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## **STANDING OFFER BRIEF REQUIRED SERVICES (RS)**

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## **Part 5**

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## **1 INTRODUCTION**

Civil Engineering and Prime Consultant services are required, on as and when requested basis primarily related to highway infrastructure needs, but also, to a lesser extent, other Civil Work for Parks Canada Agency (PCA). Consulting services are required to assist PCA, to provide a range of planning, inspection, investigation, design and construction supervision services, and possibly preparation of RFP's for Design-build projects.

It is anticipated a significant portion of the work will occur in the Mountain Parks in British Columbia and Alberta.

For the duration of this Standing Offer the Parks Canada project management office will be located at Box 350, 301B West 3rd Street, Revelstoke, BC, V0E 2S0

The scope of work will vary from project to project, but may include any combination of the services identified as basic services or additional services, including sub-consultant engineering and cost consulting services.

## **2 CONSULTANT SERVICE REQUIREMENTS**

Parks Canada Agency (PCA) is inviting consulting firms with Civil Engineering and Prime Consultant experience to submit proposals for Standing Offers.

The successful consulting firms will primarily provide Civil Engineering and Prime Consultant services, on an "as and when requested" basis mainly on roadway rehabilitation projects and also to a lesser extent, on other Civil Work for Parks Canada Agency (PCA) in the Mountain Parks located in British Columbia and Alberta and to a lesser extent in national parks located in British Columbia, Alberta, Saskatchewan, Manitoba, Yukon Territory and Northwest Territory.

Mountain Parks in British Columbia include Yoho National Park, Kootenay National Park, Glacier National Park, and Mount Revelstoke National Park; Other National Parks in British Columbia include Pacific Rim, Gulf Islands and Gwaii Haanas; Mountain Parks in Alberta include Banff National Park, Jasper National Park and Waterton Lakes National Park; Other National Parks in Alberta include Elk Island and Wood Buffalo; National Parks in Saskatchewan include Grasslands and Prince Albert; National Parks in Manitoba include Riding Mountain and Wapusk; National parks in the Yukon Territory include Kluane; National parks in the Northwest Territories include Nahanni and Tuktut Nogait.

The services may include but not be limited to:

- Prime Consultant
- Roadway Engineering
- Transportation Engineering
- Bridge / Structural Engineering
- Geotechnical / Materials Engineering
- Hydrology / Hydraulic / Avalanche Engineering
- Electrical and Illumination Engineering
- Geohazard and Rock Engineering
- Municipal engineering
- Administration & Resident Services – Construction
- Planning
- Technical investigations
- Inspections, Testing and Analysis
- Surveying
- Environmental Assessment and Monitoring Services

- Landscape Architecture
- Archeological Assessment and Monitoring Services
- Budget and Schedule Management (to be provided by the category of Personnel identified under Roadway/Transportation Engineering section included in Appendix C of this RFSO).

## **2.1 SUMMARY OF REQUIRED SERVICES**

2.1.1 The Consultant will be responsible for providing and coordinating full professional Engineering, and Specialist Consultant services as required for a full range of roadway asset needs. A summary of professional expertise and relevant specialty experience requirements for this SOA include, but are not limited to the following:

- .1 Engineering Services:
  - Roadway/Transportation
  - Geotechnical
    - Foundation and Materials testing
    - Rock and Geohazard
  - hydrotechnical
  - Bridge/structural
  - Prime Consultant
- .2 Asset Management Services:
  - Infrastructure asset inspections and assessments
  - Estimating and cost planning/control
  - Scheduling and time planning/control
  - Life Cycle Analysis and Costing
  - Maintenance and preservation
  - Traffic counts and analysis
  - Road safety audits and assessments
- .3 Construction and Field Services:
  - Testing and Analysis
  - Surveying
  - Resident Services – Construction
- .4 Impact assessment and monitoring services
  - Environmental Assessment and monitoring
  - Archaeological assessment and monitoring

## **3.2 SUMMARY SCOPE OF SERVICES – PROJECT RELATED**

- 3.2.1 Review site conditions.
  - .1 Review existing drawings, with respect to major code or design guide requirements affecting each project;
- 3.2.2 Visit the site to:
  - .1 Familiarize with all conditions of the site that may impact the recommendations or design,
  - .2 Identify impacts due to utilities, environmental or cultural value components
- 3.2.3 Prepare recommendation, whether preservation, maintenance, rehabilitation, or replacement
  - .1 Describe and/or depict concept and provide Class 'D' cost estimate.
- 3.2.4 Traditional Design-bid-build:
  - Prepare Schematic Design options (generally 3 minimum), with an outline of the advantages and disadvantages of each, including Class 'C' cost estimates.
  - Prepare Project Description (PD) and impact assessments as required

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- Prepare a final Design Development Report based on the selected Schematic Design, complete with outline specifications and a Class 'B' cost estimate.
  - Prepare fully coordinated construction drawings based on the approved Design Development Report, ready for tendering purposes, including a Class 'A' cost estimate;
  - Prepare specifications using the latest version of the National Master Specifications (NMS) program.
- 3.2.5 Design – Build (possible but unlikely under this Standing Offer):
- Prepare preliminary design in order to be able to define scope of Design–Build project, design parameters, constraints, cost, and schedule
  - Prepare RFP (2 Phases) for selection of Design-Build Team.
- 3.2.6 Provide information and advice during the tendering process including preparation of addenda and review of tender results;
- 3.2.7 Provide agreement administration and general engineering services during construction.
- 3.2.8 Provide information and advice to the Departmental representative in planning and developing a Risk Management plan.
- 3.2.9 Recommend cost effective 'green construction' materials, methods and practices that can be incorporated into the project without a significant impact on the project budget.
- 3.2.10 Provide environmental coordination with all disciplines
- 3.2.11 Prepare Maintenance Manuals, as-built documents (drawings and specifications).
- 3.2.12 Provide warranty services.
- 3.2.13 Provide information and advice during the post construction (or Design–Build) evaluation sessions.

### **3.3 CONSULTANT RESPONSIBILITIES**

#### **3.3.1 Prime Consultant**

- .1 The Prime Consultant is completely responsible for providing and coordinating the work of all professional disciplines (Engineering, Environmental, and Specialist Consultant Services) required, from the Pre-Design Services Stage to the completion of the Post Construction Stage of the project.

#### **3.3.2 Consultant**

- .1 The Prime Consultant and their personnel identified in the completed Team Identification Form.
- .2 The Consultant will be required to maintain its team's expertise for the duration of the Standing Offer.
- .3 The Consultant will be required to comply with and adhere:
  - .1 to all the requirements in the Standing Offer and Call-up for services,
  - .2 to all commitments made and included in the Consultant's RFSO submission and in the completed Declaration Form.
- .4 The Consultant Team shall be comprised of qualified professional and technical expertise with extensive recent relevant experience capable of providing the services identified in the standing Offer Project Brief and the Call-up for services.

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### **3.4 GENERAL SERVICE REQUIREMENTS**

#### **3.4.1 Overview**

- .1 In general, the Departmental Representative will act as the Project Manager during all phases of design and construction of the project. The Consultant must adhere to all the Standards and Guidelines outlined in the Standing Offer, as may be applicable to the projects and scope of work described herein.
- .2 The Consultant shall deliver integrated professional services as required, in distinct stages, as follows:
  - Project Planning Services
  - Pre-Design Services
  - Schematic Design
  - Design Development
  - Construction Documents ( Traditional or Design-Build)
  - Tender Call and Bid Evaluation
  - Construction (or Design–Build) and Agreement Administration
  - Post Construction (or Design–Build) Services
- .3 The outline of deliverables and process, as presented in each Project Brief are intended as a general outline only. It is not exhaustive and does not preclude alternative or supplementary approaches as may be suggested by the Consultant for consideration by the Departmental representative.
- .4 The Consultant shall perform the Services described herein, in accordance with the terms and conditions of the Agreement.

