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PWGSC Documentation and Deliverables Manual for Architectural and Engineering Consultants

*Formerly known as
Doing Business with PWGSC Documentation and Deliverables Manual*





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Revisions

Version	Date	Description
0.1	August 14, 2017	Draft version for consultation
1.0	January 12, 2018	Original Issuance
1.1	January 31, 2019	Update to cost submission format, and minor corrections / updates
2.0	August 17, 2023	Review and update and new name: <i>PWGSC Documentation and Deliverables Manual for Architecture and Engineering Consultants</i>



1 General

1.1 Effective Date

August 17, 2023

This document supersedes *Doing Business with PWGSC Documentation and Deliverables Manual*, January 31, 2019.

1.2 Authority

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

1.3 Purpose

This document establishes the minimum requirements for deliverables by architectural and engineering consultants leading multi-disciplinary technical and professional teams. It aims to ensure a well-documented design process and provide best value to Canada. It should be noted that this manual is not intended to guide the design process but is more focused on the presentation and submission requirements.

1.4 Scope

This document shall apply to architecture, engineering, and related Real Property services and deliverables solicited directly by PWGSC or real property service providers by PWGSC on its own behalf as well as for other government departments and is applicable to all regions of PWGSC.

1.5 Harmonization with Terms of Reference

This document shall be used in conjunction with solicitation documents including the project's Project Brief, Terms of Reference (TOR), Request for Proposal (RFP), call-up, or RPN contract. In case of a conflict between documents, the requirements of the TOR or RPN contract prevail over those of this document.

1.6 Departmental Name Change

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

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

1.7 Terminology

This document utilizes "shall" and "must" interchangeably and are used to express a requirement, a provision the Consultant is obligated to meet.

1.8 Definitions

1.8.1 Accessible Document

An Accessible Document is fully usable by persons with and without disabilities. Making your documents accessible allows users to navigate them in different ways. See [Government of Canada Digital Accessibility Toolkit / Sharing space: How to create accessible documents in Office 365](#).

1.8.2 Addendum

A document that amends Tender Documents during tender period and becomes part of the [Contract Documents](#) when a Contract is awarded.

1.8.3 ArcGIS

Is a web-based mapping software used for geographic information system (GIS) services.

1.8.4 Building Information Modeling (BIM):

Building Information Modeling (BIM) is the, “use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.” (ISO 19650-1)

1.8.5 Drawings

The graphic and pictorial portions of the Contract Documents, wherever located and whenever issued showing the design, location and dimension of the Work, generally including illustrations, plans, elevations, sections, details and diagrams¹.

- **Computer-Aided Design and Drafting (CADD) Drawings** are drawings digitally represented as vector graphics stored in an Autodesk® AutoCAD TrustedDWG™ (.dwg) file format.
- **Portable Document Format (PDF) Drawings** are drawings digitally represented as raster images/vector graphics stored in a PDF/E-1(.pdf) file format in accordance with ISO 24517-1.

1.8.6 Common Data Environment (CDE)

For the purposes of this document, the CDE is the agreed repository of construction project information available for collecting, managing and disseminating each information container through managed processes.

1.8.7 MasterFormat®

Is a North American classification system containing a list of standardized numbers and titles for organizing construction bidding and contract requirements, Specifications, Drawing notes, cost data and building operations by Work Results. (See also to UniFormat™). This publication is jointly produced by Construction Specifications Canada (CSC), and Construction Specifications Institute (CSI) in the United States of America.

1.8.8 Master Specifications

A model or guide document used by a Specification writer as the base of developing a Specification for a Project. The master Specification could be an individual Work Result Section or a complete system with a compendium of Specification sections to choose from.

1.8.9 NMS Master Design Specifications

They are organized in accordance with UniFormat™ classification system. They are mostly used by professionals at early project stages, documenting owner project requirements, Schematic/Conceptual design, design development and costing, they describe the intents and objectives of the built project by listing required performance levels with compliance verification measures, while leaving the actual procedure or methodology for achieving the required results as open ended.

1.8.10 NMS Master Construction Specifications

They are organized in accordance with MasterFormat™ classification system. They communicate work results to the contractor for costing and execution during the bidding process, by describing Work results, products, and workmanship by listing specific requirements, exact materials or systems, and detailed fabrication, installation processes to achieve the desired work results. Each section's text is organized in accordance with SectionFormat™/Page Format™ by establishing a structure consisting of three primary Parts as follows: Part – 1 General, Part -2 Products, and Part 3 – Execution.

1.8.11 Reports

Are written accounts given of a particular matter after thorough investigation or consideration prepared by the Consultant. Reports are typically illustrated with images, diagrams, charts, and other graphic elements.

1.8.12 Predesign Studies

Define and document the needs and function of a building or the suitability of a site, to provide the Consultant and Client with the necessary information for design decision-making. During pre-design the purpose and objectives of the design-construction program are established. Studies examine the suitability of using new sites versus existing capital assets and facilities, the structure of the proposed program's organizations, and the procurement methods to be used to acquire the needed resources for projects.

1.8.13 Schematic Design

Resolves the Client requirements and desires into physical form. Schematic design interprets the results of the predesign studies into a concept of "what will be built" and illustrates how the parts of the project functionally relate to each other. The Consultant and the Client begin by agreeing on the following elements:

- the character of the site (including physical features, local surroundings, landscape features, and regulatory restrictions);
- the space planning requirements described in the client's functional program;
- the image or philosophical objectives that the client wants to project;
- the design approach.

1.8.14 Design Development

Refines and develops the selected schematic design in more detail. Where the schematic design generally describes "what" is being built, design development explores and determines "how" it is being built and how it will operate, with design features of the project more fully developed.

1.8.15 Construction Documents

Are the Consultant's primary reference and resource in performing construction contract administration services. The construction documents:

- capture the client's project objectives for construction, especially with respect to costs, time and overarching considerations such as sustainability, durability, life cycle, accessibility, etc.;
- describe the Consultant's design intent in both drawings and text for construction.

Construction documents Construction contracts name the departmental representative having primary authority over these documents for the purpose of evaluating construction work, quality and conformity. Construction documents provide a transparent, straightforward and unambiguous basis for construction contract administration services in order to minimize the opportunities for disagreements, disputes or claims to arise from contractors.

1.8.16 Specifications

Are written requirements and standards for products, systems, workmanship, quality, and the services necessary for the performance of the Work.

Performance Specifications: is a statement of required results, verifiable as a meeting stipulated criteria and free of unnecessary process limitations. Sections Numbers and Titles are organized based on UniFormat™ alpha-numeric classification system, which are organized by building elements and related site work. It is used at early phases of the design of a facility and can provide the Owner (Canada) with more innovative construction solution. It can be called as outline specifications or design specifications.

Prescriptive Specifications: describes the means and methods for achieving the desired Work Result, but without stating what that final Work Result actually is. Sections Numbers and Titles are organized based on MasterFormat® classification system. Specification section's text is organized in accordance with SectionFormat™/Page Format™ by establishing a structure consisting of three primary Parts.

