

Project Brief

**Architectural and Engineering Services
New Police Facility, Rosthern Saskatchewan**

PROJECT DESCRIPTION

PD 1 PROJECT INFORMATION

PD 1.1. SERVICES

- .1.1.1. Royal Canadian Mounted Police (RCMP) requires the services of an architectural firm, acting as prime consultant together with a multi-disciplinary team of sub-consultants for the provision of service required for this project.

PD 1.2. THE PROJECT BRIEF AND RCMP'S PROJECT DELIVERY MANUAL (PDM)

- .1.2.1. The Project Brief document must be used in conjunction with the PDM, as the two documents are complimentary.
- .1.2.2. The Project Brief describes project-specific requirements, services and deliverables while the PDM document outlines project administration, documentation, delivery and definitions common to all projects.
- .1.2.3. In the case of a conflict between the two documents, the requirements of the Project Brief override the PDM document.

PD 1.3. GENERAL

- .1.3.1. Project Title: New Detachment Rosthern, Saskatchewan.
- .1.3.2. Location of the Project: Rosthern, Saskatchewan.

PD 2 PROJECT INTRODUCTION AND BACKGROUND

PD 2.1. OVERVIEW

- .2.1.1. The services of an Architectural firm, acting as Prime Consultant, are required to undertake the design and construction administration services needed to facilitate the implementation of a new detachment and storage garage in Rosthern, Saskatchewan for the RCMP.
- .2.1.2. As Prime Consultant, the selected Architectural firm will provide a full consulting Team including the required expertise in civil, structural, mechanical, electrical, landscape architecture, sustainable development, commissioning, costing, and building/fire code.

PD 2.2. USER DEPARTMENT

- .2.2.1. The User Department, referred to throughout the Project Brief, is:
 - .2.2.1.1. The Royal Canadian Mounted Police (RCMP).
- .2.2.2. RCMP Mission:
 - .2.2.2.1. The RCMP is Canada's national police service. Proud of our traditions and confident in meeting future challenges, we commit to preserve the peace,

uphold the law and provide quality service in partnership with our communities.

- .2.2.2.2. The project objective is to design, contract administration and construction of a new police detachment facility to meet the RCMP's program requirements on a building site secured by the RCMP in Rosthern, Saskatchewan.
- .2.2.2.3. The anticipated size of the facility is approximately 937m² plus a detached storage garage building of approximately 70m².

PD 2.3. CONSTRAINTS AND CHALLENGES

- .2.3.1. Security Clearances will be required for personnel working on this project.
- .2.3.2. Budget control and management is of significant importance in the completion of this project. Utilization of innovative design to reduce the overall cost of the project is critical and design options provided will be challenged to ensure economies and efficiencies are achieved.
- .2.3.3. An absolute consideration must be ease of maintenance and easy access to parts for repair of equipment and systems installed in the facilities. Equally important is the reduction of ongoing Operations and Maintenance.
- .2.3.4. This facility will need to be designed and developed to be sustainable demonstrating that the detachment will be capable of achieving a "net zero" carbon status through calculated design.

PD 2.4. SUMMARY OF REQUIREMENT

- .2.4.1. Design to meet the requirements of the functional programs, applicable codes, the RCMP and Treasury Board Standards and Guidelines, and contract administration phase of the separate corresponding construction contract for the design of RCMP detachment facilities.
- .2.4.2. Work to include:
 - .2.4.2.1. New design options to meet functional requirements.
 - .2.4.2.2. Completion of Tender Documents.
 - .2.4.2.3. Construction.
 - .2.4.2.4. Project Administration.
 - .2.4.2.5. Post Construction – Warranty.

PD 3 PROJECT OBJECTIVES

PD 3.1. OBJECTIVE ONE – FUNCTIONAL PERFORMANCE

- .3.1.1. Provide a design that will allow for varying functional requirements and meet the specific spatial values for the new facility in the community of Rosthern,

Saskatchewan that responds to the operational and functional requirements of the RCMP.

.3.1.2. Achieve:

- .3.1.2.1. A design that provides a functional, responsive and efficient workspace in keeping with the functional programs of the RCMP and Treasury Board standards.
- .3.1.2.2. Healthy and safe working environments that fully support optimum work productivity.
- .3.1.2.3. Effective and continuous physical security for the occupants in the conduct of their daily business.
- .3.1.2.4. Integration of RCMP systems for Security and Information Services with project requirements.
- .3.1.2.5. Easy to use and adaptable systems and technologies to support requirements with capacity for growth and change.
- .3.1.2.6. Effective and efficient office furniture plan, referencing approved suppliers from the Government of Canada's National Master Standing Offer Agreement, fully coordinated with the Mechanical and Electrical disciplines.
- .3.1.2.7. A facility that is designed in a manner that will allow for simple future expansion to the administration and detention portions of the facility.

PD 3.2. OBJECTIVE TWO: DESIGN QUALITY AND CHARACTER

.3.2.1. Provide a design that will effectively and appropriately serve the RCMP and its operations for an expected life span of 30 years before major refit.

.3.2.2. Achieve:

- .3.2.2.1. Design excellence by use of quality materials and precise execution in accordance with best current practice, standards and codes, respecting the location and climate where these facilities will be located.
- .3.2.2.2. A design that will reflect the importance and the nature of the functions it serves and fits within the surrounding environment.
- .3.2.2.3. A fully integrated design.

PD 3.3. OBJECTIVE THREE: BUILDING PERFORMANCE

.3.3.1. Provide a building and building systems that will enable long-term efficient and cost effective life cycle performance.

.3.3.2. Achieve:

- .3.3.2.1. A building that embodies sustainable design and application principles and is implemented in an environmentally responsible manner.
- .3.3.2.2. Apply active and passive energy efficient and carbon emission responsible design strategies, including the study and evaluation of various building systems and envelopes.

- .3.3.2.3. The facility at a minimum must comply to NECB 2020 Tier 2. Compliance shall be demonstrated utilizing Part 10, Tiered Building Energy Performance Compliance Method.
- .3.3.2.4. Healthy and safe environments that meet or exceed all applicable codes for construction, fire, health, and life safety.
- .3.3.2.5. A building that fully integrates all components and systems (architectural, structural, mechanical, electrical, range equipment, IT, multimedia, security, and furniture).
- .3.3.2.6. Building envelope and systems that are of a high quality; designed in response to sound building science, life cycle cost effectiveness, general ease of maintenance and constructed with the best workmanship possible.
- .3.3.2.7. Mechanical systems that can be accessed and easily repaired and / or replaced in the building life cycle as required.

PD 3.4. OBJECTIVE FOUR: PROJECT DELIVERY

- .3.4.1. Deliver the project utilizing best practices in support of RCMP's needs, respecting the approved scope, expected quality, budget and schedule.
- .3.4.2. Achieve:
 - .3.4.2.1. A cohesive functional partnership and open communication between all members of the project delivery team and stakeholders throughout all phases of project delivery.
 - .3.4.2.2. An integrated and focused Consultant team with an in-depth understanding and collective 'buy-in' of the project requirements, scope, budget and scheduling objectives, working constructively to ensure a collaborative and cooperative team approach with knowledgeable and timely input and contribution by all project team members, including representatives from the RCMP.
 - .3.4.2.3. Rigorous quality assurance reviews during the design and construction phases, conducted as an integral element of the design process for all major disciplines.
 - .3.4.2.4. A rigorous quality management plan in order to respond and correct, in a timely and effective manner, all issues as they occur.
 - .3.4.2.5. Appointment of a competent and qualified Project Architect to provide enduring vision and guidance for the entire project duration, to be responsible for the production and delivery of all documents, review of construction for conformity to intent, and to ensure that there is a continuity of key personnel working as an integrated dedicated team for the full duration of the project.
 - .3.4.2.6. Professional conduct in all phases of the project, employing best practices for budget, schedule, quality, and scope management.
 - .3.4.2.7. A continuous risk identification and management program employing effective methodologies to avoid unexpected project impacts, and to ensure construction claims avoidance.

- .3.4.2.8. Continuous and comprehensive documentation of the project at all stages of the project implementation for Records of Decisions, project follow up and development of lessons learned.

PD 4 SCOPE OF WORK

PD 4.1. OVERVIEW

- .4.1.1. Provide comprehensive professional services for all phases of project development including, project analysis and schematic design, design development, tender document production, assistance during tendering, construction administration, post construction services, commissioning and warranty services as described in more detail in the following sections.
- .4.1.2. Ensure integration of RCMP user systems and requirements during all phases of the project.
- .4.1.3. Maintain consistency and continuity of the multidisciplinary team throughout all project phases. The table below provides an overview of the spaces required.

Rosthern Detachment	
Usage	SQ Meters (approx. +/-)
Public Area (Reception, Vestibules, etc)	46.2
Office Area	142.5
General Support Area	158.2
Operational Support Area	113.0
Secure Area	164.3
Total Basic	624.2
Circulation Gross Up (24%)	149.8
Total Usable	774.1
Service/Common area (10%)	77.4
Total Rentable	851.5
Vertical Penetrations/Exterior Walls (10%)	85.5
Total Gross Space	937

PD 4.2. PHASE 1 – PROJECT ANALYSIS AND SCHEMATIC DESIGN

- .4.2.1. Review the site to provide options for the RCMP consideration for placement of the new detachment. The review must consider (but not limited to) parking, vehicular circulation, access, relocation/demolition of existing buildings along with a recommended option.
- .4.2.2. Provide 3 conceptual designs for consideration by the RCMP for the provision of a new facility, ensuring optimal use of the site, space utilization, efficiency, and

integration of security requirements, and compliance with Authorities Having Jurisdiction.

- .4.2.3. Summarize options in a Project Design Brief complete with functional program, key features, opportunities, constraints, risks and estimated construction budgets.
- .4.2.4. Present Schematic Design options and Design Brief for review and approval by RCMP.
- .4.2.5. During the project analysis stage, the Consultant must evaluate and propose options for site development. This will include (but not limited to) a review of site services, grading, environmental impacts, cost comparisons between options, etc.
- .4.2.6. Develop final Schematic Design based on RCMP selected concept and comments and submit for sign off.

PD 4.3. PHASE 2 – DESIGN DEVELOPMENT

- .4.3.1. Develop the preferred design based on the approved schematic from Phase I.
- .4.3.2. Update Project brief drawings, outline specifications, and supporting information sufficient to convey full conceptual understanding of all building elements and systems for all disciplines. Summarize options considered for each major building system along with evaluation to support recommended concepts.
- .4.3.3. Conduct Greenhouse Gas Life-Cycle Cost Analysis (LCCA) of multiple options for evaluation. A single option will be chosen for further development in the Construction Documents phase. Embodied Carbon Report of structural materials required after LCCA report is complete. Refer to Section 2.11 – Greenhouse Gas Life-Cycle Cost Analysis (LCCA) and Embodied Carbon Reporting for further details and requirements.
- .4.3.4. Update project budget, schedule, and risk plan based on outcome of design development phase.
- .4.3.5. Submit updated project brief and supporting documentation for RCMP review and approval.
- .4.3.6. Finalize Design Development phase based on RCMP approval and comments and submit for sign off.

PD 4.4. PHASE 3 – CONSTRUCTION DOCUMENTS

- .4.4.1. Development of construction documents to be conducted at 66%, 99% and tender ready stages with full updates to the Project Brief, drawing and specification submissions, presentations, cost estimates, schedules.
- .4.4.2. Prepare and provide documentation for RCMP reviews and approvals at 66%, 99% and tender ready stages of construction document production.
- .4.4.3. After each stage of RCMP review, confirm how comments have been or will be addressed in the next stage, or provide alternate solutions to address expressed concerns for RCMP signoff.
- .4.4.4. Proceeding to tender with planned addenda or incomplete documentation will not be acceptable.

PD 4.5. PHASE 4 – TENDER CALL AND BID EVALUATION

- .4.5.1. Coordinate with the Departmental Representative in the development of tender package. Identify Unit Prices or other Bid information that may be included in the documents.
- .4.5.2. Review all queries received during tender period and provide responses and or addenda as may be required for issue by RCMP.
- .4.5.3. Assists the Department Representative in evaluating the technical aspects of bids on an as required basis, including evaluation of tender price.

PD 4.6. PHASE 5 – CONSTRUCTION CONTRACT ADMINISTRATION

- .4.6.1. Perform periodic construction reviews for conformance to contract documents and contract administration, including provision of site review reports, evaluation and certification of construction progress claims.
- .4.6.2. Review and responds to Requests for Information (RFI's), prepare Site Instructions, Contemplated Change Notices/Proposed Changes.
- .4.6.3. Review and evaluation of Contractors change proposals and claims.
- .4.6.4. Review and evaluation of changes to construction schedule.
- .4.6.5. Attendance at all regularly scheduled project meetings by representatives of each key Consultant discipline relevant for the phase of the work.
- .4.6.6. Attendance as required by key Sub-Consultants at special project meetings when required in response to specific technical issues as they arise.
- .4.6.7. Site reviews, identify and document contract deficiencies.
- .4.6.8. Issue substantial completion document including any deficiencies that remain.

PD 4.7. PHASE 6 – COMMISSIONING

- .4.7.1. Prepare comprehensive commissioning plan for all Building systems.
- .4.7.2. Ensure commissioning requirements have been incorporated into appropriate sections of the project specifications prior to tender.
- .4.7.3. Monitor and document all commissioning activities as required.
- .4.7.4. Conduct final site reviews and provide certifications for Final Completion.

PD 4.8. PHASE 7 – WARRANTY

- .4.8.1. Minimum of six weeks before the expiration of the warranty period conduct a site review and document all deficiencies or issues noted that are covered by project warranties.
- .4.8.2. Attend meetings as required with affected contractors, or subcontractors to review requirements for corrective action.
- .4.8.3. Review and document contractor follow up to warranty related corrective work.

PD 4.9. ARCHITECTURAL

- .4.9.1. Analysis of site options and placement of buildings.
- .4.9.2. Coordination of all professional services as required to deliver an integrated comprehensive design solution.
- .4.9.3. Comprehensive interior design services, including layouts, systems furniture coordination, finishes, acoustic treatment/systems design, and built- in furnishings as required.
- .4.9.4. Landscape design services to design all exterior elements as required to allow for location of new building and associated equipment in the context of existing site elements including roads, parking, pathways, site lighting, grounds, planting beds, trees, site drainage and fencing. All exterior signage and way finding to suit site standards.
- .4.9.5. Specific design and specification of locking hardware and physical security systems in compliance with RCMP standards.
- .4.9.6. Coordinate and determine requirements for the production of required documentation in all forms related to submissions for approval to all authorities having jurisdiction, including but not limited to, RCMP Fire Marshall, Natural Resources Canada, Environment Canada, local and provincial authorities.
- .4.9.7. Provide a Project Schedule and monitoring/updating of project schedule from baseline.
- .4.9.8. Preparation of submissions to all authorities having jurisdiction and liaison as required to achieve approvals.