#### **3.4.2 Standard of Care**

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

#### **3.4.3 Budget Management Services**

- .1 Throughout the project development, the Construction (or Design–Build) Cost Estimate prepared by the Consultant shall not exceed the Construction (or Design–Build) Cost Limit.
- .2 Budget Management Services are required to provide Class D, C, B and A level estimates
- .3 Cost estimating and budget management shall be provided by an experienced professional engineer and/or quantity surveyor.
- .4 The Class C and Class B cost estimates 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 Class A cost estimate shall be submitted in trade cost breakdown format.
- .5 Cost estimates shall have a summary plus full back-up showing items of work, quantities, unit prices and amounts.
- .6 Cost estimates shall also include Life Cycle Cost and Life Cycle Analysis to ensure sustainable design objectives are met.
- .7 In the event that the Consultant considers that the Construction (or Design–Build) Cost Estimate will exceed the Construction (or Design–Build) Cost Limit, the Consultant shall immediately notify the Departmental representative, and
  - .1 if the excess is due to factors under the control of, or reasonably foreseeable by the Consultant, the Consultant shall, if requested by the Departmental representative, and at no additional cost to Canada, make such changes or revisions to the design as may be necessary to bring the Construction (or Design–Build) Cost Estimate within the Construction (or Design–Build) Cost Limit; or
  - .2 if the excess is due to factors that are not under the control of the Consultant, changes or revisions may be requested by the Departmental representative. Such changes or revisions shall be undertaken by the Consultant at Canada's expense, and the cost involved shall become an amount to be mutually agreed, prior to

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performance of the said changes or revisions.

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

#### 3.4.4 Schedule Management Services

- .1 Schedule Management Services are required to prepare and monitor the project schedule through to the completion of the design (or Design–Build) process and to monitor construction progress. Schedule management shall generally be provided using industry accepted software to provide detailed bar charts and/or critical path schedules.
- .2 Submit in a timely manner to the Departmental representative, for review, a time schedule for the consultant services to be performed, in detail appropriate to the size and complexity of the project, and in a format acceptable to the Departmental representative;
- .3 Cooperate and co-ordinate all schedule information with the General Contractor (or Design–Build Team), for incorporation into the master schedule during construction.
- .4 Adhere to the approved time schedules and, if changes in the approved time schedule become necessary, indicate the extent of, and the reasons for such changes, and submit to the Departmental Representative for approval.

#### 3.4.5 Project Information, Decisions, Acceptances & Approvals

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

#### 3.4.6 Changes in Services

- .1 Make changes in the Services to be provided for the Project, including changes which may increase or decrease the original scope of Services, when requested in writing by the Departmental representative ; and
- .2 Prior to commencing such changes, advise the Departmental representative of any known and anticipated effects of the changes on the Construction (or Design–Build) Cost Estimate, Consultant fees, Project Schedule, and other matters concerning the Project.

#### 3.4.7 Codes, By-laws, Licenses, Permits

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

#### 3.4.8 Provision of Staff and Sub-Consultant Services

For proposed changes to the roles of any and all persons, including principals, to be employed by the Consultant to provide the Services for the Project, submit in writing, to the Departmental representative for approval, the names, addresses, qualifications and experience of the proposed individual(s).

- .1 When fees are on a Payroll Cost basis, submit to the Departmental representative, for approval, a statement of Payroll Costs, and any amendments thereof, for all persons to be employed by the Consultant to provide the Services for the Project.

#### 3.4.9 Project Monitoring Reporting

- .1 Provide a system for documentation and project monitoring and reporting through each stage of project delivery, for approval by the Departmental representative.
- .2 Prepare and submit monthly progress reports in a format agreed to with the Departmental

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representative. The purpose of the report will be to review and monitor the progress of the work by the Consultant. The report shall:

- .1 identify the progress of all deliverables,
- .2 identify all instances where the schedule or cost plan is not being met,
- .3 outline remedial measure being taken and
- .4 identify any anticipated or potential problems to be addressed.

#### 3.4.10 Risk Management

- .1 The Consultant shall provide Risk Management services in accordance with section 3 of Appendix "F", Standards and Procedures.
- .2 The Risk Management Plan is an evolving document that will change over the life of the project as risks change throughout different project phases.

#### 3.4.11 Value Engineering / Analysis

- .1 In the Traditional Design phase of work the Consultants shall:
  - .1 Conduct studies that provide a well-balanced emphasis on total determination of investment value that not only reduce capital and operating costs, but also provide a better overall product.
  - .2 Provide the best alternatives in terms of a value added quality performance, operating costs, environmental issues, etc.
  - .3 Provide these alternatives in addition to the three (3) alternative solutions to be presented for review at the Schematic Design stage of work required in the Standing Offer.
  - .4 Conduct Value Engineering / Analysis studies during the early design stage to allow sufficient time for adoption of recommended alternatives without having any adverse effect on Project schedule.
  - .5 Conduct Value Engineering and Analysis studies using the following or similar acceptable methodology:
  - .6 Approach issues in terms of OUTPUTS, rather than INPUTS, i.e., what is to be achieved rather than what needs to be done.
  - .7 Create new ideas through brainstorming at the Integrated design sessions with PCA staff, Consultant members including Sub / Specialist Consultants, industry specialists and Contractors.
  - .8 Evaluate ideas and obtain consensus with all concerned on a short list of preferred value-added alternatives.
  - .9 Estimate Life-Cycle costs of suggested alternatives.
  - .10 Rate each idea against advantages and disadvantages.
  - .11 Prepare with Clients and other interested parties, a Risk Assessment list of consequences if individual ideas are adopted or rejected.
  - .12 Develop ideas into practical alternative concepts which suit current conditions.
  - .13 Prepare final report of recommendations to the Departmental representative for consideration and approval.
- .14 Incorporate approved ideas into design and construction documents in a timely fashion.
- .15 Monitor and report on implementation during construction stage of work.

- .2 In the preparation of the RFP for a Design-Build project the Consultants shall:
  - .1 Conduct studies that provide a well-balanced emphasis on total determination of investment value that not only reduce capital and operating costs, but also provide a better overall product.
  - .2 Provide the best alternatives in terms of a value added quality performance, operating costs, environmental issues, etc.
  - .3 Provide these alternatives in addition to the three (3) alternative solutions to be presented for review at the Schematic Design stage of work required in the Standing Offer.
  - .4 Conduct Value Engineering / Analysis studies during the early design stage to allow sufficient time for adoption of recommended alternatives without having any adverse effect on Project schedule.
  - .5 Conduct Value Engineering and Analysis studies using the following or similar acceptable methodology:
    - .6 Approach issues in terms of OUTPUTS, rather than INPUTS, i.e., what is to be achieved rather than what needs to be done.
    - .7 Create new ideas through brainstorming at the Integrated design sessions with PCA staff, Consultant members including Sub / Specialist Consultants, industry specialists and Contractors.
    - .8 Evaluate ideas and obtain consensus with all concerned on a short list of preferred value-added alternatives.
    - .9 Estimate Life-Cycle costs of suggested alternatives.
    - .10 Rate each idea against advantages and disadvantages.
    - .11 Prepare with PCA, a Risk Assessment list of consequences if individual ideas are adopted or rejected.
    - .12 Develop ideas into practical alternative concepts which suit current conditions.
    - .13 Prepare final report of recommendations to the Departmental representative for consideration and approval.
  - .14 Incorporate approved ideas into Design-build documents in a timely fashion.
  - .15 Monitor and report on implementation during construction stage of work.

3.4.12 Resident Site Services During Construction (Traditional or Design-build)

- .1 Resident site services during construction as required as outlined in the Required Services section.
- .2 Resident site services will be provided by the Consultant for the purpose of quality assurance, monitoring and reporting through the construction stage of the project.

3.4.13 Additional Services

- .1 Additional Services, if required, shall be determined in the manner set out in the Standing Offer.

## **4 PROJECT PLANNING SERVICES**

### **4.1 GENERAL REQUIREMENTS**

The purpose of this stage is to produce the necessary background and ancillary information required to deliver a cohesive, quality project.

