of magnitude Class 'D' cost estimates; and be prepared to further develop the cost estimate to level Class 'A' ready for tender. (2) Quantify design and construction costs, contingencies and risks;</p>		
<p>(3) Prepare and investigate costing alternatives to assist in the identification of the most cost-effective design and/or construction approach; Investigate and report on life-cycle costs; (4) Document all unit pricing, analysis, and valuation.</p> <p>1.8.3 Deliverables</p> <p>1. Cost Planning (1) Cost plans; (2) Cost analyses and "what if" scenarios; (3) Cash flows; and / or (4) Reports on alternative procurement and construction strategies or other project-related issues.</p> <p>2. Cost Estimating (1) Fully detailed cost estimate. Order of magnitude Class 'D' accuracy; and be prepared to further develop the cost estimate to level "A" ready for tender. (2) Documentation of the methodology of the estimate and any assumptions made; (3) Documentation of all pricing and valuation calculations; (4) Reports on investigation of costing alternatives; and / or (5) Reports on life-cycle costs.</p> <p>RS 1.9 Hydrology and Drainage Structure Sizing Design</p> <p>1.9.1 Intent A study of the local hydrology to assess the requirements for drainage structure design.</p> <p>1.9.2 Scope and Activities: To review and summarize aspects of drainage requirements for a project and to calculate the structure type and sizing requirements.</p> <p>1.9.3 Deliverables A detailed engineering design of drainage structures for each project requirement and a report that outlines the basis for structure sizing and location.</p> <p>RS 1.10 Regulatory Issues</p> <p>1.10.1 Intent To confirm that all design meets all requirements as set forth by code and regulatory authorities having jurisdiction.</p>		

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<p>1.10.2 Scope and Activities: To attend meetings for discussion purposes of any design issues and to resolve any design issues.</p> <p>1.10.3 Deliverables Plans and specifications compliant with necessary requirements meeting regulatory and code requirements.</p>		<p>14. Project specification amendment; 15. Plan to incorporate the recommendations of decisions for the CEAA (prepared by others), if required/requested; 16. Cost Plan, including cost analysis, "what if" scenarios, potential risks, alternative procurement and construction strategies; 17. Class 'C' Cost Estimate, including methodology of the estimate, assumptions made, costing alternatives and life cycle costs. Document all unit pricing, analysis, and valuation 18. Prepare project master schedule and identify potential risks to schedule; 19. Report on deviation from schedule and recommend corrective measures or updated time line.</p>
<p>RS 2.0 CONCEPT DESIGN</p> <p>2.1 Intent To translate the project requirements into preliminary design to explore design options and analyze them with respect to priorities and program objectives previously identified. Out of this process, one option will be recommended to proceed to Design Development.</p>		<p>RS 3.0 DESIGN DEVELOPMENT</p> <p>3.1 Intent To further develop one of the options presented at the Concept Design stage. The Design Development documents consist of drawings and other documents to describe the size and character of the entire project as to engineering, structural, environmental, mechanical and electrical systems, materials and such other elements as may be appropriate.</p>
<p>2.2 Scope and Activities: 1. Obtain written approval from Project Manager for development of schematic design options based on the analysis of the Project Brief; 2. Provide alternative design options exploring possible technical and environmental strategies which are viable and have potential for development; 3. Analyze each solution with regard to the project goals including cost and schedule; 4. Write a preliminary project-description report outlining the various components and system options; 5. Incorporate the findings of environmental assessment and Canadian Environmental Assessment Act (CEAA) Screening Report (prepared by others), if required/requested; 6. Minimize the use of hazardous/toxic materials and products made from endangered or rare species (i.e. tropical hardwoods); 7. Recommend one option for further development with all supporting background and technical justifications; 8. Produce a Class 'C' cost estimate for the various options; and be prepared to further develop the cost estimate to level Class 'A' ready for tender. 9. Produce an implementation schedule, including alternative procurement and construction strategies.</p>		<p>3.2 Scope and Activities: 20. Obtain written approval from Project Manager for development of one of the proposed concept design options; 21. If any alterations are demanded, document all required changes, analyze the impact on all project components, and resubmit for approval if required; 22. Expand and clarify the Concept Design intent for each design discipline; 23. Present the design materials to the client, design review or other committees as indicated by the project manager; 24. Present the design to the government or local authorities where required; 25. Ensure coordination of all disciplines' design development; 26. Analyze the constructability of the project and advise on the construction process and duration; 27. Based on all material available at the time, prepare a milestone schedule for the consideration with special attention to the impact on tenants; 28. Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project; 29. Define Commissioning Requirements; 30. Provide a list of all NMS sections to be used, complete with a full draft specification, catalogue cuts and sustainable development/green choices.</p>
<p>2.3 Deliverables 10. Schematic Design Drawings; 11. Site plan showing proposed works, existing infrastructure, existing and proposed services and fit within surrounding context; 12. Description of the options with recommendation of preferred solution; 13. Waste Management plan</p>		<p>3.3 Deliverables 1. Plans for all works, including all disciplines, showing all infrastructure. Indicating all key dimensions; 2. Preliminary works plans and plans for site preparation; 3. Engineering plans and details.</p>

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

RS 4.0 CONSTRUCTION DOCUMENTS

4.1 Intent

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

4.2 Scope and Activities:

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

- (1) Obtain Project Manager's approval for Design Development submissions (33%, 66%, 99% and Final)
- (2) Requirements pertaining to such elements as format, type, content, number of copies, etc. For the preparation and submission of Construction Documents are presented in PA 1 and in Doing Business.

- (3) Confirm format of drawings and specifications;
- (4) Clarify special procedures (i.e. phased construction);
- (5) Submit drawings and specifications at the required stages. (33%, 66%, 99%);
- (6) Provide written response to all review comments and incorporate them into Construction Documents where required;
- (7) Advise as to the progress of cost estimates and submit updated cost estimates as the project develops;
- (8) Update the project time plan (schedule);
- (9) Prepare a final Class 'A' (substantive) estimate;
- (10) Review and approve materials and construction processes specifications to meet sustainable development objectives.