1.8.17 Technical Documentation

Includes designs, reports, photographs, physical models, surveys, drawings, specifications, computer software developed for the purpose of the Project, computer printouts, design notes, calculations, CADD, files, and other data, information and material, prepared, computed, drawn, or produced and operating and maintenance manuals either prepared or collected for the Project.

1.8.18 UniFormat®

Is a uniform classification system for organizing preliminary construction information into a standard order or sequence on the basis of Elements of systems (substructure, shell, interiors, and services), without regard to the materials and methods used to accomplish them. It is produced jointly by CSC and CSI. (See also to MasterFormat™)

1.8.19 Work

The Work means, subject only to any express stipulation in the Contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the Contract in accordance with the Contract Documents.

1.8.20 Work Results

Are construction results achieved in the production stage or by subsequent alteration, maintenance, or demolition processes and identified by one of more of the following: the particular trade or skill involved; the construction resources used; the part of the construction entity which results; the temporary work or other preparatory or completion work which results. (ISO)

1.8.21 RPn Contract

Refers to specific multi-year contracts for the delivery of diverse real property (RP) services. This currently includes RP contracts 1 through 7.

1.9 Universal Requirements

1.9.1 General

All submissions shall include digital copies of each document in PDF/A (in compliance with ISO 19005) format. Digital files must be unlocked and without password protection or access/printing restrictions of any type. All text in digital files must be fully searchable. PDF files must be derived from the software in which they were created. PDF files are to be optimized and have layers, masks, and other extraneous information removed prior to submission. Submissions must not contain any extraneous comments or elements.

Final submissions of each deliverable are to include the files in the originator file format as well as PDF versions.

1.9.2 File Formats

Digital format of documents shall be as follows:

- Without password protection and printing restrictions;
- Written reports and studies: Microsoft Word (or compatible with) and PDF;
- Spreadsheets, and budgets: Microsoft Excel (or compatible with) and PDF;
- Presentations: Microsoft Power Point (or compatible with) and PDF;
- Concept Development / Schematic Design Drawings: PDF;
- Construction Drawings: refer to section 3.2 Construction Drawings
- Specifications: refer to section 3.4 Construction Documents / Specifications;
- Schedules (Time Plans): Microsoft Project, refer to section 5.1 Project Schedules / Schedule Format;
- Geographic Information System (GIS): xml, shp files, geodatabase (gdb), TAB.

1.9.3 Accessibility Requirement

Unless otherwise stated in the TOR or RFP, all deliverables must be submitted in an [accessible digital format](#).

1.9.4 File Transfer Requirements

The submission of Hard Copies will be confirmed, and instructions for delivery will be provided, by the Departmental Representative.

All digital files that cannot be transferred via email due to size (more than 3.5 MB) or for confidentiality reasons are to be either provided on Secure USB keys or transmitted through a secure Protected B File Transfer Protocol site (FTP) approved by the Departmental Representative;

If USB keys are to be used, the Terms of Reference will specify the performance criteria and quantity required. Any other means of file transferring are to be approved by the Departmental Representative.

2 Report Documents

2.1 General

This section provides guidance to Consultant firms on the preparation of deliverables including, but not limited to: investigations, assessments, studies, Schematic/Conceptual design and Design Development documents (namely written reports and attached drawings) to be submitted according to PWGSC standards for real property projects across Canada.

For deliverables related to Federal Heritage Properties, additional best practices, standards, and procedures may be required. Please contact tpsgc.sisag-rpsaes.pwgsc@tpsgc-pwgsc.gc.ca for further instruction on heritage conservation projects.

2.2 Principles of PWGSC Report, Presentation and Other Documents

Documents shall provide:

- Expert advice and guidance consistent with industry best practices, professional standards, codes and regulations.
- Articulation in plain language written without the use of jargon.
- Written arguments with a high level of cohesive thought and organization.
- Report documents shall be based on demonstrable and justifiable evidence-based information.

2.2.1 Report Review requirements

- Submissions will be reviewed as per the approved project schedule, typically at 33%, 66%, 99%, and final, unless otherwise indicated by departmental representative.
- The Departmental Representative will coordinate PWGSC subject matter experts and other stakeholders for the reviews. PWGSC reviews do not absolve Consultant of professional accountability or responsibility for accuracy or quality.
- Submissions that are incomplete and/or deemed non-compliant with the terms of the contract will be returned for a new submission following corrective action. The Consultant will be held accountable for project delays that occur as a result of non-compliant submissions.

2.3 Report Content

The contents of each report will vary depending on the requirements of each project. Reports shall provide a clear, succinct and detailed account of the purpose, objectives, context, analysis, evaluation, findings and recommendations. Reports shall also include applicable graphics, images, sources, tables and plans in support of the text as applicable. Reports shall include an introduction and a conclusion summarizing the key findings and Consultant's recommendations unless instructed otherwise in the specific scope of services. For details refer to **Appendix A**.

Unless otherwise indicated by departmental representative, reports are to include the following:

- Table of contents;
- A glossary of definitions for technical terms not considered general knowledge;
- Executive summary (for documents in excess of ten pages);

- Introduction including:
 - Scope of Work;
 - Constraints and Limitations;
 - Project Team
- Project vision and design principles;
- Approach and Methodology;
- Building or Asset description (in the case of a Federal Heritage Property, its heritage designation and a summary of its reasons for designation and character-defining elements);
- Construction, maintenance, or rehabilitation History;
- Description of systems;
- Observations and Analysis;
- Code / regulatory requirements;
- Feasibility assessment with estimates;
- Design options with estimates;
- Recommendations;
- Conclusions;
- References(as applicable and not limited to):
 - Documents consulted;
 - Footnotes/Endnotes referencing quoted material and/or data sources;
 - Past Project information consulted;
 - Exploratory opening or testing results;
 - Additional reports produced for the purpose of the report preparation, analysis, etc.;
 - Content from consultations with stakeholders.

2.3.1 Report Submission Formats

Unless otherwise stated in the TOR or RFP, reports shall be submitted as follows:

Labels must clearly indicate PWGSC is the client. The header for each page must reference the title of the project, date, and PWGSC's project number;

Footers must contain the page number in the following format: "page #" of "total pages";

Each submission must include:

- PWGSC must be referenced on the front page, as well as key project information:
- DFRP;
- Building or asset name;
- Construction year;
- Project number;
- Location or official address;
- Status of heritage designation (ex: Federal Heritage Property / Submitted for Evaluation / building under 50 years old / Not designated);
- Applicable references, footnotes, and bibliographical data to support the analysis and evaluation work;
- A section or appendix which lists the Consultant project team members, their professional designation, and what they provided for the deliverable.

Reports shall be presented in the following format:

Paper size:	8.5x11 or 11x17
Paper format:	Portrait or Landscape
Title Page format:	Project Title, Print Date, 'Draft' or Title Only to be noted
Table of Contents format:	Headings, Subheadings, List of Tables, List of Figures, List of Plans, Page Numbers
Body Text:	Narratives standardized throughout, Figures, Tables, Plans and Photos to include captions explaining relevancy, page numbering, and source. Executive Summary as a standalone type of document to have separate numbering system.
Bibliography:	All documents used to be identified in standard bibliographical format
Glossary:	Include when terminology is not familiar to the general readership
Appendix:	Organize and structure to support the report. Include an introduction explaining how the appendix is organized.

