

1 General

1.1 DESCRIPTION OF WORK

- .1 The work will take place at the DFO Satellite Office and Warehouse, located in St. Lewis, NL.
- .2 The Description of Work generally includes, but is not limited to the following items:
 - .1 The Contractor is to provide each item, and properly execute all work as specified herein, indicated by drawings, addenda, or change orders issued with respect to this project.
 - .2 It is the goal of the Department to upgrade this building through the works of the project such that the Facility can be certified under the CaGBC Zero Carbon Building Standard - Performance Track.
 - .3 The Contractor must coordinate, administer, and supervise all work, material acquisition and labour.
 - .4 Contractor to embrace the safety culture mandatory on this project. Failure to comply 100% will result in removal of workers and/or Contractor from site. Refer in particular to Section 01 35 29.06 - Health and Safety Requirements.
 - .5 Civil Scope (Phase 1, 2021):
 - .1 Contractor to clear, grub and dispose of all trees, shrubs, rock and other material where indicated on drawings to allow for construction of new solar array field. Coordinate material disposal location with Departmental Representative.
 - .2 Contractor to coordinate the installation of concrete pile bases for new solar array field with Electrical Contractor.
 - .3 Contractor to supply and install new 1800mm high chain link fence, gate, concrete bases and all required attachments as per details and specification.
 - .6 Civil Scope (Phase 2: 2022)
 - .1 Contractor to coordinate the removal of existing 6900L fuel oil tank with Mechanical Contractor. Site Contractor to demolish existing oil tank housekeeping pad.
 - .2 Contractor to provide a new slab-on-grade for pellet storage.
 - .7 Architectural Scope (Phase 1, 2021):
 - .1 Demolition:
 - .1 Remove existing metal siding and trims as required to facilitate the removal of existing exterior windows and the installation of new exterior windows. Existing metal siding is to be salvaged for reinstallation following installation of new windows. Existing metal trims are to be removed and disposed of.
 - .2 Remove and dispose of existing window buildout, casing and blinds.
 - .3 Remove and dispose of existing exterior windows.
 - .4 Remove and dispose of existing attic hatches.
 - .2 New Construction:
 - .1 Install new triple glazed exterior windows complete with new wood buildout, wood casing, roller window shades and exterior metal trims.
 - .2 Install new exterior door thresholds, weatherstripping and door seals.
 - .3 Install new attic hatch.
 - .4 Install 150mm additional fiberglass batt insulation in attic space

- of office building.
- .5 Excavate around building perimeter as required to install 50mm concrete faced rigid insulation extending 1220mm below metal wall flashing. Backfill excavation when complete.
- .8 Architectural Scope (Phase 2, 2022):
 - .1 Cutting, patching and painting as required to facilitate the work of the Mechanical & Electrical sub-contracting.
 - .2 Construct Pellet Storage Shed as shown on the Drawings.
- .9 Mechanical Scope (Phase 2, 2022):
 - .1 Demolition:
 - .1 Demolish the existing forced air oil furnace in the existing office mechanical room, associated fuel oil piping, tank, and monitoring system.
 - .2 Demolish the existing electric hot water heater within the mechanical room to the nearest tie-in point.
 - .3 Demolish the existing multi-zone split air conditioning system including outdoor condensing unit, and capture refrigerant charge
 - .4 Remove existing HRV and associated ductwork to as shown, to accommodate the new ERV location
 - .2 New Construction:
 - .1 Install a pellet boiler of the specified capacity with vacuum transfer from an outdoor storage shed (by General Contract) under this scope. Provide all ancillaries for the hydronic system including piping and valves, pumps, buffer tank, expansion tank, and controls.
 - .2 Install a new condensing unit with an indoor central station heat pump Air Handling Unit (AHU), complete with new refrigerant charge. To be completed in compliance with DFO Halocarbon system procedures (see attached Appendix 'A')
 - .3 Install a new hydronic ducted heating coil downstream of the new AHU, to provide primary (first stage) heating to the facility.
 - .4 Install an indirect DHW heater, sourced from the new hydronic system.
 - .5 Supply and Install a new Energy Recovery Ventilator in the mechanical room, and reconnect to existing duct distribution system.
 - .6 The Contractor shall furnish for the department an initial fill of pellets for the shed (10 ton fill), meeting the following requirements:
 - .1 The pellets must meet the CaGBC ZCB guideline for zero-emissions biomass, certifications or a written statement of compliance must be provided.
 - .2 Pellets must be made from wood harvested from crown land.
 - .3 Pellet Vendor must have a replanting initiative.
 - .4 The pellets are manufactured from a by-product that would otherwise go to landfill (note in this case the by-products cannot contain paint or other chemicals).
 - .5 The pellets shall meet PFI "high quality pellet" standards and shall at minimum meet the following:
 - Calorific value: 16,700 kJ/kg (min)
 - Bulk Density: 640 kg/m3 (min)