- 4.1.1 The following list identifies those reports which are required for the project and must be



produced by the Consultant.

- .1 Preliminary Project Reports
  - .1 Feasibility Studies
  - .2 Options
  - .3 Analysis or Assessment
- .2 Structural Report
  - .1 Conditions / Load rating Report
  - .2 Detailed Investigation Report
  - .3 Investigation and Report (I&R)
- .3 Cost and Scheduling Reports
  - .1 Implementation Strategy and Schedule Report
  - .2 Order of Magnitude (Class D) Cost Report
- .4 Environmental and Sustainable Design Reports

## **5 PRE-DESIGN SERVICES (Traditional or Design-Build)**

### **5.1 GENERAL REQUIREMENTS**

- 5.1.1 Obtain written authorization from the Departmental Representative before proceeding with Pre-Design Services (Analysis of Project Requirements).
- 5.1.2 Review and report on all aspects of the project requirements. The Consultant will further review and analyze all available program information, consult with PCA and Authorities having Jurisdiction, and deliver a comprehensive and integrated Pre-Design Report. This report will form the basis for the scope of work for the remainder of the project and will be utilized throughout the project to guide the project delivery.

### **5.2 ROLE OF PCA**

- 5.2.1 PCA will:
  - .1 Provide all background reports and technical data;
  - .2 Provide functional program;
  - .3 Provide all available drawings and plans;
  - .4 Review and provide a quality assurance report on the consultant's Pre-Design Report;
  - .5 Review revisions and consultant rebuttal to the PCA quality assurance report;
  - .6 Review and Approve the detailed work breakdown structure for the project;
  - .7 Review and Approve the final Pre-Design Report; and
  - .8 Authorize consultant to proceed to Schematic Design.
  - .9 Other

### **5.3 RESPONSIBILITIES OF THE CONSULTANT**

- 5.3.1 The scope and activities shall include but are not limited to the following:
  - .1 Administrative:
    - .1 Provide information and advice during the Project Start-up meetings, workshops;
    - .2 Outline the quality management process for the consultant;
    - .3 Confirm that all necessary pre-design documentation required for this project is available and confirm that all information is still current and up-to-date. Notify the Departmental representative of any missing and /or out-of-date reports.
  - .2 Regulatory Analysis:
    - .1 Review and analyze regulatory and statutory requirements;
    - .2 Identify and verify all authorities having jurisdiction over the project;
    - .3 Identify applicable codes, regulations and standards; and

- .4 Prepare Regulatory Analysis section of the “Pre-Design Report”
- .5 Other
- .3 Program Analysis:
  - .1 review and analyze all available reports, studies and data provided by PCA
- .4 Site Analysis:
  - .1 Review and analyze all available reports, studies and data provided by PCA
    - .1 Existing site conditions;
    - .2 Existing site plans;
    - .3 Subsurface reports (geotechnical);
    - .4 Municipal infrastructure: Note any field investigations that will be required to verify and / or confirm existing site utilities and their capacities;
    - .5 Historical site features;
    - .6 Archaeological features;
    - .7 Environmental features, including sustainable design strategy (i.e. storm water);
  - .8 Prepare Site Analysis section of the “Pre-Design Report”.
- .5 Budget, Schedule and Risk Analysis:
  - .1 Review and analyze the project budget and schedule data, constraints and opportunities.
  - .2 Advise and recommend budget and schedule modifications and outline risk implications and mitigation strategies,
  - .3 Prepare Class “D” estimate;
  - .4 Prepare risk implications and mitigation strategies; and
  - .5 Prepare Budget, Schedule and Risk Analysis section of the “Pre-Design Report”.
- .6 Pre-Design Report
  - .1 Prepare and submit an integrated Pre-Design Report for review and approval by the Departmental representative.
  - .2 Revise as required by the Departmental representative and resubmit for acceptance.
  - .3 The Report will consolidate the “Service Requirements” identified above and will be utilized as the benchmark project control document to monitor progress of the project.
  - .4 The Report will be used as a basis for monthly reporting of progress and will require supplements and modifications to reflect changes in project parameters as may be identified and approved throughout the project life cycle.
- .7 Pre-Design Report Content - The Pre-Design Report shall include but is not limited to the following:
  - .1 Executive Summary
  - .2 The executive summary is intended to provide a précis of the Pre-Design Report and outline any recommendations requiring PCA approval.
  - .3 Regulatory Analysis
  - .4 Program Analysis
  - .5 Site Analysis
  - .6 Building Analysis
  - .7 Budget, Schedule and Risk Analysis
  - .8 Rebuttal to PCA Quality Assurance Report
  - .9 Prepare and submit a written response to all comments provided by PCA.
  - .10 Prepare Preliminary code analysis and Preliminary standards analysis

## **6 SCHEMATIC DESIGN SERVICES (Traditional or Design-Build)**

### **6.1 GENERAL REQUIREMENTS**

- 6.1.1 The Consultant must obtain written authorization from the Departmental representative before proceeding with Schematic Design.
- 6.1.2 The objective of the Schematic Design stage is to explore three or more distinctly different architectural design schemes, to allow comparison, analysis against project requirements and selection of a design direction for preparation of a final design concept.
- 6.1.3 Schematic Design is to be presented in sketch format (single line, to scale), fully integrated and supported by three or more distinctly different engineering solutions, along with massing models, site photographs and narrative description.
- 6.1.4 The Departmental Representative will choose one option to be further developed. Although the Consultant is required to identify a preferred option, the Departmental Representative will determine and advise the Consultant on the most appropriate option.

## **6.2 ROLE OF PCA**

- 6.2.1 PCA will:
  - .1 Organize the integrated Design Workshops;
  - .2 Review and comment on preliminary consultant submissions;
  - .3 Review and provide a quality assurance report on the consultant's Schematic Design Report;
  - .4 Review revisions and consultant rebuttal to the PCA quality assurance report;
  - .5 Review and accept the amended work breakdown structure for the project;
  - .6 Review and accept the final Schematic Design Report; and
  - .7 Authorize consultant to proceed to Design Development.

## **6.3 RESPONSIBILITIES OF THE CONSULTANT**

- 6.3.1 The Consultant scope and activities shall include but are not limited to the following:
  - .1 Administrative:
    - .1 Manage and provide information and advice during integrated Design Workshops;
    - .2 Confirm quality management process for the consultant.
  - .2 Regulatory:
    - .1 Prepare Preliminary code analysis and Preliminary standards analysis.
  - .3 Site Analysis and Design Options:
    - .1 Prepare site plans including:
      - .1 Site features and restrictions;
      - .2 Influences, and existing structures etc.;
      - .3 Subsurface features;
      - .4 Historical site features;
      - .5 Archaeological features; and
      - .6 Environmental features including sustainable design strategies (i.e. storm water management, landscaping etc.);
  - .4 Budget, Schedule and Risk Analysis:
    - .1 Prepare:
      - .1 Updated budget and Class "C" estimate;
      - .2 Milestone project schedule including allowances for reviews and approvals for each stage of the project life cycle;
      - .3 Risk implications and mitigation strategies; and
      - .4 Updated work breakdown structure;

## **6.4 SCHEMATIC DESIGN REPORT**

- 6.4.1 Schematic Design documents illustrate the functional relationships of the project elements as well as the project's scale and character, based on the final version of the functional program, the schedule and the budget.
- 6.4.2 The consultant shall prepare and submit a Draft Schematic Design Report including a minimum of three options for review and acceptance by the Departmental Representative.
- 6.4.3 Revise as requested by the Departmental Representative and resubmit for formal acceptance.
- 6.4.4 The Report will update the "Pre-Design Report", consolidate the "Service Requirements" identified above and will continue to be utilized as the benchmark project control document to monitor progress of the project. The Schematic Design Report shall be "web enabled".
- 6.4.5 The Consultant shall deliver presentations at sessions arranged by the Departmental Representative.
- 6.4.6 Content - The Schematic Design Report shall include but is not limited to the following:
- .1 Executive Summary
    - .1 The executive summary is intended to provide a précis of the Schematic Design Report and outline any recommendations requiring PCA approval.
  - .2 Regulatory Analysis
  - .3 Program Analysis and Design Options
  - .4 Site Analysis and Design Options
  - .5 Analysis and Design Options
  - .6 Budget, Schedule and Risk Analysis
  - .7 Rebuttal to PCA Quality Assurance Report
  - .8 Prepare and submit a written response to the Departmental Representative, to all comments provided by PCA

## **7 DESIGN DEVELOPMENT SERVICES (Traditional only)**

### **7.1 GENERAL REQUIREMENTS**

- 7.1.1 The objective of the Design Development stage is to further refine and develop the design option selected at the Schematic Design phase.
- 7.1.2 The Consultant must obtain written authorization from the Departmental Representative before proceeding with Design Development.