2.3.2 Acronyms

The use of Acronyms is only permitted at the discretion of the Departmental Representative.

Acronyms shall not be used in the executive summary.

When used in the report the Acronym should be spelled out in full followed by the Acronym in parentheses. For example, 'Public Works and Government Services (PWGSC). Subsequent references in the body of the text can be 'PWGSC'.

Acronyms can be identified when a Glossary is part of a Report.

2.3.3 Identification of Disciplines and Specializations

Identify internal and external team members according to their provincial/territorial professional accreditation with respective acronyms, followed by the role of the individual. Disciplines are as follows, but not limited to:

- Architecture – Architect
- Landscape Architecture – Landscape Architect
- Urban Planning – Urban Planner
- Civil/Municipal Engineering – Civil Engineer
- Mechanical Engineering – Mechanical Engineer
- Electrical Engineering – Electrical Engineer
- Structural Engineering – Structural Engineer
- Geotechnical Engineering – Geo-technical Engineer
- Interior Design – Interior Designer
- Multidisciplinary Real Property expertise – For example: Environmental, Sustainability, Accessibility, Fire Protection, Health and Safety, etc.
- Heritage Conservation Expertise – For Federal Heritage Properties, contact tpsgc.sisag-rpsaes.pwgsc@tpsgc-pwgsc.gc.ca.

2.4 Presentations Requirements

Presentation materials must be of professional quality and display a high standard of graphics for clear understanding.

Presentation material must use provided PWGSC template or approved alternate format.

Embedded video and multi-media files are to be submitted as separate documents in a universal (non-proprietary) format.

PWGSC must be referenced on the front page, as well as key project information:

- Date;
- Directory of Federal Real Property number (DFRP);
- Building or asset name;
- In the case of a Federal Heritage Property, its FHBRO number and/or designation;
- Project number;
- Location or official address;

Do not reference the Consultant's name on presentations.

2.5 Schematic and Design Development

Unless otherwise stated in the TOR or RFP, Schematic/Conceptual and Design Development Drawing submissions are to include renderings and sketches displaying a high standard of graphics for clear understanding. Sketches and drawings can include renderings, site, floor and roof plans, elevations, sections, details, etc. A full set at this stage would also include drawing plans related to the disciplines and specializations noted above in 2.3.6 as applicable.

Schematic/Conceptual and Design Development Drawing submissions must include at a minimum a title page with a table of contents and a key plan on each page as required.

NOTE:

Use .DWG or .DXF drawings for topographical surveys and existing conditions layout plans, in accordance with **section 3.2 Drawings**.

3 Construction Documents

3.1 General

This section provides instructions to Consultants on the preparation of Construction Documents (namely specifications and drawings) to be submitted in accordance with PWGSC standards for real property projects across Canada.

- Specifications, drawings, and addenda shall be complete and clear so that contractors can prepare bids without assumptions;
- Construction Documents shall permit bidders to bid accurately. If a precise quantity is impossible to identify (e.g., cracks to be repaired), then provide an estimated quantity for bidding purposes (to be used in conjunction with unit prices);
- Ensure that the terminology used throughout Construction Documents is consistent and is in accordance with current and applicable codes and standards;
- Measurement Units used on drawings and in specifications shall be based on the International System of Units (SI).

3.1.1 Principles of PWGSC Contract Documents

Contract Documents shall be prepared based on common public procurement principles. PWGSC does not use Canadian Construction Documents Committee (CCDC) documents or other standards / formats being used in private industry.

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

3.1.2 Translation

All documentation including drawings, specifications, reports as well as all bidder questions shall comply with the requirements of the Official Languages Act.

- [Requirements in respect of the Official Languages Act](#) on Buyandsell.gc.ca
- [Official Languages Act \(R.S.C., 1985, c.31 \(4th Supp.\)\)](#)

3.1.3 Construction Documents

Unless otherwise indicated in the Project Brief / TOR, construction document submissions shall meet the definitions outlined below. Further discipline-based requirements may be included in the Project Brief or TOR.

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

3.1.4 Quality Assurance

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

PWGSC reserves the right to ask the Consultant to provide any documentation related to the project at any time, including proof of compliance with applicable regulations.

3.1.5 Quality Assurance Deliverables

For every construction document submission package or percent complete the Consultant shall provide:

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

IMPORTANT: The *Documentation and Deliverables Manual* aims to describe the parameters for submission of deliverables. Upon contract award, the requirements will be confirmed with project managers and technical team. If deliverables are non-compliant with requirements, PWGSC retains the right to reject deliverables and request re-submission of compliant deliverables.

3.1.6 Departmental Representative (for non-RPn contracts only)

The Consultant shall use the term “Departmental Representative” instead of Engineer, PWGSC, Owner, Consultant or Architect.

3.2 Construction Documentation

3.2.1 General

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

- No trade names present on drawings; and
- No specification-type notes are on drawing;
- No Consultant logo on drawings.

3.2.2 Information to be Included

Drawings shall show the quantities of the elements, the configuration of the project, the dimensions, and details of how the work is constructed.

- There shall be no references to future work or information that will be changed by future addenda.
- The scope of work shall be clearly detailed, and elements not in the Contract shall be identified clearly.

3.2.3 Revision Notes

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

3.2.4 Drawing Numbers

Drawings shall be numbered in sets according to the type of drawing and the discipline involved as indicated in the following table. The requirements of the [PSPC National CADD Standard](#) supersede these requirements, where warranted.

Discipline	Drawing
Demolition / Removals	D01, D02, etc.
Architecture	A01, A02, etc.
Bridges and Dams	B01, B02, etc.
Civil	C01, C02, etc.
Landscape Architecture	L01, L02, etc.
Mechanical	M01, M02, etc.
Electrical	E01, E02, etc.
Structural	S01, S02, etc.
Interior Design	ID01, ID02, etc.
Land Surveying	LS01, LS02, etc.

3.2.5 Legends

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

3.2.6 Schedules and Tables

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

3.2.7 Drawing Symbols

Drawing conventions must be in accordance with CSA B78.5-93: *Computer-Aided Design Drafting (Buildings)*.

3.2.8 As-Built Documentation

PWGSC requires that Contractors keep and maintain documentation reflecting field changes, product or material selections made during construction or installation, and approved shop drawings and submittals which shall serve as a record of the Work as it was constructed for use by PWGSC in developing Record Documentation. Actual locations of constructed elements impacted by changes or product/material selection must be accurate to the level stipulated within the terms of the Contract. As-Built Documentation shall represent as constructed conditions including location and size of equipment, devices, plumbing lines, mechanical and electrical equipment, structural elements etc.