4.3 Details

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

4.4 Deliverables

3. Deliverables are similar at all three stages; completeness of the project development should reflect the stage of a submission.
4. 99% Submission:
 - (1) Complete specification and working drawings.
 - (2) 99% Commissioning plan and Systems Operations manual
 - (3) One copy of site information, soil investigation report, borehole logs, etc.
 - (4) One copy of support data, studies, calculations, etc., required by Engineering disciplines for final checking and record.
 - (5) One copy of updated Cost Plan and Project Schedule

5. Final Submission:
 - (1) This submission incorporates all revisions required by the review of the 99% submission. Provide the following:
 - b) Ten complete sets of originals of the working drawings.;
 - c) Ten sets of original specifications;
 - d) Class 'A' estimate;
 - e) Complete Commissioning Plan;
 - f) Complete Systems Operations Manual;
 - g) As a safeguard against loss or damage to the originals, retain a complete set of drawings in reproducible form and one copy of specification;
 - h) Inspection Authorities Submission;
 - i) Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call.
 - (1) The Consultant shall, as a minimum, assist tender evaluation by providing advice on such elements as;
 - b) The completeness of tender documents in all respects;
 - c) The technical aspects of the tenders;
 - d) The effect of alternatives and qualifications which may have been included in the tender;
 - e) The tenderers capability to undertake the full scope of work;
 - f) The availability of adequate equipment to carry out the work;
 - g) Examine and report on any cost and schedule impact created by the issue of tender /contract addenda.
 - (1) If PWGSC decides to re-tender the project, provide advice and assistance to the Project Manager;
 - (2) Revise and amend, at your cost, the construction documents to bring the cost of the work within the limits stipulated.

RS 5.0 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

5.1 Intent

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

5.2 Scope and Activities:

1. Tender Call
 - (1) The Project Manager shall be responsible for the production of the required number of copies of the Tender Documents and for such other documents as are necessary for tender call purposes.
 - (2) The Consultant shall:
 - b) Prepare, sign, seal and submit complete sets of approved tender-ready, Construction Drawings and Specifications to the Project Manager. Requirements pertaining to number and types of copies of Construction Drawings and Specifications are outlined below under PA 1.
 - c) Provide the Project Manager with all information required by tenderers to fully interpret the Construction Documents. The Contracting Authority will issue the addenda to all participants.
 - d) Attend tenderers briefing meeting(s) (i.e. Job Showing), upon request
 - e) Prepare addenda based on questions arising in such meetings for issue by the Contracting Authority. The Contracting Authority will issue the addenda to all participants; and
2. Bid Evaluation and Construction Contract Award
 - (1) The 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.
 - (1) Electronic true copy of the final submission drawings and specifications on one or multiple CD-ROM in Portable Document Format (PDF) in accordance with Doing Business. The PDF files should to the greatest extent possible be derived from the native software in which they were

5.3 Deliverables

1. Originals of drawings and specifications;
2. Electronic copies of drawings and specifications;
3. Addenda where needed;
4. Full notes of all inquiries, and related correspondence, during the bidding period;
5. Changes to the documents, if re-tendering is necessary;
6. Updated cost estimate or schedule;
7. Submission Requirements for Construction Drawings and Specifications;
8. Provide three (3) complete sets of approved Construction Drawings as follows:
 - (1) One (1) hard copy, signed and sealed; and
 - (2) Two (2) electronic copies (one in native format and one in PDF format);
9. Provide three (3) sets of approved Construction Specifications as follows:
 - (1) One (1) hard copy properly bound and covered; and
 - (2) Two (2) electronic copies (one in native format and one in PDF format).
10. The electronic true copy of drawings and specifications is for tendering purposes only and do not require to be signed and sealed.
11. The original signed and sealed hard copy of drawings and specifications will be the version used by the successful contractor for construction and building permit purposes.
12. Electronic Versions of Construction Drawings and Specifications
 - (1) Electronic true copy of the final submission drawings and specifications on one or multiple CD-ROM in Portable Document Format (PDF) in accordance with Doing Business. The PDF files should to the greatest extent possible be derived from the native software in which they were

created and must not have any password protection and printing restrictions.

RS 6.0 CONSTRUCTION & CONTRACT ADMINISTRATION & POST CONSTRUCTION WARRANTY REVIEW

6.1 Intent

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

6.2 Scope and Activities:

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

6.3 Deliverables

- Written reports from site visits including persons involved;
- Written reports on the progress of the work and the cost of the project at the end of each month;
- Additional detail drawings when required to clarify, interpret or supplement the Construction Documents
- Post contract drawings (As-Built Drawing);

- Interim or Final certificates;
- Debrief of Commissioning Activities;
- As built records;
- Warranty deficiency list;
- Report on Final Warranty Review;

RS 7.0 RISK MANAGEMENT (ALL STAGES)

7.1 Intent

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

7.2 Scope and Activities:

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

7.3 Deliverables

- Prepare Risk Management Reports at Design Development, 66% Design Documents, and 100% Design Documents stages;
- Include input from all sub-consultants; and from Client;
- Take steps to implement risk mitigation. This includes as a minimum further recommendations, analysis, investigations, site meetings and site supervision.

RS 8.0 SUPPORT SERVICES

8.1 ESTIMATING AND COST PLANNING

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

- Delivering projects on time and within budget is a high priority. A fully qualified cost estimating, cost planning and cost control resource(s), referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on construction projects may be required. This Cost Specialist will be conversant with all aspects of construction cost estimating during the design stages including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.