### **7.2 ROLE OF PCA**

- 7.2.1 PCA will:
- .1 Organize the Integrated Design Workshops;
  - .2 Review and comment on preliminary consultant submissions; and
  - .3 Apply for Treasury Board "Effective Project Approval".
  - .4 Review and provide a report on the consultant's Design Development Report;
  - .5 Review revisions and consultant rebuttal to the PCA quality assurance report;
  - .6 Review and accept the amended work breakdown structure for the project;
  - .7 Review and accept the final Design Development Report; and

- .8 Authorize consultant to proceed to Construction Documents.

### **7.3 RESPONSIBILITIES OF THE CONSULTANT**

7.3.1 The Consultant scope and activities shall include but are not limited to the following:

- .1 Administrative:
  - .1 Manage and provide information and advice during:
    - .1 Integrated Design Workshops;
    - .2 Information exchange meetings;
  - .2 Confirm quality management process for the consultant.
  - .3 Update quality management process for the consultant.
- .2 Regulatory:
  - .1 Refine, develop and prepare:
    - .1 Detailed code analysis; and
    - .2 Detailed standards analysis;
- .3 Site Design:
  - .1 Refine, develop and prepare site plans including:
    - .1 Site features and restrictions (i.e. landscape features, topographical features, climatic influences, setback requirements, easements, existing buildings and/or structures etc.);
    - .2 Subsurface features;
    - .3 Municipal infrastructure, subsurface and above grade services, including capacities and limitations (i.e. storm water drainage, fire protection, domestic water, power, telecommunications etc.);
    - .4 Historical site features;
    - .5 Archaeological features; and
    - .6 Environmental features including sustainable design strategies (i.e. storm water management, landscaping etc.);
- .4 Design:
  - .1 The Consultant is responsible for all design activities including but not limited to:
    - .1 Refine develop and prepare detailed design drawings and descriptions.
    - .2 Grading and geometric design;
    - .3 Fencing, retaining walls, etc.;
    - .4 Pavement design;
    - .5 Pavement markings, signing, guide posts, etc.;
    - .6 Elevations, sections, special details, etc.;
    - .7 Seeding,
    - .8 Superstructure plans, etc.;
    - .9 Drainage design, guardrail design;
    - .10 Special construction and demolition, including heritage structures, hazardous materials abatement etc.;
    - .11 Sustainable design summary of strategies; and
    - .12 Outline specifications, including identification of all components and finishes, and sustainable procurement strategies.
- .5 Budget, Schedule and Risk Analysis:
  - .1 Prepare Updated:
    - .1 Budget and Class "B" estimate;
    - .2 Project schedule modifications, including allowances for reviews and approvals for each stage of the project life cycle;
    - .3 Risk implications and mitigation strategies; and
    - .4 Work breakdown structure;

## **7.4 DESIGN DEVELOPMENT REPORT**

- 7.4.1 The Consultant shall prepare and submit a Draft Design Development Report for review by the Departmental Representative.
- 7.4.2 Revise as requested by the Departmental Representative.
- 7.4.3 Resubmit for formal acceptance by the Departmental Representative.
- 7.4.4 The Report will update the "Schematic Design Report", consolidate the scope and activities identified above and will continue to be utilized as the benchmark project control document to monitor progress of the project.
- 7.4.5 The Consultant shall deliver presentations at sessions arranged by the Departmental Representative.
- 7.4.6 The Design Development Report shall include, but is not limited to the following:
  - .1 Executive Summary
  - .2 The executive summary is intended to provide a précis of the Design Development Report and outline any recommendations requiring PCA approval.
  - .3 Regulatory Analysis
  - .4 Site Design
  - .5 Detailed Design
  - .6 Budget, Schedule and Risk Analysis
  - .7 Rebuttal to PCA Quality Assurance Report
  - .8 Prepare and submit a written response to the Departmental Representative, to all comments provided by PCA.

## **8 CONSTRUCTION OR DESIGN-BUILD DOCUMENT SERVICES**

### **8.1 GENERAL REQUIREMENTS**

- 8.1.1 The objective of the Construction (or Design-Build) Document stage is to prepare tender ready drawings and specifications or Design-Build RFP, setting forth in detail all the requirements for the construction (or Design-Build) of the project along with a final (Class A) cost estimate.
- 8.1.2 The Consultant must obtain written authorization from the Departmental representative before proceeding with Construction (or Design-Build) Documents.

### **8.2 ROLE OF PCA**

- 8.2.1 PCA will:
  - .1 Organize Integrated Design (or Prequalification / RFP for Design-Build) Review Sessions at 50%, and 99% stages through the construction (or Design-Build) document stage, as required;
  - .2 Review and comment on preliminary consultant submissions;
  - .3 Respond to questions from the Consultant as required,
  - .4 Review revisions and consultant rebuttal to the PCA quality assurance report;
  - .5 Review and accept the amended work breakdown structure for the project;
  - .6 Review and accept the final the Construction (or Design-Build) Document progress at

- 50% and 99%; and
- .7 Formally accept documents ready for Tender.

### **8.3 RESPONSIBILITIES OF THE CONSULTANT**

8.3.1 The Consultant Scope and activities shall include but are not limited to the following:

- .1 Administrative:
  - .1 Manage and provide information and advice during integrated Design (or RFP Phas2 1 / RFP Phase 2 for Design-Build) Review Sessions at the 50% and 99% stages;
  - .2 Update quality management process for the consultant.
- .2 Regulatory:
  - .1 Complete detailed standards analysis;
- .3 Scope and Activities:
  - .1 Obtain acceptance for submissions (50%, 99% and final)
  - .2 Confirm format of drawings and specifications or Design-Build documents
  - .3 Clarify special procedures (i.e. phased construction)
  - .4 Submit drawings and specifications (or Prequalification / RFP for Design-Build) at the required stages. (50%, 99% and final)
  - .5 Provide written response to all review comments and incorporate them into Construction Documents
  - .6 Advise as to the progress of cost estimates and submit updated cost estimates as the project develops
  - .7 Update the project schedule
  - .8 Prepare a final Class 'A' estimate
  - .9 Submit all engineering calculations
  - .10 Review and approve materials, construction processes and specifications to meet sustainable development objectives.
- .4 Technical and Production Meetings:
  - .1 Production of construction (or RFP Phas2 1 / RFP Phase 2 for Design-Build) documents will be reviewed during the meetings arranged by Departmental representative and Consultant.
  - .2 Representatives from PCA will be present as arranged by the Departmental Representative.
  - .3 Consultant shall ensure that his staff and the sub-consultant representatives attend the technical and production meetings as required.
  - .4 Consultant shall arrange for all necessary data, progress prints, etc.
  - .5 Prepare and submit a written response to the Departmental Representative, to all comments provided by PCA.

### **8.4 GENERAL DELIVERABLES**

- 8.4.1 Deliverables identified are typical for most projects, but must be customized by the Consultant for the specific requirements of the project.
- 8.4.2 Completeness of the work should reflect the stage of a submission.
- 8.4.3 Aspects to be included (but are not limited to) are identified below for each submission stage.

