



ADDENDUM NO. 2
Request for Tender 11-276A
Fire Station Headquarters – Station #3
Date: June 2, 2011

Please be advised the following changes/clarifications to the above-noted tender document:

Mechanical:

Item 1: Hallex drawing M1 Rev 1:

- Add note to Roof Top Unit Schedule: All RTU's to have Merv13 Filter.

Item 2: Hallex drawing M2 Rev 1:

- Add CO2 sensor in Room 102 to communicate with RTU3 ventilation control.
- Thermostat tag in Room 102 to read RTU-3
- Thermostat tag in Room 122 to read RTU-2
- Relocate both DAC1 and DAC2 located on south wall in building IT room 116, to north wall of the same room.

Electrical:

Item #1 – Specification 26 05 01 Rev2 – Common Work Results

- a) Note the changes to paragraph 3.3.2(a)
- b) Note the addition of paragraphs (b),(c),(d),(e) and (f) in Section 3.3.2
- c) Note the addition of sections 3.4, 3.5 and 3.6

Item #2 – Hallex Electrical Drawing E1 Rev 2

- a) Note the revision in the ELECTRICAL LEGEND for data, telephone and card access symbols
- b) Note the change in quantity for Item #3 from 20 each to 23 each.

Item #3 – Hallex Electrical Drawing E2 Rev 2

- a) Note the various changes as highlighted with revision clouds.

Item #4 – Hallex Electrical Drawing E3 Rev 2

- a) Note the change in the Reflected Ceiling Plan for the Building IT Room (116)

Item #5 – Hallex Electrical Drawing E4 Rev 2

- a) Note the removal of circuit #66 on Panel A. It is now a spare.
- b) Note the addition of 5 each Communications Equipment circuit breakers on Panel UPSB.

Item #6 – Hallex Electrical Drawing E5 Rev 0

- a) This is a new drawing outlining various conduit runs.
- b) Coordinate layout and installation efforts with the Communications Contractor.
- c) Note that this drawing is not an exhaustive schedule of all conduits to be included. Best practice techniques are to be used for interconnection of systems wiring throughout the building.

d) This drawing is to be read in conjunction with Section 3.6 of Specification 26 05 01 Rev 2.

The following questions have been received and responses are shown below:

Q1. The second page of the bid form, part 1, item 2, requires us to include the cash allowance cost. There are cash allowances in Section 01020 as well as in the Mech. and Elect. Specifications. Do we include the sum of all of these in item 2 or just the sum of cash allowances listed in section 01020?

Response: Bidders to insert the total cash allowance amount of \$184,000 on 00400 Bid Form, Item 2

Q2. Where are the Corner Guards, how many are needed & what length? Are these as they are not shown on Drawings or indicated in Division: 10260?

Response: As shown on Floor Plan, allow for at all exterior drywall corners.

Q3. What type of Bike Racks are required, what size & models are needed? There does not appear to be a spec for these units. Qty also needed.

Response: Provide one (1) 5 wave bike rack model T9A652777GBK from Global Industrial or approved alternate

Q4. There is a size of Footgrille noted in Vest. 100 but Foyer 125 & Corr 136 do not indicate a size as per Floor plan. Please clarify.

Response: In specification 12400 Item 1.2 delete reference to Foyer 125 and Corridor 136

Q5. Could you provide a roof framing plan?

Response: Drawing S2 is the only framing plan.

All other terms and conditions remain the same.

Purchasing
Town of Milton
Fax No. 905-878-4231

Please sign and fax this page back to the attention of the Purchasing - Corporate Services Department at 905-878-4231.

I/We acknowledge receipt of the above addendum items.