- Water Content: 10% (max)
- Ash Content: 10% (max)
- Contents: 100% untreated natural wood.

- .10 Electrical Scope (Phase 1, 2021):
 - .1 Demolition
 - .1 Demolition of existing service rated 120/240V, single phase, three wire, recessed mounted panelboard 'A', including but not limited to tracing out and identification of all associated existing branch circuit wiring and feeders as necessary for their future reuse and connection to new service rated panelboard, as well as all necessary utility and Departmental Coordination required to facilitate a temporary shutdown of the electrical service to the facility. This work will also include coordination with the General Contractor for the safe and organized removal of existing insulation and wooden casework around the existing panelboard.
 - .2 Demolition of select lighting control switches as required for their replacement with line voltage occupancy switches. The scope of this work includes but is not limited to tracing out and identification of all associated existing branch circuit wiring as necessary to facilitate its reuse and connection to new occupancy switches.
 - .3 Demolition of select receptacles and wiring devices as required for their removal or splice and relocation as indicated on the Drawings. The scope of this work includes but is not limited to tracing out and identification of all associated existing branch circuit wiring as necessary to facilitate splicing and reconnection to new; or otherwise, the complete removal of the wiring device and branch circuit back to source as indicated on the Drawing.
 - .2 Solar Photovoltaic System:
 - .1 Supply, installation, and commissioning of a new ground mounted solar array and associated connection to the facilities electrical distribution system. The scope of this work includes but is not limited to the supply and installation of:
 - .1 30kW ground mounted solar array system utilizing power optimizers or microinverter technology, suitable for connection to Utility distribution.
 - .2 Inverters complete with arc fault protection and rapid shutdown to CSA 22.1 Section 64 and to system performance and operational characteristics as indicated. All software and hardware is to be provided for remote ethernet monitoring of the system. Inverters are to be located within the existing service space as shown on the Drawings.
 - .3 Ground mounted racking system which support the photovoltaic panels c/w all necessary footings, anchors, clips for a fully engineered system to suit the specific environmental characteristics and geographic location.
 - .4 Individual grounding of solar arrays racking and equipment to the manufactures recommendations and CSA 22.1-18 Section 10.
 - .5 All associated trenching, raceway, cabling, connectors etc. for a safe and fully operational solar renewable energy generator as described.

- .6 Programming, verification, commissioning, and training on the full solar array as well as all associated control and monitoring equipment.
- .3 Lighting Control Upgrades:
 - .1 Installation of new lighting control devices where specifically indicated on the Drawings. The scope of this work includes but is not limited to the installation and connection of branch circuit wiring and occupancy devices as well as the functional testing and calibration of time delay and sensitivity settings as required to best suit the application.
- .4 New Service Rated Panelboard:
 - .1 Installation of a new service rated panelboard. The scope of this work includes but is not limited to the connection of new and easing branch circuiting and electrical loads to this new panelboard including verification of phase rotation and balancing, circuit identification, the connection and verification of existing facility grounding, and utility coordination and connection of service feeders.
- .11 Electrical Scope (Phase 2, 2022):
 - .1 Demolition of existing electrical infrastructure associated with existing obsolete mechanical systems as indicted on the drawings. This scope of work includes but is not limited to the tracing out, disconnection and removal of electrical back to source for existing obsolete mini-split condensers, evaporators, heat recovery ventilator, oil fired boiler and associated diesel tank monitoring and leak detection system.
 - .2 New Construction including all electrical material and plant associated with the connection of new mechanical equipment, as well as the subsequent verification of phase rotation, and proper operation and control of the mechanical load.