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<p>2. The purpose of cost planning and cost control is to assist in the accomplishment of project cost objectives. It is a continuous and interactive process involving planning, action, measurement, evaluation and revision.</p>		<p>examine the estimates provided and make such revisions as are subsequently agreed to be necessary and/or provide ample acceptable evidence that such corrections or amendments are unnecessary.</p>
<p>8.1.2 Scope of Services</p>		<p>8.1.5 No Action Abrogates Consultant's Responsibilities</p>
<p>3. The Cost Specialist shall provide an interactive and continuous cost consulting service from the commencement of project design through to construction completion and subsequent evaluation, including the preparation of complete estimates for all construction trades, escalation, inflation and contingency costs, as noted in the previous RS sections.</p>		<p>9. No acceptance or approval by PWGSC, whether expressed or implied, shall be deemed to relieve the Cost Specialist, or the Consultant, of professional or technical responsibility for the estimates and cost reports.</p>
<p>4. The Cost Specialist shall provide a cost advising, and cost monitoring/reporting service.</p>		<p>10. Neither does acceptance of an estimate by PWGSC in any way abolish the Consultant's responsibility to maintain the specified Construction Cost Limit throughout the life of the project, or the requirement to redesign should the lowest acceptable bid differ significantly from the agreed Construction Cost Plan, unless and until the Project Manager indicates otherwise in writing.</p>
<p>5. The Cost Specialist shall attend all relevant project and production meetings throughout the design phases and be prepared to present and defend the estimates directly to the Project Manager.</p>		<p>8.2 Surveying</p>
<p>8.1.3 Cost Estimate and Planning Report</p>		<p>8.2.1 Intent</p>
<p>6. The Cost Specialist is to provide continuous cost monitoring, timely identification and early warning of all changes that affect or potentially affect the estimated construction costs of the project.</p>		<p>To have adequate survey control for design purposes or during construction.</p>
<p>7. If the estimate falls short of or exceeds the Construction Cost Limit due to such changes, the Cost Specialist with the Consultant team shall fully advise the Project Manager. The Cost Specialist with the Consultant team shall propose alternative design solutions.</p>		<p>8.2.2 Scope and Activities</p>
<p>8. An Cost Estimate and Planning Report will include sufficient description and cost detail to clearly identify:</p>		<p>8.2.3 Deliverables</p>
<p>(1) Scope Change: Identifying the nature, reason and total cost impact of all identified and potential project scope changes affecting Construction Cost Estimate;</p>		<p>Complete survey plans consistent with design requirements to be supplied in digital format.</p>
<p>(2) Cost Overruns and Under runs: Identifying the nature, the reason and the total cost impact of all identified and potential cost variations;</p>		<p>8.3 Materials Testing</p>
<p>(3) Options Enabling a return to the Construction Cost Estimate: Identifying the nature and potential cost effects of all identified options proposed, in order to return the project within the Construction Cost Estimate.</p>		<p>8.3.1 Intent</p>
		<p>To procure materials testing services during construction, including the testing of placed materials such as backfill soils and gravels.</p>
<p>8.1.4 Responsibilities</p>		<p>8.3.2 Scope and Activities</p>
<p>PWGSC will review all aspects of the Cost Specialist's work on a continuing basis to determine the validity and completeness of the information provided. In the event areas of concern are identified, including errors and omissions as well as areas of inadequate detail or areas that require further explanation, the Cost Specialist shall re-</p>		<p>To provide materials testing services, equipment and personnel on an as required or as specified basis to conduct testing of materials: at source, as samples submitted by the Contractor, and as placed in-situ, to make sure that the materials and the</p>

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<p>construction and/or placement methods are in accordance with the contract drawings and specifications.</p>		<p>(1) be directly responsible to the Consultant;</p> <p>(2) become thoroughly familiar with all pertinent documents for the construction including as a minimum the National Building Code. They shall be aware of all Federal, Provincial and Municipal standards for the health and safety of construction workers;</p> <p>(3) become thoroughly familiar with the requirements of the Consultant Project Brief and project responsibilities of others which relate to these services;</p>
<p>8.3.3 Deliverables Materials testing reports and, if required/requested, recommendations for removal and /or remediation of non-conforming materials.</p>		
<p>8.4 RESIDENT CONSTRUCTION SERVICES</p>	<p>8.4.2 Scope and Activities</p>	
<p>8.4.1 Intent</p>	<p>1. General</p>	
<p>1. The intent of the provision of Resident Construction Service is to implement the project in compliance with the Construction Contract Documents and to ensure construction contractor compliance with their contract. The Consultant shall provide a Resident Construction Services Representative for the duration of the construction contract stage.</p>	<p>(1) The Resident Construction Services Representative's service shall commence on the date the contractor physically mobilizes on a site and finish on the date of Certificate of Substantial Performance unless otherwise stated by the Project Manager.</p>	
<p>2. The purpose of the Resident Construction Services Representative is responsible to:</p>	<p>(2) The Consultant shall be responsible to distribute and assign the Construction Services Representative in such a manner that the intent of these services, as stated above is assured. The consultant shall ensure, via his planned allotment of the Construction Services Representative's time, that quality assurance is maintained and that all critical aspects of the work by the construction contractor's forces occur in the presence of the Resident Construction Services Representative.</p>	
<p>(1) ensure the presence of the Consultant on site for the project;</p> <p>(2) to inspect, coordinate and monitor all aspects of the work during key periods of the construction of the facility, and liaise with the contractor, Public Works And Government Services Canada and other agencies as appropriate to the work.;</p> <p>(3) to provide resident inspection during key periods of construction work and maintaining records of all construction work placed on behalf of the design engineer and Project Manager;</p> <p>(4) ensure that a sufficient level of communication is maintained with the Project Manager, Consultant, Contractor and any other organization applicable to the construction and construction contract administration of the individual detachment construction contract.</p>	<p>(3) The Consultant shall, prior to the construction contract tender of the facility provide Detail Project Schedule, identifying the key stages of construction and the planned allotment of hours when the Resident Construction Services Representative shall be on site.</p>	
<p>3. Resident Construction Services Representative(s) should:</p>	<p>(4) The PWGSC representatives may, at their discretion, request additional amounts and/or less amounts of services of the Resident Construction Services Representative. Those additional and/or reduced services shall be calculated utilizing the hourly rate identified by the Consultant.</p>	
<p>(1) be a registered Professional Engineer or be eligible for registration in the Province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador; or</p> <p>(2) be a registered Certified Engineering Technologist or be eligible for registration in the province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador; or</p> <p>(3) be a registered Certified Engineering Technician or be eligible for registration in the province of New Brunswick or Nova Scotia or Prince Edward Island or Newfoundland and Labrador;</p> <p>(4) Other combinations of education and experience will be considered considering the requirements and complexity of the service(s) required.</p>	<p>2. Duties and Responsibilities</p> <p>(1) Provide Resident Construction Services including inspection, coordination and monitoring during the construction work and be responsible to the Consultant.</p> <p>(2) Maintain daily records, while on site, of all construction work placed and ensure constant communication amongst Project Manager, the Consultant and Contractor.</p>	
<p>4. The Resident Construction Services Representative shall:</p>		