As-Built Documentation is no longer accepted in red-line mark-up hard-copy or hand-written note formats and must be produced in a digital format capable of supporting querying and machine-reading. Both the As-Built process and its resulting documentation must be kept in real-time and must support remote or virtual business processes in the Contractor, Consultant, or PWGSC organizations.

3.2.9 Record Documentation

PWGSC requires that the Consultant prepare Record Documentation consolidating the as-constructed or as-installed state of the Work for PWGSC's use in the accurate long-term management and use of the facility. This documentation is prepared using:

- the Contractor submitted *As-Built Documentation*, which captures the products or materials selected for, and any changes made to the Work during its construction;
- when required, the Consultant-led general review, inspection, testing, RFI (request for information), and change order results; and
- PWGSC requested changes or details.

When the required services for Construction Phase and Contract Administration include site services specifying continuous on-site representation and oversight of the Work on behalf of PWGSC, the Design Consultant must collect As-Built or As-Installed information on a real-time basis for cyclical integration into stamped Record Documentation. When the contracted required services do not stipulate continuous on-site representation, the Design Consultant must collect As-Built or As-Installed information as described in their contract and integrate this information into unstamped Record Documentation.

3.2.10 Submission Format

- **Drawing Digital Copy Deliverable Format**

Submit digital drawings in accordance with Appendix E in two formats: PDF (per Section 1.9 Universal Requirements) and .DWG or .DXF.

- **Drawing Hard Copy Deliverable Format**

Submit hard copy drawings when requested.

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

3.3 Building Information Modeling (BIM) Implementation

[NOTE: The PSPC BIM Initiative is still under development at the time of this update. Updated text and information for Consultants will be provided when available. For projects requiring a contractual BIM service, project-specific requirements for BIM service delivery are provided in the Project Brief, Terms of Reference, or Statement of Work.]

PWGSC is committed to using non-proprietary or “OpenBIM” standards. As such, PWGSC will not specify a proprietary software for the production of models. For the sake of consistent and quality legacy information, the Consultant shall use the international standard for BIM interoperability (Industry Foundation Classes or IFC) in all cases where models are submitted. Where BIM delivery is required, models and modelled information shall be submitted in the following two formats:

- .native (whichever format is native to the modelling software used by the Consultant); and
- .ifc (version stipulated by the Contract or scope of work – e.g. IFC 4).

PWGSC is also aligning its implementation of BIM with the ISO 19650ⁱⁱ series of standards towards information management using BIM. As such, Consultants shall work with software that is compliant to the IFC standard to deliver submissions as per the IFC version, Level of Information Need, or Exchange Information Requirements identified in their contract or scope of work.

Where used, BIM shall not replace the submission requirements outlined by this document. Rather, consultants shall submit BIM deliverables in addition to the requirements outlined herein. Where the submission requirements outlined by this document are defined as outputs of a BIM-based process, the Consultant must seek clarification on appropriate workflows for deriving these deliverables (e.g. CADD files or PDF drawings, schedules and sheets, etc.) from BIM through their project’s Departmental Representative.

All modelled information, and contractual model-based Information Exchanges shall conform to:

- Project-specific requirements, such as they are laid out in the project’s BIM Execution Plan (BEP), and Contract; and
- Any project-identified BIM standards and/or guidelines.

Models for submissions shall be organized as per Appendix E.

3.3.1 Submission Format

PWGSC is aware of the challenges currently faced by industry in the export of National CADD Standard compliant .DWG files from BIM Design Authoring solutions such as Revit or Archicad. To aid industry in the alleviation of this burden while PWGSC's business processes evolve, PWGSC has provided each Regional CADD and/or BIM Manager with the discretion to simplify or streamline the requirements for National CADD Standard compliant submissions. Where BIM delivery is required and this discretion has not already been exercised or clarified within the language of the Contract, Consultants may inquire with their Departmental Representative.

Where BIM delivery is required and this discretion is to be exercised, PWGSC requires the following submissions in National CADD Standard compliant .DWG format for Geomatics review and approval:

- Issued for Tender Documentation (when working within a Region with this business process and/or a traditional Design-bid-Build delivery model); and
- Record Documentation.

This discretion shall only be exercised by Regional Geomatics' Heads when Project Teams have ensured that:

- They have Senior Management authorization for conducting a BIM Pilot Project;

- They have consulted with and continue to actively engage a PWGSC BIM Coordinator and/or Project Drawing Coordinator acting on behalf of the Department and their Region;
- There are provisions for BIM project controls in the contract, or in a subsequent amendment, including but not limited to a BIM Execution Plan that will ensure the same level of governance and oversight as the National CADD Standard for the milestone submissions in scope of this decision; and
- The Consultant and its team take all necessary steps to produce National CADD Standard quality PDF sheets and packages from the BIM Design Authoring application in use.

3.4 Specifications

3.4.1 National Master Specification

Design and construction specifications must follow the most current version of the *Canadian [National Master Design and Construction Specifications \(NMS\)](#)* format offered by the National Research Council Canada (NRC).

- The Consultant is fully responsible and accountable for the content of construction project specifications;
- For each specification Section, edit, amend, and supplement the NMS template as deemed necessary to produce an appropriate project specification free of conflict and ambiguity;
- The Consultant must refer to the latest [NMS User's Guide](#) and [NMS Development Guide](#) issued by the NRC for further guidance on using the NMS.

3.4.2 Table of Contents

Specifications must include an index which list all specification Sections, including numbers of pages, as well as the Division and Section number and title in the format shown in Appendix C

3.4.3 Specification Format

Long form Sections describing single units of work shall be used for complex work. Short form Sections may be used for less complex work. The Consultant must use one CSC format consistently for the entire specification.

- Start each Section on a new right-hand page and show the project number, NMS Section title, NMS Section number, page number, and specification date on each page.

3.4.4 Reference Standards

Since codes and reference standards in the NMS may not be up to date, the Consultant must ensure that the project specification uses the current applicable edition of references quoted.

3.4.5 Specifying Products and Building Materials

Specifications shall make use of generic names in referencing construction materials. The Consultant shall refer to the latest version of the NRC's [NMS Development Guide](#) for further details. The term "Acceptable Manufacturers" must not be used, as this restricts competition and does not ensure the actual material or product will be acceptable.

Alternate Products and Materials

Alternative products and 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. Refer to [G113 Approval of alternative materials](#) article of *PWGSC Standard Acquisition Clauses and Conditions (SACC) Manual*.

Sole Sourcing

Sole sourcing of products and materials and/or work is only allowed in exceptional and justifiable circumstances. Before including sole source products and materials and/or work, the

Consultant must obtain approval from the appropriate authority for the sole sourcing. Consultants must provide proper justification for all individual sole source requirements. For non-RPn contracts, refer to the Standard Acquisition Clauses and Conditions (SAAC) Manual - [Annex 3.1: Treasury Board questions for sole source - Buyandsell.gc.ca](#).

