# GENERAL

## General

### This Section specifies the requirements for quality control and testing throughout the progress of the Work.

### Definitions

#### Quality Assurance shall be work performed by the Region and/or the Consultant to ensure that the Work complies with the requirements of the Contract.

#### Quality Control shall be the work performed by the Contractor to ensure that the Work complies with the requirements of the Contract.

### The quality of the design, workmanship and materials used shall comply with:

#### The Ontario Building Code

#### Building By-Laws of the Local Municipality

#### The National Building Code of Canada

### The Contractor shall remove from the Site all materials rejected by the Consultant and/or the Region after delivery. The Contractor shall adhere to the manufacturer's recommendations with respect to the handling, preparation, installation, testing, operation or protection of any Product or material to be incorporated into the Work. The Contractor shall check to ensure that all materials supplied are compatible with each other unless specific adjacent materials have been specified in the Contract Documents. The Contractor shall notify the Consultant of any materials that are non-compatible.

### Where reference is made to standards or standard specifications, the latest revision at the time of tender closing shall apply unless otherwise noted in the Contract Documents.

### On-site activity may not start until an acceptable Quality Control Program has been provided.

## Related Sections

### Section 01300 – Submittals

### Section 01450 – As-Built Drawings

### Section 01800 – Equipment Testing and Facility Commissioning

## Measurement and Payment

### The Work outlined in this Section shall be included in the lump sum price under Item A1.03 in the Bid Form.

### Notwithstanding any other provision in the Contract, payments under this Item will be made on the progress draw broken down, as follows:

#### 15% will be paid upon submission of a Site-Specific Quality Control Program acceptable to the Region.

#### Remaining 85% – Payment will be prorated monthly over the remaining Contract time, including any extensions to the Contract time and each monthly prorated amount will be paid, provided that the Contractor fulfils their duties for Quality Control in accordance with the Contract Documents.

## Quality Assurance

### The Region will retain the services of an independent inspection company to perform the following routine quality assurance services, without cost to the Contractor:

#### Testing of compaction of backfill, granular base courses and asphalt.

#### Concrete cylinder testing, aggregate testing and cement testing for cast-in-place concrete.

#### Inspection of welding of structural steel and pipe joints.

#### Torque of high strength bolts.

#### Load tests of structural items.

#### Subgrade examination for load bearing capability.

#### Application of any lining, protective coating or membrane system.

#### Groundwater monitoring.

#### Environmental inspection and monitoring.

#### Others as noted elsewhere in the Contract Documents.

### The Region’s tests do not relieve the Contractor of its responsibility for its own quality control.

### The Region may request samples of any materials at any reasonable time.

### The Contractor shall cooperate with the Consultant and any other independent inspection company retained by the Region.

### The Contractor shall provide concrete, materials and labour for tests as may be required.

### The Contractor shall provide facilities for the handling and inspection of materials.

### If testing fails to fulfill the requirements of the Contract, any additional testing required to prove the adequacy of construction shall be at the Contractor's expense. Where the routine test shows the construction to be inadequate or where the Contractor's materials and procedures have not been as specified in the Contract Documents or when work has proceeded without observation, additional testing will be required as directed by the Region and/or the Consultant. Such additional testing or retesting will be performed by a testing agency approved by the Region and paid for by the Contractor.

### The Contractor shall make good, at no cost to the Region, all items of Work for which any test result indicates that the Work does not conform to the requirements of the Contract Documents. All rejected materials deemed unsuitable by the Consultant and/or the Region shall be removed from the Site by the Contractor at no additional cost to the Region.

### Procedures

#### The Contractor shall notify the appropriate testing agency and Consultant in advance of the requirement for tests, in order that attendance arrangements can be made.

#### The Contractor shall submit samples and/or materials required for testing, as specifically requested in the Specification Sections. The Contractor shall submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.

### The Contractor shall provide labour and facilities to obtain and handle samples and materials on site and shall provide sufficient space to store and cure test samples.

### Independent Inspection Agencies

#### Independent Inspection/Testing Agencies will be retained and paid for by the Consultant for the purpose of inspecting and/or testing portions of Work.

#### Provide equipment required for executing the inspection and testing by appointed agencies.

#### Employment of inspection/testing agencies does not relax responsibility to perform the Work in accordance with Contract Documents.

#### If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. The Contractor shall correct defects and irregularities as advised by the Consultant at no cost to the Region. The Contractor shall pay for the costs of all required re-testing and re-inspection.