- | | |
|--|--|
| <p>(3) The Consultant shall ensure that the Resident Construction Services Representative maintains, records and submits time sheets. The Consultant shall forward time sheets of the Resident Construction Services Representative to Project Manager after verifying accuracy and approving. The Consultant shall submit reviewed and approved time sheets to the Project Manager, within two weeks after completion of 40 hours of service by the Resident Construction Services Representative, for review.</p> <p>Inspection and Reporting</p> <p>The Resident Construction Services Representative shall:</p> <p>b) inspect all phases of the work in progress, for the purpose of bringing to the attention of the Contractor, after checking with the Consultant, and Project Manager any discrepancies between the work, the contract documents and accepted construction procedures;</p> <p>c) keep a daily log of such inspections and issue a weekly written report to the Consultant in the form directed.</p> <p>The Consultant shall review and approve weekly reports prior to distribution to the Departmental Representative (Project Manager). Reports shall be distributed within five (5) working days of the reports week ending date.</p> <p>The Resident Construction Services Representative shall make any other reports or surveys as may be requested by the Project Manager through the Consultant.</p> <p>Interpretation of the Contract Documents</p> <p>Interpretation of the contract documents shall be the responsibility of the Consultant. The Consultant may, however, have the Resident Construction Services Representative provide him with information regarding job conditions and may require him to relay day-to-day instructions to the Contractor.</p> <p>It shall be the duty of the Resident Construction Services Representative to assist the Consultant and further inform the Consultant of any anticipated problems which may delay the progress of the work. The method of relaying such information shall be determined by the Consultant.</p> <p>Changes in the Work</p> <p>The Resident Construction Services Representative shall not authorize or order any change in the work which will constitute a change in design or in the value of the contract except as delegated by the Project Manager.</p> <p>The Consultant may call upon the Resident Construction Services Representative to assist in the evaluation of changes in the work, where a knowledge of job conditions is required.</p> | <p>6. Communication and Liaison</p> <p>The Resident Construction Services Representative shall:</p> <p>(1) Convey the Consultant's instructions regarding the required standards of workmanship to the Contractor(s);</p> <p>(2) Check specifications, confer and obtain guidance on these findings with the Consultant. The matter is then to be brought to the attention of the Contractor's Superintendent. Although informal discussions with Sub-trade Superintendents are usually permissible, (but only with the agreement of the Contractor), the Resident Construction Services Representative should not deal directly with foreman or tradesmen, or interfere with the progress of the work;</p> <p>(3) Communicate formally with the Contractor via memorandum form only. When this form is issued the Resident Construction Services Representative must immediately file copies with PWGSC and the Consultant;</p> <p>(4) Contact the Consultant immediately when it is apparent that information or action is required of the Consultant, e.g. general instructions, clarifications, sample of shop drawing approvals, requisitions, contemplated change orders, site instructions, details, drawings, etc.;</p> <p>(5) Accompany PWGSC representatives on inspections and report to the Consultant requirements, comments or instructions of PWGSC's forces. Note that the Resident Construction Services Representative should encourage such requirements, comments or instructions to be provided to him in writing;</p> <p>(6) Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor and immediately report these to the Consultant with comments;</p> <p>(7) Ensure that PWGSC and the Consultant are notified promptly when key pieces and/or components of materials and equipment are delivered, so that these parties can arrange for the appropriate personnel to have an opportunity to inspect same prior to installation.</p> <p>Inspection of the Work</p> <p>The Resident Construction Services Representative shall make on site observations and spot checks of the work to determine whether the work, materials and equipment conform with the contract documents and supplementary conditions. The Resident Construction Services Representative shall advise the Contractor of any deficiencies or</p> |
| <p>3.</p> <p>(1)</p> <p>(2)</p> <p>(1)</p> <p>(2)</p> <p>(1)</p> <p>(2)</p> <p>(1)</p> <p>(2)</p> | <p>7.</p> <p>(1)</p> |

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<p>unapproved deviations via memorandum and report immediately to the Consultant and Project Manager any of these on which the Contractor is tardy or refuses to correct.</p>	<p>(3) Accept any work or portions of the build works; (4) Enter into the area of responsibility of the Contractor.</p>	
<p>(2) The Resident Construction Services Representative shall arrange for the Consultant's architectural, structural, mechanical, electrical and other consultants to make the periodic inspections required by the Consultant's contract, and for these inspections to be made timely with respect to the progress of the work.</p>	<p>12. Hazardous Construction Operations The Resident Construction Services Representative is to communicate regularly with the Construction Safety Professional regarding any issues of site safety. All safety related issues must be forwarded immediately to the Safety Professional, as well as the Project Manager.</p>	
<p>(3) The Resident Construction Services Representative shall also report if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.</p>	<p>13. Equipment Required and Provided by Consultant Costs of all equipment required shall be covered in the quoted fixed hourly rate. Equipment required shall include as a minimum: b) Digital Camera; c) Personal Protective Equipment; d) Office Supplies required to perform services; e) Cell Phone or other acceptable means of communication; f) Laptop computer.</p>	
<p>(4) The Resident Construction Services Representative shall assist in the preparation of all deficiency reports, interim, preliminary, and final, in collaboration with the PWGSC and Consultant's representatives.</p>	<p>(1) Provision of a site trailer and cover costs associated with same, including: fax machine and furniture will be supplied by construction Contractor.</p>	
<p>(5) The Resident Construction Services Representative shall be responsible for the measurement of all work to be done by the Contractor</p>		
<p>8. Site Meetings</p>		
<p>The Resident Construction Services Representative shall attend and participate in all job-site meetings held during key periods of construction.</p>		
<p>9. Inspection and Testing</p>	<p>8.4.3 Deliverables</p>	
<p>(1) The Resident Construction Services Representative must see that the tests and inspections required by the contract documents are conducted, and should observe these tests and report the results in the daily log.</p>	<p>1. Daily Log The Resident Construction Services Representative shall keep a daily log while on site. This will record the following: b) weather conditions, particularly unusual weather relative to construction activities in progress; c) major material and equipment deliveries; d) daily activities and major work done; e) number of workers on site (full day or part day) and trade represented; f) start, stop or completion of activities; g) presence of inspection and testing firms, tests taken, results, etc.; h) unusual site conditions experienced; i) significant developments, remarks, etc.; j) special visitors on site; k) authorities given Contractor to undertake certain or hazardous works; l) Environmental, Safety or other notable incidents; m) reports, instructions from Appropriate Authorities Response Actions.</p>	
<p>(2) The Consultant should be notified if the test results do not meet the specified requirements, or if the Contractor does not have tests undertaken as required.</p>		
<p>10. Emergencies</p>		
<p>(1) In the case of emergency where safety of persons or property is concerned or work is endangered, to safeguard the interests of PWGSC, the Resident Construction Representative shall give immediate written notice and verbal contact to PWGSC of the possible hazard.</p>		
<p>11. Limitations</p>		
<p>The Resident Construction Services Representative shall not:</p>		
<p>(1) Authorize deviations from the contract documents;</p>		
<p>(2) Approve shop drawings or samples unless requested by project manager for project use;</p>		

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- (1) Based on site/ project specific conditions, the items recorded may expand or be reduced. The log is the personal property of the Resident Construction Services Representative. Copies of the log book, certified as copies, are to be provided at the end of the project.
- (1) The items may be expanded or reduced based on site/ project specific conditions.
- (2) In addition, the Resident Construction Services Representative shall maintain an up to date progress schedule.

