

**Part 1          General**

**1.1            DESCRIPTION OF WORK**

- .1      In general, work under this contract consists of:
  1.      Provide and install four (4) new natural gas fired high efficiency boilers c/w multi-boiler control panel and associated hydronic circulation pumps. Contractor to provide all control components, wiring, devices and installation to complete all work. Include Manufacturer Certified Representative start-up.
  2.      Provide new boiler combustion air and vent termination for all new boilers as indicated on drawings.
  3.      Provide all submittals including shop drawings, waste management disposal plan, as-built drawings, operation & maintenance manuals, warranty letter, site specific safety plan.
  4.      Removal and disposal of existing piping as indicated on drawings.
  5.      Remove all equipment and materials made redundant by this work. Remove all mechanical and electrical equipment designated for removal. Dispose off-site unless noted otherwise. Dispose of all material made redundant.
  6.      Removal of any electrical or control systems, wiring and accessories made redundant by this contract.
  7.      Electrical disconnect and reconnect as required. Provide electrical connections of all new equipment including new electrical panels, wiring and all accessories.
  8.      Provide new hydronic, drainage, domestic water and vent piping, insulation and jacket, valves, hangers and accessories as indicated on drawings.
    1.      Modifications and additions to hot water piping and associated accessories to suit new boiler installation arrangement and insulation as required.
    2.      Modification to existing domestic water piping (including backflow prevention devices, trap primers, etc), vent and sanitary piping as required to suit new boiler installation arrangement and insulation as required.
  9.      Provide new natural gas piping, valves and accessories shown. Modify natural gas piping as indicated on drawings.
  10.     Provide mechanical and electrical identification of all new and existing equipment located in the Boiler room.
  11.     Modification to ventilation/exhaust ductwork and system to provide the required air change rate in the new mechanical room serving the four (4) new boilers.
  12.     Provide all trenching, cutting and patching, repair damaged surfaces to match existing, including painting.
  13.     Provide draining and re-filling of heating system as required to perform work.
  14.     Provide cleaning and flushing of all new piping installed including potable water, non-potable water and heating water piping.
  15.     Obtain all required licenses and permits.

16. Clean up all areas during and at the completion of work.
17. Provide all required modifications to electrical systems (i.e. including relays, contactors, transformers, switches, etc.) to make all control systems a complete operational package.
18. Provide fire stopping and smoke seals as required for new and existing piping with the Boiler room.
19. Provide control wiring as indicated c/w accessories.
20. Contractor to maintain building fully operational during construction, meaning minimizing disruption of space heating during normal occupancy. Perform work after hours where occupant safety or disruption of heating is an issue. Building must be maintained above 18°C at all times and heating shut-down periods limited. Contractor shall coordinate/phase work in order to keep heating available at all times during construction (with exception of limited shut-down periods).
21. Provide all Architectural work as indicated.
22. Contractor to supply and install a new DDC control system as required to accommodate new control points as indicated in Points List. Complete all work as noted within specifications, points list and drawings inclusively. Provide graphics, programming and LAN connection to AAFC existing front end.
23. TAB to confirm new flow rates and temperatures are to design.
24. Provide user training and operations and maintenance manuals.
25. Provide Equipment Performance Verification start-up reports.
26. Provide commissioning of the complete system.
27. Materials and workmanship must meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

## **1.2 FAMILIARIZATION WITH SITE**

- .1 Before submitting a bid, it is required that bidders visit the site to review and verify the form, nature and extent of the work, materials needed, the means of access and the temporary facilities required to perform the Work.
- .2 A walk-through of project site prior to completion of bid submittal will be arranged by PSPC. Date, time and location to be confirmed by PSPC.

## **1.3 CODES AND STANDARDS**

- .1 Perform work in accordance with the National Building Code of Canada (NBC), National Fire Code of Canada (NFC) 2015 and any other code of provincial or local application, including all amendments up to bid closing date, provided that in any case of conflict or discrepancy, the more stringent requirement shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

#### **1.4 INTERPRETATION OF DOCUMENTS**

- .1 For Federal Government projects, Division 01 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

#### **1.5 TERM ENGINEER**

- .1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative as defined in the General Conditions of the Contract.