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

- Wording for the sole source of work shall be in Part 1 as follows:
 - X. Designated Contractor
 - .1 Retain the services of [_____] to do the work of this Section.
- Wording for the sole source of BAS shall be in Part 1 - General as follows:
 - X. Designated Contractor
 - .1 Retain the services of [_____] or its authorized representative to complete the work of BAS Sections.
- Wording for the sole source of BAS shall be in Part 2 – Products as follows:
 - X. Products and Materials
 - .1 There is an existing [_____] system presently installed in the building. products and materials must be selected to ensure compatibility with the existing [_____] system.
- Wording for the sole source of products and materials (i.e., fire alarm systems) shall be in Part 2 - Products as follows:
 - X. Acceptable Materials
 - .1 The only acceptable materials are [_____].

3.4.6 Measurement for Payment (for non-RPn contracts)

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

Unit Prices

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

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

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

- the price per unit and the estimated total price for each item listed;
- a complete description of each type of work covered; and
- items as described in the referenced specification Section.

Item No.	Specification Reference Section	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						

3.4.7 Cash Allowances

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

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

3.4.8 Warranties

A 12-month warranty period with regard to the contract shall be retained unless otherwise specified. For non-RPn contracts, see PWGSC’s standard acquisition clauses and conditions. Extended warranties shall only be used where experience has shown that serious defects are likely to appear after expiry of the standard one-year warranty period. When necessary to extend beyond the 12-month warranty period, use the following wording in Part 1 - General of the applicable technical Sections, under the heading “Extended Warranty”:

For the work of this Section [____], the 12-month warranty period is extended to [____] months.

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

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

3.4.9 Specification Coordination

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

3.4.10 Regional Guide (for non-RPN contracts)

The Consultant shall contact the Departmental Representative to obtain the PWGSC Region’s requirements for Division 01 - GENERAL REQUIREMENTS or other short-form specifications as appropriate.

Any Division 01 content should be adjusted to reflect the guidance of this document.

3.4.11 Health and Safety

All project specifications are required to include Section 01 35 29.06 – Health and Safety Requirements and Section 02 81 00 – Hazardous Materials. For non-RPn contracts, confirm with the Departmental Representative to determine if there are any instructions to meet regional requirements.

3.4.12 Subsurface Investigation Reports

If required, subsurface investigation report(s) must be included after Division 31 – EARTHWORKS, and the following paragraph added to Division 31 – EARTHWORKS:

Subsurface Investigation Report(s)

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

If the Departmental Representative determines that it is not practical to include the subsurface investigation report(s), alternate instructions will be provided.

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

In addition to providing the subsurface investigation report(s), the foundation information required by the current *National Building Code of Canada* (Division C, Part 2, 2.2.4.6 – Information Required on Foundation Drawings) shall be included on foundation drawings.

3.4.13 Prequalification and Pre-Award Submissions (not mandatory for RPn contracts)

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

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

3.4.14 Contracting Issues (not applicable to RPn contracts)

Specifications describe the workmanship and quality of the work and must not contain any contracting issues. Division 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS of the NMS is not used by PWGSC, except for Section 00 01 07 – Seals Page and Section 00 01 10 - Table of Contents. In specifications, remove all references to the following:

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

3.4.15 Specification Submission Format

Specification Hard Copy Deliverable Format

Submit hard copy specifications upon request, printed on both sides of white bond paper.

Specification Digital Copy Deliverable Format

Submit digital copy of specifications in PDF format and in accordance with Section 1.9 Universal Requirements and Appendix E0.

3.5 Addenda

This section is not applicable to RPn contracts.

3.5.1 Format

Prepare addenda using the format shown in Appendix D. No signature-type information is to appear. Every page of the addendum (including attachments) shall be numbered consecutively. All pages shall have the PWGSC project number and the appropriate addendum number. Sketches shall appear in the PWGSC format, signed and sealed.

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

3.5.2 Content

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

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

4 Cost Estimates

4.1 Cost Estimates Submission Formats (not applicable to RPN contracts)

Construction cost estimates for projects must be prepared in elemental format, in accordance with UniFormat® as issued by CSC and the CSI.

All cost estimates shall contain the following:

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

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

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

4.2 Classes of Cost Estimates for Construction Projects

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

4.2.1 Class D (Indicative) Estimate

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

4.2.2 Class C (Indicative) Estimate

Based on schematic/conceptual design and/or comprehensive list of project requirements, this estimate shall be adequately detailed and shall be sufficient for making the correct investment decision. This cost estimate shall be based on measured quantities of all items of work and prepared in elemental analysis format. The level of accuracy of a Class C cost estimate shall be such that no more than a 15% design allowance is required.

4.2.3 Class B (Substantive) Estimate

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

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

4.2.4 Class A (Pre-Bid) Estimate

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

5 Project Schedules

For RPn projects, the contractual deliverables apply instead of the following.

5.1 Schedule Format

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

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

5.2 Progress Report

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

The contents of each progress report will vary depending on the requirements at each project phase. Unless otherwise indicated by departmental representative, progress reports shall include:

- an executive summary;
- a narrative report;
- a variance report;
- a criticality report;
- an exception report (as required);
- the master schedule with cash flow projections;
- the detailed project schedule (network diagram or bar charts);
- a list of key milestones as agreed to with the Departmental Representative;
- the remaining schedule (activities with less than 100% Complete); and
- a look ahead schedule

5.2.1 Executive Summary

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

5.2.2 Narrative Report

The project narrative shall detail the work performed to date, comparing work progress to planned, and presenting current forecasts. This report shall summarize the progress to date, explaining current and possible deviations and delays and the required actions to resolve delays and problems with respect to the Detailed Schedule, and Critical Paths.

5.2.3 Variance Report

The variance report, with supporting schedule documentation, shall detail the work performed to date and compare work progress to work planned. It shall summarize the progress to date and explain all causes of deviations and delays and the required actions to resolve delays and problems with respect

to the detailed schedule and critical paths. The variance report shall be presented in the following format:

Paper size: 8.5x11
Paper format: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision Block
Body text: Narratives for each report to match other reports
Columns: Activity ID, Activity Name, Planned Start and Finish, Baseline Start and Finish, Variance, Activity % Complete, Total Float.

5.2.4 Criticality Report

The criticality report identifies all activities and milestones with negative, zero, and up to five days' Total Float (or 15 days' Total Float depends on the duration of project). It is used as a first sort for ready identification of the critical paths, or near-critical paths, through the entire project. The criticality report shall be presented in the following format:

Paper size: 8.5x11
Orientation: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision Block
Body text: Narratives for each report to match other reports
Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete, Total Float

5.2.5 Exception Report

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

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

The exception report shall be provided in the following format:

Paper size: 8.5x11
Orientation: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision
Body text: Narrative to match other reports

Paper size: 8.5x11
Orientation: Landscape
Title format: Project Title, Report Type, Print Date, Data Date, Revision
Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float

5.2.6 Master Schedule

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

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

5.2.7 Detailed Project Schedule

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

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

5.2.8 List of Key Milestones

A list of key milestones agreed to with the Departmental Representative shall be provided in the following format:

Paper size: 8.5x11
Paper format: Portrait
Title format: Project Title, Report Type, Print Date, Data Date, Revision Block
Columns: Milestones ID, Milestones Name, Planned Date, Baseline Date.