1.2 WORK SEQUENCE

- .1 Construct Work in stages to accommodate continued use of premises during construction.
- .2 Co-ordinate Progress Schedule and co-ordinate with occupancy during construction.
- .3 Work is expected to be completed over 2 years, the Contractor shall mobilize twice, once during the 2021 construction season (June - October), and complete the prescribed renovations entirely. Leaving the facility in a functional interim state, and completing the upgrades in the 2022 construction year.
- .4 System outages for the heating system must be minimized, scheduled two (2) weeks in advance, and coordinated with Departmental Representative.

1.3 FAMILIARIZATION WITH SITE

- .1 In general, bidders must obtain all necessary information as to the risks, contingencies and other circumstances which may influence or affect their tender pricing. No allowance must be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

1.4 COST BREAKDOWN

- .1 Phase 1 and Phase 2 of the project will be completed under one (1) single lump sum contract.
- .2 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Departmental Representative will provide the required forms for application of progress payment.

- .3 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components or building systems as directed by Departmental Representative.
- .4 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.

1.5 PERMITS

- .1 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .2 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of Work.
- .3 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

1.6 BILINGUAL NOTATIONS

- .1 Any items supplied and installed under this contract which have operating instructions on them and which can be expected to be used by the public and building tenants, must have such operating instructions in bilingual format - English and French.
- .2 Public Works and Government Services Canada will not be responsible for re-stocking or re-ordering costs incurred by the Contractor as a result of his failure to ensure bilingual designation on such items.
- .3 The Contractor is responsible for ensuring that all trades are made aware of these requirements.

1.7 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. The building and grounds are non-smoking.

1.8 COORDINATION

- .1 All Trades on site are responsible to co-operate and co-ordinate with each other.
- .2 Coordination prior to installation of all building components is mandatory.
- .3 Where work must be modified or reinstalled to be properly coordinated, the cost to do so will be paid by the Contractor. The Departmental Representative will not pay for uncoordinated work nor will the Departmental Representative pay to resolve uncoordinated work.

1.9 EMERGENCIES

- .1 The Departmental Representative has authority in an emergency to stop the progress of the work whenever in his or her opinion, such stoppage may be necessary to ensure the safety of life, or of the structure. This includes authority to make such changes and to order, access and award the cost of such work extra to the Contract or otherwise as may in his or her opinion be necessary.

1.10 EXECUTION

- .1 Execute work with least possible interference or disturbance to building operations, public and normal use of premises.

1.11 MITIGATION OF IMPACT ON EXISTING BUILDING

- .1 This Contractor will recognize that the existing facility must remain fully functional with minimal disruption during the course of the Work. Any planned disruption in services must be brought to the attention of the Departmental Representative and receive prior approval before commencement.
 - .2 This Contractor is responsible to ensure that the existing building is kept free from any contamination that may result from any of the Work.
 - .3 The life safety and security systems in the existing building are required to remain
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functional during construction. This Contractor is responsible to ensure that such systems are not inadvertently activated or deactivated during construction.

1.12 DOCUMENTS

- .1 The Contract Documents are complementary and what is called for by any one must be as binding as if called for by all.
- .2 Descriptions of materials or work which have well known technical or trade meanings must be held to refer to such recognized standards.
- .3 Should the specifications conflict with the drawings, the specifications will govern.
- .4 In the case of discrepancies between drawings, those of larger scale, or if the scale are the same, those of later date will govern.
- .5 All drawings and specifications must be interpreted in conformity with the agreement.

1.13 PROTECTION OF WORK AND PROPERTY

- .1 The Contractor must maintain continuously adequate protection of all his or her work from damage and must take reasonable precautions to protect the Departmental Representative's property from all injury arising in connection with this Contract. He or she must make good any damage or injury to his or her work and must make good any damage or injury to the property of the Departmental Representative resulting from the lack of reasonable protective precautions.

1.14 COMMUNICATION

- .1 All submissions and inquiries will be directed to the Departmental Representative for review.
- .2 All direction will be transmitted to the Contractor by the Departmental Representative.