Signature

Company Name

1. General

1.1 General

- .1 Instructions to Bidders, Form of Tender, Form of Contract and Division 1 all form part of this Section.
- .2 This Section, 26 05 01, applies to and governs the work of all sections of Division 26.
- .3 The Electrical specifications and drawings specify complete systems. Include all labour and material required to make them so.
- .4 Provide and install all material and labour to complete the work as shown on the drawings, described in the specifications or required by regulatory agencies.
- .5 Supply all items, articles and materials using methods, operations or techniques mentioned, shown, scheduled or reasonably implied by the drawings and specifications. This shall include all labour, equipment, tools, apparatus and incidentals required to provide a complete and operable electrical system or systems.
- .6 The drawings and specifications are intended to complement one another. Materials and operations shown or implied on one and not the other shall be deemed to be required and must be included in the contract.
- .7 The specifications are comprised of the following sections:
 - 26 00 00 Electrical Specification Contents
 - 26 05 01 Common Work Results – Electrical
 - 26 05 05 Electrical LEED® Requirements
 - 26 05 43 Underground Ducts and Raceways for Electrical Systems
 - 26 24 10 Main Electrical Service
 - 26 27 00 Power and Distribution Equipment
 - 26 51 13 Lighting Equipment
 - 27 31 00 Voice Communications Switching and Routing Equipment
 - 26 32 13 Generator Set Specifications
 - 26 36 23 Transfer Switch
 - 33 05 23 Evacuation and Backfill Electrical Work
- .8 Coordinate the electrical work with other trades. Provide an adequate work force and supervision to meet the construction schedule.

1.2 Codes Permits and Inspections

- .1 The complete installation shall conform to the Ontario Electrical Safety Code, 24th Edition, 2009.
- .2 Electrical Equipment, devices, fixtures, etc, shall conform to CSA and ULC as applicable.
- .3 Electrical Contractor shall obtain all required permits prior to undertaking the work. The Electrical Safety Authority of Ontario (ESA) plan inspection report shall be made available to the contractor as soon as it is received by the Engineer.
- .4 After completion of the work the contractor shall furnish to the Architect a certificate of Final Inspection and Approval from the ESA.

1.3 Scope of Work

- .1 Provide and install all material and labour to complete the work as shown on the drawings, described in the specifications or required by regulatory agencies.
- .2 Supply all items, articles, materials, using methods, operations or technique mentioned, shown, scheduled or reasonably implied by the drawings and specifications. This shall include all labour, equipment, tools, apparatus and

- .3 incidentals required to provide a complete and operable electrical system or systems. Provide all necessary grounding and bonding, whether shown on drawings or not, as per the Ontario Electrical Safety Code, 24th Edition, 2009.
- .4 Coordinate the electrical work with other trades. Provide an adequate work force and supervision to meet the construction schedule.
- .5 Upon completion of the project provide the owner with a certificate of warranty, certificate of ESA inspection approval, fire-alarm system verification report, as-built drawings and maintenance manuals. This provision shall be met prior to application for the final draw.

1.4 Contradictions and Discrepancies

- .1 Prior to the closing of tenders, report any contradiction or discrepancies found in the drawings and/or specifications to the Engineer for clarification.
- .2 The Engineer will interpret the intent of the article in question and may issue an addendum to clarify the intent.
- .3 Failure by the Contractor to report contradictions or discrepancies until after the tenders close will give the Engineer the right to interpret the intent of the article in question and render a binding decision.

1.5 Quality Assurance

- .1 Before tendering, become fully acquainted with by-laws of any local or other authority having jurisdiction.
- .2 Carry out all changes and alterations required by the authority inspector of any authority having jurisdiction without delay to the progress of the work and without extra cost.
- .3 Materials and labour provided under this contract shall be of the new and of the highest quality and shall be in compliance with the Canadian Standards Association, Ontario Electrical Safety Code, 24th edition, 2009, ULC, Ontario Building Code 2006, and all Fire Department Regulations.
- .4 Upon completion of the project provide the owner with a certificate of warranty, certificate of ESA inspection approval, fire-alarm system verification report, as-built drawings and maintenance manuals. This provision shall be met prior to application for the final draw.
- .5 Pay for all permits required for the undertaking and completion of this work.