PD 4.10. CIVIL ENGINEERING

- .4.10.1. All services required to design and construct required site utility services (including but not limited to) power, fuel, water, storm and sanitary sewers, sustainability and utility infrastructure in support of business continuity requirements.
- .4.10.2. All services required for complete site development modifications, including but not limited to, contaminated soils remediation, excavation, grading, drainage, roads, parking areas, curbs and sidewalks along with coordination with site security infrastructure, lighting and landscape elements.

PD 4.11. STRUCTURAL ENGINEERING

- .4.11.1. Comprehensive structural engineering to design all applicable structural elements to current construction standards, as defined by applicable building codes.
- .4.11.2. Exterior elements in support of business continuity infrastructure components and site development.

PD 4.12. MECHANICAL ENGINEERING

- .4.12.1. Comprehensive mechanical engineering to design all applicable mechanical systems for the operation of a new facility including systems in support of business continuity.

- .4.12.2. All documentation required from all applicable authorities having jurisdiction for provincial and federal environmental and technical approvals.
- .4.12.3. Preparation of submissions to all authorities having jurisdiction and liaison as required to achieve approvals.

PD 4.13. ELECTRICAL ENGINEERING

- .4.13.1. Comprehensive electrical engineering to design all applicable electrical systems for the operation of a new facility including systems in support of business continuity.
- .4.13.2. Specialty electrical engineering related to design, coordination and installation of comprehensive audio-visual, information network, and security systems, as per requirements to evolve in detail during design development. Refer to Building Components and Connectivity Sections (BCC).
- .4.13.3. Coordination with third party suppliers for integration of RCMP procured proprietary systems for audio-visual, information network, and security systems.
- .4.13.4. Specialty interior lighting design including general and task lighting to suit user requirements as per functional program.
- .4.13.5. Exterior site lighting.
- .4.13.6. Security systems infrastructure.

PD 4.14. BUILDING / FIRE CODE ENGINEERING

- .4.14.1. Comprehensive engineering to complete Building/ Fire Code analysis at all stages of the project. Design through construction completion.
- .4.14.2. Review reports consisting of the checking of building design drawings, specifications and shop drawings for conformity to the fire protection standards prescribed by the National Building Code, National Fire Code, Treasury Board Fire Protection Standards, or other applicable codes and standards at each phase of the project.

PD 4.15. COMMISSIONING

- .4.15.1. Preparation of comprehensive documentation to define requirements for complete building systems.
- .4.15.2. All commissioning activities as required to design, check and verify that all building systems are functioning to the design specifications.
- .4.15.3. Review, verification and documentation of all contracted commissioning activities.

PD 4.16. COSTING

- .4.16.1. Preparation of comprehensive construction cost estimates at appropriate levels (D, C, B and A) for the specific stage of the project.
- .4.16.2. Preparation of estimates of Operating, maintenance and life cycle costs in conjunction with considerations of alternate building systems in the context of Value Engineering.
- .4.16.3. Provision for analysis of tender costs and recommendations of reasonableness.

- .4.16.4. Provision for analysis of submitted proposed change costs and schedule impacts and recommendations of reasonableness.

PD 4.17. SUSTAINABLE DEVELOPMENT

- .4.17.1. Preparation of comprehensive documentation exploring and comparing multiple unique building systems and technologies to meet the RCMP sustainable requirements via energy modelling.
- .4.17.2. Building systems to be reviewed and evaluated resulting in a recommendation to the RCMP.

PD 5 BUILDING COMPONENTS AND CONNECTIVITY (BCC)

PD 5.1. GENERAL

- .5.1.1. This project includes implementation of the Building Components and Connectivity (BCC) program. The objective of the BCC program is to meet the operational requirements of the end-users to allow immediate occupancy of the space. Building components means building fixtures, furnishings and equipment. Building connectivity means the physical, electronic and other systems that connect buildings and the workstations in them.
- .5.1.2. BCC Components include acquisition for the following list (but not limited to):
 - .5.1.2.1. Commercially Available Furniture, utilizing the National Master Standing offers for the Government of Canada.
 - .5.1.2.2. Purpose-Built Furniture and Shelving, mobile shelving.
 - .5.1.2.3. Soft Seating.
 - .5.1.2.4. Chairs.
 - .5.1.2.5. Task Lighting.
 - .5.1.2.6. Kitchenette Equipment (fridge, microwave, freezer).
 - .5.1.2.7. Window treatment (ie. Blinds).
 - .5.1.2.8. Health and Safety Equipment.
- .5.1.3. BCC Components do not include the following:
 - .5.1.3.1. Office equipment related to administrative functions such as: computers, printers, fax machines, television sets, VCRs, converters, phone sets or radios.
- .5.1.4. BCC Connectivity includes the following building-specific list (but not limited to):
 - .5.1.4.1. Cabling.
 - .5.1.4.2. CATV.
 - .5.1.4.3. Network.
 - .5.1.4.4. Telephone.

- .5.1.4.5. Police Radio System Antennae/Whips.
- .5.1.4.6. Multimedia (TV, Smartboards).
- .5.1.4.7. Digital Asset Management System.
- .5.1.5. Scope of BCC for this Project:
 - .5.1.5.1. For this project, BCC is divided into functional groups as follows:
 - a. Information Services.
 - b. Security.
 - c. Furniture/Equipment.
 - .5.1.5.2. The responsibility for contracting for BCC will be in two parts as follows:
 - a. **Information Services and Security Devices** will be supplied and installed separately by the RCMP, however the design for rough-in to accommodate these devices must be included in the design for the Construction Contractor to provide.
 - b. **Furniture and Equipment** will be contracted as part of the project and therefore is part of the work of this contract. Commercial furniture may be selected from an approved supplier from a National Master Standing Offer.

PD 5.2. OFFICE FURNITURE SUPPORT SERVICES

- .5.2.1. Provide complete and integrated Office Furniture Support Services for the User Department's project from Pre-Design to Project Close Out.
 - a. Office Furniture Support Services are the seamless integration of all furniture, equipment and appliances required for a finished project that is ready for use by the occupants in compliance with the Government of Canada Fit-Up Standards, and the Property Management Manual (PMM)
- .5.2.2. Confirm the following with the Departmental Representative:
 - .5.2.2.1. Roles and responsibilities within the furniture procurement models;
 - .5.2.2.2. Lines of Communication, and;
 - .5.2.2.3. Project specific Furniture procurement strategy.
 - a. Furniture will be procured by the RCMP through various standing offer arrangements and/or competitive bidding processes. Multiple furniture tender packages may be required for one or more of the following procurement strategies:
 - i. Invitation to Tender (ITT)
 - ii. Request for Proposals (RFP)
 - iii. Low Dollar Value Procurement
 - iv. Treasury Board of Canada Secretariat Sole Sourcing
 - b. Furniture to be procured by the User Department and installed by the Furniture Contractor. General Contractor to install electrical to furniture

system whip connections, and all data to be installed into furniture systems to termination locations.

.5.2.3. RCMP will provide the following reference material:

.5.2.3.1. Client Search Tool (CST):

- a. The CST is a Government of Canada approved electronic furniture catalogue (“Basket of Goods”);
- b. The CST is an interactive data base of available furniture from respective pre-qualified suppliers;
- c. The CST is used to establish a furniture Budget and listing based on the operational and functional requirements;

.5.2.3.2. Furniture is selected from the “electronic catalogue”;

- a. Once the Budget and listing is approved the listing is transferred to other spreadsheets intended for RCMP Procurement.

.5.2.3.3. Furniture Procurement Workbook and Chair Builder intended for RCMP procurement. Provided by Departmental Representative and to be completed by the Consultant.

PA 5.3. FURNITURE TENDER DOCUMENTS

.5.3.1. Develop furniture procurement packages. Include the following in each procurement package:

- .5.3.1.1. Furniture commodities and quantities to be procured;
- .5.3.1.2. Components, loose furniture commodities and accessories required to support the design;
- .5.3.1.3. Supporting infrastructure and building systems;
- .5.3.1.4. Coordinated Furniture Plans and Elevations;

.5.3.2. Master Furniture Plan, including:

.5.3.2.1. Furniture for each procurement method and category on separate layers;

- a. All furniture items should be individually identifiable by *Government of Canada Unique Identification Code (GoCUIC)* numbers to determine quantities required.

.5.3.2.2. Legend with;

- a. Full description,
- b. Overall dimensions, and
- c. Quantities and GoCUIC number (where applicable).

.5.3.2.3. Identification of all accessories and lighting components to be supported from the panels;

.5.3.2.4. Critical installation dimensions (aisle lengths, widths, location relative to architectural elements).

- .5.3.3. Panel Plan drawings showing:
 - .5.3.3.1. Differentiation between powered and non-powered panels;
 - .5.3.3.2. Power, voice and data outlets;
 - .5.3.3.3. Power spines;
 - .5.3.3.4. Top and base feed locations;
 - .5.3.3.5. Typical panel elevations, showing locations of outlets, glazed panels and accessories;
 - .5.3.3.6. Locations of connectors at X, L and T panel junctions, and;
 - .5.3.3.7. The number of workstations.
- .5.3.4. Class 'A' cost estimate for each furniture category, including delivery, installation and taxes;
- .5.3.5. Invitation to Tender (ITT) includes:
 - .5.3.5.1. Work Spaces - Client Search Tool (CST), and;
 - .5.3.5.2. Seating CST.
- .5.3.6. Request for Proposal (RFP) includes:
 - .5.3.6.1. Matrix of User Department furniture requirements;
 - .5.3.6.2. Matrix of selected/agreed upon furniture solutions (with input from the User Department and Departmental Representative);
 - .5.3.6.3. Furniture Specifications (in *matrix format) from selected furniture solutions;
 - .5.3.6.4. Review the schedule, determine risks and propose mitigation measures associated with the Furniture Procurement Strategy.
 - a. Documents must support the project Risk Management Plan and Project Schedule.

PA 5.4. FURNITURE TENDER SUPPORT

- .5.4.1. Meet with the Departmental Representative to review and confirm requirements to support the Furniture Procurement Strategy.
- .5.4.2. Provide the Departmental Representative written clarifications and responses to bidder queries. Supplementary drawings may be required to accompany written responses.
- .5.4.3. Participate on the Evaluation Board to confirm technical conformance of furniture bid submittals.
- .5.4.4. Provide colour and finish selections for awarded furniture packages that:
 - .5.4.4.1. Coordinate with architectural colours and finishes and;
 - .5.4.4.2. Support the intended usage and facility management of the furniture items.

- .5.4.5. Review furniture shop drawings and installation plans supplied by furniture suppliers.

PD 6 PROJECT DELIVERY APPROACH

PD 6.1. GENERAL

- .6.1.1. The construction tender activity will use a traditional design -single tender -build approach. The Consultant engaged through this contract will coordinate all services related to Schematic Design, Design Development, Construction Documents, technical tendering documents and participation in construction administration and warranty period. Contractors will be retained by the RCMP and report directly to the RCMP Departmental Representative to coordinate all services related to construction.
- .6.1.2. All work will be managed by the RCMP Departmental Representative.

PD 7 SCHEDULE

PD 7.1. GENERAL:

- .7.1.1. Rosthern Detachment:

Award of Consultant Contract	Milestone
Security Clearance Processing	(Approx. 3 Months)
Present Concept Design Options	Milestone
Finalize Floor Plan/schematic design report	Milestone
Greenhouse Gas Lifecycle Cost Analysis	Milestone
Design Development Report	Milestone
66% Contract Documents	-----
99% Contract Documents	-----
Final Tender Documents	10 Months
Issued Construction Tender	(Approx. 6 months)
Award Construction Tender	Milestone
Construction Completion	(Approx. 18 Months)
Building Occupancy	Milestone

PD 8 COST

PD 8.1. GENERAL

- .8.1.1. The estimated preliminary construction cost estimate (Class D) for the Rosthern Detachment is \$7,750,000.00. The value includes construction costs, but does not include construction contingencies, escalation or risks. This budget does not include any furniture associated costs.
- .8.1.2. Cost estimate does not include administrative costs, building permits, consultant fees or applicable taxes.
- .8.1.3. The project design must take into consideration the project budget and functional requirements throughout the development of the project to ensure that both Scope and Cost objectives are met.
- .8.1.4. The project budget is based on the above identified preliminary estimate. Estimates for construction and BCC will be developed and updated by the Consultant at identified stages in project development and will be reviewed by the RCMP for compliant with the overall project budget. Proceeding to subsequent stages will be subject to RCMP approval of estimate variances.

PD 9 SUSTAINABLE DEVELOPMENT / GREENHOUSE GAS LIFE CYCLE COST ANALYSIS (GHG LCCA) AND EMBODIED CARBON REPORTING

PD 9.1. DEFINITIONS

- .9.1.1. Embodied Carbon – the amount of carbon dioxide emitted during the manufacture, transport, and construction of building materials together with end-of-life emissions.
- .9.1.2. Net Present Value (NPV) – the result of subtracting the present value of costs from the present value of revenues and represents the profit from the project after the capital costs are recovered and expected rate of return expressed by the discount rate. A positive net present value is considered to be an economically attractive investment.
- .9.1.3. Net Zero Carbon Building – a highly energy efficient building that produces on-site, or procures, enough carbon-free renewable energy to offset the total carbon emissions produced from the consumption of energy to operate the building annually.
- .9.1.4. Net Zero Carbon Ready Building – a building that could operate as a net zero carbon building in the future through on-site renewable energy, or improvements to the utility grid, to be considered net zero carbon.
- .9.1.5. Shadow Carbon Cost – a method of investment or decision analysis that adds a surcharge for carbon dioxide that would be released to market prices for projects that involve carbon emissions.