2. Weekly Records
- (1) The Resident Construction Services Representative shall prepare weekly reports for the Consultant in the form directed:
- b) progress relative to schedule;
- c) major activities commencing or completed during the week; main activities now in progress;
- d) major deliveries of materials and/or equipment;
- e) difficulties which may cause delays in completion;
- f) materials and labour needed immediately;
- g) cost estimates of work completed and materials delivered (cost plus contracts);
- h) outstanding information or action required by Consultant or PWGSC;
- i) work force;
- j) weather;
- k) remarks;
- l) accidents on site;
- m) safety hazards caused by the work, the Contractor or his agents.
- A reproduction of the original contract drawings shall be carefully preserved and shall be kept marked up to date with all addenda, change orders, site instructions, details, as-built conditions, etc., issued subsequent to the award of the contract.

- (1) The items may be expanded or reduced based on site/ project specific conditions.

3. Site Records
- (1) The Resident Construction Services Representative shall maintain up to date files at the site for the use as follows:
- b) Contract and Tender Documents;
- c) Approved Shop Drawings;
- d) Approved Samples;
- e) Samples;
- f) Site Instructions;
- g) Contemplated Change Orders;
- h) Change Orders;
- i) Memoranda;
- j) Test and Deficiency Reports;
- k) Correspondence and Minutes of Meeting;
- l) Names, addresses, telephone numbers of Client representatives, Consultant and all Contractors, sub-trades key personnel associated with the contract; including home telephone numbers in case of emergencies.

Annex B
Qualified Specialty Services

The Annex provides the qualified Suppliers for each Specialty Service by Geographical Region. The order of the suppliers presented will be used in Part 6B, Selection Process when determining invited suppliers on a rotational basis. The order of the suppliers will be randomly generated (i.e. names from a hat, list randomly generated by computer, etc.).

The number of names selected is based on the selection process detailed in Part 6B. The name at the top of the list would be selected first. If a supplier is selected they move to the bottom of the list even if they choose to not participate in the RFP or they do not receive a contract as a result of a RFP process.

Suppliers may be added to the list after the annual refresh. New suppliers would be added to bottom of the list and the selection process would continue as per Part 6B.

Specialty Service	Geographic Region			
	Nova Scotia	New Brunswick	Prince Edward Island	Newfoundland and Labrador
Civil/Municipal Engineering	1	1	1	1
	2...	2...	2...	2...
Structural Engineering				
	1	1	1	1
	2...	2...	2...	2...
Marine Engineering				
	1	1	1	1
	2...	2...	2...	2...
Coastal Engineering				
	1	1	1	1
	2...	2...	2...	2...
Highway and Transportation Engineering				

	1	1	1	1	1
	2...	2...	2...	2...	2...
Traffic Engineering					
	1	1	1	1	1
	2...	2...	2...	2...	2...
Geotechnical Engineering					
	1	1	1	1	1
	2...	2...	2...	2...	2...
Landscape Architecture					
	1	1	1	1	1
	2...	2...	2...	2...	2...

ANNEX C

Supply Arrangement Reporting

Suppliers must provide a quarterly report on usage of the Supply Arrangement containing the information below.

Supply Arrangement Reporting must be e-mailed to the Contracting Authority.

Please use the Supply Arrangement number in the subject line and clearly included:

- The supply arrangement number for which the data is submitted
- The period for which the data has been accumulated (start date and end date)
- The Total Spend to date by Canada

Supply Arrangement		Start Date of SA		End Date of SA		
Total Value to Date		Total Value for the Reporting Period		Reporting Period	Start Date	End Date
Invoice #	Description Location	Date of Contract Award	Date of Completion	Value of Contract		

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Annex D

Doing Business

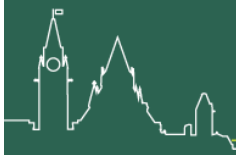
Doing Business (Annex D) appended to the arrangement package is to be inserted at this point and forms part of this document.



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Appendices

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

SECTION 1 INTRODUCTION

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

SECTION 2 PWGSC NATIONAL CADD STANDARD

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

Refer to:

<http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html>

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

SECTION 3 GUIDE TO PREPARATION OF CONSTRUCTION DOCUMENTS FOR PWGSC

1 Purpose

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

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

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

2 Principles of PWGSC Contract Documents

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

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

3 Quality Assurance

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

SPECIFICATIONS

1 National Master Specification

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

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

2 Specification Organization

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

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

3 Terminology

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

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

4 Dimensions

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

5 Standards

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

- CSA standards: <http://www.csa.ca>
- CGSB standards: <http://www.pwgsc.gc.ca/cgsb>
- ANSI standards: <http://www.ansi.org>
- ASTM Standards: <http://www.astm.org>
- ULC standards: <http://www.ulc.ca>
- General reference of standards: <http://www.cssinfo.com>

The NMS website (<http://www.tpsgc-pwgsc.gc.ca/biens-property/ddn-nms/index-eng.html>) also links to other documents references in the NMS under its "Links" feature.

6 Specifying Materials

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

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

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

Acceptable Materials: set up the paragraph format as follows:

Acceptable Materials:

1. ABC Co. Model [_____].
2. DEF Co. Model [_____].
3. GHI Co. Model [_____].

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

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

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

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

"Designated Contractor

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

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

"Designated Contractor

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

and in Part 2 as "Materials

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

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

"Acceptable materials

.1 The only acceptable materials are [] .”

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

7 Unit Prices

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

Use the following wording:

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

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

Sample of Unit Price Table:

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

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

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

8 Cash Allowances

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

9 Warranties

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

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

Delete all references to manufacturers' guarantees.