1.6 Submittals

- .1 **Manufacturer's Shop Drawings**
 - a) Comply with the provisions listed herein.
 - b) Before fabrication of any materials or equipment, submit six (6) copies of detailed drawings of equipment and apparatus to the Engineer for review. Do not order materials until review has been given. Check the drawings and note comments, date and signature before submitting.
 - c) Shop drawings must apply to the equipment under consideration. Advertising literature and comprehensive data sheets are not acceptable. The drawings must contain the actual dimensions of unit and dimensioned location and size of all outlets and connections, model range, capacity, hp, voltage, etc., of all accessories listed in the specifications, and/or being provided, and the operating points of the proposed equipment.
 - d) Do not consider review rendered on shop drawings as a guarantee of

measurements for building conditions. Where drawings are reviewed, said review does not mean that drawings have been checked in detail. The review does not in any way relieve this contractor from his responsibility or necessity of furnishing material to meet the performance of equipment specified and/or as shown on the contract drawings.

- e) Electrical items for which shop drawings are specifically requested are listed in each section of the Specification.

.2 Interference Drawings

- a) Where equipment of the electrical system must be installed in close proximity to equipment of another trade, this Contractor shall prepare and submit the necessary interference drawings for review and comment.
- b) Submission of the interference drawings to the Engineer for review does not absolve the Contractor of his responsibility for the proper layout and coordination of the work.

.3 Record Drawings

- a) On two (2) sets of prints of this project, mark all changes and deviations from the original plans. Correctly mark all changes in red ink.
- b) On completion of the project, turn these plans over to the Owner for the Owner's record of the exact location of all piping and equipment.
- c) Certify these plans, "as-built". Plans are not considered certified unless they are signed and sealed by an officer of this contractor's company.
- d) Where piping is buried, dimension locations with respect to building walls and mark levels with respect to the elevation of finished floor below which piping is buried.

.4 Maintenance Data and Operating Instructions

- a) Collect and assemble manufacturer's data and operating and maintenance instructions.
- b) Print name of project and Owner's, Architect's and Engineer's names on the title sheet and cover, and return over sets of manuals to the Architect for approval before completion of the work. Re
- c) Assemble all data in logical order and insert in as suitable hard cover, black, three-ring, hard back, loose leaf binder. Mark each Section with a labeled tab protected with a celluloid cover.
- d) Protect schedules, lists and directories with plastic covers.
- e) Type all notes. Printed literature may be used.
- f) Neatly assemble data complete with a list of contents.
- g) Include a complete list of electrical equipment supplied and installed under this contract.
- h) Equipment data shall include, without being limited to:
 - i) Manufacturer's data sheets, instruction sheets, brochures.
 - ii) Electrical Panel data sheets and schedules.
 - iii) Motor data sheets.
 - iv) Operating, maintenance and lubricating instructions.
 - v) Recommended spare parts lists, etc., issued by manufacturers or suppliers of equipment installed, necessary and desirable for maintenance, operation and repair of the equipment.
- i) Electrical Panel data sheets shall include, at minimum, the following

- information for each panel:
- vi) Panel Rated Voltage
 - vii) Panel Rated Current
 - viii) Panel Short Circuit Current Rating
 - ix) Panel Schedule
- j) Motor data sheets shall include for each motor the following information.
- x) Motor designation
 - xi) Motor H.P,
 - xii) Voltage
 - xiii) Nameplate full load current
 - xiv) Actual running current
 - xv) Catalogue of overload element installed
 - xvi) Time up to full speed
 - xvii) Fuse type and rating
 - xviii) Motor starter size
 - xix) Time up to speed shall be checked on site with stop watch in conjunction with a tachometer or clamp-on meter.
- k) Manual should also include:
- xx) Equipment shop drawings
 - xxi) Operating instructions for each system
 - xxii) Control diagrams
 - xxiii) Wiring diagrams
 - xxiv) Guarantees
 - xxv) Test reports
 - xxvi) Lubricant lists
- l) Instructions shall include specific warning of maintenance and operation practices or materials which may damage or disfigure the particular material or equipment.