PD 9.2. OVERVIEW

- .9.2.1. Sustainable Development objectives must be addressed throughout the evolution of the project. Sustainable Development is defined in broad terms as a strategy that routinely and consistently includes the consideration of the environmental, economic and societal impact of every decision made for the project.
- .9.2.2. The following sustainable areas of focus include but are not limited to:

- .9.2.2.1. Energy efficiency and conservation.
- .9.2.2.2. Greenhouse gas emissions reduction.
- .9.2.2.3. Clean energy sources, on-site and off site generation.
- .9.2.2.4. Water management and conservation.
- .9.2.2.5. Pollution prevention.
- .9.2.3. Energy modeling to complete a Greenhouse Gas LCCA report, and Embodied Carbon reporting will be required in accordance with the requirements stated below.

PD 9.3. DESIGN GUIDELINES

- .9.3.1. The project's energy efficiency strategies can be achieved by incorporating passive and active design strategies. The International Passive House Association (iPHA), Canada Green Building Council (CaGBC), the Green Building Initiative (GBI) and Natural Resources Canada (NRCAN) are internationally recognized organizations who publish standards and quantify the minimum requirements for green building certifications. Certification of these standards will not be pursued, but these standards and guides may be used as resources to meet the project requirements.
- .9.3.2. The facility must be designed and undergo a series of computer simulated energy modeling to demonstrate compliance with the Greenhouse Gas LCCA Options Analysis requirements. Compliance of the design requirements must be demonstrated at the Design Development stage, and will be used as a basis for decision-making prior to commencing into the Contract Document stage. The software utilized for modelling must be compliant with ANSI/ASHRAE 140.
- .9.3.3. Services to include a comprehensive study, review and recommendation for the implementation of systems that best meets the requirements of the project. Further clarification provided in 2.11.4 Greenhouse Gas Life Cycle Cost Analysis.

PD 9.4. BUILDING PERFORMANCE

- .9.4.1. Provide a building and building systems that will enable long-term efficient and cost effective life cycle performance.
- .9.4.2. Achieve:
 - .9.4.2.1. A building that embodies sustainable design and application principles and is implemented in an environmentally responsible manner.
 - .9.4.2.2. Healthy and safe environments that meet or exceed all applicable codes for construction, fire, health, and life safety.
 - .9.4.2.3. A building that fully integrates all components and systems (architectural, structural, mechanical, electrical, IT, multimedia, security, and furniture).
 - .9.4.2.4. Building materials and systems that are of a high quality; designed in response to sound building science, life cycle cost effectiveness, general ease of maintenance and constructed with the best workmanship possible.
 - .9.4.2.5. Mechanical systems that can be accessed and easily repaired and / or replaced in the building life cycle as required.

PD 9.5. GREENHOUSE GAS LIFE CYCLE COST ANALYSIS

- .9.5.1. The Consultant must obtain written authorization from the Departmental Representative before proceeding with the Greenhouse Gas Life Cycle Cost Analysis.
- .9.5.2. The consultant team shall perform a Greenhouse Gas Life Cycle Cost Analysis of multiple options in order to assess the total cost of the facility ownership. The analysis is to consider all costs associated with the building and building systems, and their impacts to the emissions of greenhouse gases. Intent is to demonstrate at least two (2) options to be considered Net Zero Carbon.
- .9.5.3. Based on results of the options analysis, the project stakeholders shall choose one option to be further developed.
- .9.5.4. Building specific data to be entered into RETScreen software and the RETScreen file is to be shared with the RCMP.

PD 9.6. SCOPE AND ACTIVITIES

- .9.6.1. Review chosen schematic building design as it relates to achieving net zero greenhouse gas emissions compliance.
- .9.6.2. Design baseline to meet performance requirements of the reference building as defined in the NECB 2020, Part 8: Building Energy Performance Compliance Path.
- .9.6.3. Prepare and analyze a minimum of 6 design options for the building. Each option to identify the life cycle cost of the system/configuration over a 40-year lifetime, and its greenhouse gas emissions impact. Mandatory 6 design options are as follows:
 - .9.6.3.1. Option 1 – Baseline:
 - a. Design to meet reference building criteria as identified in NECB 2020, Part 8: Building Energy Performance Compliance Path.
 - b. Design provides baseline for cost comparison between the subsequent options.
 - .9.6.3.2. Option 2 – NECB Tier 2:
 - a. Design to be compliant with NECB 2020, Tier 2 energy performance requirements, as defined in Part 10: Tiered Building Energy Performance Compliance.
 - .9.6.3.3. Option 3 – Cost Neutral GHG Reduction:
 - a. Design to provide the greatest GHG emissions reductions that results in a neutral (as close to 0 as possible) Net Present Value.
 - .9.6.3.4. Option 4 – Maximum GHG Reduction:
 - a. Design to meet net zero carbon building requirements. Option to utilize on-site carbon-free renewable energy, if required, to offset the total carbon emissions produced from the consumption of energy to operate the building annually.
 - .9.6.3.5. Option 5 – Optimized GHG Reduction:
 - a. Demonstrate an option that optimizes the cost effectiveness relative to the highest GHG reduction.
 - .9.6.3.6. Option 6 – Net Zero Ready

- a. Design to meet net zero carbon building requirements through a combination of producing on-site carbon-free renewable energy, and the consumption of an assumed entirely carbon-free renewable energy utility grid.
 - b. All consumption of fossil fuels is to be eliminated.
 - c. Utility rates (if applicable) to be calculated at current market value plus 10%. Include inflation rates in 40-year life cycle cost calculation.
 - d. Assume no restrictions on total solar voltaic energy production output. Net metering is not permitted.
- .9.6.4. At minimum, one design option to include the use of a geo-exchange system.
- .9.6.5. Results of each option to be presented in a graphical format, and to include the following criteria:
- .9.6.5.1. Description of Option.
 - .9.6.5.2. Annual Greenhouse Gas Emissions (in tonnes of CO₂e).
 - .9.6.5.3. Initial Capital Cost.
 - .9.6.5.4. Incremental Capital Cost (over Option 1: Baseline).
 - .9.6.5.5. Annual Energy Cost (based on current market value, except as noted for Option 6).
 - .9.6.5.6. Annual Shadow Carbon Cost (at \$300/tonne).
 - .9.6.5.7. 40-year Maintenance Cost (include specialized transportation & personnel costs if required).
 - .9.6.5.8. 40-year Life-Cycle Cost.
 - .9.6.5.9. Incremental Net Present Value compared to Option 1.
- Lifecycle cost to be calculated:

$$\text{Lifecycle cost} = \text{Capital Cost} + \text{Replacement Costs} - \text{Residual Value} + \text{Energy Costs} + \text{Other Costs} + \text{Shadow Carbon Cost } (\$300/\text{tonne})$$
- Chart and calculations to be inclusive of NPV discount rate (defined by the applicable Government of Canada departmental finance branch), utility inflation rates, and construction inflation rates.
- Example summary chart provided at end of document.
- .9.6.6. Purchasing of renewable energy credits to offset greenhouse gas emissions is not a permissible alternative.
- .9.6.7. Report to include executive summary, description of each option presented, analysis of data above in graphical format, and conclusion with a recommendation. Graphics, charts, images, etc. are to be included, as required, to support information presented within report.
- .9.6.8. Deliverables:

- .9.6.8.1. Prepare and submit, for review and approval by the RCMP Departmental Representative, a Greenhouse Gas Life-Cycle Cost Analysis Report. Revise as required by the Departmental Representative. Resubmit for acceptance.
- .9.6.8.2. Departmental Representative to review report and choose one design option for further development.

PD 9.7. EMBODIED CARBON REPORT

- .9.7.1. The Consultant must obtain written authorization and choice of preferred option from the GHG LCCA report from the Departmental Representative, before proceeding with the Embodied Carbon Report.
- .9.7.2. Provide a brief breakdown of the carbon emissions throughout specific materials life-cycle. Include all materials used for: foundations, structural superstructures, complete wall and roof assemblies (from exterior cladding to interior finish); and structural components of floors, structural ceilings, and stairs (finishes not to be included).
- .9.7.3. Carbon emissions to be identified at the following life-cycle stage:
 - .9.7.3.1. Upfront Carbon – material production stage (including raw material supply, transport, and manufacturing) and construction process stage (including transport and installation process).
 - .9.7.3.2. Operational Carbon – the material's use stage (including use, maintenance, repair, refurbishment, and/or replacement).
 - .9.7.3.3. End of Life Carbon – the material's end of life stage (including de-construction/demolition, transport, waste processing, and disposal).
- .9.7.4. Report to include embodied carbon breakdown and totals of each material identified. Report is for informational purposes only.
- .9.7.5. Deliverables:
 - .9.7.5.1. Prepare and submit, for review and approval by the RCMP Departmental Representative, an Embodied Carbon Report. Revise as required by the Departmental Representative.

PD 10 DESIGN QUALITY

PD 10.1. PEER REVIEWS

- .10.1.1. The Consultant is responsible for controlling and confirming quality throughout the life of the project. As part of the design quality assurance process the Consultant will be responsible for coordinating peer reviews for each discipline.
- .10.1.2. Peer reviews must be completed by all sub-disciplines/stakeholders and documented with follow up responses and included in each design submission.

PD 11 CONSULTANT TEAM

PD 11.1. GENERAL

- .11.1.1. The Consultant team will be required to maintain its expertise for the duration of the project. The Consultant Team must include at minimum the following disciplines: Architecture (the Consultant), Civil Engineering, Mechanical Engineering, Electrical Engineering, Structural Engineering, sustainable development, commissioning, costing, and building/fire code.
- .11.1.2. The Consultant shall be responsible to co-ordinate and direct all Consultant Team activities.
- .11.1.3. The Consultant team shall be comprised of competent and qualified professionals having professional and technical expertise with extensive relevant experience, and shall be capable of providing the services identified in the Required Service Requirement section of this Project Brief.
 - .11.1.3.1. Members of the consultant team may have the necessary qualifications and expertise to provide services in more than one discipline or specialty.
 - .11.1.3.2. Consultants are permitted to expand their consultant team to include additional disciplines as required in order to successfully deliver the project.
- .11.1.4. Expertise and relevant experience requirements for this project are as follows:
 - .11.1.4.1. Administrative:
 - a. Project Management.
 - b. Scheduling.
 - c. Risk Management.
 - d. Cost consulting.
 - .11.1.4.2. Regulatory Analysis, Planning, Design, and Development:
 - a. Building Code.
 - b. Municipal Zoning.
 - c. Occupational Health and Safety.
 - d. Fire and Life Safety.
 - .11.1.4.3. Program Analysis, Planning, Design, and Development:
 - a. Enriched front end planning.
 - b. Functional programming.
 - .11.1.4.4. Site Analysis, Planning, Design, and Development:
 - a. Site Planning.
 - b. Landscape Architecture.
 - c. Civil Engineering / Municipal Engineering (infrastructure).
 - .11.1.4.5. Architecture and Specialties:
 - a. General Architecture.
 - b. Interior Design.

- c. Furniture/Workstation specialist.
- d. Sustainable Design.
- e. Codes and Life Safety.
- f. Building Envelope.
- g. Signage and Wayfinding.

.11.1.4.6. Engineering:

- a. Structural:
 - i. Seismic.
- b. Mechanical:
 - i. Heating Ventilation Air Conditioning (HVAC).
 - ii. Plumbing.
 - iii. Fire protection.
 - iv. Indoor / Outdoor Air Quality Design and Control.
 - v. Building Automation / Energy Management Control Systems.
- c. Electrical:
 - i. Power.
 - ii. Lighting.
 - iii. Information Technology and Communications.
 - iv. Network Infrastructure Systems.
- d. Civil.
- e. Landscape Architecture.
- f. Commissioning and Integrated Systems Testing.

.11.1.4.7. Budget, Schedule and Risk Analysis, Planning, Design, and Development:

- a. Cost planning.
- b. Life cycle costing.
- c. Estimating.
- d. Change evaluation and cost control.
- e. Time Planning, Scheduling, and schedule monitoring.
- f. Risk Management.

PD 12 **EXISTING DOCUMENTATION**

PD 12.1. **GENERAL**

- .12.1.1. Copies of all pertinent documentation will be made available to the Consultant.
- .12.1.2. The successful Consultant will be provided with the following background documents:
 - .12.1.2.1. Exemplary drawings of recently completed detachment projects in Saskatchewan.
 - .12.1.2.2. Topographical Survey information of the site (performed 2021).
 - .12.1.2.3. Geotechnical Report information of the site (performed 2021).
- .12.1.3. Disclaimer:
 - .12.1.3.1. Reference information will be available in the language it is written.
 - .12.1.3.2. The documentation may be unreliable and is offered “as is” for use by the Consultant.

PA 6. PROJECT ADMINISTRATION

PA 6.1. GENERAL

- .6.1.1. The following administrative requirements apply during all phases of the project delivery.

PA 6.2. CONTRACT AUTHORITY

- .6.2.1. The RCMP is the Contract Authority.
- .6.2.2. Changes to the Consultant agreement can only be authorized by the Contract Authority.

PA 6.3. RCMP PROJECT MANAGEMENT

- .6.3.1. The RCMP Senior Project Manager assigned to the project is the RCMP Departmental Representative.
- .6.3.2. The RCMP Departmental Representative is directly concerned with the project and responsible for its progress on behalf of the RCMP.
- .6.3.3. The RCMP administers the project and exercises continuing control over the project during all phases of development.
- .6.3.4. Unless directed otherwise by RCMP Departmental Representative, the Consultant is responsible to obtain all Federal, Provincial and Municipal requirements and approvals necessary for the work. Applications and liaison with other GOC departments shall be coordinated through the RCMP Departmental Representative.

PA 6.4. LINES OF COMMUNICATION

- .6.4.1. Unless otherwise directed by RCMP Departmental Representative, the Consultant to conduct all project communication.

- .6.4.2. Formal contact between the Consultant and the RCMP Project Team, which includes RCMP representative, shall be through the RCMP Departmental Representative.
- .6.4.3. Direct communication between Consultant Team members and the RCMP Project Team on routine matters is required to enable the discussion and resolution of technical issues. However, no communication shall alter the terms of the project scope, budget or schedules unless directed in writing by the RCMP Departmental Representative.
- .6.4.4. Where the tender is issued by the RCMP (as in a construction tender call), the RCMP is responsible for all correspondence with bidders and awarding of the contract.

PA 6.5. MEDIA RELATIONS

- .6.5.1. The Consultant shall not respond to requests for project related information or questions from the media. All media inquiries are to be directed to the RCMP Departmental Representative.
- .6.5.2. The Consultant shall not use any project related materials, information, drawings, images, or photographs in any form for publicity or promotional purposes without the express written authorization of the RCMP Departmental Representative, which may be withheld at the sole discretion of the RCMP.

