

**1. GENERAL**

1.1 RELATED WORK

- .1 Section 31 23 33 – Excavation, Trenching and Backfilling

1.2 STANDARDS OF MATERIAL AND WORKMANSHIP

- .1 All electrical equipment, materials and systems Specified and shown on the Drawings shall be new and conform to the standards of the Canadian Standards Association. Equipment or material is Specified by the technical description only, and is to be of the best commercial quality obtainable for the purpose.
- .2 All work is to be performed by qualified tradesmen.

1.3 STANDARDS

- .1 Within these Specifications reference is made to the following standards:
  - .1 CEMA – Canadian Electrical Manufacturers Association
  - .2 CSA – Canadian Standards Association
- .2 Refer also to Section 31 23 33 – Excavation, Trenching and Backfilling.
- .3 Materials are to carry CSA approval and conform to CEMA standards
- .4 Equipment wiring and wiring devices shall meet the requirements of the current edition of the Canadian Electrical Code, Part 1.
- .5 Where an equipment manufacturer has been identified in the Bid, substitutions will subsequently be permitted only where it can be shown that unusual or unforeseen circumstances will cause unacceptable delays in completion of the Work.

1.4 PERMITS, CERTIFICATES AND FEES

- .1 Obtain all necessary permits at the beginning of the Work. Upon award of the Contract, submit copies of the Drawings and Specifications to the provincial inspection branch for their review and incorporate any comments. Pay all fees associated with this review. Submit a copy of the comments to the Engineer.

1.5 ALTERATIONS

- .1 Alterations entailing additional work or deletions shall be carried out only upon the written request of the Engineer. Additional work or deletions shall be settled in the manner described in GC 24 – Changes in the Work.
- .2 Any prices submitted for additional work or alterations shall include a price breakdown for all labour and material, and where required, shall be justified by the appropriate documentation. No extras will be allowed without prior written authorization from the Engineer.

#### 1.6 CONTRACT DRAWINGS

- .1 Any discrepancies between drawing details, between the Drawings and the Specifications, between specification sections, or between these documents and Site conditions shall be brought to the attention of the Engineer prior to the Bid closing.

#### 1.7 SHOP DRAWINGS

- .1 The Contractor shall submit for approval a minimum of three printed sets of shop drawings, as well as an electronic copy in PDF format, showing in detail the design and construction of all MCCs, panels, control panels, control wiring, cabinets, switchboards, bus work, light fixtures, and all other special apparatus and special features, including wiring diagrams where applicable, in connection with the work. All such drawings shall be to a scale satisfactory to the Engineer and the work shall not be executed until such approval by the Engineer has been obtained.
- .2 Approval of these drawings by the Engineer is general and is not intended to serve as a check and shall not relieve the Contractor of its responsibility for errors, or the necessity for checking the drawing, or of furnishing the materials and performing the Work as required by the plans and Specifications. Additional copies of these drawings shall be furnished upon request for the use of other contractors whose work is in any way related under the Contract.
- .3 All shop drawings are to be identified with the project name.
- .4 Shop drawings shall be submitted through the General Contractor in accordance with the General Conditions.

#### 1.8 CONTRACT BREAKDOWN

- .1 Submit a breakdown of the Contract price into classifications to the satisfaction of the Engineer, with the items of the Contract breakdown totaling the Contract Amount. The breakdown will be used in computing progress payments. Progress claims, when submitted, are to be itemized against each item of the Contract breakdown.

#### 1.9 DRAWINGS AND SPECIFICATIONS

- .1 The Drawings and Specifications are complementary; what is called for by one shall be binding as if called for by both.
- .2 Should any discrepancies occur between the Drawings and the Specifications which leaves doubt as to the true intent and the meaning of the Drawings and Specifications, obtain a ruling from the Engineer before submitting a Bid. If this is not done, it will be assumed that most expensive alternate has been allowed for.
- .3 Electrical drawings indicate the location and route to be followed by conduit and/or wire and do not show all structural and mechanical details. In some cases, conduit or wiring is not shown or is shown diagrammatically on a schematic or riser diagram. Each conduit and wire shall be installed to provide a complete operating component or system and shall be installed to conserve headroom within furring spaces.

- .4 In order to provide sufficient details and the maximum degree of clarity on the Drawings, the symbols used for various electrical devices, particularly wall mounted devices, take up more space on the Drawings than the device does on the wall. In these instances, locate the device on the wall with primary regard for convenience of operations; do not string the devices out along the wall so as to coincide with the scale location of the electrical symbols.

1.10 EXAMINATION OF THE SITE

- .1 Prior to submitting the Bid, visit the Site and thoroughly investigate the location, connection points and details of all services and systems which in any way may affect or tie-in with the Work covered in these Specifications and accompanying Drawings. No extras will be allowed for work resulting from conditions that would have been evident upon thorough examination of the Site.
- .2 Any discrepancies, points of doubt, or contention shall be made known to the Engineer in writing not later than seven (7) Days prior to closing date of the Bid; otherwise, allow for the most expensive alternative.

2. **PRODUCTS** (Not Applicable)

3. **EXECUTION** (Not Applicable)

**END OF SECTION**