10 Scope of Work

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

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

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

12 Related Sections

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

13 Index

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

14 Regional Guide

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

15 Health and Safety

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

16 Designated Substances Report

Include "Section 01 14 25 - Designated Substances Report"

17 Subsurface Investigation Reports

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

Subsurface investigation report(s)

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

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

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

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

18 Experience and Qualifications

Remove experience and qualification requirements from specification sections.

19 Prequalification and Pre-award submissions

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

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

20 Contracting Issues

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

Remove all references within the specifications, to the following:

- General Instructions to Bidders
- General Conditions
- CCDC documents
- Priority of documents
- Security clauses
- Terms of payment or holdback
- Tendering process
- Bonding requirements
- Insurance requirements
- Alternative and separate pricing
- Site visit (Mandatory or Optional)
- Release of Lien and deficiency holdbacks

DRAWINGS

1 Title Blocks

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

2 Dimensions

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

3 Trade Names

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

4 Specification Notes

No specification type notes are to appear on any drawing.

5 Terminology

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

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

6 Information to be included

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

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

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

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

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

ADDENDA

1 Format

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

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

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

2 Content

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

DOCUMENTATION

Translation

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

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

Consultant shall provide:

- Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- Index: as per Appendix 'C'
- Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- Drawings: reproducible originals, sealed and signed by the design authority.
- Tender information:
 - Including a description of all units and estimated quantities to be included in unit price table.
 - Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
 - Government Electronic Tendering System (MERX): Consultants to provide an electronic true copy of the final documents (specifications and drawings) on one or multiple CD-ROM in Portable Document Format (PDF) without password protection and printing restrictions. The electronic copy of drawings and specifications is for bidding purposes only and do not require to be signed and sealed. See Appendix 'D' and Appendix 'E'.

PWGSC shall provide:

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

SECTION 4 CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

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

Class 'D' (Indicative) Estimate:

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

Submit Class D cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

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

Class 'C' Estimate:

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

Submit Class C cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

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

Class 'B' (Substantive) Estimate:

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

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

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

Class 'A' (Pre-Tender) Estimate:

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

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

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

SECTION 5 TIME MANAGEMENT

1 Time Management, Planning, and Control

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

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

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

1.1 Schedule Design

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

When building a Control System you must consider:

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

1.2 Schedule Development

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

Work Breakdown Structure

When developing the schedule the consultant needs to use PWGSC standards and practices. Two basic requirements are the National Project Management System

(NPMS) and a Work Breakdown Structure (WBS), structured supporting the NPMS (Levels 1-4).

The WBS is as follows:

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

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

Major and Minor Milestones

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

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

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

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

Activities

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

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

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

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

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

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

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

Project Logic

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

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

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

Activity Duration

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

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

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

Activity List

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

Milestone List

A Milestone List identifies all project Major and Minor milestones.

Master Schedule

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

Detailed Project Schedule

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

1.3 Schedule Review and Approval

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

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

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

1.4 Schedule Monitoring and Control

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

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

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

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

Progress Reports

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

The Progress Report includes:

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

Narrative reporting begins with a statement on the general status of the project followed by a summarization of delays, potential problems and project status criticality, any

potential delays, outstanding issues and concerns and options for dealing with any serious planning and scheduling issues.

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

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

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

Exception Report

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

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

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

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

1.5 Standard Submissions

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

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

1.6 Schedule Outputs and Reporting Formats

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

Progress Reports

Paper Size: Letter

Paper Format: Portrait

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

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

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

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

Exception Reports

Paper Size: Letter

Paper Format: Portrait

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

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

Paper Size: Letter

Paper Format: Landscape

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

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

Work Breakdown Structure (indent tree):

Paper Size: Letter

Paper Format: Portrait

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

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

Activity Lists

Paper Size: Letter

Paper Format: Portrait

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

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

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

Milestone Lists

Paper Size: Letter

Paper Format: Portrait

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

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

Master Schedule (Bar Chart)

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

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

Detailed Project Schedules (Bar Chart)

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

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

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

Last updated November 21, 2012

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

Item	Verified by:	Comments:	Action by:
Specifications:			
1 National Master Specifications			
1a The current edition of the NMS has been used.			
1b Sections have been included for all work identified on drawings and sections edited.			
2 Specification Organization			
2a Either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full page format is used.			
2b Each Section starts on a new page and the Project Number, Section Title, Section Number and Page Number show on each page.			
2c Specification date and consultant's name are not indicated.			
3 Terminology			
3a The term Departmental Representative is used instead of Engineer, PWGSC, Owner, Consultant or Architect.			
3b Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by" are not used.			
4 Dimensions			
4a Dimensions are provided in metric only.			
5 Standards			
5a The latest edition of all references quoted is used.			

6 Specifications Materials			
6a The method of specifying materials uses recognized standards. Actual brand names and model numbers are not specified.			
6b Materials are specified using standards and performance criteria (if not, the correct form of acceptable materials has been used).			
6c Identify if non-restrictive, non-trade name "prescription" or "performance" specifications are used.			
6d Indicate if a list of acceptable materials have been used.			
6e The term "Acceptable Manufacturers" is not used.			
6f No sole sourcing has been used.			
6g If sole sourcing has been used, the correct wording has been used and a justification provided to RPCD for the sole sourced products.			
7 Unit Prices			
7a Unit prices are used only for work that is difficult to estimate.			
8 Cash Allowances			
8a Indicate if cash allowances have been used.			
9 Warranties			
9a Indicate if warranties extend more than a 12 or 24 months period.			
9b Manufacturers guarantees are not indicated.			
10 Scope of Work			
10 No paragraphs noted as "Scope of Work" are included.			
11 Summary and Section Includes			
11a In part 1 of section, paragraphs "Summary" and "Section Includes" are not used.			
12 Related Sections			
12a The list of related sections and appendices are coordinated.			
13 Index			
13a The index shows a complete list of plans and specification sections with the correct number of pages and correct drawing titles and section names.			
14 Regional Guide Specifications			
14a General Instructions is included (Section 01 00 10 in the NCA).			

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

Item	Verified by:	Comments:	Action By:
Drawings:			
1 Title Blocks			
1a The PWGSC title block is used.			
2 Dimensions			
2a Dimensions are provided in metric only.			
3 Trade Names			
3a Trade names are not used.			
4 Specification Notes			
4a There is no specification type notes.			
5 Terminology			
5a The term Departmental Representative is used instead of Engineer, PWGSC, Owner,			

Consultant or Architect.			
5b Notations such as: “verify on site”, “as instructed”, “to match existing”, “example”, “equal to”, “equivalent to” and “to be determined on site by” are not used.			
6 Information to be included			
6a Architectural and Engineering Drawings have been stamped and signed by the design authority.			
6b The project quantity and configuration, dimensions and construction details are included.			
6c References to future work and elements not in contract do not appear or are kept to an absolute minimum and clearly marked.			