PA 6.6. GENERAL PROJECT DELIVERABLES

- .6.6.1. Where deliverables and submissions include summaries, reports, network diagrams, drawings, plans, specifications and finish schedules, submit deliverables as follows:
 - .6.6.1.1. Two (2) original 600mm x 900mm (24x36) hard copies (in English).
 - .6.6.1.2. One (1) copy in electronic format (in English) The electronic deliverables shall be provided using Microsoft applications.
 - .6.6.1.3. Alternative electronic format: the Consultant may submit all work in Adobe Acrobat *.pdf format except for Network diagrams which must be submitted in their original electronic format.
 - .6.6.1.4. All drawings will be generated and distributed in the format using layering and file transfer protocols as described in the reference document available online.
 - .6.6.1.5. Record drawings will be delivered in electronic (PDF and CAD) and hardcopy format.
 - .6.6.1.6. Construction documents issued for tender purposes must be in English.
 - .6.6.1.7. For all new buildings, building specific data to be entered into RETScreen software and the original RETScreen file to be shared with RCMP.

PA 6.7. ACCEPTANCE OF PROJECT DELIVERABLES

- .6.7.1. While the RCMP acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles the RCMP to review the work.

The RCMP reserves the right to reject undesirable or unsatisfactory work. The Consultant must obtain the RCMP Departmental Representative's acceptance during each of the project stages. RCMP acceptance does not absolve the Consultant from non-Code-compliant work.

- .6.7.2. Acceptance indicates 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.
- .6.7.3. The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the terms and conditions of the contract.
- .6.7.4. The RCMP acceptance does not prohibit rejection of work which is determined to be unsatisfactory at later stages of review. If progressive design development or time / cost / risk updates or technical investigation reveals that earlier acceptance should be withdrawn, the Consultant is responsible for re-designing work and resubmitting for acceptance at the Consultant's cost.
- .6.7.5. Acceptances by other agencies and levels of government must be obtained to supplement the RCMP acceptances. The Consultant shall assist the Departmental Representative in securing all such acceptances and adjust all documentation as required by such authorities when securing acceptance.

PA 6.8. COORDINATION WITH SUB-CONSULTANTS

- .6.8.1. Throughout all phases of the project, assume responsibility for co-ordinating the work of any sub-consultants and specialists retained by the Consultant.
- .6.8.2. Ensure clear, accurate and ongoing communication of concept design, 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.
- .6.8.3. Coordinate the Quality Assurance process ensuring submissions of Sub-Consultants are complete and signed off by the designated senior reviewer of the Consultant.
- .6.8.4. Ensure sub-consultants provide adequate site inspection services and attend all required meetings.

PA 6.9. PROJECT RESPONSE TIME

- .6.9.1. It is a requirement of this project that the key personnel of the Consultant and Sub-Consultants or specialist firms are personally available to attend meetings or respond to inquiries within two working days of a request by the RCMP Departmental Representative.

PA 6.10. MEETINGS

- .6.10.1. The Consultant with the RCMP Departmental Representative shall arrange meetings generally once a month throughout the entire project development and implementation period for all members of the project team, including representatives from the RCMP, and Consultant Team.
- .6.10.2. During design and tendering phases:

- .6.10.2.1. Attend the meetings.
- .6.10.2.2. Record the issues and decisions.
- .6.10.2.3. Prepare and distribute minutes within two (2) working days of the meeting.
- .6.10.2.4. Meetings will normally be held at the office of the RCMP Departmental Representative.
- .6.10.3. During construction and implementation:
 - .6.10.3.1. Attend the meetings.
 - .6.10.3.2. Prepare and distribute minutes within two (2) working days of the meeting.
 - .6.10.3.3. Standing agenda items shall include:
 - a. Project Planning Monitoring and Control.
 - b. Health and Safety.
 - c. Schedule.
 - d. Cost.
 - e. Risk.
 - .6.10.3.4. On occasion, there may be urgent problem solving meetings. The Consultant shall be available to attend such meetings.

PA 7. AUTHORITIES, SUBMISSIONS, REVIEW AND APPROVAL PROCESS

PA 7.1. FEDERAL GOVERNMENT AUTHORITY / JURISDICTION

- .7.1.1. The following are authorities having Federal Government jurisdiction over the project:
 - .7.1.1.1. Treasury Board of Canada:
 - a. Project approvals.
 - .7.1.1.2. The Royal Canadian Mounted Police:
 - a. Tendering and procurement.
 - b. Contract approvals.
 - c. Contract Authority.
 - d. Government of Canada Security Policy.
 - e. RCMP Departmental Authority.
 - f. Project Delivery.
 - g. Functional design requirements and standards.
 - h. Multimedia.
 - i. IT

- j. Security Systems.
- k. Life Safety.
- l. Personnel Security.
- .7.1.1.3. Environment Canada:
 - a. Canadian Environmental Assessment Act and;
 - b. Canadian Environmental Protection Act.
- .7.1.1.4. National Building Code:
 - a. Building codes and standards.

PA 7.2. PROVINCIAL & MUNICIPAL AUTHORITIES / JURISDICTION

- .7.2.1. The Federal government does defer to provincial and municipal authorities for specific regulations, standards and inspections. In areas of conflict, the Federal authority prevails.
 - .7.2.1.1. Labour Board:
 - a. Employment Standards.
 - b. Construction Safety.
 - c. Designated Substance Management.
 - d. Workers Compensation.
 - .7.2.1.2. Saskatchewan Ministry of Environment
 - .7.2.1.3. Local Electrical and Gas Authority
 - a. Electrical installations.
 - .7.2.1.4. Natural Gas Installation
 - .7.2.1.5. Municipality/City Authority/Utility:
 - a. Zoning.
 - b. Site Plan Control, Development Plan.
 - c. Building, Electrical and Plumbing Permits and Inspection.
 - d. Fire Safety, Equipment and access for fire-fighting equipment.

PA 7.3. PRESENTATIONS AND SUBMISSIONS

- .7.3.1. The RCMP Departmental Representative, as well as the Federal Authorities identified below will review work in progress on a continuing basis. Formal presentations are required for design and project approvals in accordance with the Project Delivery Phases outlined. Ad hoc presentations may be required to various committees and senior officials.
- .7.3.2. The frequencies of meetings indicated are estimates. They will be affected by the project phase, issues and requirements for decisions and approvals. The

Consultant will be required to attend all meetings as needed and to make presentations to satisfy Authorities as identified.

.7.3.3. Municipal Building Permits and Other Permits:

.7.3.3.1. Co-ordinate submission requirements, schedule, number of submissions and turnaround time with the municipal authority.

.7.3.3.2. Development Permit:

- a. While Municipal Development and Site Planning approval is not required for Federal Properties, consultation with the municipal planning / zoning officials shall be undertaken for this project.
- b. On behalf of the RCMP, the Consultant shall submit design development documents to the City or municipal authority for review and comment regarding site planning.
- c. The Consultant shall undertake negotiations and identify any problems to the Departmental Representative for final resolution by the RCMP.

.7.3.3.3. Building Permit:

- a. On behalf of the RCMP, the contractor shall apply for a Building Permit.
- b. The Consultant will prepare all necessary supporting documentation for this permit application.
- c. The Consultant shall complete negotiations and resolve all permit related issues prior to tender.

PA 7.4. RCMP SENIOR MANAGEMENT APPROVALS

.7.4.1. The project will be subject to approvals by senior managers of the RCMP.

.7.4.2. Purpose of review and approval:

.7.4.2.1. Final decision authority for all options.

.7.4.3. Submission format:

.7.4.3.1. Report, Drawings and Specifications, Oral Presentation, Unilingual English.

.7.4.4. Submission schedule:

.7.4.4.1. Submissions are reviewed at schematic (concept) design phase, design development phase, and Pre-Tender.

.7.4.5. Number of submissions:

.7.4.5.1. As required to obtain approval with the assumption that acceptance of submissions for approval will be progressive and based on previous approvals.

.7.4.5.2. One (1) mandatory submission for each scheduled occurrence, plus any follow-up reviews.

PA 7.5. RCMP PROJECT DELIVERY TEAM

- .7.5.1. Purpose of review and approval:
 - .7.5.1.1. Program and budget compliance, design, and technical quality assurance.
- .7.5.2. Submission format:
 - .7.5.2.1. Reports, drawings and specifications, oral presentation, unilingual English.
- .7.5.3. Submission schedule – submissions are reviewed at:
 - .7.5.3.1. Pre-design/schematic (concept) phase, design phase, design development phase, construction documents phase 66% and 99% complete.
- .7.5.4. Expected review and approval turnaround time:
 - .7.5.4.1. 3 weeks (15 working days).
- .7.5.5. Number of submissions:
 - .7.5.5.1. One at each stage providing two (2) mandatory hard copies and one (1) electronic copy for each scheduled occurrence, plus any follow-up reviews.

PA 7.6. RCMP FIRE MARSHALL – HEALTH AND SAFETY

- .7.6.1. Purpose of Review and Approval:
 - .7.6.1.1. Health and life safety.
- .7.6.2. Submission Format:
 - .7.6.2.1. Report, drawings and specifications as required.
- .7.6.3. Submission Schedule:
 - .7.6.3.1. Approvals required as described per stages.
- .7.6.4. Expected Turnaround Time:
 - .7.6.4.1. Three (3) weeks; (15 working days).
- .7.6.5. Number of Submissions: until approval has been received.

PA 7.7. MUNICIPALITY / CITY

- .7.7.1. Purpose of Review and Approval:
 - .7.7.1.1. Municipal approvals.
 - .7.7.1.2. Site plan approval, Building permit
- .7.7.2. Submission Format:
 - .7.7.2.1. Drawings and specifications.
- .7.7.3. Submission Schedule:
 - .7.7.3.1. Submissions are reviewed when completed work has been forwarded to the Departmental Representative for site plan and building permit approvals.
- .7.7.4. Expected Turnaround Time:

.7.7.4.1. According to municipal schedule.

.7.7.5. Number of Submissions:

.7.7.5.1. Until approval has been received.

PA 7.8. OTHER AUTHORITIES HAVING JURISDICTION

.7.8.1. 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 directed by the Departmental Representative.

.7.8.2. Codes, regulations, by laws and decisions of authorities having jurisdiction shall be observed.

.7.8.3. The RCMP will voluntarily comply with the applicable provincial Construction Health and Safety Acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

REQUIRED SERVICES

RS 1. ANALYSIS OF PROJECT REQUIREMENTS

RS 1.1. INTENT

- .1.1.1. This stage is intended for the Consultant to review and report on all aspects of the project requirements. The Consultant Team will review, gather and analyse all available program information, consult with the RCMP to develop a functional program and deliver a comprehensive Pre-Design Report. This approved deliverable will become the formal project work plan and will be utilized throughout the project to guide the delivery.

RS 1.2. SCOPE AND ACTIVITIES

- .1.2.1. Analyze the project requirements/program including any amendments.
- .1.2.2. Analyze all available base building, site information and existing infrastructure.
- .1.2.3. Analyze BCC requirements including any amendments identified by the RCMP for Information Services, Security and Furniture/Equipment.
- .1.2.4. Analyze the building design security requirement and confirm design standards.
- .1.2.5. Review all other available existing material related to the project including requirements identified in the Project Brief.
- .1.2.6. Develop and document sustainability strategies to achieve carbon neutral buildings.
- .1.2.7. Identify all additional information that will be needed to deliver the project.
- .1.2.8. Undertake a budget, schedule and risk analysis and identify all conflicts that will need to be addressed with respect to scope, quality, schedule and cost.
- .1.2.9. Identify and verify all authorities having jurisdiction over the project and codes, regulations and standards which apply.
- .1.2.10. Develop an updated work breakdown structure that incorporates all of the above together with a detailed schedule including allowances for review, and approvals for each stage of the project including deliverable requirements for BCC, Information Services, and Security to be integrated into facility.
- .1.2.11. Deliverables:
 - .1.2.11.1. Prepare and submit an integrated Stage One Pre-Design Project Report, which includes a functional program and an analysis of project requirements for review and approval by the RCMP Departmental Representative. Resubmit for acceptance.
 - .1.2.11.2. The Stage One Pre-Design Report will consolidate the Scope and Activities identified above and will be utilized as the benchmark project control document to monitor progress of the project. 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 accepted throughout the project life cycle.

- .1.2.11.3. The structure used for the Stage One Pre-Design Project Report shall be used for the required project reports for all subsequent project stages. The content of the subsequent reports will vary according to the project stage.

RS 1.3. STAGE ONE PREDESIGN PROJECT REPORT STRUCTURE & CONTENT

.1.3.1. Executive Summary:

- .1.3.1.1. The executive summary is intended to provide an outline of the Stage One Pre-Design Project Report and outline any recommendations requiring the RCMP approval.

.1.3.2. Administrative:

.1.3.2.1. Aspects to be included (but not limited to) are:

- a. Summaries of project start-up meetings, workshops, partnering sessions.
- b. Quality management process for the Consultant Team.
- c. Confirmation that all necessary pre-design documentation required for this project is available and confirmation that the information is still current and up-to-date.
- d. Summary analysis of state of project readiness and viability of budget and schedule.

.1.3.3. Regulatory Analysis:

.1.3.3.1. Aspects to be included (but not limited to) are:

- a. Preliminary summary of regulatory and statutory requirements.
- b. Preliminary summary of authorities having jurisdiction.
- c. Preliminary summary of codes, regulations, and standards, and
- d. Summary analysis of regulatory limitations and project impacts.

.1.3.4. Program Analysis:

.1.3.4.1. Aspects to be included (but not limited to) are a review and analysis of:

- a. Updated Functional program including room data sheets.
- b. Programmatic options.
- c. RCMP reports, studies, guidelines.
- d. Space data sheets.
- e. BCC requirements.
- f. Summary analysis of Program requirements.

.1.3.5. Site Analysis:

.1.3.5.1. Aspects to be included (but not limited to) are a review and analysis of:

- a. Site features and restrictions (i.e. landscape features, topographical feature, climatic influences, setback requirements, easements, existing buildings, and / or structures.), parking capacity.
- b. Review of subsurface, geotechnical analysis of soils.
- c. Municipal infrastructure, subsurface and above grade services, including capacities and limitations (i.e. storm water drainage, fire protection, domestic water, power, telecommunications,).
- d. Historical/archaeological features, previous uses.
- e. Environmental features including sustainable design opportunities.
- f. Summary analysis of Site conditions and project impact.