5.2.9 Remaining Schedule

A remaining schedule with activities with less than 100% Complete shall be provided along with a bar charts in the following format:

Paper size: 11X17
Orientation: Landscape
Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete.
Footer format: Project Title, Report Type, Print Date, Data Date, Revision Block

5.2.10 Look Ahead Schedule

The look ahead schedule with a list of activities planned for four weeks (or eight weeks depend on the dimension of the project) shall be provided along with bar charts in the following format:

Paper size: 11X17
Orientation: Landscape
Columns: Activity ID, Activity Name, Duration, Start, Finish, Duration % Complete.
Footer format: Project Title, Report Type, Print Date, Data Date, Revision Block

6 References

The following references apply to all real property projects across Canada.

For RPN contracts, use the *Non-Exhaustive List of Legislation, Policy, Directives, Standards and Related Guidance*.

6.1 Legislation

- [Department of Public Works and Government Services Act \(justice.gc.ca\)](http://justice.gc.ca) (S.C. 1996, c. 16)
- [Canada Labour Code](#) (R.S.C 1985, c.L-2)
- [Official Languages Act \(R.S.C., 1985, c.31 \(4th Supp.\)\)](#)

6.2 Government of Canada

- [Policy on the Planning and Management of Investments](#)
- [Directive on the Management of Real Property](#)
- [Digital Accessibility Toolkit / Sharing space: How to create accessible documents in Office 365](#)
- **National Research Council's Canadian [National Master Construction Specification \(NMS\)](#)**

6.3 Public Services and Procurement Canada

- PWGSC Buyandsell.gc.ca Standard Acquisition Clauses and Conditions (SAAC) Manual Subsection 5.R – Real Property Contracting
 - General Instructions – Construction Services: [GI13 Approval of alternative materials](#)
 - Contract Documents - [Section 5.R.R2810D - GC1 - General Provisions - Buyandsell.gc.ca](#)
- PSPC The Supply Manual:
 - [Annex 3.1: Treasury Board questions for sole source - Buyandsell.gc.ca](#)
- PSPC National Computer Aided Design and Drafting Standard:
 - [PSPC National CADD Standard](#)
 - [8.0 Annex D – Quality control of CADD data](#)
- PSPC Technical Reference for Office Building Design:
 - <https://publications.gc.ca/site/eng/9.839370/publication.html>

Appendix A

Report Documents - Detailed Requirements

This list reflects a general content structure for reports, however it is non exhaustive and additional articles/items may be required for certain types of reports.

For documentation related to Federal Heritage Properties, additional best practices, standards, and procedures may be required. Please contact tpsgc.sisag-rpsaes.pwgsc@tpsgc-pwgsc.gc.ca.

2.3.2 Report Content
ARTICLE / ITEM
<p>a. Table of Contents The Table of Contents shall show a complete listing of headings, subheadings and page numbers. A separate section lists figures which may but not necessarily be limited to include photos, tables, illustrations, plans etc.</p>
<p>b. Executive Summary The executive summary shall provide a high-level standalone summarization of the project, its vision, analysis and evaluation, key findings and recommendations. It should be between 1 to 5 pages and include where applicable supporting images, tables and plans to support the text.</p>
<p>c. Introduction The introduction shall provide the purpose, objectives of the project, scope of work and project background, as well as identify members of the project team.</p>
<p>d. Project Vision and Design Principles The project vision shall provide in one or two sentences the intended optimal desired end state for the site, building (s) or campus project. In addition, include:</p> <ul style="list-style-type: none">• An action statement that expresses the purpose, key objectives, approach and direction of the project;• Five to eight high level design principles to assist in supporting the vision and action statements.

2.3.2 Report Content

ARTICLE / ITEM

e. Building or Asset description

This section provides a physical description of the asset, including the architectural style, materials, and notable features of a building, as well as a high level description of the building's functional program and the history of occupants.

For a landscape, it describes the boundary of the asset, distinct areas and landscape characteristics.

In the case of a Federal Heritage Property, the heritage designation should be indicated with a brief summary of the reasons for designation and the character-defining elements. Reference should also be made to the fact that all interventions to a Federal Heritage Property must be guided by the [Standards and Guidelines for the Conservation of Historic Places in Canada](#).

f. Construction, maintenance, or rehabilitation History

This section describes all known interventions on a building completed since its construction. This includes but is not limited to additions, demolitions, renovations, rehabilitations, etc.

g. Description of systems

This section describes the condition of critical building systems, including HVAC, electrical, security, life safety, fire safety, lighting, utilities, telecom, energy management, etc.

h. Approach and Methodology

The methodology shall provide the philosophy, rationale, strategy, approach and types of activities undertaken to complete the project's deliverables. Identify when applicable:

- Federal legislation, policies, and directives;
- Codes, standards and best practices;
- Provincial and municipal codes and standards;
- Key federal initiatives such as Indigenous engagement, sustainability and accessibility;
- For a Federal Heritage Property, the approach should include conservation goals, guided by the [Standards and Guidelines for the Conservation of Historic Places in Canada](#).

Note:

Federal codes and standards take precedence unless other authorities having jurisdiction are more stringent.

i. Existing Conditions and Context

Identify at a minimum existing site, building(s) or campus conditions and context of the asset as to its location. Include:

- Relevant adjacencies as to land ownership and use;
- Constraints of and limitations;
- Key stakeholders;
- Chronology of modifications and system upgrades
- Adjacent current and future development;
- Urban design;
- Heritage designations;
- Environmental conditions;
- Sustainability and accessibility considerations.

2.3.2 Report Content

ARTICLE / ITEM

j. Analysis, Evaluation and Findings

Analysis, evaluation, findings shall capture relevant design layers identified in the TOR or Request for Proposal (RFP). Where applicable evaluation criteria and weightings are to be clearly identified.

k. Design Options

When required, the minimum number of Design options is three unless otherwise stipulated in the TOR or RFP Options shall:

- Demonstrate distinctly different designs, each named and numbered;
- Meet departmental functional and operational requirements and approval processes;
- Include relevant design layers such as but not limited to: base building, site and building services and systems, massing and scale, exterior and interior circulation, sustainability, accessibility to experiential and aesthetic;
- Include at a minimum indicative Class D cost estimate;
- In the case of a Federal Heritage Property, criteria should include how the options meets the intent of the [Standards and Guidelines for the Conservation of Historic Buildings in Canada](#).

The preferred option if selected shall provide demonstration plans including, but not limited to: plans, details, elevations, renderings and bird's eye views.

l. Conclusion and Recommendations

The conclusion shall include a summary of the project, its findings, next steps and recommendations.

m. References:

References of documents and resources consulted are imperative to the holistic development of a proposal. Citations and quotes should be referenced appropriately.

4 Acronyms

4a Acronyms shall not be used in the executive summary. If used in the report a full definition is to be provided. Acronyms must follow this format 'Public Works and Government Services (PWGSC)'. Subsequent references can be 'PWGSC'.