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

Consultant's Representative: _____

Firm name: _____

Signature: _____ Date: _____

APPENDIX 'B' - Sample of Addendum

Last updated April 22, 2008

ADDENDUM No. _____

Project Number: _____

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

DRAWINGS

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

- 1 A1 Architectural
- .1

SPECIFICATIONS

SPEC NOTE: indicate section number and title.

- 1 Section 01 00 10 - General Instructions

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

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

APPENDIX 'C' - Sample of Index

Last updated April 22, 2008

Project No: _____

Index
Page 1 of _____

DRAWINGS AND SPECIFICATIONS

DRAWINGS:

SPEC NOTE: List all Drawings by number and title.

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

SPECIFICATIONS:

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

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

APPENDIX 'D'

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

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005

Last Updated: June 3, 2008

Version 1.0

PREFACE

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

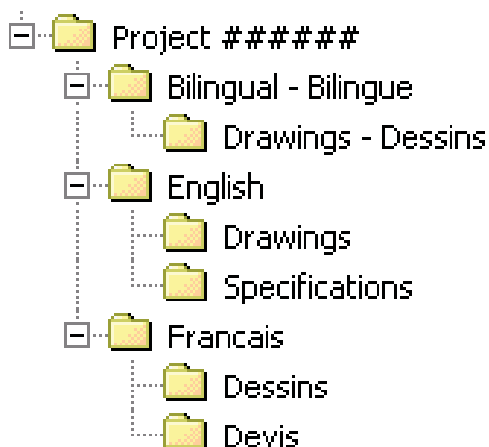
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction.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

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

1. DIRECTORY STRUCTURE

1.1 1st, 2nd and 3rd Tier Sub-Folders

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



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

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

IMPORTANT:

The applicable elements of the Directory Structure (1st, 2nd and 3rd Tier folders) are always required and cannot be modified.

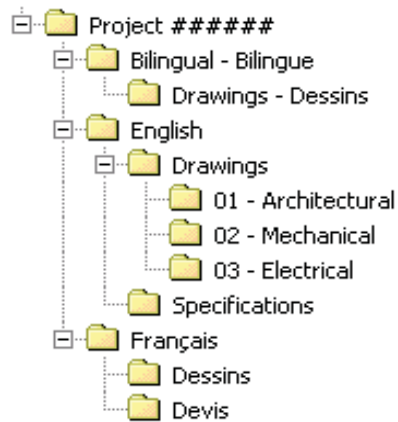
1.2 4th Tier Sub-Folders for Drawings

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

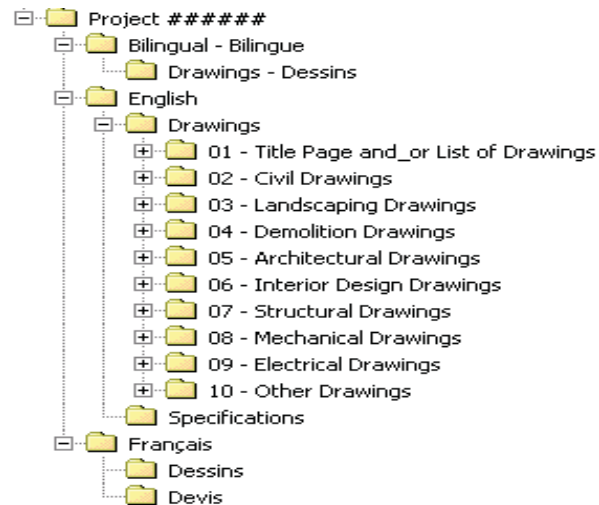
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “Drawings – Dessins”, “Drawings” and “Dessins” folders.

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

Examples of 4th Tier sub-folders for drawings:



or



1.2.1 Naming Convention

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

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

- Y

Where:

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

Y = The title of the folder

Example: 03 – Mechanical

For the “*Drawings - Dessins*” folder:

- Y - Z

Where:

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

Y = The English title of the folder

Z = The French title of the folder

Example: 04 - Electrical - Électricité

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

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

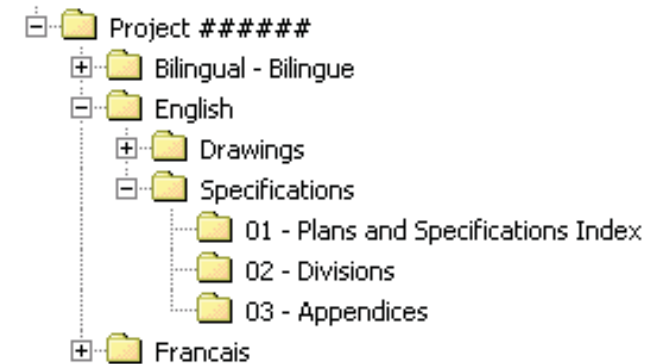
- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the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

1.3 4th Tier Sub-Folders for Specifications

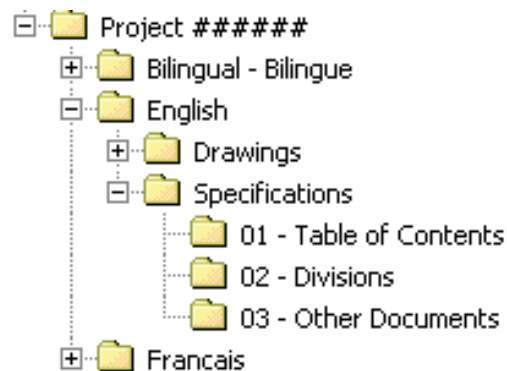
The “*Specifications*” and “*Devis*” folders must have 4th Tier sub-folders created to reflect the various elements of the specifications.