.1.3.6. Budget, Schedule, and Risk Analysis:

.1.3.6.1. Aspects to be included (but not limited to) are:

- a. Class 'D' estimate, for construction and BCC.
- b. Analysis of risk implications and preliminary mitigation strategies.
- c. Budget, Schedule, and Risk Analysis section of the pre-design report.

.1.3.7. Rebuttal to internal/external Quality Assurance Audit:

.1.3.7.1. Aspects to be included (but not limited to) are:

- a. Review and analysis of comments provided by the RCMP Project Team.
- b. Summary and results of internal Peer Reviews.
- c. Written response to all comments provided by the above and a summary of project impacts.

RS 2. SCHEMATIC DESIGN (DESIGN CONCEPT)

RS 2.1. INTENT

- .2.1.1. The Consultant must obtain written authorization from the RCMP Departmental Representative before proceeding with Schematic Design.
- .2.1.2. The objective of the Schematic Design stage (or Design Concept) is to explore three distinctly different design concepts presented in sketch format (single line, produced to scale), fully integrated and supported by three or more distinctly different engineering solutions for the structure, mechanical, electrical systems, along with physical or massing models, site slides and photographs, energy analysis and life cycle cost analysis, analytical data and calculations and sufficient narrative to allow comparison, analysis against project requirements, budget, and selection of a design direction for preparation of a final design concept.
- .2.1.3. The Schematic Design will be in sufficient detail to illustrate and communicate the project characteristics. Provide a detailed review and analysis of the project requirements including all updates and amendments to ensure all requirements are

fully integrated into the Schematic Design. Out of this process the Schematic Design option will be selected and authorization to proceed to the next phase.

- .2.1.4. Design Development will be based on the accepted Schematic Design.
- .2.1.5. The RCMP Departmental Representative, in concert with others, shall approve one option to be further developed. Note: Although the Consultant is required to identify a preferred option, the RCMP Departmental Representative may select another option.

RS 2.2. SCOPE & ACTIVITIES

- .2.2.1. Review, validate and update the details of the Functional Program requirements, including space analysis.
- .2.2.2. Coordinate services as required with the BCC project for Information Services, Security, Equipment and Furniture.
- .2.2.3. Develop sustainable design strategy.
- .2.2.4. Prepare a minimum of three (3) Schematic Design options.
- .2.2.5. Analyze each option with regard to the project goals including cost and schedule.
- .2.2.6. Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, cost, etc.
- .2.2.7. Present / submit Schematic Design options for review and approval to committees, review groups and authorities having jurisdiction as identified in the Project Administration Section 3.4.
- .2.2.8. The consultant shall perform a soil thermal conductivity desktop audit of the site, in conformance with ANSI/CSA C448 Series-16 and ASHRAE Standards. Information obtained from audit to assist in design of a geo-exchange mechanical system.
- .2.2.9. Provide and /or coordinate all project requirements.
- .2.2.10. Coordinate all services with the RCMP Departmental Representative.

RS 2.3. DELIVERABLES

- .2.3.1. Schematic (concept) 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.
- .2.3.2. Prepare and submit, for review and approval by the RCMP Departmental Representative, an integrated Stage Two Project Report, and Schematic (Concept) Design. Revise as required by the Departmental Representative. Resubmit for acceptance.
- .2.3.3. The report will update the Stage One Report using the established report structure and format, 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.
- .2.3.4. The Schematic (concept) Design report shall include written narrative, schematic drawings, graphics, models (traditional and/or computer generated).

- .2.3.5. Stage Two Report aspects to be included (but not limited to) are:
 - .2.3.5.1. Updated Functional Program including base building requirements and room data sheets.
 - .2.3.5.2. Statement of design principles for all disciplines.
 - .2.3.5.3. Drawings, renderings and supporting 3D visualization illustrating the building interior / exterior, site.
 - .2.3.5.4. Principles of BCC: Information Services, Security, Built-in Furniture and Equipment integration with base building.
 - .2.3.5.5. Outline specifications for building systems and equipment performance.
 - .2.3.5.6. Soil thermal conductivity desktop audit, including, but not limited to, executive summary, assumptions, calculations, methodologies and results.
 - .2.3.5.7. Sustainable Development Strategies:
 - a. Risk Assessment Report.
 - b. Report on any deviations that will affect cost or schedule and recommend corrective measures.
 - c. Updated detailed schedule.
 - d. Class 'C' Estimate.
 - e. Submit Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.

RS 2.4. DETAILS

- .2.4.1. Architectural:
 - .2.4.1.1. Site plan relationships, landscape concept, building outlines, main accesses, roadways, vehicular and pedestrian traffic patterns.
 - .2.4.1.2. Concept building plans showing relative disposition of main accommodation areas, circulation patterns, floors, horizontal and vertical space relationships, mechanical / electrical shafts.
 - .2.4.1.3. Elevations and sections.
 - .2.4.1.4. Typical wall details for building envelope.
 - .2.4.1.5. Perspectives and / or 3D visualization.
 - .2.4.1.6. Prepare and submit a report indicating how the design will meet the RCMP's operational requirements. Include the following subjects:
 - a. Building areas and summary of all accommodation areas required.
 - b. Identify, in square meters, the area and spatial requirements for all unit spaces identified in the Functional Program.
- .2.4.2. Civil:
 - .2.4.2.1. Verification of all site services information.

- .2.4.2.2. Site plans for the building showing existing and proposed site services and proposed building service connections.
- .2.4.2.3. Where contributing to an existing sewer, include preliminary analysis of impact on existing systems.
- .2.4.2.4. Concept plans for disbursement of storm water and site drainage systems.
- .2.4.3. Structural / Seismic:
 - .2.4.3.1. General description of structures, including systems considered and benefits/disadvantages.
 - .2.4.3.2. Preliminary design loads for all load cases.
 - .2.4.3.3. Concept drawings of structural systems proposed, including typical floor plans, foundations, lateral systems and explanatory sketches.
- .2.4.4. Mechanical:
 - .2.4.4.1. The concept submission shall include a description of the specific mechanical requirements and function for each area in the building. Incorporate in the submission a schedule of requirements confirming program requirements for all rooms and identify the mechanical building services to be provided.
 - .2.4.4.2. Explain in the concept submission the manner in which the proposed mechanical systems correlate with users' requirements and in accordance with Sustainable Development requirements.
 - .2.4.4.3. Confirm in square meters the area to be provided for mechanical rooms, and then identify what percentage of total building area this represents. Identify location of mechanical spaces in the building.
- .2.4.5. Electrical:
 - .2.4.5.1. Site plan showing location of electrical and telecommunication service entrances.
 - .2.4.5.2. Normal and Emergency power distribution details including a diagram showing distribution up to distribution centers on each floor.
 - .2.4.5.3. Floor plans indicating locations and size of major electrical equipment and distribution centers.
 - .2.4.5.4. Floor plans indicating locations and size of telecommunications rooms, closets and major conduits.
 - .2.4.5.5. Typical lighting concepts for the interior and exterior environments including roads and parking areas.
 - .2.4.5.6. Typical ceiling or floor distribution systems for lighting, power, and telecommunications.
 - .2.4.5.7. Fire alarm system concept.
 - .2.4.5.8. BCC integration concepts.

RS 3. DESIGN DEVELOPMENT

RS 3.1. INTENT

- .3.1.1. This stage will further develop the design option selected for refinement at the Schematic Design stage. The Design Development documents consist of drawings and other documents to describe the scope, quality and cost of the project in sufficient detail to facilitate design approval, confirmation of code compliance, detailed planning of construction and project approval. This design will be used as the basis for preparation of construction documents.

RS 3.2. SCOPE & ACTIVITIES

- .3.2.1. Obtain written approval from RCMP Departmental Representative to proceed to Design Development Stage.
- .3.2.2. Review, validate and update details of program requirements and base building requirements with the RCMP.
- .3.2.3. Update Functional Program room data sheets as required.
- .3.2.4. Coordinate services as required for BCC with project for Information Services, Security, Furniture and Equipment.
- .3.2.5. Develop the Greenhouse Gas Life-Cycle Analysis and Embodied Carbon report.
- .3.2.6. If any alterations are required, analyze the impact on all project components, and resubmit for approval if required.
- .3.2.7. Expand and clarify the Schematic Design intent for each design discipline.
- .3.2.8. Present/submit design and materials for review and approval to committees, review groups and authorities having jurisdiction as identified in section Project Administration, (Section 3.4).
- .3.2.9. Provide and/or coordinate all information for all project disciplines.
- .3.2.10. Undertake an update to budget (Class C), schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, cost.
- .3.2.11. Coordinate services with the RCMP Departmental Representative.
- .3.2.12. Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project.
- .3.2.13. Confirm all aspects of the proposed Site design development.

RS 3.3. DELIVERABLES

- .3.3.1. Prepare and submit an integrated Stage Three Project Report, Design Development, for review and acceptance by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance. The report will update the Stage Two Report, Schematic (Concept) Design, 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.

- .3.3.2. The Stage Three Project Report shall include (but not be limited to) the following aspects, in written narrative, graphic, model (traditional and / or computer generated), and photographic format.
- .3.3.3. Stage Three Report:
 - .3.3.3.1. Updated Functional Program including base building requirements and integration of BCC.
 - .3.3.3.2. Drawings and other media to communicate the entire site and building project for all disciplines showing all elements and services to detail necessary to make all design decisions and to substantially estimate the cost of the project.
 - .3.3.3.3. Provide a list and draft specification sections of all National Master Specification (NMS) sections to be used. Submit outline specifications for all systems and principle components and equipment. Provide in the outline specifications manufacturers' literature about principal equipment and system components proposed for use in the project.
 - .3.3.3.4. Integration of BCC components illustrated by the plans and specifications for Furniture / Equipment, including all required layout and location plans, supporting infrastructure and connectivity requirements.
 - .3.3.3.5. Finishes and colour schemes, including Furniture / Equipment.
 - .3.3.3.6. Site / building renderings, 3D visualization.
 - .3.3.3.7. Update to Risk Assessment Report.
 - .3.3.3.8. Fire Protection Engineers Report including requirements, strategies or interventions for protection of the building and its occupants.
 - .3.3.3.9. Outline Commissioning Plan.
 - .3.3.3.10. Outline Operation and Maintenance (O&M) Manual.
 - .3.3.3.11. Preliminary construction schedule.
 - .3.3.3.12. Updated detailed schedule including deliverable requirements to be provided for BCC: Information Services, Security, Furniture and Equipment.
 - .3.3.3.13. Updated Class 'C' Estimate.
 - .3.3.3.14. Update milestone project schedule, complete with summary of revisions and mitigation strategies (if significant change occurs).
 - .3.3.3.15. Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.
 - .3.3.3.16. Stage Three Project Report, Design Development consolidating all of the above.
 - .3.3.3.17. Greenhouse Gas Life-Cycle Cost Analysis and Embodied Carbon reports to be submitted as separate documents from the Stage Three Project Report.

RS 3.4. DETAILS

.3.4.1. Architectural:

- .3.4.1.1. Site plan showing the building and infrastructure including pedestrian, vehicular, parking, fire routes, security, refuse storage, and delivery service access.
- .3.4.1.2. Floor plans of each floor showing all accommodation required, including all necessary circulation areas, stairs, elevators, and ancillary spaces anticipated for service use. Indicate building grids, modules, and key dimensions. Include roof plans.
- .3.4.1.3. Elevations of all exterior building facades showing all doors and windows accurately sized and projected from the floor plans and sections. Indicate clear floor and ceiling levels and any concealed roof levels.
- .3.4.1.4. Cross-sections through the building(s) to show floor levels, room heights, inner corridor elevations.
- .3.4.1.5. Detail Sections of walls or special design features requiring illustration and explanation of this stage, including fireproofing methods, physical, acoustical security.
- .3.4.1.6. Reflected ceiling plans.
- .3.4.1.7. Architectural materials, millwork, finishing details and/or samples to determine choice of materials and finishes.
- .3.4.1.8. Plans and typical details for Built-in Furniture.
- .3.4.1.9. Details of integration of Information Services, Security, Furniture / Equipment with Built-in Furniture.
- .3.4.1.10. Provide wall, floor and ceiling sections and details for all spaces requiring acoustic security. Include STC ratings for doors, transfer ducts and other assemblies to meet functional program and security requirements.

.3.4.2. Civil:

- .3.4.2.1. Further refined site plans showing site services and building service connections referenced to proposed building outlines, site access roads, parking, fire routes and sidewalks, including existing and proposed grades and drainage improvements. Drawings shall contain locations of manholes (complete with invert elevations), valves, and fire hydrant locations. In addition, identify proposed pipe sizes and slopes, where applicable, and include pipe invert elevations at building foundation.
- .3.4.2.2. Provide typical trench and related details, including profiles of below grade services.
- .3.4.2.3. Indicate locations of and provide details of independent utility infrastructure and services such as underground tanks, vaults, wells and utility service pads.

.3.4.3. Structural / Seismic:

- .3.4.3.1. Provide detailed description of structural design concept to resist seismic loads and to address requirements for post disaster construction.

- .3.4.3.2. Provide detailed description of structural design concept to resist progressive collapse caused by natural or manmade disasters.
 - .3.4.3.3. Structural drawings indicating modifications or new structural systems, structural materials, cladding details, fireproofing methods and other significant or unusual details.
 - .3.4.3.4. Drawings shall indicate all design loads, e.g. dead and live loads on all plans with atypical loads marked.
 - .3.4.3.5. Indicate integration of Information Services and Security pathways and relationships with building structure.
- .3.4.4. Mechanical:
- .3.4.4.1. For the selected option develop a minimum of:
 - a. HVAC system.
 - b. Develop the design in detail with the recommended option. Provide one design option in the LCCA that includes the use of a geo-exchange system, utilizing data obtained from the soil thermal conductivity desktop audit.
 - c. Site Plan showing service entrances for, domestic water supply, sanitary and storm drains and connections to utility services, including all key invert elevations.
 - d. Drawings showing preliminary sizing of ventilation, cooling and heating systems showing locations, and all major equipment layouts in mechanical rooms.
 - e. Drawings of plumbing system, showing routing and sizing of major lines and location of pumping and other equipment where required.
 - f. Drawings of the fire protection systems showing major components.
 - g. Provide written description of design concepts and all specific system components to provide service redundancy in support of business continuity.
 - h. Provide information of all internal and external energy loads in sufficient detail to determine the compatibility of the proposal with existing services, approved concept and energy budget.
 - i. Analysis of selected equipment and plant with schematics and calculations sufficient to justify the economy of the selected systems.
 - j. Describe the mechanical systems to be provided and the components of each system including mechanical ancillary devices needed to support emergency power systems.
 - k. Describe the building systems control architecture. Provide preliminary Energy Management Control Services (EMCS) network architecture, mechanical control schematics, and sequence of operation of each building system.