5 Identification of Disciplines

2.3.2 Report Content

ARTICLE / ITEM

5a Internal and external team members shall be identified as to their professional body's legislated title or industry standard followed by the role of the individual and name of the person. Discipline are as follows, but not limited to:

Architecture – Architect

Landscape Architecture – Landscape Architect

Urban Planning – Urban Planner

Civil Engineering – Civil Engineer

Mechanical Engineering – Mechanical Engineer

Electrical Engineering – Electrical Engineer

Structural Engineering – Structural Engineer

Geotechnical Engineering – Geotechnical Engineer

Interior Design – Interior Designer

Multidisciplinary Real Property expertise – For example: Environmental, Sustainability, Accessibility, Fire Protection, Health and Safety, etc.

Heritage Conservation Expertise – contact tpsgc.sisag-rpsaes.pwgsc@tpsgc-pwgsc.gc.ca for multidisciplinary conservation disciplines and special expertise

Appendix B

For RPN contracts, see Oversight Work Instructions.

Checklist for the Submission of Reports

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

Report Submissions			
Item	Verified by	Explanations	Action By
1 Naming Convention Structure			
1a Verify that documents – reports, publications, previous projects, drawings, specifications and models – are digitally submitted in accessible format, and are named and structured in accordance with Appendix E - Directory Structure and Naming Convention, unless otherwise specified in the TOR or instructed by the Departmental Representative		When files are named and structured incorrectly significant delays in the contractibility review and solicitation process may occur.	
2 Report Formatting			
2a Font Verify that the typeface used for the headings and body are consistent in size and font.			
2b Language and Grammar Ensure the report is written in plain language as per the Government of Canada Directive on the Management of Communications. Ensure the tense remains consistent, and avoid the use of passive voice. Acronyms are not used in the executive summary. First use of each Acronym is spelled out in full followed by the Acronym in parentheses. Acronyms can be identified when a Glossary is part of a Report.			

Report Submissions			
Item	Verified by	Explanations	Action By
2c References Ensure accurate and consistent use of citations.			
3 Report Structure			
3a Title Page Representation of information must be clearly and properly arranged. Include the following information: <ul style="list-style-type: none"> • Clear and concise title of report and subheading if required; • Authors names and affiliations identified; text size cannot be larger than text referencing PWGSC; • PWGSC must be referenced; • Date report is published; • DFRP; • Building or asset name; • Heritage designation and FHBRO designation number (if applicable); • Project number; • Location or official address. 			
3b Table of Contents Must contain all first and second level headings in the report. Titles and page numbering must be accurate. List of tables, figures, and appendices, if included, should be listed.			
3c Executive Summary			
3d Introduction			
3e Project Vision and Design Principles			
3f Building or Asset Description Status of heritage designation (ex: Federal Heritage Property / Submitted for Evaluation / building under 50 years old / Not designated); Construction year.			
3g Construction, maintenance, or rehabilitation History			

I confirm that the report has 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:

Checklist for the Submission of Construction Documents

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

Construction Document Submissions			
Item	Verified by	Explanations	Action By
1 Naming Convention Structure			
1a Verify that construction documents - drawings, specifications and models – are digitally submitted in accessible format, and are named and structured in accordance with Appendix E - Directory Structure and Naming Convention , unless otherwise specified in the TOR or instructed by the Departmental Representative		When files are named and structured incorrectly significant delays in the contractibility review and solicitation process may occur.	

Drawings\Design			
Item	Verified by	Explanations	Action By
1 Index			
1a The index shows a complete listing of drawing titles and numbers.			
2 Drawings and Title Blocks			
2a Drawings have been checked using the 8.0 Annex D – Quality control of CADD in accordance with the PSPC National CADD Standard .			
3 Units			
3a All units of measure are metric.			
4 Trade Names			
4a Trade names are not used.			

Drawings\Design			
Item	Verified by	Explanations	Action By
5 Specification Notes			
5a There are no specification-type notes.			
6 Terminology			
6a The term "Departmental Representative" is used instead of "Engineer," "PWGSC," "Owner," "Consultant," or "Architect."			
6b Notations such as "verify on site," "as instructed," "to match existing," "example," "equal to," "equivalent to," and "to be determined on site by" are not used.			
7 Information to be included			
7a The project quantities, configurations, dimensions, and construction details are included.			
7b References to future work and elements not in the tender documents do not appear or are kept to an absolute minimum and clearly marked.			
7c National Building Code Data Matrix (For example purposes only: National Building Code Data Matrix - RAIC)			
8 Quality Assurance			
8a Coordination review of the design between various disciplines has been completed by the Consultant.			
8b Constructability review of design has been performed.			
9 Signing and Sealing			
9a Every final drawing bears the seal and signature of the responsible design professional in compliance with various provincial and territorial jurisdiction requirements.			

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

Specifications			
Item	Verified by	Explanations	Action by
7c Non-restrictive, non-trade name “prescription” or “performance” specifications are used throughout.			
7d The term “Acceptable Manufacturers” is not used.			
7e No sole sourcing has been used.			
7f If sole sourcing has been used, the correct wording has been used and a justification, estimate, and specification have been provided to the Departmental Representative for the sole-sourced products.			
8 Measurement for Payment			
8a Unit prices are used only for work that is difficult to estimate.			
9 Cash Allowances			
9a No cash allowances have been used or if they have, approval from the Departmental Representative has been received.			
10 Miscellaneous Requirements			
10a “Scope of Work” paragraphs shall not be included in the technical sections from Division 02 to Division 44.			
10b Within technical sections, Part 1 – General, the paragraphs “Summary” and “Section Includes” shall not be utilized.			
11 Specification Coordination			
11a The list of related sections and appendices are coordinated.			
12 Health and Safety			
12a Section 01 35 29.06 – Health and Safety Requirements is included.			
13 Subsurface Investigation Reports			
13a Subsurface investigation reports are included after Section 31.			
14 Pre-qualifications			
14a There are no mandatory contractor and/or subcontractor prequalification requirements or references to certificates, transcripts, licence numbers of a trade or subcontractor, or other such documentation or item included in the bid.			

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

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

Consultant's Representative:

Firm name:

Signature: _____ Date:

Appendix C

Drawings and Specifications Table of Contents Template

B.1 General

List drawings by number and title.

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

B.2 Sample Table of Contents

Project No: _____

Table of Contents

Index
Page 1 of _____

DRAWINGS:

C-1	Civil
L-1	Landscape Architecture
A-1	Architecture
S-1	Structural
M-1	Mechanical
E-1	Electrical
ID-1	Interior Design
LS-1	Land Surveying

Discipline	Drawing
Demolition / Removals	D01, D02, etc.
Architecture	A01, A02, etc.
Civil	C01, C02, etc.
Landscape Architecture	L01, L02, etc.
Mechanical	M01, M02, etc.
Electrical	E01, E02, etc.
Structural	S01, S02, etc.
Interior Design	ID01, ID02, etc.
Land Surveying	LS01, LS02, etc.