### **8.5 50% SUBMISSION STAGE DELIVERABLES**

- 8.5.1 Traditional: Comments Applicable to all Disciplines:

- .1 Value Engineering Studies.
- .2 Identify clearly, all NIC items on all drawings and specifications.
- .3 Submit updated Class B cost estimate and schedule.
- .4 Report progress on application of Sustainable Development issues.
- .5 Submit written response to the Departmental Representative to review comments made at the Design Development stage.
- .6 Specifications: (Traditional)
  - .1 50% edited with all pertinent sections,
  - .2 Confirm review of General Conditions of Agreement and coordination with Division 1.
- .7 Design:
  - .1 Site plan
  - .2 Sections
  - .3 Elevations
  - .4 Preliminary details
  - .5 General notes
- .8 Structural:
  - .1 Design loads and calculations
  - .2 Structural plans
  - .3 Design details
  - .4 Schedules

8.5.2 Design-Build:

- .1 Submit written response to the Departmental Representative to review comments made at the Design Development stage.
- .2 Prepare a Class "C" estimate
- .3 Prepare 100% Phase 1 and 50% RFP documents for Design-Build projects as Tender for Phase 1 will proceed before Phase 2 documents are completed.

**8.6 99% SUBMISSION DELIVERABLES**

8.6.1 Traditional: Comments Applicable to all ASME Disciplines:

- .1 Submit written response to the Departmental Representative to review comments made at 50% stage.
  - .1 All working drawings and specifications - fully complete.
  - .2 All Drawings and Specifications to be signed and sealed.
  - .3 Submit a final report on the application of Sustainable Development principles and strategies for the project.
  - .4 Submit one copy of updated Cost Plan, Class "A" level ( $\pm 5\%$ ) project cost estimate.
  - .5 Submit one copy of updated Project Schedule
  - .6 Information on drawings must fully comply with codes, federal standards and all other requirements in the consultant agreement.
- .2 Specifications:
  - .1 99 % edited specifications
  - .2 Written contributions specific to the tender form and invitation to Tender, as maybe required.
  - .3 Complete set of co-ordinated construction drawings suitable for tender call, including all details.
  - .4 Provide final code review.
  - .5 Complete coordination to provide 99% completion
- .3 Structural:
  - .1 Complete set of co-ordinated construction drawings, including details, sections,



plans and schedules.

.2 Provide structural calculations.

8.6.2 Design-Build:

- .1 Submit written response to the Departmental Representative to review comments made at 50% stage.
- .2 Prepare a Class "B" level cost estimate
- .3 Prepare 80% RFP Phase 2 documents for Design-Build projects

**8.7 100% SUBMISSION STAGE – FINAL TENDER DOCUMENTS**

8.7.1 Traditional: Applies to all disciplines. Submit:

- .1 Written response to the Departmental Representative to review comments made at 99% stage.
- .2 All original reproducible drawings and specifications for tendering purposes, 100% reviewed and coordinated, incorporating all PCA comments made at the 99% stage, either in the documents themselves, if time allows, or as an addendum during the tendering period.
- .3 All specification sections and an index of specifications. The specifications shall consist of typed and edited NMS sections.
- .4 Updated project implementation schedule.
- .5 Revised Class "A" level cost estimate,
- .6 A set of digitized specifications on CD or DVD disk(s) or by e-mail, in PDF (Portable Document Format), book marked by section and drawing files on CD or DVD disk(s) or by e-mail, in PDF, as requested by the Departmental Representative.
- .7 Any plans and specifications required by Inspection Authorities before tender call.

8.7.2 Design-Build:

- .1 Submit written response to the Departmental Representative to review comments made at 99% stage.
- .2 Revised Class "B" level cost estimate
- .3 100% RFP Phase 2 documents for Design-Build projects including a Class "A" estimate immediately after closing of Phase 1: Prequalification

**9 TENDERING SERVICES**

**9.1 GENERAL REQUIREMENTS**

9.1.1 PCA will undertake public tendering of the Project.

9.1.2 The Consultant's original Construction (or Design-Build) Documents are used to issue to the Government Electronic Tendering System (GETS) and/or to produce sets of prints required for tender call.

9.1.3 After printing, the originals are retained by PCA and the Consultant is provided with sets of prints as needed, for use by the Consultant during the bidding period.

**9.2 BIDDERS CONFERENCE**

9.2.1 During the tender period, the Contracting Authority may, at the request of a potential bidder, arrange a Bidders Conference to clarify its requirements.

- 9.2.2 The Consultant, their Sub-Consultants, as well as essential Specialist Consultants, must attend and prepare any resulting technical addenda for issue by the Contracting Authority.
- 9.2.3 Questions arising in such meetings will be answered by written addenda only, issued by the Contracting Authority.
- 9.2.4 All enquiries from bidders during the tender period shall be forwarded immediately to the Contracting Authority named on the front page of the Invitation to Tender, without providing any information to the inquirers. The Contracting Authority will obtain technical answers through the Departmental Representative and will publish both questions and answers to all bidders at the same time, and will issue clarifications without publication.

### **9.3 DOCUMENT INTERPRETATION**

- 9.3.1 Provide the Departmental Representative with all information required by tenderers to fully interpret the Construction (or Design-Build) Documents, including sample boards, colour boards and other special reports.

### **9.4 ADDENDA**

- 9.4.1 Addenda to Tender Documents are to be prepared, as required, by the Consultant and submitted to the Departmental Representative.
- 9.4.2 Addenda to Tender Documents are issued through the Contracting Authority to all recipients of the Tender Documents.
- 9.4.3 The Contracting Authority will issue all addenda in writing (no information is to be issued orally), and may issue an addendum by facsimile.
- 9.4.4 Normally, addenda are issued no later than seven working days before the tenders close.

### **9.5 TENDER OPENING (Traditional)**

- 9.5.1 Tenders are opened at the location stated in the advertisement.

### **9.6 PRICE NEGOTIATION (Traditional)**

- 9.6.1 If the low bid exceeds the Consultant's final Construction Cost Estimate (Class 'A' level) by more than 5%, PCA may negotiate with the low tenderer to reduce the price to an acceptable level without making fundamental changes to the scope of work.
- 9.6.2 If price reduction involves changes in the scope of work the Consultant shall:
- .1 Advise the Departmental Representative which items can be changed and the reduction in cost to be expected by negotiation.
  - .2 Meet with the Contracting Officer, the Departmental Representative and the low tenderer, as required to provide information and advice during the negotiations.

**9.7 RE-TENDERING (Traditional)**

- 9.7.1 If no satisfactory reduction can be negotiated with the low tenderer or if the desired price reduction entails significant changes in the scope of work or the character of the design, PCA may re-tender the Project.
- 9.7.2 If the Project has to be re-Tendered, the Consultant shall provide advice and information to the Departmental Representative as requested.

**9.8 REWORK (traditional)**

- 9.8.1 Revise or amend the Construction Documents as required to bring the cost of the work within the limits stipulated.

**9.9 PHASE 1 RATING (Design-Build)**

- 9.9.1 Consultant to be member(s) of the team rating the proponent's qualifications and experience

**9.10 PHASE 2 RATING (Design-Build)**

- 9.10.1 Consultant to be member(s) of the team rating the proponent's design proposal and project delivery management proposal

**10 CONSTRUCTION (DESIGN-BUILD) ADMINISTRATION SERVICES**

**10.1 GENERAL**

- 10.1.1 Monitor the progress of the Contractors' work, compliance with all drawings and specifications, time schedules, quality standards and progress reports, through resident site supervision during the construction period.
- 10.1.2 Review reports on Health and Safety strategies for construction stage of work.
- 10.1.3 Notify the Departmental Representative immediately if Human Remains, Archaeological Remains and Items of Historical or Scientific Interest are discovered on the site and obtain further information on action to be taken.
- 10.1.4 For Design-Build project, review Design documents submitted by Design-Build Team in accordance with the terms of the Contract to verify compliance with design parameters specified, submit findings and make recommendations to PCA. Reviews to occur at different stages as specified in the Contract.
- 10.1.5 Review and process shop drawings.
- 10.1.6 Provide to the Departmental Representative, detailed drawings, clarification advice, contemplated change orders and change orders as required.
- 10.1.7 Provide quality assurance testing.
- 10.1.8 Report on contractors maintaining specified quality and schedules, ensuring that contractors are monitoring delivery of critical materials and equipment.