- I. Explain what acoustical and sound control measures are to be included in the design.

.3.4.5. Electrical:

- .3.4.5.1. For the selected option update the electrical design synopsis. Provide data on the total connected load, the maximum demand and diversity factors, and the sizing of the emergency load.
- .3.4.5.2. Identify Utility requirements and indicate short circuit information at point of entry.
- .3.4.5.3. Elaborate on proposed emergency power scheme and provide preliminary installation details for emergency generator installation(s).
- .3.4.5.4. Indicate metering locations on distribution diagram.
- .3.4.5.5. Provide typical lighting, power and telecommunication system details for all workspaces.
- .3.4.5.6. Include lighting design and control schemes for typical lighting arrangements.
- .3.4.5.7. Elaborate on exterior lighting scheme. Provide typical fixture concepts.
- .3.4.5.8. Provide a fire alarm riser diagram.
- .3.4.5.9. Submit detailed BCC integration concepts.

.3.4.6. Commissioning:

- .3.4.6.1. To be prepared by the Architect and Mechanical / Electrical Sub-Consultants.
- .3.4.6.2. Define requirements for project records and how these records will be managed, updated, and submitted at the end of the project.
- .3.4.6.3. Provide an outline of the proposed Commissioning procedures, protocols and schedule requirements.
- .3.4.6.4. Prepare a list of Spare or specialty equipment, extra material and redundancies needed to operate and maintain this facility over its life expectancy.

.3.4.7. Furniture / Equipment:

- .3.4.7.1. Preliminary Furniture Plans:
 - a. The Consultant shall prepare preliminary furniture and equipment plans that include but are not limited to a generic furniture footprint, and, or specific furniture/equipment (including AV) systems.
 - b. Illustrate preliminary layout of all furniture, furnishings and equipment pertaining to open and enclosed workstations / work settings, support space and special purpose space, including variations based on selection of alternate furniture and equipment systems.

RS 4. CONSTRUCTION DOCUMENTS
RS 4.1. INTENT

- .4.1.1. The Consultant must obtain written authorization from the Departmental Representative before proceeding with Construction Documents.
 - .4.1.1.1. The objective of the Construction Document phase is to translate the design development documents into construction drawings and specifications to guide and direct the Contractor and Sub-Contractors in carrying out their work on the project.
 - .4.1.1.2. Prepare drawings and specifications setting forth in detail the requirements for the construction and final cost estimate for the project.
 - .4.1.1.3. Construction documents shall be prepared in three phases as follows with progressive submissions for review and approval by the RCMP.
 - .4.1.1.4. 66% indicates substantial technical development of the project - well advanced architectural and engineering plans, elevations, sections, details, schedules and specifications.
 - .4.1.1.5. 99% is the submission of complete Construction Documents ready for tender call.
 - .4.1.1.6. Final Submission incorporates all revisions required in the 99% version and is intended to provide the Departmental Representative with complete Construction documents ready for tender call.
 - .4.1.1.7. The Final Submission shall be in English.

RS 4.2. GENERAL

- .4.2.1. Activities are similar at all stages; completeness of the project development shall reflect the stage of a submission.

RS 4.3. SCOPE & ACTIVITIES

- .4.3.1. Obtain Departmental Representative's approval for Construction Documents submissions (66%, 99% and final).
- .4.3.2. Confirm format of drawings and specifications.
- .4.3.3. Provide full coordination of all disciplines between all tender packages.
- .4.3.4. Clarify special procedures.

Develop and provide engineered procedure for on-site soil thermal conductivity testing. Testing procedure to be in compliance with ANSI/CSA C448 Series-16 and ASHRAE Standards.

- .4.3.5. Submit drawings and specifications at the required stages (66%, 99% and final).
- .4.3.6. Include base building Information Services and Security pathways and service infrastructure at each stage.
- .4.3.7. Provide written response to each discipline peer review comments and incorporate them into Construction Documents where required.
- .4.3.8. Advise as to the progress of cost estimates and submit updated cost estimates as the project develops.

- .4.3.9. Prepare a Class 'B' estimate for submission with the 66% submission.
- .4.3.10. Prepare a final Class 'A' estimate with the 99% submission (for each tender package) including estimated annual cash flows during projected construction period.
- .4.3.11. Review and approve materials and construction processes and specifications to meet sustainable development objectives and commissioning.
- .4.3.12. Establish quality control process to be implemented during construction through sample mock-ups or model areas as part of Construction and Contract Administration stage.
- .4.3.13. For all disciplines, develop outline for project specific Operation and Maintenance Manuals for each building system.
- .4.3.14. Update Greenhouse Gas Life-Cycle Cost Analysis for selected building option only, demonstrating updated values based-off decisions made throughout the Construction Documents Stage.
- .4.3.15. In collaboration with all relevant disciplines; Authorities having Jurisdiction; and relevant Federal, Provincial, and Municipal codes, standards and legislative requirements for the project, refine, develop, and prepare:
 - .4.3.15.1. Final code statement.
 - .4.3.15.2. Final zoning data summary.
 - .4.3.15.3. Final fire separations and life safety plans.
 - .4.3.15.4. 100% complete construction documents for submission to authority for review. As during the previous design stages, the review of the construction documents by local authorities will also occur during the Construction Contract Award stage.
 - .4.3.15.5. Sign and seal one (1) set of 100% complete construction documents for building permit application.

RS 4.4. DELIVERABLES

- .4.4.1. Deliverables shall occur in three stages, completeness of the project development shall reflect the stage of submission: 66%, 99% and 100%.
- .4.4.2. The Consultant Team shall prepare and submit an integrated Stage Four Project Report, Construction Documents as well as the 100% construction documents (drawings and specifications) for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance. The construction documents report will update the Design Development 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.
- .4.4.3. The Stage Four Project Report shall be provided in written narrative, graphic, model (traditional and / or computer generated), and photographic format.
- .4.4.4. Deliverables are similar at 66%, 99% stages; completeness of the project development shall reflect the stage of a submission.

.4.4.5. 66%, and 99% Submissions:

- .4.4.5.1. Coordinate all disciplines within and between all tender packages including any scope changes that may be required to remain within budget.
- .4.4.5.2. Documented responses to RCMP review comments from previous submission.
- .4.4.5.3. Complete written peer reviews with responses to review comments and incorporate them into Construction Documents where required.
- .4.4.5.4. Complete specification and working drawings for all tender packages.
- .4.4.5.5. Include on-site soil thermal conductivity testing procedure into contract documents.
- .4.4.5.6. Complete Commissioning plan.
- .4.4.5.7. Update and provide updated energy analysis report for finalized building design only, reflecting all changes made through the development of the Construction documents. Provide RETScreen file (in RETScreen native file format) for the purposes of the RCMP's portfolio management and analysis. File to be inclusive of the following information: Building location, Archetype, Facility ID, Anticipated energy and fuel consumption, Anticipated energy generation, anticipated greenhouse gas emissions.
- .4.4.5.8. One copy of the complete colour schedules, including textures, sheens, colour chips and material samples.
- .4.4.5.9. One copy of support data, studies, calculations.
- .4.4.5.10. Updated Risk Analysis.
- .4.4.5.11. Updated project cost estimate.
- .4.4.5.12. Updated Project Schedule.
- .4.4.5.13. Update Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.

.4.4.6. Final Submission:

- .4.4.6.1. This submission incorporates all revisions required by the review of the 99% submission. Provide the following for each tender package.
 - a. Coordinate all disciplines between all tender packages including any scope changes that may be required to remain within budget.
 - b. Complete set of originals of the working drawings for all tender packages in English.
 - c. Complete sets of original specifications, in English.
 - d. Class 'A' estimate.
 - e. Complete Commissioning Plan.
 - f. Update the Systems Operations Manual to reflect any changes from the 99% submission. Updated project schedule.

- g. Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call.
- h. Update Project Log, tracking all approved major decisions including those affecting changes to project scope, budget and schedule.

RS 4.5. SUPPLEMENTARY SUBMISSION REQUIREMENTS

.4.5.1. Commissioning Specifications:

- .4.5.1.1. Use NMS for commissioning as the basis for the project specifications for commissioning. Prepare additional specifications for systems where NMS specifications do not exist. Complete design information required in the performance verification report forms.
- .4.5.1.2. Specify detailed performance verification procedures and output, documents, scheduling and reporting requirements.
- .4.5.1.3. Identify and include in specification all tests to be conducted at manufacturer's plants, on-site during construction, installation, commissioning on-site and during the operation phase.
- .4.5.1.4. Develop a training package for Operation & Maintenance personnel and include in specification.
- .4.5.1.5. Use NMS for the identification of equipment and inventory in conjunction with the PMSS / MMS.
- .4.5.1.6. Provide PMSS / MMS coding and system nomenclature on tender documents within equipment schedules and on all single line diagrams.
- .4.5.1.7. Obtain approval of equipment PMSS / MMS identification from the RCMP Departmental Representative or designate.

.4.5.2. Commissioning Submission Requirements:

- .4.5.2.1. Outline commissioning plans and specifications included with the 66% construction documents should include the following:
 - a. Typical floor plans with general ductwork layouts and duct sizes.
 - b. Mechanical equipment room layouts and sections with all major systems.
 - c. Schematics of EMCS, system architecture, sequence of operation, wiring diagrams.
 - d. Riser diagrams.
 - e. System schematics.
 - f. Complete specifications including all sections.
 - g. Commissioning sequence plan.
 - h. Building management manual and training plan.
 - i. General plumbing and fixtures layout.

- .4.5.2.2. The detailed commissioning specifications are to be submitted with the 66% construction documents stage and updated and resubmitted at each subsequent stage of the construction documents.
- .4.5.2.3. PMSS / MMS system and equipment codes are identified for each piece of mechanical and electrical equipment with the 66% construction documents. Completed PMSS / MMS numbering (with equipment unit counters) for all mechanical and electrical equipment are to be provided at the 99% stage. Submit a comprehensive Commissioning Plan for all systems.
- .4.5.2.4. Submit a comprehensive system operator Training Plan.
- .4.5.2.5. Final submission of System operator training plan documents to be English.
- .4.5.3. Final Furniture and Equipment Plans:
 - .4.5.3.1. The Consultant shall prepare final furniture and equipment plans and specifications. Plans and information to include but are not limited to the following:
 - a. Final partition locations.
 - b. Final layout of all furniture, furnishings and equipment pertaining to open and enclosed workstations / work settings, support space and special purpose space, include critical dimensions as required.
 - c. Review plans to confirm compliance with all Code requirements related to life safety, and accessibility.
- .4.5.4. Furniture / Equipment (BCC):
 - .4.5.4.1. Furniture including but not limited to specialized operating consoles and equipment including audio visual system installations may form part of the project.
 - .4.5.4.2. Prepare plans and specifications at the 66%, 99% and Final submissions.
 - .4.5.4.3. Prepare systems furniture and equipment systems contract documents drawings and specifications including the following:
 - a. Location of acoustical screens complete with critical installation dimensions.
 - b. Location of all panel supported or free standing work surfaces and related components for all work stations.
 - c. List of all accessories and lighting components.
 - d. Location of all accessories and lighting components to be supported from the panels, work surfaces or overhead bins; this to be identified on an interior elevation or isometric view of typical workstation types.
 - e. Telephone, electrical and data source locations.
 - f. List of screens complete with electrical harnesses and outlets.
 - g. Legend indicating type, size, fabric(s) and electrical requirements.

- h. Location, size, mounting and connectivity requirements for all AV and specialized systems and equipment.
 - i. Electrical, telephone, data, voice and video infrastructure including but not limited to cable trays and wire ways in support of selected systems layout / locations.
- .4.5.4.4. Based on approved colour scheme presented in Concept Design Stage prepare a Final finishes presentation board for all furniture requirements:
- a. Prepare a report with written and graphic identification of all furniture finishes, including samples and specifications for all panels, work surfaces, seating, filing, and accessories and all freestanding furniture.
- .4.5.4.5. Based on the final equipment and furniture layout plans, coordinate with the mechanical and electrical including telecommunications Sub-Consultants to incorporate M&E space and location requirements on the final equipment and furniture plans as well as to ensure the M&E drawings accurately reflect the furniture and equipment layout. For the Interior Design Sub-Consultant these include the following:
- a. Lighting layout, and zoning.
 - b. Task lighting systems and controls.
 - c. Location of light switches.
 - d. Location of thermostats.
 - e. Fire hose cabinets location and space requirements.
 - f. Additional cooling / exhaust location requirements.

RS 4.6. CONSTRUCTION DOCUMENT PRODUCTION IN PROGRESS REVIEWS

- .4.6.1. Technical and Production Meetings (Project Delivery Coordination Meetings):
- .4.6.1.1. Production of construction documents will be reviewed during the meetings arranged by the RCMP Departmental Representative and Consultant as required.
 - .4.6.1.2. Representatives from the RCMP support staff will be present as arranged by the RCMP Departmental Representative.
 - .4.6.1.3. The Consultant shall:
 - a. Ensure that the Consultant's staff and the sub-consultant representatives attend the technical and production meetings as required.
 - b. Arrange for all necessary data, progress prints.
 - c. Prepare minutes of the meetings and distribute copies to all participants.
 - .4.6.1.4. Progress Review:

- a. As work progresses on construction drawings, submit drawings, schedules, details, specifications based on the NMS, pertinent design data, updated cost plan, updated project schedule, updated commissioning plan and updated outline O&M manuals as required.

RS 5. TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

RS 5.1. INTENT

- .5.1.1. Provide technical support and documentation to the Departmental Representative to support the Contract Authority as required to issue and execute the tender calls, evaluate bids and award contracts.