1.7 Qualifications

- .1 Electrical Contractors shall hold a valid Electrical Contractor License in Ontario.
- .2 All Electrical work shall be performed by qualified electricians holding valid "Certificates of Qualification" issued by the Provincial licensing board.
- .3 The journeyman/apprentice ratio shall not exceed 3:1 (three journeyman to one apprentice).

1.8 Product Delivery, Storage and Handling

- .1 Storage of Materials, Equipment and Fixtures
 - a) At all times keep the Owner's property in clean and tidy condition and properly store and stack all materials neatly upon the site so as not to litter the premises.
 - b) Store packaged materials and equipment in original undamaged condition with manufacturer's labels and seals intact or properly crated where such applies. Prevent damage to materials during handling and storage. Keep storage area dry and secure from pilfering.

1.9 Job Conditions

- .1 Visit the site and become thoroughly familiarly with existing site conditions so as not

- to overlook any condition which may affect the scope of the work. For any such item which could be foreseen, no extra will be allowed.
- .2 Refer to Division 1 concerning the provision of temporary water, light, power and heat. Supply all extensions cords, lamps, hose, etc.
 - .3 Provide own office, workshops, tools and materials storage if necessary, and be responsible for any loss or damage thereto.

1.10 Minor Field Changes

- .1 The location, arrangement and connection of equipment and material as shown on the drawings represent a close approximation to the intent and requirements of the contract. The right is reserved by the Architects to make reasonable changes required to accommodate conditions arising during the progress of the work. Such changes shall be done at no extra cost to the Owner, unless the location, arrangement or connection is more than five feet from that shown.

1.11 Guarantee

- .1 Guarantee in writing that all materials and workmanship used on the project are in strict accordance with the specifications and will give proper and efficient operation and are free from mechanical or electrical defects. Repair and/or replace any defects which may appear in any of the work within one year after the written acceptance of same by the Owner (except due to ordinary wear and tear) without additional expense to the Owner. Note that the one year period referred to above may exceed the equipment guarantee appreciably, and allowance must be made for this fact.

1.12 Clean-Up and Final Documents

- .1 On completion of the work described in each section of this Division 16, remove from the premises all surplus and waste materials, clean all fixtures and equipment, and leave all items in perfect order and ready for operation.
- .2 Issue to the Owner through the Architect:
 - a) Copies of "As-built" drawings.
 - b) Copies "Operation and Maintenance Brochures".
 - c) Copies "ESA final Inspection and Approval Certificate".
 - d) Copies of the fire alarm verification certificate, if applicable
 - e) Final completion and guarantee certificates.
 - f) The Engineer's final acceptance of the work is contingent upon these being received.
 - g) Declaration of Completion
 - h) Contractor shall provide a declaration signed by a responsible officer of the Company indicating that the following procedures and tests have been performed in accordance with the drawings and specifications:
 - i) All approvals and permits obtained.
 - j) All debris and construction materials removed from the site.
 - k) Major electrical equipment identified.
 - l) Operating and maintenance manuals submitted to Architects for approval.
 - m) Operating and maintenance on site instructions given as follows:
 - n) To: _____ Date: _____
 - o) Record drawings submitted to the Architects.

- .3 Refer to Division 1 for required number of copies.

2. **Products**

2.1 **Materials**

.1 Standards of Materials and Equipment

- a) This is a BASE BID specification. Items on the Drawings and subsequent divisions of these specifications are listed with the names of a specific manufacturer, the first of which is a base bid and has been used in the design and is the equipment shown on the Drawings. The price submitted for this contract shall be based on the use of materials and equipment specified.
- b) Where more than one manufacturer is listed for a particular item or groups of items, the contractor may list this equipment in his base bid, as an alternate, providing he states in his tender:
 - c) the name of the manufacturer
 - d) adjustment in price, if any
 - e) equipment model number and capacity
- f) Any alternate equipment must conform to the performance and quality standards of the base bid equipment.
- g) Alternate names listed in this Division have been selected because of similarity of quality and performance. If this contractor wishes to submit equipment or material of a manufacturer other than those listed, written approval must be obtained from the Engineer prior to submission of tender.
- h) Any equipment submitted must not exceed space requirements allocated on the Drawings.
- i) All of the materials required for the performance of the work shall be new and the best of their respective kind and be of uniform pattern throughout the work.