#### **1.6 SETTING OUT WORK**

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide 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.

#### **1.7 COST BREAKDOWN**

- .1 Before submitting first progress claim submit breakdown of Contract Amount in detail as directed by Departmental Representative and aggregating contract amount. Required forms will be provided for application of progress payment.
- .2 List items of work numerically following the same division/section number system of the specification manual and thereafter sub-divide into major work components and building systems as directed by Departmental Representative.
- .3 Upon approval, cost breakdown will be used as basis for progress payment.

#### **1.8 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each of the following:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda and amendments.
  - .4 Reviewed Shop Drawings.
  - .5 List of outstanding shop drawings.
  - .6 Change Orders.
  - .7 Other modifications to Contract.
  - .8 Field Test Reports.
  - .9 Copy of Approved Work Schedule.
  - .10 Health and Safety Plan and other safety related documents.
  - .11 Other documents as stipulated elsewhere in the Contract Documents.

**1.9 PERMITS**

- .1 In accordance with the General Conditions, obtain and pay for building permit, certificates, licenses and other permits as required by municipal, provincial and federal authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application forms and approval documents received from above referenced authorities.

**1.10 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

- .1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.
- .2 Where security has been reduced by work of Contract, provide temporary means to maintain security.
- .3 Where elevators exist in building, only those assigned for Contractor's use may be used for moving workers and material within building. Protect walls of passenger elevators, to approval of Departmental Representative prior to use. Accept liability for damage, safety of equipment and overloading of existing equipment.
- .4 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas which will be operative during such work.

**1.11 ROUGHING-IN**

- .1 Be responsible for obtaining manufacturer's literature and for correct roughing-in and hook-up of equipment, fixtures and appliances.

**1.12 CUTTING, FITTING AND PATCHING**

- .1 Ensure that cutting and patching required by all trades is included in total bid amount submitted for the work.
- .2 Execute cutting, fitting and patching required to make work fit properly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work. This includes patching of openings in existing work resulting from removal of existing services.
- .4 Do not cut, bore, or sleeve load-bearing members, except where specifically approved by Departmental Representative.

- .5 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .6 Fit work airtight to pipes, sleeves ducts and conduits.

**1.13 CONCEALMENT**

- .1 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

**1.14 LOCATION OF FIXTURES**

- .1 Location of equipment, fixtures and outlets, shown or specified shall be considered as approximate. Actual location shall be as required to suit conditions at time of installation and as is reasonable.
- .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 when impending installation conflicts with other new or existing components. Follow directives for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

**1.15 EXISTING SERVICES**

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to tenant operations.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. This includes disconnection of electrical power and communication services to tenant's operational areas. Adhere to approved schedule and provide notice to affected parties.
- .4 Provide temporary services to maintain critical building and tenant systems.
- .5 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.

- .7 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.

#### **1.16 BILINGUAL NOTATIONS**

- .1 Any items supplied and installed under this contract which have operating instructions on them such as door hardware, washroom accessories, push button activation controls powered hand dryers, mechanical equipment such as water coolers, etc., and which can be expected to be used by the building tenants, must have such operating instructions in bilingual format - English and French.
- .2 Factory embossed or recessed symbols illustrating equipment operation is an acceptable alternate to lettering.
- .3 Items supplied with factory - embossed or recessed lettering in one official language with an applied sticker or decal representing the second official language is not acceptable unless the Departmental Representative gives prior approval before any such items are ordered.
- .4 Internationally recognized colour coding such as red and blue center pieces for plumbing brass is acceptable.
- .5 No extra costs will be paid for re-stocking or re-ordering of materials and equipment due to Contractor's failure to fully meet bilingual signage requirements specified herein.
- .6 Ensure that all trades are made aware of above requirements.

#### **1.17 BUILDING SMOKING ENVIRONMENT**

- .1 Comply with smoking restrictions.

END OF SECTION