RS 5.2. SCOPE & ACTIVITIES

- .5.2.1. Provide technical documentation in the form of plans and specifications to the Departmental Representative as prescribed.
- .5.2.2. Prepare addenda based on questions arising in such meetings for issue by the Contracting Authority.
- .5.2.3. Provide the Departmental Representative with all information required by Bidders to fully interpret the Construction Documents.
- .5.2.4. Make recommendations for issue of addenda as a result of informal inquiries, as required.
- .5.2.5. Provide a summary of inquiries at the conclusion of the tender period for project records.
- .5.2.6. Assist in tender evaluation by providing advice on the following:
 - .5.2.6.1. The completeness and compliance with tender requirements of tender submissions in all respects.
 - .5.2.6.2. The effect of alternatives and qualifications, which may have been included in the tender.
 - .5.2.6.3. Evaluation and explanation of variations to the tender cost which exceed 10% of the pre-tender estimate.
 - .5.2.6.4. The bidders capability to undertake the full scope of work.
 - .5.2.6.5. Examine and report on any cost and schedule impact created by the issue of tender/contract addenda.

RS 5.3. DELIVERABLES

- .5.3.1. Electronic copies of drawings and specifications.
- .5.3.2. Addenda as required.
- .5.3.3. Changes to the documents, if re-tendering is necessary.
- .5.3.4. Updated cost estimate and schedule.

- .5.3.5. Submit to the Departmental Representative, in English, one (1) signed and sealed and one (1) electronic copy of the complete tender documents with all incorporated addenda for all tender packages.

RS 6. CONSTRUCTION & CONTRACT ADMINISTRATION

RS 6.1. INTENT

- .6.1.1. Coordinate all activities with the Departmental Representative.
- .6.1.2. During the implementation of the project, lead activities, in consultation with the RCMP Departmental Representative's behalf to the extent provided in this document.
- .6.1.3. Carry out the review of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents.
- .6.1.4. Keep the RCMP 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 review.
- .6.1.5. Ensure compliance with Commissioning Plan, update plan as necessary.
- .6.1.6. Determine the amounts owing to the Contractor based on the progress of the work, and certify payments to the Contractor.
- .6.1.7. Act as interpreter of the requirements of the contract documents.
- .6.1.8. Provide cost advice during construction.
- .6.1.9. Advise the RCMP Departmental Representative of all potential changes to scope for the duration of the implementation.
- .6.1.10. Review the Contractor's submittals.
- .6.1.11. During the twelve (12) month warranty period, investigate all defects and alleged defects and issue instructions to the Contractor.
- .6.1.12. Conduct a final warranty review.

RS 6.2. DELIVERABLES

- .6.2.1. Written reports from site visits including persons involved.
- .6.2.2. Written reports on the progress of the work and the cost of the project at the end of each month with progress claims.
- .6.2.3. Additional detail drawings when required to clarify, interpret or supplement the Construction Documents.
- .6.2.4. Post contract drawings.
- .6.2.5. Interim or Final certificates.
- .6.2.6. Debrief Notes of Commissioning activities outlining the commissioning process, major activities, and lessons learned from this project.
- .6.2.7. Systems Operation Manual and O&M Manual to reflect as-commissioned operation and maintenance of each building system.

- .6.2.8. Building Operation and Maintenance Manual to reflect as-commissioned operation and maintenance of each building system.
- .6.2.9. As-built records and As-Built specifications including sub-set pathways and service infrastructure locations for BCC: Information Services and Security.
- .6.2.10. Warranty deficiency list.
- .6.2.11. Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.
- .6.2.12. Report on Final Warranty Review.

RS 6.3. DETAILS

- .6.3.1. Construction Meetings:
 - .6.3.1.1. Immediately after contract award, arrange a briefing meeting with the RCMP Departmental Representative.
 - .6.3.1.2. Prepare minutes of the meeting and distribute copies to all participants and to other persons agreed upon with the Departmental Representative.
 - .6.3.1.3. In consultation with the RCMP Departmental Representative, call job meetings as frequently as required, commencing with the construction-briefing meeting.
 - .6.3.1.4. Prepare minutes of the meetings and distribute copies to all participants.
 - .6.3.1.5. It is expected that there will be a minimum of 19 meetings on site for the Rosthern Detachment project. It may be deemed necessary, due to the location of the site, to arrange teleconference calls with all project stakeholders prior to, the regularly scheduled construction site meetings to review project status and work through challenges and issues prior to arriving on the construction site. The consultant must include all travel time and costs as part of their fixed fee.
- .6.3.2. Project Schedule:
 - .6.3.2.1. As soon as possible after contract award, obtain Project Schedule from the Contractor. Schedule to include:
 - a. All construction activities.
 - b. Schedule of delivery requirements for BCC Information Services, Security to be integrated into base building.
 - c. All related works.
 - d. Detailed commissioning component shown separately.
 - .6.3.2.2. Review the construction schedule, identify conflicts and make recommendations on options to reduce timeline where possible.
 - .6.3.2.3. Monitor the approved construction schedule, take necessary steps to ensure that the schedule is maintained and submit a detailed report to the RCMP Departmental Representatives concerning any delays.

- .6.3.2.4. Keep accurate records of causes of delays.
- .6.3.2.5. Make every effort to assist the Contractor(s) to avoid delays.
- .6.3.2.6. Ensure the Commissioning Schedule is updated at the start of the Commissioning Phase of the project. Routinely update this schedule throughout the commissioning of the work.
- .6.3.3. Cost Breakdown:
 - .6.3.3.1. Obtain from the Contractor(s) detail cost breakdown on forms approved by the RCMP Departmental Representative and submit to the RCMP Departmental Representative, with Progress Claims.
- .6.3.4. Site Visits:
 - .6.3.4.1. Provide construction review services.
 - .6.3.4.2. Ensure compliance with contract documents.
 - .6.3.4.3. Provide services of qualified personnel who are fully knowledgeable with technical and administrative requirements of project.
 - .6.3.4.4. Establish a written understanding with Contractor(s) as to what stages or aspect of the work are to be inspected prior to being covered up.
 - .6.3.4.5. Assess quality of work and identify in writing to the Contractor(s) and the RCMP Departmental Representative, all defects and deficiencies observed at time of such inspections.
 - .6.3.4.6. Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
 - .6.3.4.7. Any directions, clarifications or deficiency list shall be issued in writing to the Contract authority and the RCMP Departmental Representative.
 - .6.3.4.8. Provide clarifications on Plans and Specifications or site conditions as required in order that project not be delayed.
- .6.3.5. Progress Reports:
 - .6.3.5.1. Report to the Contract authority and the Departmental representative regularly on the progress of the work. Submit monthly reports.
- .6.3.6. Detail Drawings:
 - .6.3.6.1. Provide for the Contract authority information, any additional detail drawings as, and when required, to properly clarify or interpret the contract documents.
- .6.3.7. Shop Drawings:
 - .6.3.7.1. Selected shop drawings will require review by the RCMP. Prepare a listing of all required shop drawings for identification of submissions requiring review by RCMP. Shop drawings requiring RCMP approval shall not be returned to the Contractor until review has been completed.
 - .6.3.7.2. Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor(s) and stamped: "reviewed" by the Consultant before return to the Contractor(s).

- .6.3.7.3. Expedite the processing of Shop Drawings.
- .6.3.7.4. All equipment must be CSA approved, or CSA equivalent. In the case of equivalency, provide letters of approval for use in Canada.
- .6.3.8. Inspection and Testing:
 - .6.3.8.1. Provide the Departmental Representative with recommended list of tests to be undertaken, including on-site and factory testing.
 - .6.3.8.2. Ensure all testing is detailed within Commissioning Plan.
 - .6.3.8.3. Review results of acoustic tests conducted by third party.
 - .6.3.8.4. Consultant to observe and validate on-site thermal on-site conductivity testing results. Consultant to provide Thermal Conductivity Testing Report (in accordance to ASHRAE Standards) and is to include, but not limited to:
 - executive summary, background, site work, observations, methodologies, results, conclusions, and project impacts.
 - Drill Lithology Report and Map.
 - Record of borehole locations.
 - Report to be reviewed and sealed by a registered Professional Engineer.
 - .6.3.8.5. Review all test reports and recommend necessary action to the Departmental Representative for the Contractor(s) when work fails to comply with contract.
 - .6.3.8.6. Immediately notify the Departmental Representative if tests fail to meet project requirements and when corrective work will affect schedule.
 - .6.3.8.7. Assist the Departmental Representative in approving all Contractor's sample mock-ups or model areas that will be used to establish benchmarks for acceptable construction standards.
 - .6.3.8.8. The Contractor will be required to obtain approvals before proceeding with construction of each sample mock-up and model area.
 - .6.3.8.9. Coordinate with the RCMP Security subject matter experts who will inspect and ensure acceptability of all aspects of security during construction.
- .6.3.9. Training:
 - .6.3.9.1. Prior to tender, provide the RCMP Departmental Representative, with recommended list of training to be undertaken.
 - .6.3.9.2. Ensure all training is detailed within the Commissioning Plan.
- .6.3.10. Contractor Progress Claims:
 - .6.3.10.1. Each month the Contractor(s) submits a progress claim for work and materials as required in the Construction Contract(s).
 - .6.3.10.2. The claims are made by completing the following forms where applicable:
 - a. Request for Progress Payment.

- b. Cost Breakdown for Fixed Price Contract.
 - c. Copy of good standing with WCB.
 - d. Statutory Declaration Progress Claim.
- .6.3.10.3. Review and sign designated forms and promptly forward claims to the RCMP Departmental Representative for processing.
- .6.3.11. Interim Inspection:
 - .6.3.11.1. The Acceptance Board shall inspect the work and list all unacceptable and incomplete work on a designated form.
 - .6.3.11.2. The Board shall accept the project from the Contractor(s) subject to the deficiencies and uncompleted work listed and priced.
 - .6.3.11.3. The Contractor(s) will be required to provide a work plan of actions and schedule to correct all deficiencies.
 - .6.3.11.4. The Consultant shall coordinate with the RCMP Departmental Representative to monitor, inspect and report on the progress of deficiencies corrections.
- .6.3.12. Interim Certificates:
 - .6.3.12.1. Payment requires completion and signing, by the parties concerned, of the following documents:
 - a. Interim Certificate of Completion.
 - b. Cost of Breakdown for Fixed Price Contract.
 - c. Cost of Breakdown for Unit or Combined Price Contract.
 - d. Inspection and Acceptance.
 - e. Statutory Declaration Interim Certificate of Completion.
 - f. Workers Compensation Board Certificate.
 - .6.3.12.2. Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Departmental Representative for processing.
- .6.3.13. Furniture / Equipment Delivery and Installation:
 - .6.3.13.1. Delivery and installation of Furniture / Equipment to be coordinated by RCMP in consultation with the Consultant and Contractor.
 - .6.3.13.2. Final delivery dates to be confirmed with the RCMP.
 - .6.3.13.3. Consultant to provide deficiency list to the RCMP Departmental Representative for each floor of Furniture / Equipment delivered.
- .6.3.14. Operation and Maintenance Data Manual:

- .6.3.14.1. Prior to submission to the RCMP Departmental Representative, review and provide written comment in detail indicating the acceptability of all manuals.
- .6.3.14.2. The Contractor(s) shall retain one (1) copy of each volume for his record and use during the instruction period.
- .6.3.15. As-Built Record Drawings and As-Built Specifications (for each Tender Package and a Comprehensive Consolidated Final Package).
 - .6.3.15.1. Following the take-over, obtain as-built marked-up hard copy from the Contractor(s).
 - .6.3.15.2. Show significant deviations in construction from the original Contract drawings, including changes shown on Post-Contract Drawings, changes resulting from Change Orders or from On-Site Instructions.
 - .6.3.15.3. Indicate PMSS / MMS numbers for each piece of mechanical and electrical equipment on each drawing.
 - .6.3.15.4. Check and verify all As-Built records for completeness and accuracy and submit to the RCMP Departmental.
 - .6.3.15.5. Produce Record Drawings by incorporating final As-Built-information into project drawings. Delivered electronically in both PDF and DWG format.
 - .6.3.15.6. Submit a comprehensive consolidated final package of Record Drawings in format required by the Contract within twelve (12) weeks of the Final Certificate.

RS 7. COMMISSIONING

RS 7.1. COMMISSIONING OBJECTIVES

- .7.1.1. The objectives of commissioning are:
 - .7.1.1.1. To document the design intent of the overall project and the proposed building systems and components and to verify and demonstrate that all functional and operational requirements have been correctly interpreted in the Design solution.
 - .7.1.1.2. To document the operational, maintenance and building management requirements.
 - .7.1.1.3. To minimize O&M costs through the careful selection of design solutions (for economy, reliability, durability, accessibility, and maintainability), construction materials, installation practices, performance verification procedures.
 - .7.1.1.4. To verify that the selected design solutions and the resultant built works protect the safety, health, welfare and comfort of occupants and O&M personnel.
 - .7.1.1.5. To define responsibility areas for meeting these operational requirements in the contract documents and include a process to demonstrate compliance.
 - .7.1.1.6. To demonstrate that the RCMP's requirements are met during the project implementation and commissioning phases of the project and to support quality management of construction and installation through verification of building components, systems and environments.

- .7.1.1.7. To ensure that the commissioning process is implemented and documented according to the approved Commissioning Plan and in accordance with the Commissioning Schedule.
- .7.1.1.8. To verify and demonstrate that all systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget.
- .7.1.1.9. To provide comprehensive documentation of the operational, maintenance and building management.
- .7.1.1.10. To implement a comprehensive training program.