- 10.1.9 Review and make recommendations on progress claims.
- 10.1.10 Issue interim and final deficiency reports.
- 10.1.11 Finalize project documentation and accounts.
- 10.1.12 Recommend (if required) the release of holdback upon satisfactory completion.
- 10.1.13 Follow-up on any problems identified by the Client arising during the warranty period.

## **10.2 CONSTRUCTION SAFETY**

- 10.2.1 All construction (or Design-Build) projects that are occupied by federal employees are subject to the Canada Occupational Safety and Health Act and Regulations as administered by Health and Welfare Canada. Fire safety provisions during construction must comply with FCC Standard 301, administered by the Fire Protection Engineer.
- 10.2.2 In addition to the above, the Contractor must comply with the provincial and municipal safety laws and regulations, and with any instructions issued by the officers of these "Authorities Having Jurisdiction" relating to construction safety.

## **10.3 PROJECT MEETINGS**

- 10.3.1 The Departmental Representative will arrange meetings every two weeks or as deemed suitable, throughout the entire construction period, for representatives from:
  - .1 Stakeholders
  - .2 PCA in-house staff
  - .3 Prime Consultant
  - .4 Prime Consultant's Sub-Consultants and Specialist Consultants as determined by Departmental representative.
  - .5 Contractor and their Consultants and Subcontractors.
- 10.3.2 The Consultant shall include in the agreement documents, for provision by the contractor, requirements for a meeting room of sufficient size, appropriate furniture and equipment, to hold Project Meetings.
- 10.3.3 The Consultant shall include in the agreement documents the requirement for the Contractor to attend the meetings.
- 10.3.4 The Consultant shall record the issues and decisions and prepare and distribute minutes to all attendees within two (2) working days of the meeting.
- 10.3.5 The Prime Consultant and their proposed Sub/Specialist Consultants, should be personally available to attend all design and construction meetings and respond to inquiries within two (2) working days of the Departmental representative's request, in the locality of the place of the work, from the date of the award of the Consultant agreement, until final inspection and turnover.
- 10.3.6 Review minutes for errors in fact, omissions or other discrepancies and report to the Departmental Representative.

#### **10.4 PROJECT SCHEDULE**

- 10.4.1 Immediately upon receipt of the Project Schedule from the Contractor, after agreement award, review and verify whether the schedule is reasonable and has all detailed components of work shown separately. Provide review comments and advice to the Departmental Representative.
- 10.4.2 Use the schedule as the basis for evaluating the progress of the work, once the Departmental representative has accepted the Contractor's Project schedule.
- 10.4.3 Record all discrepancies and recommend remedial measures to the Departmental Representative.
- 10.4.4 Keep accurate records of causes of delays.
- 10.4.5 Assist the Contractor to avoid delays by providing timely reports and advice.

#### **10.5 BUDGET/CASH FLOW AT EACH MEETING.**

- 10.5.1 Review the value of progress of work against the approved cost breakdown. When each trade is regularly reviewed against the Project Schedule and the cost breakdown, it quickly becomes apparent whether the Contractor is on budget and is generating the appropriate cash flow for the work.
- 10.5.2 Record all discrepancies and agreed remedial measures.

#### **10.6 DESIGN (Design-Build only)**

- 10.6.1 Review and comment Design documents or Drawings submitted by the Contractor
- 10.6.2 Chair Design meetings with Contractor, his consultants and PCA.

#### **10.7 SHOP DRAWINGS**

- 10.7.1 Review, discuss, record problems and identify agreed remedial action.
- 10.7.2 Monitor and record the progress of shop drawing review. Record parties designated for action and follow up.
- 10.7.3 On completion of project, forward two copies of reviewed shop drawings to the Departmental representative. Verify that shop drawings include the project number and are recorded in sequence.
- 10.7.4 Verify the number of copies of shop drawings required. Consider additional copies for others such as Fire Protection Engineer's offices.
- 10.7.5 Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor and stamped: "reviewed" by the Consultant before return to the Contractor.
- 10.7.6 Expedite the processing of Shop Drawings in a timely manner.

## **10.8 CLARIFICATIONS DURING CONSTRUCTION (Traditional)**

- 10.8.1 The Consultant must provide clarifications on Plans and Specifications or site conditions, as required in order that the project not be delayed.
- 10.8.2 Record contractor's acknowledgment of receipt of all clarifications.
- 10.8.3 Verify and record whether an impact on cost or schedule may be expected and advise the Departmental Representative.
- 10.8.4 Provide to the Departmental Representative, any additional detail drawings, as and when required, to properly clarify or interpret the agreement documents, in a timely manner.

## **10.9 WORK MEASUREMENT**

- 10.9.1 If work is based on unit prices, measure and record the quantities for verification of monthly progress claims and the Final Certificate of Measurement.
- 10.9.2 When a Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

## **10.10 INSPECTIONS AND SUPERVISION**

- 10.10.1 Provide nonresident and resident engineering construction inspection services by qualified personnel to verify compliance with agreement documents. These personnel must be fully knowledgeable with technical and administrative requirements of project.
- 10.10.2 It is required that fully qualified, experienced Inspection and Supervision personnel play a major role in the inspection and monitoring of the detailed project. The Resident Engineer specialist shall provide consultant inspection services from commencement of the project construction stage through to the commissioning of the project.
- 10.10.3 The Resident Engineer shall be a professional engineer licensed to provide the necessary professional services to the full extent that may be required by provincial law in the province of the project. The Resident Engineer can also be a resident construction inspection technologist with a minimum of 10 years of relevant recent experience under the supervision of a professional engineer.
- 10.10.4 Establish a written understanding with contractors as to what stages or aspect of the work are to be inspected prior to being covered up.
- 10.10.5 The Resident Engineer shall inspect all phases of the work in progress, for the purpose of bringing to the attention of the Contractor, after checking with the Design Consultant and the Project manager any discrepancies between the work, the agreement documents and accepted construction procedures.
- 10.10.6 Immediately after the award of the Construction contract and before work begins on site, the Resident Engineer will attend and take minutes of the Pre-construction Meeting. The Consultant should also attend this meeting.
- 10.10.7 Assess quality of work and identify, in writing to the Departmental representative, all defects

and deficiencies observed at time of such inspections.

- 10.10.8 Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
- 10.10.9 Any recommendations, clarifications or deficiency lists shall be issued in writing to the Departmental representative, with a copy to the Contractor.
- 10.10.10 Keep the Departmental representative 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 reviews.
- 10.10.11 The Resident Engineer shall keep a daily log recording weather activities, major material and equipment deliveries, daily activities and major work done, start, stop or completion of activities, unusual site conditions, special visitors on site, authorities given contractor to undertake certain or hazardous work, environmental incidents, health and safety notices and incidents, reports, instructions from Appropriate Authorities Response Actions.
- 10.10.12 The Resident Engineer shall keep a daily log of all his inspections and shall issue a weekly written report to the Project Manager in the form directed.
- 10.10.13 The Consultant is responsible for recording any and all changes from the original agreement on a marked-up hard copy of drawings and then at the end of the project check and verify the changes with the Contractor and after that Consultant provide electronic version of the As-Build drawings.
- 10.10.14 In the case of emergency where safety of persons or property is concerned, or work is endangered by the actions of the Contractor or the elements, to safeguard the interests of PCA, the Resident Engineer shall give immediate written notice to the Project Manager and to the Contractor of the possible hazard. The Resident Engineer shall, if necessary, stop the work to protect the safety of the workers or Crown property or give orders for remedial work, and contact the Design Consultant immediately for further instruction.
- 10.10.15 The Resident Engineer shall not: Authorize deviations from the agreement documents; approve shop drawings or samples; accept any work or portions of the project; enter into the area of the responsibility of the Contractor's Field Superintendent; stop the work unless convinced that an emergency exists as noted above; authorize any payments.