## Inspection

### The Contractor shall provide the Consultant with access to the Work at all times when required.

### The Contractor shall give timely notice requesting inspection if the Work is designated for special tests, inspections or approvals by the Consultant’s instructions.

### The Consultant may order any part of the Work to be examined if the Work is suspected to be not in accordance with the requirements of the Contract Documents. If, upon examination such Work is found to be not in accordance with the Contract Documents, the Contractor shall correct the Work and pay for the cost of examination and correction. If the Work is found to be in accordance with the Contract Documents, the Consultant shall pay for the cost of examination and replacement.

### Access to Work

#### Allow inspection and testing agencies access to the Work, and to off-site manufacturing and fabrication plants.

#### Co-operate to provide reasonable facilities and the health and safety equipment necessary for such access.

### Reports

#### Submit electronic copies of the inspection and test reports to the Consultant within five (5) Working Days after receipt of inspection and test reports. Provide partial testing results as they become available.

#### Provide an electronic copy to the Subcontractor of the work being inspected or tested, or the manufacturer or fabricator of material being inspected or tested.

#### Include a copy of all inspection and test reports in the commissioning manuals as per Section 01425 - Computerized Maintenance Management System Data Requirements, and Section 01810 – Equipment Testing and Facility Commissioning.

## Quality Control

### The Contractor shall provide a written site-specific quality control program to the Consultant within 30 Days after the award of the Contract demonstrating how the Contractor’s responsibilities for Quality Control will be fulfilled. Onsite activity may not start until an acceptable Quality Control Program has been provided.

### The Contractor’s site-specific quality control program should incorporate the following:

#### High level requirements for sampling, testing, and placement of construction materials, including but not limited to concrete, asphalt and aggregates.

#### Quality Control Personnel

##### The Contractor shall appoint competent quality control personnel for the management of the requirements and application of quality control measures.

##### Include the roles and responsibilities of the quality control personnel.

#### Quality Control Communications

#### Sampling Requirements

#### Inspection and Testing Requirements

#### Reporting Requirements and Timelines for Submissions

#### Addressing Non-conformances

### Inspection and Testing

#### The Region may request the Contractor to provide reasonable assistance and arrangements for an inspection to take place. Reasonable notice shall be provided to the Contractor of at least twenty-four (24) hours in advance.

#### The Contractor shall supply copies of all testing and sampling results for all materials to be used in the construction of the Work, indicating that materials comply with the Specifications. Such tests shall be made by a testing company which has been approved by the Consultant and shall be at the Contractor's expense.

#### If the Contractor covers or permits to be covered any items of Work that have been designated for special tests, inspections or approvals before such is made, the Contractor shall uncover such Work, have inspections or tests satisfactorily completed and make good such Work at no additional cost to the Region.

#### All sampling and testing shall be performed by an accredited facility or agency, as required and approved by the Consultant.

#### Any and all materials or manufactured products, including pipe, may be tested by the Region. The Contractor shall, at their own expense, supply samples for quality assurance testing as directed for any and all materials or manufactured products which are being used or proposed to be used in the Work. The Contractor shall not be entitled to any extra compensation nor any extension of Contract time to complete the Work as a result of any delays that may be caused due to compliance with the Specifications.

#### Materials whose test results fail to meet specified requirements and those materials which are rejected upon inspection shall not be permitted to remain on the Site and shall be immediately removed from the Site by the Contractor at their own expense.

#### In addition to the above items, the Contractor shall arrange and pay for the following:

##### Inspection and testing required by law, ordinances, rules, regulations or Authorities having jurisdiction

##### Inspection and testing performed exclusively for the Contractor's convenience

##### Tests specified to be carried out by the Contractor under the supervision of the Consultant

### Acceptance of Materials

#### During the process of unloading any equipment and materials, the Contractor shall inspect equipment and materials for loss or damage in transit. The Contractor shall notify the Consultant and the carrier of any loss or damage to the shipment.

#### All equipment and materials supplied by the Contractor and found faulty or defective upon delivery will be rejected by the Consultant and shall be replaced by the Contractor at their own expense. Failure to discover the same shall not relieve the Contractor of their responsibility for removing all faulty materials supplied and replacing same with good materials which the Contractor shall supply all at their own cost and expense.

#### The unloading of all equipment shall be carefully performed in an approved manner to avoid damage to such equipment. Ample facilities shall be provided by the Contractor for handling the equipment.

### The Contractor shall bring to the attention of the Consultant any condition, equipment, or installation which may not be suitable for its intended purpose.

# PRODUCTS (NOT USED)

# EXECUTION (NOT USED)

**END OF SECTION**