RS 7.2. ROLES & RESPONSIBILITIES

- .7.2.1. The RCMP Departmental Representative:
 - .7.2.1.1. Has overall responsibility for managing the project and delivering the project to the Project Leader on time and on budget. Upon completion, the Departmental Representative hands the facility over to the Project Leader.
- .7.2.2. The Consultant shall:
 - .7.2.2.1. Establish Design Criteria, functional and operational requirements, if not already established in the contract.
 - .7.2.2.2. Prepare a preliminary Commissioning Plan.
 - .7.2.2.3. Prepare commissioning specifications for components, equipment, systems and integrated systems and incorporate same into the construction specifications.
 - .7.2.2.4. Plan the commissioning and performance verification (PV) activities, processes and their output, including development of project-specific:
 - a. Installation / Start-up Check Lists.
 - b. Product Information (PI) Report Forms and Performance Verification (PV) Report Forms.
 - c. Design data to PI and PV report forms.
 - .7.2.2.5. Prepare a detailed Training plan.
 - .7.2.2.6. Incorporate PSPC MMS identification codes to all components, equipment and systems into all working documents.
 - .7.2.2.7. Review the Contractor's detailed commissioning schedule for components, equipment, systems, and integrated systems. (PV tests will be performed by the Contractor).
 - .7.2.2.8. Identify Contractor and subcontractor commissioning, PV and testing responsibilities.
 - .7.2.2.9. Monitor commissioning activities, provide quality control reports to the RCMP throughout the construction, commissioning and operational phases of the work, including:

- a. Inspection and verification of as installed components, sub-system and systems on a regular basis during construction.
 - b. Witnessing tests.
 - c. Reviewing and verifying testing, adjusting and balancing (TAB) reports.
 - d. Reviewing and verifying Performance Verification (PV) Reports.
 - e. Witnessing and certifying systems and integrated systems tests. Any test that cannot be commissioned due to design errors or omission must to be redesigned and re-commissioned.
- .7.2.2.10. Participate in the Training Plan by providing training on design philosophy, design intent and systems designs.
 - .7.2.2.11. Witness and certify deferred tests, commissioning activities, PV, review and accept reports.
 - .7.2.2.12. Identify and verify the rectification of all outstanding deficiencies.
 - .7.2.2.13. Assist in the resolution of all issues relating to commissioning.
 - .7.2.2.14. Prepare "as-built" documentation (plans and specifications) as described elsewhere in the contract or Project Brief.
 - .7.2.2.15. Assist in fine-tuning of systems and equipment as required during the warranty period.
 - .7.2.2.16. Assist in systems checks and environmental checks during the warranty period.
 - .7.2.2.17. Participate in warranty inspections and production of warranty inspection reports and address all warranty issues that may arise.
 - .7.2.2.18. Ensure that the final product meets the Design Criteria, functional and operational requirements, the project objectives and all requirements of the contract and Project Brief.
 - .7.2.2.19. Recommend acceptance of the complete project.
 - .7.2.2.20. Assist the RCMP Departmental Representative in the preparation of a debriefing (Evaluation) report. To include, but not necessarily be limited to:
 - a. A building evaluation summary with recommendations.
 - b. Lessons learned from the project.

RS 7.3. TRAINING

- .7.3.1. In consultation with the RCMP prepare a comprehensive training criteria for the training of the Facility Management personnel, User (where deemed necessary) and operations and maintenance staff.
- .7.3.2. Training shall be in English.
- .7.3.3. The training plan shall enable O&M personnel to identify repair and maintenance needs that might otherwise go undetected for long periods with possibly serious consequences.

- .7.3.4. Training shall enhance monitoring and diagnostic capabilities and result in more efficient, cost-effective operation of the facility.
- .7.3.5. The training plan shall recognize both short-term and long-term requirements.

RS 7.4. CORRECTION OF DEFICIENCIES

- .7.4.1. The Consultant, in consultation with the RCMP Department Representative, shall:
 - .7.4.1.1. Instruct the contractor to correct all the deficiencies identified and recorded during the performance verification.
 - .7.4.1.2. Provide solutions during the PV process with respect to the variances from the design parameters.
 - .7.4.1.3. Adjust or alter the systems to achieve the design parameters. This shall include re-testing.
 - .7.4.1.4. Immediately notify the Departmental Representative when tests fail to meet project requirements and when corrective work and re-tests affect construction and completion schedule.
 - .7.4.1.5. Report in writing to the Departmental Representative indicating compliance or anomalies regarding witnessed events. The Consultant is to investigate and recommend in writing any corrective actions to be taken to facilitate compliance with design intent and design criteria.

RS 7.5. ACCEPTANCE OF THE PROJECT

- .7.5.1. The project will be accepted and the Interim Certificate of Completion will be issued only after:
 - .7.5.1.1. Successful completion of all integrated systems tests, life safety support systems tests and after all other requirements of the authority having jurisdiction are satisfied.
 - .7.5.1.2. All test certificates; commissioning reports and commissioning documentation have been approved and accepted by the Departmental Representative.

RS 7.6. COMMISSIONING DOCUMENTATION

- .7.6.1. General:
 - .7.6.1.1. Commissioning documentation is a complete set of data and information fully describing the completed project as a built, finished, functional and operational facility and presented in a form that can be maintained, updated and used over the life of the building.
 - .7.6.1.2. In preparing project-specific commissioning documentation, use all existing generic commissioning documentation to the maximum extent possible. However, the Consultant retains over-riding responsibility for the content of all project-specific commissioning documentation and for editing, amending and supplementing as required and as is appropriate for the project.
- .7.6.2. Details:

- .7.6.2.1. Commissioning documentation shall include:
 - a. The Commissioning Plan, the master planning document for all commissioning activities and deliverables, revised, refined, updated and reviewed at each stage of design development.
 - b. Commissioning specifications.
 - c. Commissioning Schedule.
 - d. The Commissioning Schedule is developed by the Contractor, outlining the performance testing program in an orderly sequence acceptable to the Commissioning Manager and the Consultant, the planned dates for submission of commissioning documentation. The Commissioning Schedule is a sub element to the construction schedule and is to be updated as required.
 - e. Training Plans.
 - f. Installation Check Lists for use during pre-start-up and pre-commissioning inspections.
 - g. Product Information (PI) report forms to document all details of equipment, components and systems.
 - h. Performance Verification (PV) report forms and include thereon all design criteria, design intents and other relevant design information.
 - i. MMS requirements.
- .7.6.3. TAB and commissioning reports.
- .7.6.4. Final evaluation report.

RS 7.7. COMMISSIONING DELIVERABLES

- .7.7.1. First technical submission by the Consultant shall include the following:
 - .7.7.1.1. From the commissioning perspective, the Conceptual Design Report shall include:
 - a. Description of the design describing the Design Criteria, Design Intent, the design philosophy, the functional and operational requirements and the conceptual framework for the operation and use of the proposed building, its components and systems, how the proposed design meets the RCMP's requirements, corporate and project objectives. To be updated at each stage of project development.
 - b. Design criteria, Design intents.
- .7.7.2. 66% Submission:
 - .7.7.2.1. Factory and on-site tests of components, sub-systems, systems and integrated systems during construction, installation and commissioning defined and detailed in commissioning specs.
 - .7.7.2.2. Commissioning activities to be deferred to Operational Phase and Warranty Period identified.

- .7.7.2.3. Detailed commissioning specifications.
- .7.7.2.4. Updated Commissioning Plan.
- .7.7.2.5. Detailed Building management manual.
- .7.7.2.6. Updated Design Intent Document.
- .7.7.2.7. Updated O&M Budget.
- .7.7.2.8. Updated Training Plan.
- .7.7.2.9. Complete PI and PV forms. Provide for all components, equipment and systems to be tested.
- .7.7.3. 99% Submission:
 - .7.7.3.1. Commissioning specifications integrated into project specifications.
 - .7.7.3.2. 99% Commissioning plan.
 - .7.7.3.3. 99% Design Intent Document detailing each building system, including all engineering calculations.
 - .7.7.3.4. Maintenance management System (MMS) codes identifiers shown on the construction documents and indicated on each PI and PV form.
 - .7.7.3.5. 100% Training Plan.
 - .7.7.3.6. Design information added to PI forms.
- .7.7.4. 100% Submission:
 - .7.7.4.1. This submission incorporates all revisions required by the review of the 99% submission.
 - .7.7.4.2. Updated Commissioning Plan
 - .7.7.4.3. Update the Design Intent Document to reflect any changes from the 99% submission.

RS 7.8. CONSTRUCTION & COMMISSIONING

- .7.8.1. General:
 - .7.8.1.1. Upon Contract award, review and Update the PI and PV Forms, installation/start-up Check Lists, Commissioning Plan, Training Plan, commissioning specifications, and Commissioning Schedule to ensure relevance to the project.
 - .7.8.1.2. Incorporate relevant data from approved shop drawings and installed component data.
 - .7.8.1.3. Review contractor's compliance with the contract documents.
 - .7.8.1.4. When possible, witness and certify tests, including those tests conducted before concealment and start up.
 - .7.8.1.5. Review all test reports and take necessary action with Contractor when work fails to comply with contract.

- .7.8.1.6. Immediately notify Departmental Representative when tests fail to meet project requirements and when corrective work will affect schedule.
- .7.8.1.7. Ensure that all deficiencies are rectified and acknowledge that the installation of components and systems is ready for the commissioning phase.
- .7.8.1.8. Review all maintenance management nomenclature, devices and submissions prepared by the contractor. Ensure on-site implementation and tagging of maintenance management.
- .7.8.2. Manuals and reports:
 - .7.8.2.1. Review and approve:
 - a. All commissioning documentation, including PV documentation, procedures and expected output.
 - b. In consultation with the Contractor, review/select the test instruments to be used and instrument calibration.
 - c. Operating and Maintenance (O&M) Manual:
 - i. Verify, and certify, completeness, relevance and accuracy.
 - ii. Ensure Contractor assembles all certified tests results and incorporates into the Maintenance manuals.
- .7.8.3. Training:
 - .7.8.3.1. Departmental Representative to organize the location and provide the lists of participants.
 - .7.8.3.2. Contractor to provide training sessions on the operations and maintenance of components, equipment, sub-systems, systems and integrated systems.
- .7.8.4. Components, sub-systems, systems, and integrated system performance verification (PV):
 - .7.8.4.1. Certify and date all PV procedures and test results.
 - .7.8.4.2. Report in writing to the Departmental Representative indicating compliance or anomalies regarding witnessed events. The Consultant is to investigate and recommend in writing any corrective actions to be taken to facilitate compliance with design intent and design criteria.
 - .7.8.4.3. Provide solutions during the PV process with respect to the variances from the design parameters.
 - .7.8.4.4. In consultation with the Departmental Representative, instruct the contractors to rectify all deficiencies identified and recorded during the performance verification and adjust or alter the systems to achieve the design parameters. Re-test to verify compliance.
 - .7.8.4.5. In consultation with the Departmental Representative, recommend takeover of the facility subject to performance of PV and commissioning which were previously agreed to be deferred until the operational phase.

RS 8. ESTIMATING & COST PLANNING

RS 8.1. INTENT

- .8.1.1. Delivering this project on time and within budget is a high priority. A fully qualified cost estimating, cost planning and cost control Team, referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on large construction projects is required. This Cost Specialist will be conversant with all aspects of construction cost estimating during the design stages including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.
- .8.1.2. The purpose of cost planning and cost control is to assist in the accomplishment of project cost objectives. It is a continuous and interactive process involving planning, action, measurement, evaluation and revision.

RS 8.2. SCOPE OF SERVICES

- .8.2.1. The Consultant's Shall provide an interactive and continuous cost consulting service from the commencement of project design through to construction completion, including the preparation of complete estimates for all construction trades, escalation, inflation and contingency costs.
- .8.2.2. The Consultant shall attend key project meetings throughout the design phases and be prepared to present and defend the estimates directly to the Departmental Representative.
- .8.2.3. The Consultant shall work with and advise the RCMP on the costs of individual building components and costs of various design systems. Estimates should be prepared in detail and summarized using an Elemental Analysis format.
- .8.2.4. Services – Specific Activities:
 - .8.2.4.1. Project Analysis Stage:
 - a. Review, report on, and propose revisions to the existing class "D" estimate. Do not proceed until the Cost Specialist, the Consultant and the RCMP have accepted the revised class "D" estimate.
 - b. The revised Class "D" estimate shall become the Construction Cost Plan.
 - .8.2.4.2. Concept Design:
 - a. An updated Class "D" estimate will be prepared at the highest level of detail commensurate with the available information using elemental and additional detail ed costs.
 - .8.2.4.3. Design Development:
 - a. Upon completion of design development prepares a Class "C" estimate representing the increased level of design detail available. The report shall be prepared using detailed (elemental) costs i.e. measured quantities with minimal allowances or lump sums.
 - b. Upon final acceptance, the Class "C" estimate shall become the Construction Cost Plan.
 - .8.2.4.4. Contract Documents:

- a. During the production of the contract documents a process of continuing cost control progressively more detailed is required. At each review of contract documents, an up-to-date estimate shall demonstrate compliance with the Construction Cost Plan. Non-compliance with the Construction Cost Plan will require revisions to the contract documents.
- b. Provide a Class "B" estimate with the 66% construction document submission.
- c. Upon acceptance, the Class "B" estimate shall become the Construction Cost Plan.

.8.2.4.5. Pre-Tender:

- a. Upon completion of the contract documents a pre-tender Class "A" cost estimate will be prepared using 100% measured quantities.
- b. Provide a trade breakdown of the pre-tender estimate for use in reviewing the submitted bids and the successful Contractor's estimate breakdown.
- c. Upon acceptance, the Class "A" estimate shall become the Construction Cost Plan.

.8.2.4.6. Tender Stage:

- a. **Tender Award** During the tender period, examine and report on any cost impact created by the issue of tender/contract addenda. Incorporate the results of such addenda review into the final pre-tender estimate (both elemental and trade versions) prior to receipt of bids.
- b. **Bid Review and Analysis** Assist the Departmental Representative, as required, by analyzing and reconciling any differences between the pre-tender estimate and the submitted bids.

Greenhouse Gas Life Cycle Cost Analysis (GHG LCCA)

Options	Option 1: Baseline <i>(Complies with NECB 2020, Part 8: Building energy Performance Compliance Path reference building)</i>	Option 2: NECB Tier 2 <i>(Complies with NECB 2020, Part 10: Tiered Building Energy Performance Compliance, Tier 2 requirements)</i>	Option 3: Cost Neutral GHG Reduction <i>(Greatest GHG reductions with a neutral Net Present Value (as close to \$0 as possible))</i>	Option 4: Maximum GHG Reduction <i>(Meets Net Zero carbon requirements utilizing on-site carbon-free renewable energy to offset consumption of utility provided energy)</i>	Option 5: Optimized GHG Reduction <i>(Most cost effective GHG reduction)</i>	Option 6: Net Zero Ready <i>(Meets Net Zero carbon requirements utilizing both on-site and utility provided carbon-free renewable energy)</i>
Description						
Annual GHG Emissions (tonnes of CO ₂ e)						
Total Initial Capital Cost (\$)						
Incremental Capital Cost (above/below Baseline) (\$)						
Annual Energy Cost (\$/year)						
Annual Carbon Shadow Cost (\$/year)						
40-year Maintenance Cost (\$)						
40-year Life-cycle Cost (\$)						
Incremental Net Present Value (compared to Option 1) (\$)						
Discount Rate:	Recommendation:					
Utility Inflation Rate:						
Construction Inflation Rate:						
*Note - Rates stated above to be provided by Departmental Representative.						