3. **Execution**

3.1 **Preparation**

.1 Coordination

- a) Start work and proceed as soon as possible after the contract has been let and in accordance with the construction of the building.
- b) Confer and cooperate with other trades in order to eliminate any unnecessary delays to the construction schedule. Where doubt exists regarding other trades, confer with the Architect without delay for detailed instructions concerning how to proceed with the work. Expedite delivery of all equipment and materials to meet the construction schedule.

.2 Grounding and Bonding

- a) All equipment, devices, conduits, raceways, etc. shall be grounded and bonded in accordance with the Ontario Electrical Safety Code, 24th Edition, 2009.
- b) Note the grounding detail on electrical drawing E5 wherein special grounding and bonding provisions are shown for a common grounding buss bar in the Building IT Room (116).
- c) An Erico #TGB-A18L10PT Ground Bar will be mounted on the top right corner

- of the plywood back board mounted in the Building IT Room (116).
- d) 10 each Burndy KPA8C connector lugs will be used to terminate 10 each #6 ground wires from each of the 10 antenna locations. Connection of the ground wires at the antenna ends will be by Communications Contractor.
 - e) 5 each Burndy KPA8C connector lugs will be used to terminate 5 each #6 ground wires; one each from each of the four IT racks and one only from the FlexiTray running through the Building IT Room (116).
 - f) A Burndy KPA25 will be used to terminate a #3 ground wire that will be run in conduit to the electrical room (110) and be terminated by this Contractor to earth ground via best practice methods.

.3 Sleeves and Escutcheons

- a) Provide and install sleeves for conduits and cables and openings for raceways and equipment. Sleeves in concrete shall be schedule 40 steel pipe sized to allow free passage of the equipment. Sleeves shall extend 6" on either side of the structure on each side and be packed with resilient fire stop material. All penetrations caused by the electrical work shall be sealed using an approved fire sealing material in accordance with the Ontario Building Code.
- b) Do not set conduits or ducts in contact with concrete, masonry, wood, steel or similar materials. Conduits must be free to expand, contract or otherwise move without wear or noise.
- c) Where exposed conduits and ducts pass through floors, walls, etc., finish with solid type escutcheon plates held in place with set screws where necessary. Paint escutcheons to match the walls except when used with chrome piping, when they are chrome plated to match. When pipes are insulated, escutcheons may be omitted, provided the insulation is butted neatly to the wall and completely covered by its finish jacket in a manner acceptable to the Engineer.

.4 Cutting and Patching

- a) Cutting and patching of the building structure required due to the demolition of existing electrical equipment or for the installation of new electrical apparatus is the responsibility of the Electrical Contractor. Cutting and patching shall be provided by the trade skilled in the installation of the media to be patched at the expense of the Electrical Contractor.
- b) All cutting and patching shall be laid out for review by the Engineer prior to proceeding and patching shall be completed to a "paint ready" state.
- c) No cutting of structural members shall be permitted without the approval of the Structural Engineer.
- d) Provide and pay for pitch-pockets installed by the roofing contractor where electrical wiring must penetrate the roof.

.5 Scaling Drawings

- a) All drawings are in general made to scale and where figured dimensions are not given, obtain approximate distance by scaling plans. It is however, distinctly understood that the Contractor does so entirely on his own responsibility as the accuracy of the drawings is not guaranteed.
- b) The drawings upon which this contract is based show the arrangements, general design and extent of the duct and piping and other systems. These systems are suitably outlined on the drawings with regard to sizes, locations,

- general arrangements
- c) The mains and connections thereto are shown more or less in diagram, except where in certain cases the drawings may include details giving the exact locations and arrangements required. Any necessary change or additions to the runs to accommodate structural conditions are done without additional charge or expense to the Owner. Conceal all ductwork and piping unless shown otherwise. Notify the Engineer immediately and secure his authority in writing for such revisions before proceeding with the work.