1.15 CODES AND REGULATIONS

- .1 Perform work in accordance with National Building Code of Canada (NBC) 2015 and any other code of provincial or local application, provided that in any case of conflict or discrepancy the more stringent requirements will apply.
- .2 Meet or exceed requirements of contract documents and specified standards.
- .3 References to standards, including manufacturer's direction for installation must be the latest edition.
- .4 All materials, components and equipment as well as construction methods will comply with the latest edition of the National Building Code and all other applicable Provincial codes or regulations.
- .5 The latest edition of the Canadian Electrical Code will govern all electrical work, whether pre-wired an/or assembled remote from the site or not.
- .6 All equipment supplied or installed will be CSA approved for the intended use.
- .7 The latest edition of the Newfoundland & Labrador Occupational Health and Safety Act will govern safe construction practices.
- .8 Provide a copy of all certificates of acceptance issued by Provincial or local authorities.

1.16 WORK SCHEDULE AND PROGRESS REPORTS

- .1 The Contractor will prepare and maintain a consolidated schedule in weekly increments showing scheduled work versus actual work. The schedule must indicate the contract commencement and completion date for the total project.
 - .2 The Contractor is to develop a detailed schedule identifying specific components of the carpentry, roofing and metal trades. A single line items for each is not acceptable.
 - .3 Provide updated schedule information from time to time as the progress of the work or Departmental Representative may require.
 - .4 The Contractor will furnish monthly progress reports from the date of commencement. These reports must show the percentage of completion of the various divisions of work
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and contain comments on the general progress of the project.

1.17 DFO ACTIVITIES

- .1 The Contractor is not to negatively impact DFO activities in any way. The building is to remain fully functional.

1.18 WORK PLAN

- .1 The Contractor is to prepare and submit a weekly work plan by end of business Thursdays to Departmental Representative.
- .2 Work plan to identify work for the coming week, interruptions, deliveries, updated schedule and DFO schedule requirements.
- .3 Work plan to be submitted through from Award to Final Completion for all aspects of the project.

1.19 CONTRACTOR'S USE OF SITE

- .1 Do not unreasonably encumber site with materials or equipment.
- .2 Move stored products or equipment, which interfere with operations of Departmental Representative or other Contractors.
- .3 Obtain and pay for use of additional off site storage or work areas needed for operations.
- .4 Contractor to coordinate with the Departmental Representative an appropriately sized and placed laydown area which does not interfere with site operations.
- .5 The contractor is responsible for securing stored materials onsite in a sufficient fashion, the Departmental Representative will not be responsible for, or compensate in any way loss claims to due theft or pilferage.

1.20 PROJECT MEETINGS

- .1 Hold bi-weekly project meetings at the site on a day, time and location approved by the Departmental Representative (DR). The DR will arrange for the location. In addition hold any additional meetings as the need arises or as directed by the DR.
- .2 Notify all parties concerned of such meetings.
- .3 The Contractor will record minutes of meetings and distribute to all parties within three (3) days of meeting.
- .4 Failure of the Contractor to accurately record minutes or distribute the minutes in a timely manner will result in the Departmental Representative taking over the duties and deducting an equal amount from the progress claims as compensation.

1.21 SITE INSPECTOR

- .1 No work is to be covered without having received approval from the Departmental Representative. The Departmental Representative will have the authority to cause any part of the work to cease, should, in his or her opinion, there be cause to do so.
- .2 This work must be examined by the Departmental Representative and approval granted to resume when a satisfactory solution has been found out.

1.22 SETTING OUT OF WORK

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations.
- .2 Provide all equipment, materials and devices needed to lay out and construct work.
- .3 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.

1.23 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain his approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.24 EXISTING SERVICES

- .1 Before commencing work, establish the location and extent of service lines and notify Departmental Representative of findings if in conflict with information or intent shown.
- .2 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .3 Contractor will pay for any or all repairs to existing services that have been damaged due to the Contractor's negligence in the course of his work.
- .4 Notify Departmental Representative and utilities of intended interruption of services and obtain permission.
- .5 Where Work involves breaking into or connecting to existing services, give Departmental Representative 24 hours notice for necessary interruption. Minimize duration of interruptions. Carry out Work at times as directed by governing authorities or Departmental Representative with minimum disturbance.
- .6 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.

1.25 ADDITIONAL DRAWINGS

- .1 The Departmental Representative may furnish as necessary for the execution of the work, additional instructions, by means of drawings or otherwise. All such additional instructions must be consistent with the contract documents. In giving such additional instructions the Departmental Representative will have authority to make minor changes in the work, consistent with the Contract.

END OF SECTION