#### **10.11 CONSTRUCTION (or DESIGN-BUILD) CHANGES**

- 10.11.1 The Consultant does NOT have authority to change the work or the price of the Agreement. Approved Change Orders must be issued to cover all changes, including those NOT affecting the cost of the project, such as schedule, substitutions, etc.
- 10.11.2 The Consultant must prepare Contemplated Change Notices (CCNs), review quotations associated with Change Orders (CO's). This includes monitoring and recording the progress of CCN's and CO's. Where work must proceed pending issue of a Change Order, the Consultant must record time and materials expended.
- 10.11.3 Changes that affect cost or design or otherwise alter the terms of the agreement must be accepted and approved by the Departmental Representative. Upon approval from the Departmental Representative, quotations must be obtained from the Contractor in detail. Prices are then reviewed and recommendations forwarded to the Departmental Representative.

10.11.4 The Departmental Representative will then issue the CCNs and COs to the Contractor, with a copy to Consultant.

10.11.5 The practice of "trade offs" is not allowed.

#### **10.12 CONTRACTOR'S PROGRESS PAYMENTS**

10.12.1 Each month, the Consultant submits a progress claim for work and materials as required in the Agreement. The claims are made by completing the following forms where applicable:

- .1 Request for Design payment (Design-Build)
- .2 Request for Construction Payment
- .3 Cost Breakdown for Unit and/or combined Price Contract
- .4 Cost Breakdown for Fixed Price Contract
- .5 Statutory Declaration: Progress Claim

10.12.2 The Consultant must determine the amounts owing to the Contractor based on the progress of the work and certify payments to the Contractor.

10.12.3 The Consultant must review and sign designated forms and promptly forward claims to the Departmental representative for processing. Obtain the following information from the Contractor and submit with each progress claim:

- .1 Updated schedule of the progress of work

#### **10.13 PAYMENT FOR MATERIALS ON SITE**

10.13.1 The Contractor may claim for payment of material on site, but not yet incorporated in work.

10.13.2 Material must be stored in a secure place designated by the Departmental representative.

10.13.3 A detailed list, checked and verified by the Consultant, of materials with supplier's invoice showing price of each item must accompany each claim.

10.13.4 Items must be listed separately on the Detail Sheet showing the breakdown list and total.

#### **10.14 TESTING**

10.14.1 Prior to tender, the Consultant must provide the Departmental representative with a recommended list of tests to be undertaken, including on site and factory testing. Include items in agreement specifications as necessary.

10.14.2 The Consultant shall provide testing services as required, distribution of reports, communication lines, etc.

10.14.3 The Consultant must review all test reports and take necessary action with Contractor when work fails to comply with contract requirements. The Departmental representative must be immediately notified when tests fail to meet project requirements and when corrective work will affect the schedule.



## **10.15      PROTOTYPES, MOCKUPS AND SAMPLE INSTALLATIONS**

- 10.15.1      Specify explicitly the need for prototypes, mockups and sample installations where required to gain installation knowledge and specialized testing of technically advanced assemblies.
- 10.15.2      Ensure that specifications are very clear on full requirements for such prototype work including:
- .1      Specify time frames and weather conditions under which this work will be carried out.
  - .2      Note area on site plan where this is to be done.
  - .3      Bring this item to the attention of the Contractor at construction start meeting, and approve his/her methodologies and time frames for such work.
  - .4      Involve all necessary consulting disciplines, trades/suppliers/product manufacturers and testing authorities, for a comprehensive review of the requirements and scheduled installation.
  - .5      Note where necessary, requirements for submitting of shop drawings and samples well in advance, so as not to disrupt project work schedule.
- 10.15.3      Ensure sufficient observation reports, photos or videos of work undertaken are available to avoid misunderstandings at a later stage.

## **10.16      INTERIM INSPECTION**

- 10.16.1      When PCA is satisfied that the construction work is substantially complete, they will issue an Interim Certificate of Completion to the Contractor; provided that the work remaining to be done under the contract is, in the opinion of the Departmental representative, capable of completion or correction at a cost of not more than:
- .1      3% of the first \$500,000, and
  - .2      2% of the next \$500,000, and
  - .3      1% of the balance of the value of the contract at the time this cost is calculated.
- 10.16.2      Payment to Contractor requires completion and signing, by the parties concerned, of the following documents:
- .1      Interim Certificate of Completion
  - .2      Cost Breakdown for Fixed Price Contract
  - .3      Cost Breakdown for Unit or Combined Price Contract
  - .4      Inspection and Acceptance
  - .5      Statutory Declaration: Interim Certificate of Completion
  - .6      Worker's Compensation Board Certificate
- 10.16.3      The Consultant must verify that all items are correctly stated and ensure that completed documents and any supporting documents are given to the Departmental representative for processing.

## **10.17      FINAL INSPECTION**

- 10.17.1      The Consultant must inform PCA when satisfied that all work under the agreement has been completed, including all deficiency items listed during the Interim Inspection. The Departmental representative reconvenes the Acceptance Board, which makes a final inspection of the project. If everything is satisfactory, the Board makes final acceptance of the project from the Contractor.
- 10.17.2      The final payment to Contractor requires completion and signing by the parties concerned, of

the following documents:

- .1 Final Certificate of Completion
- .2 Cost Breakdown for Fixed Price Contract
- .3 Inspection and Acceptance
- .4 Statutory Declaration Final Certificate of Completion
- .5 Cost Breakdown for Unit and/or Combined Price Contract
- .6 Worker's Compensation Clearance Certificate
- .7 Trades' Certificates as appropriate

- 10.17.3 The Consultant must verify that all items are correctly stated and ensure that completed documents and any supporting documents are given to the Departmental representative for processing.
- 10.17.4 The Consultant shall continue to monitor the situation and communicate with the Departmental Representative to ensure that he/she is aware of any deficiency work being delayed beyond reasonable time frames.

## **10.18 RECORD (AS-BUILT) DRAWINGS AND SPECIFICATIONS**

- 10.18.1 On Traditional projects, following the takeover, the Consultant must produce as-built drawings for areas that show deviations in construction from the original Contract drawings, including changes shown on Post-Contract Drawings, changes resulting from Change Orders or from on site clarifications. For Design-Build projects, the Design-Build team to submit As-built drawings to be examined by the Owner's Engineer.
- 10.18.2 Check and verify all as-built records for completeness and accuracy and submit to PCA.
- 10.18.3 For Traditional projects, produce Record Drawings by incorporating As-Built information into project drawings. Electronic versions are required for both Drawings and Specifications.
- 10.18.4 For Traditional projects, submit Record Drawings and Specifications in number and format required by the Agreement within six (6) weeks of final acceptance.
- 10.18.5 For Traditional projects, provide a complete set of final shop drawings and list of changes to specifications.

## **11 POST CONSTRUCTION SERVICES**

### **11.1 GENERAL**

- 11.1.1 All work under the Construction (or Design-Build) Contract carries a standard twelve (12) month warranty commencing on the effective date of the Interim Certificate of Completion. Certain parts of the work, such as joints and bearings, may have extended warranties as specified.
- 11.1.2 The Contractor is responsible for correcting all defects in the work during the warranty period, except for damage caused by misuse, abuse or neglect by others.
- 11.1.3 The Departmental representative will promptly notify the Consultant in the event that defects or alleged defects appear in the work of the Contractor.
- 11.1.4 The Consultant shall investigate all defects and alleged defects in the work promptly and

issue appropriate information and advice to the Departmental Representative.

- 11.1.5 The Consultant shall provide information and advice during post construction evaluation sessions.

## **11.2 TEN-MONTH WARRANTY INSPECTION**

- 11.2.1 Ten months after take over, at the request of the Departmental representative, the Consultant must arrange a ten-month warranty review of the Project.
- 11.2.2 Prepare deficiency lists for the Contractor's correction.
- 11.2.3 Inform Project Manager in writing when all items listed on the ten-month Warranty Inspection Certificate have been completed satisfactorily.