.6 Electrical Room Layout

- a) Contractor shall note that the electrical room contains a high concentration of equipment.
- b) Contractor shall coordinate with all Divisions involved in this area to ensure that there is no interference between equipment.
- c) Contractor shall review the complete set of drawings (architectural, structural, electrical and mechanical) and produce a detailed layout of the installation of its equipment.
- d) Contractor shall submit this drawing for review.

3.2 Field Quality Control

.1 Commissioning and Testing

- a) Prior to the start up of any system, check all devices and verify the manufacturer's start-up instructions.
- b) Verify that all equipment is connected to the proper voltage and phase wire size and over current protection.
- c) Megger all Panel feeders, Motor feeders and all major equipment feeders, record the readings and include them in the maintenance manuals.
- d) Check rotation on all motors.
- e) Check main service voltage, phasing, ground conditions and ground resistance. Record and include in the maintenance manuals.
- f) Ensure that all devices, wiring, conduit runs and equipment is bonded grounded in accordance with the Ontario Electrical Safety Code and that the ground electrode resistance meets the requirements of the code.

3.3 Allowances

- .1 Cash allowances as called for in this specification shall represent the full amount of monies included in the contract for the item which they are earmarked. The Contractor shall add to this amount his mark-up for overhead and profit and carry that amount in his tender price.
- .2 Expenditures from the allowances will be deducted using supplier invoices but not including Contractor mark-ups. (Mark-ups being deemed to be included in the tender price.)
- .3 At the completion of the project the balance remaining in the allowance(s) will be deducted from the contract price.
- .4 This contractor shall carry the following allowances in his tender price;
- For Milton Hydro main distribution costs (which constitutes the supply and installation of the pad-mount transformer and primary cables): \$35,000.
 - For removal or relocation of existing utility poles:\$10,000.

3.4 Building IT Room (116)

- .1 An uninterruptable power supply will be installed in this room and (supplied and installed by others). It is this Contractor's scope to connect both the supply power and distribution circuits as specified in the electrical drawings to the UPS.
- .2 This Contractor is responsible for the installation of UniStrut mounted along the top four IT equipment racks installed in the room (by others) to which will be attached no less than eight receptacle boxes suitable for the installation of single receptacles that are to be of a NEMA L21-30R configuration with a current rating of 30 Amps and a voltage rating of 120/208Vac with 4 Poles, and 5 wires, color black with a nylon body. Each of these receptacles are to be wired to the UPSA distribution panel.
- .3 Within the IT Room, this Contractor will also be responsible for the installation of no less than five dedicated 120Vac receptacles sourced from the dedicated UPSA distribution.

3.5 Voice / Data Jack Provisions

- .1 With reference to electrical drawing E2, wherever a data symbol is shown, a standard receptacle box is to be installed complete with a ¾ inch conduit and pull cord. The conduit is to be routed within the wall to above the finished ceiling space.

3.6 Conduit

- .1 Note new drawing E5 illustrating conduit distribution for the various services within the building. All conduits, unless implicitly stated, are the responsibility of this Contractor. All standard conduit best use practices are to be adhered to and these drawings or specifications shall in no way absolve this Contractor from their responsibilities.
- .2 Where dimensions or sizes are not shown, standard sizes as dictated by the Ontario Electrical Safety Authority shall be used.
- .3 Where there exists the routing of signals or cables not recognized or addressed by the Code, specification of sizes will be dictated by the Contractor or Supplier of the equipment or system. Where no specification is available from these sources, the Contractor is to consult with the Engineer to determine correct sizes.
- .4 For all conduit routing, no LB, LR or LL directional change fittings will be used. All corners and directional transitions will be made using sweeping-style bend fittings only.
- .5 This Contractor is to allow in their price, the provision of an additional 400 feet of 2 inch EMT conduit with the provisions as set out in this section.

End of Section 26 05 01