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

Examples of 4th Tier sub-folders for specifications:



or



1.3.1 Naming Convention

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

For the “Specifications” and “Devis” folders:

- Y

Where:

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

Y = The title of the folder

Example: 02 – Divisions

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

It is essential to ensure that the order of the elements of the specifications on the CD-ROM be exactly the same as in the hard copy. GETS will sort each element of the specifications for both

screen display and printing as per the following rules:

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

2. NAMING CONVENTION FOR PDF FILES

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

2.1 Drawings

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

X### - Y

Where:

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

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

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

Example: A001 - First Floor Details

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

The following important points about drawings are to be noted:

- The drawing PDF files within each sub-folder are sorted alphanumerically for both displaying and printing. If there are more than 9 drawings in a particular discipline the numbering must use at least two numerical digits (i.e. A01 instead of A1) in order to avoid displaying drawing A10 between A1 and A2. The same rule applies when there are more than 99 drawings per discipline i.e. three digits instead of two must be used for the numbering (for example M003 instead of M03);

- If drawing PDF files are included in the “*Bilingual - Bilingue*” folder, these cannot be included as well in the “*English*” and/or “*Français*” folders;
- If drawings not associated with a particular discipline are not numbered (Title Page or List of Drawings for example), these will be sorted alphabetically. While this does not represent a problem if there is only one drawing in the sub-folder, it could disrupt the order when there are two or more drawings. If the alphabetical order of the drawings name does not represent the order on the hard copy set, the drawings are to be named as per the following standard convention when converted in PDF format to ensure proper display and printing order.

- Y

Where:

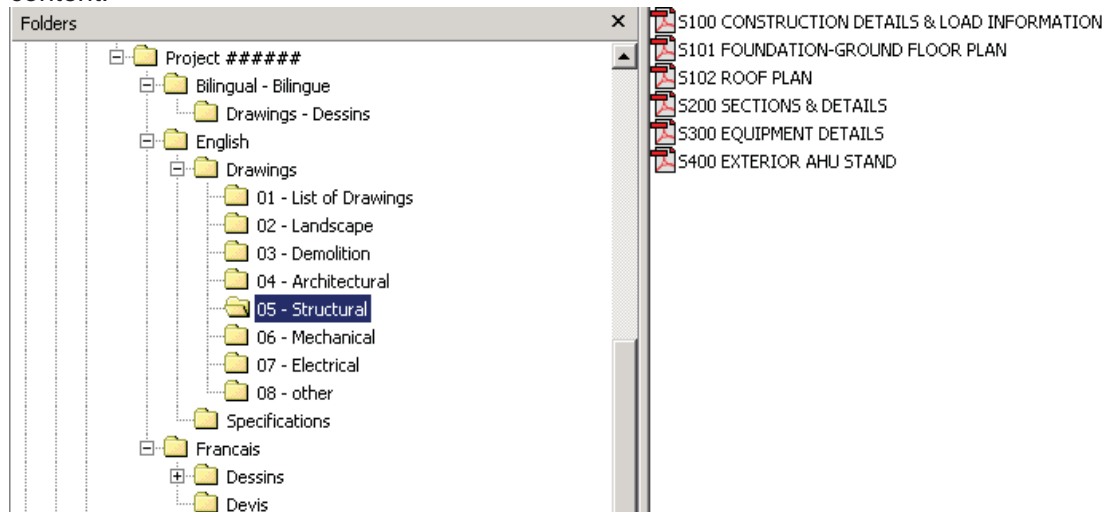
= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The name of the drawing

Example: 01 - Title Page
02 - List of Drawings

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

Example of a 4th Tier Drawings sub-folder's content:



2.2. Specifications

Each Specifications Division must be a separate PDF file and all pages contained in each PDF file must have the same physical size (height, width). The Plans and Specifications Index must

also be a separate PDF file. If there are other documents that are part of the Specifications (e.g. Appendix or other) these are to be separate PDF files as well.

2.2.1 Documents other than Specifications Divisions

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

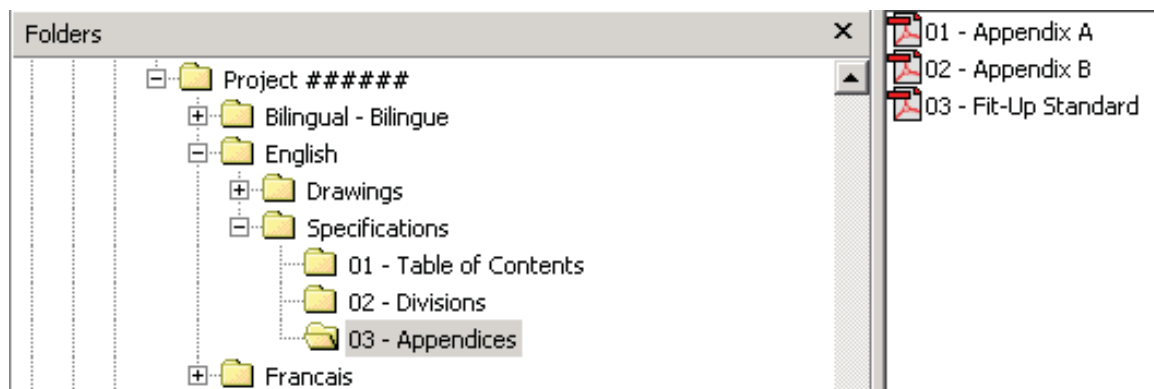
- Y

Where:

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

Example: 01 - Plans and Specifications Index

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



2.2.2 Specifications Divisions

The Specifications Divisions must be named as follows:

Division ## - Y

Where:

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

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

Example: Division 05 – Metals

The following important point about specifications is to be noted:

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

Example of a “Divisions” sub-folder content:



3. CD-ROM LABEL

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

Project *Number* / *Numéro de projet*

Project *Title* / *Titre du projet*

Documents for Tender / Documents pour appel d'offres

CD X of/de X

Example:

Project 123456 / Projet 123456

Repair Alexandra Bridge / Réparation du pont Alexandra

Documents for Tender / Documents pour appel d'offres
CD 1 of/de 1

APPENDIX 'E'

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

Issued by:
Real Property Contracting Directorate
PWGSC

May 2005 Last Updated: May 3, 2005

Version 1.0

PREFACE

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

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

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

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

1. PRINTER DRIVERS

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

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

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

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

2. PRINTER CONFIGURATION

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

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

3. CREATING PDF FILES

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

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

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

4. PDF FILES SETTINGS

4.1 Security

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

4.2 Drawing Orientation

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

4.3 Font Type

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

4.4 Resolution

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

4.5 Scale

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

5. SCANNING

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

6. FINAL CHECKLIST

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

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

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

7. ADDITIONAL INFORMATION

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