## **11.3 FINAL WARRANTY REVIEW**

- 11.3.1 Conduct a final warranty review at the request of the Departmental representative, prior to the expiry of the warranty period. Prepare deficiency lists for the Contractor's correction.
- 11.3.2 Inform the Project Manager in writing when all deficiencies listed on the final warranty review deficiency list have been corrected.

## **12 PROJECT ADMINISTRATION REQUIREMENTS**

### **12.1 PROJECT MANAGEMENT**

- 12.1.1 The Departmental Representative assigned to the project is the Project Manager.
- For the duration of this Standing Offer the Parks Canada project management office will be located at the Parks Canada Maintenance Compound - Box 350, 301B West 3rd Street, Revelstoke, BC, V0E 2S0
- 12.1.2 The Departmental Representative is directly concerned with the project and is responsible for its progress. The Departmental Representative is the liaison officer with the Consultant, and PCA.
- 12.1.3 Unless requested otherwise by the Departmental Representative, the Consultant obtains all Federal requirements and approvals necessary for the work.

### **12.2 LINES OF COMMUNICATION**

- 12.2.1 Unless otherwise requested by the Departmental representative, the Consultant shall communicate with the Departmental representative only.
- 12.2.2 During construction tender call, PCA conducts all correspondence with bidders and makes the agreement award.

## **12.3 MEDIA**

- 12.3.1 The consultant shall not respond to requests for project related information or questions from the media. Such inquiries are to be directed to the Departmental representative.

## **12.4 GENERAL DELIVERABLES**

- 12.4.1 Where deliverables and submissions include summaries, reports, drawings, plans, specifications and schedules, one (1) original shall be provided to the Departmental representative in electronic format, unless otherwise specified.

- 12.4.2 Electronic format shall be as follows:

<b>Deliverable</b>	<b>PCA</b>
.1 Written reports and studies:	Microsoft Word, Excel & Powerpoint
.2 Spreadsheets and budgets:	Microsoft Word, Excel & Powerpoint
.3 Presentations:	Microsoft Word, Excel & Powerpoint
.4 Schedules	Adobe PDF
.5 Drawings:	Auto CaD
.6 Specifications:	NMS Edit
.7 Web	Adobe PDF
.8 Internet	HTML, Macromedia Flash
.9 Alternatively, the Consultant may submit the work in pdf format. Except final drawings at any stage must be in AutoCAD format.	
.10 All drawings will be generated and distributed in the format using layering and file transfer protocols as prescribed in Standards and Procedures.	

## **12.5 ACCEPTANCE OF CONSULTANT DELIVERABLES**

- 12.5.1 While PCA acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles PCA to review the work. PCA reserves the right to reject undesirable or unsatisfactory work; the Consultant must obtain Departmental representative acceptances during each of the project stages.
- 12.5.2 Acceptances indicate that, based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices and that overall project objectives should be satisfied. The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the terms and conditions of the agreement.
- 12.5.3 PCA acceptances do not prohibit rejection of work which is determined to be unsatisfactory at later stages of review. If progressive design development or technical investigation reveals that earlier acceptances should be withdrawn, the Consultant is responsible for redesigning work and resubmitting for acceptance at the Consultant's cost.

## **12.6 COORDINATION WITH SUB-CONSULTANTS**

- 12.6.1 The Consultant shall:
- .1 Throughout all phases of the project, assume responsibility for coordinating the work of any Sub-consultants and specialists retained by the Consultant,
  - .2 Ensure clear, accurate and ongoing communication of concept, budget, and scheduling

issues (including changes) as they relate to the responsibilities of all Sub-consultants and specialists from initial base building reviews to post construction reports.

- .3 Coordinate input for the Departmental representative's Risk Management Plan.
- .4 Coordinate the Quality Assurance process ensuring submissions of Sub-consultants are complete and signed-off by the designated senior reviewer,
- .5 Ensure Sub-consultants provide adequate site inspection services and attend all required meetings

## **12.7 PROJECT RESPONSE TIME**

- 12.7.1 Key personnel of the consultant and sub-consultants or specialist firms must be personally available to attend meetings or respond to inquiries within two (2) working days.

## **12.8 DESIGN MEETINGS**

- 12.8.1 The Departmental Representative will arrange meetings generally every two weeks throughout the design and tendering stages of the project, for representatives from:
- .1 Parks Canada Agency,
  - .2 Consultants.
- 12.8.2 Meetings will normally be by conference calls. On occasions face to face meetings will be held in Banff in the offices of PCA.
- 12.8.3 The Consultant shall:
- .1 Attend the meetings,
  - .2 Record the issues and decisions,
  - .3 Prepare and distribute minutes within 48 hours of the meeting.
- 12.8.4 Standing agenda items shall include: schedule, cost, risk, quality, human safety, sustainable development and ecology.
- 12.8.5 On occasion, there may be urgent, problem-solving meetings. The Consultant must be available to attend such meetings in Banff within two (2) working day(s) notice.

## **12.9 CONSTRUCTION MEETINGS**

- 12.9.1 The Departmental representative will arrange meetings generally every two weeks throughout the construction period, for representatives from:
- .1 Parks Canada Agency,
  - .2 Public Works and Government Services Canada if required
  - .3 Consultants,
  - .4 Contractor.
- 12.9.2 Meetings will normally be held on site, at the contractor's site office.
- 12.9.3 The Consultant shall:
- .1 Attend meetings,
  - .2 Record the issues and decisions and prepare and distribute minutes within 48 hours of the meeting

## **12.10 PCA QUALITY ASSURANCE / VALUE FOR MONEY REVIEWS**

- 12.10.1 In concert with the Integrated Design process, PCA will conduct Value for Money/Quality Assurance reviews on design and construction documents prepared by the Consultants. Consultants and sub-consultants must respond in writing to PCA's comments, in a timely manner and will be held accountable for delays if proper and timely responses do not occur.
- 12.10.2 PCA reviews are not intended as a check against errors or omissions contained within the documents submitted. Consultants are responsible for any such errors or omissions, regardless of any review by PCA.

## **13 PROJECT PARTICIPANTS**

### **13.1 FEDERAL PROJECT TEAM**

- 13.1.1 The Federal Project Team includes:
- .1 PCA Project Leader who represents the Owner, identifies requirements and initiates projects, develops requirements in both functional and operational terms, obtain approvals and funding and participates in the selection of consultants.
  - .2 PCA Departmental representative who is responsible for the day-to-day management of the project. The Departmental representative will be the Consultant's single point of contact for all project requests.
  - .3 PCA Representatives. There may be numerous representatives involved in the project. These representatives will be responsible for functional issues on the project, related to their respective organizations.
  - .4 PWGSC if required

## **14 SUBMISSIONS, REVIEW AND APPROVAL PROCESS**

### **14.1 SUBMISSIONS:**

- 14.1.1 Provide all required submissions, either to, or as identified by the Departmental Representative.
- 14.1.2 Provide a draft report to the Departmental Representative for review at the Integrated Design sessions, at the 99% completion of the Pre-design, Schematic Design and Design Development stages,
- 14.1.3 Provide required sets of Construction Drawings and Specifications to the Departmental representative for review at the Integrated Design sessions, at 50% and 99% stages.
- 14.1.4 Provide one original set of Construction Drawings and Specifications to the Departmental representative ready for Tender.

### **14.2 PCA DESIGN REVIEW COMMITTEE**

- 14.2.1 The purpose of review and approval process is to ensure compliance with the project program, adherence to good design practice and technical quality assurance.
- 14.2.2 The Departmental representative will schedule review sessions by the committee at the

completion of The Schematic Design stage and the Design Development stage.

#### **14.3 OTHER AUTHORITIES HAVING JURISDICTION**

- 14.3.1 Although the Federal Government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is a requirement unless otherwise identified by the Departmental Representative.
- 14.3.2 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.
- 14.3.3 PCA will voluntarily comply with the applicable provincial/territorial construction health and safety acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.