SPECIFICATIONS:

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

Appendix D

Addenda Formatting Template

C.1 Instructions

To re-issue a drawing with an addendum:

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

To re-issue a specification with an addendum:

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

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

C.2 Sample Addendum

Date: _____

Addendum Number: _____

Project Number: _____

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

DRAWINGS:

- 1 A1 Architecture
.1

SPECIFICATIONS:

- 1 Section 01 00 10 – General Instructions (GIs)
NOTE: Each PWGSC Region have their own regional section 01 00 10 – GIs with their specific requirements.
 - .1 Delete article (xx) entirely.
 - .2 Refer to paragraph (xx.x),
delete the following: ...
and replace with the following: ...
- 2 Section 23 05 00 – Common Work Results - Mechanical
 - .1 Add new article (x) as follows:

Appendix E

Directory Structure and Naming Convention Standards for Construction Tender Documents

E.2 Directory Structure

E.2.1 1st Tier Subfolder

The 1st tier of the directory structure shall be “Project #####” where ##### represents each digit of the Project Number. The Project Number must always be used to name the 1st tier folder and it is always required. Free text can be added following the Project Number, to include such things as a brief description or the project title.

E.2.2 2nd Tier Subfolder

The 2nd tier of the directory structure shall consist of: “Bilingual - Bilingue”, “English” and “Français” folders. The folders of the 2nd tier cannot be given any other names since the Government Electronic Tendering System (GETS) uses these names for validation purposes. At least one of the “Bilingual - Bilingue”, “English” and “Français” folders is always required, and these must always have one of the applicable subfolders of the 3rd tier.

E.2.3 3rd Tier Subfolder

The 3rd tier of the directory structure shall consist of: “Drawings - Dessins”, “Drawings”, “Models”, “Specifications”, “Reports”, “Dessins”, “Modèles”, “Devis” and “Rapports”. The folders of the 3rd tier cannot be given any other names since GETS also uses these names for validation purposes. There must be always at least one of the applicable 3rd tier folder in each document.

E.2.4 4th Tier Subfolder - Drawings

The 4th-tier subfolders for Drawings should reflect the various disciplines of the set of drawings. Because the order of appearance of the subfolders on the screen will also determine the order of printing, it is necessary to start with a number and the identification name of the subfolders in the “Drawings – Dessins”, “Drawings” and “Dessins” folders. The first subfolder must be always reserved for the Title Page and/or the List of Drawings unless the first drawing of the set is an actual numbered discipline drawing.

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

- Y

Where:

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

Y = the title of the folder Example: 03 – Mechanical

For the “Drawings - Dessins” folder:

= Y - Z

Where:

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

Y = the English title of the folder

Z = the French title of the folder

Example:

04 - Electrical – Électrique

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

The order of the drawings shall be the same as in the hard copy set. GETS will sort each drawing for both screen display and printing as per the following rules:

- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the subfolders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the drawings in the 02 sub- folder etc.);

Each drawing PDF file within each subfolder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e., Drawing A001 will be printed before Drawing A002, Drawing M02 before Drawing M03, etc.).

E.2.5 4th-Tier Subfolders for Specifications

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

The 4th tier subfolders for specifications must adhere to the following standard naming convention for the “Specifications” and “Devis” folders:

- Y

Where:

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

Y = the title of the folder

Example:

02 – Divisions

Numbering of the 4th tier subfolders is for sorting purposes only and is not tied to an element of the specifications.

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

- The alphanumerical sorting is done on an ascending order.
- The alphanumerical order of the subfolders determines the order of appearance on the screen as well as the order of printing (as an example: all the specifications PDF files in the 01 subfolder will be printed, in alphanumerical order before the PDF files in the 02 subfolder, etc.).
- Each specification’s PDF file within each subfolder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e.,

Division 01 will be printed before Division 02, 01 - Appendix A before 02 - Appendix B, etc.).

E.2.6 4th-Tier Subfolders for Models

The 4th-tier subfolders for Models must reflect the model breakdown structure (e.g. Tower A, Tower B, or Phase I, Phase II, etc.) dictated by:

- the scope of the contract and model breakdown approach defined within the BIM Execution Plan; and
- the file size limits of the common data environment (CDE) selected by PWGSC for the purposes of receiving Consultant submissions.

Model file naming conventions must clearly identify the central or primary model (this term varies between BIM Design Authoring software) as the first to be opened for the purposes of linking and/or federation. Wherever possible, disciplinary codes used in file naming should align with those used to name Drawings as per section D.3.1 and the [PSPC National CADD Standard](#).

Note: If size limits and upload speeds for the project's CDE permit, a single federated model file should be submitted for each of the models agreed upon within the scope of the contract and BEP (e.g. Tower A, Tower B or Phase I, Phase II).

E.2.7 Directory Structure Example

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

```
Project #####
  Bilingual – Bilingue
    Drawings – Dessins
      01 - Drawing List – Liste des dessins
      02 – Demolition – Démolition
      03 – Architecture – Architectural
      04 – Civil – Civil
      05 – Landscape Architecture - Aménagement paysager
      06 – Mechanical – Mécanique
      07 – Electrical – Électrique
      08 – Structural - Structurel
      09 – Interior Design – Aménagement intérieur
      10 – Land Surveying - Arpentage foncier
  English
    Drawings
      01 - Drawing List
      02 – Demolition
      03 – Architecture
      04 – Civil
      05 – Landscape Architecture
      06 – Mechanical
      07 – Electrical
      08 – Structural
      09 – Interior Design
      10 – Land Surveying
    ...
  Models
```


Specifications
 01 – Index
 02 – Divisions
 03 – Appendices
Reports
Français
 Dessins
 Modèles
 Devis
 Rapports

E.3 Naming Convention for PDF Files

Each drawing, specifications division or other document that is part of the tender documents must be converted to PDF format (without password protection) in accordance with the following standard naming convention and each PDF file must be located in the appropriate subfolder of the directory structure.

E.3.1 Drawing File Names

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

X### - Y

Where:

- X = the letter or letters from the drawing title block (“A” for Architecture or “ID” for Interior Design for example) associated with the discipline
- ### = the drawing number from the drawing title block (one to three digits)
- Y = the drawing name from the drawing title block (for bilingual drawings, the name in both English and French is to appear).

Example:

A001 - First Floor Details

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

The following important points about drawings are to be noted:

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

order on the hard copy set, the drawings are to be named as per the following standard convention when converted in PDF format to ensure proper display and printing order.

E.3.2 Specifications

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

E.3.3 Documents Other Than Specifications Divisions

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

- Y

Where:

= Two-digit number ranging from 01 to 99 with leading zeros required

Y = Name of the document

Example:

01 – Drawings and Specifications Index

E.3.4 Specifications Divisions

The specifications divisions must be named as follows:

Division ## - Y

Where:

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

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

Example:

Division 05 – Metals

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

ⁱ Construction Specifications Canada (CSC) Manual of Practice - GLOSSARY

ⁱⁱ ISO 19650 : Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) – Information management using building information modelling