

BYTEK VOLKSWAGEN

1325 St. Laurent Blvd, Ottawa, ON K1G 0Z7



SPECIFICATIONS

Project No. 2301
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A R C H I T E C T

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1 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises construction and renovation of the existing Bytek VW Dealership at 1325 St. Laurent Blvd Ottawa and further identified as Bytek Volkswagen.

2 CORPORATE DESIGN CRITERIA

- .1 The facility has been designed to conform to the Volkswagen Design Criteria Document a copy of which is available on request, under separate cover or electronically, titled as:

**Volkswagen Modular Concept
Design Criteria Document
Bytek Volkswagen, Ottawa, ON.
Nov 24, 2022**

- .2 The work shall conform to the requirements of this Design Criteria Document which is referred to throughout the specifications as "DCD".
- .3 In the event of discrepancies between the Contract Documents and the DCD, do not proceed with the work until directed by the Consultant.'

3 CONTRACT METHOD

- .1 The work will be constructed under a series of Construction Management Contracts.
- .2 Relations and responsibilities between the Owner, the Project Manager, the Consultant and the Trade Contractors are as defined in the Conditions of the Contract. Trade Contractors must, in addition:
 - .1 Furnish to the Construction Manager, bonds covering faithful performance of contracted work and payment of obligations thereunder.
 - .2 Purchase and maintain liability insurance to protect the Owner, the Construction Manager, the Consultant and the Sub-consultants, from claims for not less than limits of liability which Construction Manager is required to provide under the terms of the contract between the Construction Manager and the Owner.

4 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from the Project Manager and the Consultant.
- .2 Co-ordinate work with that of other Contractors. If any part of the work under this Contract depends for its proper execution or result upon the work of another contractor, report promptly to the Project Manager, in writing, any defects which may interfere with the proper execution of the work.

01 25 00 - SUBSTITUTION PROCEDURES

1. SUBSTITUTIONS DURING THE BIDDING PERIOD

- 1.1 Generally, specific materials, products and systems are specified in the Contract Documents to provide a standard of acceptance. Except where substitutions are specifically excluded in the individual Sections of the specification, equivalent materials, products or systems by other manufacturers are acceptable as substitutions, provided that the properties and compliance's of the substitutions meet or exceed the properties and compliance's of the specified materials, products and systems in all respects and that items exposed to sight are of the same appearance as the specified items.
- 1.2 Substitutions which do not satisfy the above requirements may be rejected by the construction Manager or the Consultant. Materials, products and systems which are so rejected shall be replaced by the specified items at no cost to the Contract.
- 1.3 In the event that, prior to closing of bids, the Bidder wishes to offer a substitution or a proposal of work, materials, or methods as an alternative to those described in the Contract Documents, he shall submit a request in writing no later than the time specified herein.
- 1.4 The request shall include the following:
 1. A description of the proposed substitution.
 2. In the case of materials, products or systems, a direct comparison between the properties and compliance's of the specified materials, products or systems with the properties and compliance's of the proposed substitution, arranged in tabular form, in the same sequence as specified in the applicable specification section or in the sequence listed in the specified manufacturer's published literature, as appropriate.
 3. In the case of materials or projects, country of manufacture.
 4. Shop drawings, product data, and certified test results attesting to the proposed material or product equivalence.
 5. If requested by the Construction Manager of the Consultant, a list of no less than five projects of comparable size and complexity, where the proposed substitution has been used in a similar application. Such projects shall have been in service for at least five (5) years and, where applicable, shall have been subjected to climatic conditions similar to those experienced at the location of the Project. The list shall include the name and current telephone number of the Architect or Prime Consultant for each project.
- 1.5 The burden of proof is on the proposer. In the event that the Construction Manager or the Consultant deems the information provided with the request for approval of a substitution to be inadequate, the request may be rejected.
- 1.6 A request constitutes a representation that the Bidder:
 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 2. Will provide the same warranty for the Substitution as for the specified Product.
 3. Will coordinate installation and make changes to other work which may be required for the work to be complete with no additional cost to the Owner. (A later claim by Bidder for an addition to Contract Price because of changes in work necessitated by use of substitutions shall not be considered).
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse the Owner and the Consultant for the cost of review or redesign services associated with re-approval by authorities.

- 1.7 Substitutions will not be considered in either of the following circumstances:
 1. When they are indicated or implied on shop drawing or product data submittals, without a separate written request having been made.
 2. When acceptance will require revision to the Contract Documents.
- 1.8 Where the terms 'or equal', 'or equivalent' or terms of similar meaning are used in the specifications, this shall not be construed as acceptance of any alternative material, product or system to those specified. The use of these terms does not relieve the Subcontractor from his responsibility to follow the procedures for approval of substitutions specified herein.
- 1.9 When a request to substitute a product is accepted, the Construction Manager will issue an Addendum to known bidders.

2. SUBSTITUTIONS AFTER CONTRACT AWARD

- 2.1 No substitutions will be permitted after award of the Contract without the prior approval of the Consultant by means of a letter of acceptance of the specific substitution.
- 2.2 In the event that the Trade Contractor wishes to offer a substitution or proposal of work, materials or methods as alternative to those described in the Contract Documents, he shall submit a request in writing.
- 2.3 The request shall include the following:
 1. Reasons for the proposed substitution.
 2. A description of the proposed substitution.
 3. The amount of any credit offered for the substitution.
 4. In the case of materials, products or systems, a direct comparison between the properties and compliance's of the specified materials, products or systems with the properties and compliance's of the proposed substitution, arranged in a form acceptable to Construction Manager and the Consultant.
 5. In the case of materials or products, country of manufacture.
 6. Shop drawings, product data, and certified test results attesting to the proposed material or product equivalence.
 7. If requested by the Construction Manager or the Consultant, a list of no less than five projects of comparable size and complexity, where the proposed substitution has been used in a similar application. Such projects shall have been in service for at least five (5) years and, where applicable, shall have been subjected to climatic conditions similar to those experienced at the location of the Project. The list shall include the name and current telephone number of the Architect or Prime Consultant for each project.
- 2.4 The Construction Manager and the Consultant reserve the right to request such additional information as they deem necessary prior to acceptance or rejection of a proposed substitution.
- 2.5 A request constitutes a representation that the Trade Contractor:
 1. Has investigated proposed Product and determined that:
 - A) It meets or exceeds the quality level of the specified Product; or
 - B) The request describes accurately and completely the specific ways in which it fails to meet the quality level of the specified Product.
 2. Will provide the same warranty for the Substitution as for the specified Product.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner. (A later claim by Bidder for an addition to Contract Price because of changes in work necessitated by use of substitutions shall not be considered).

4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse the Owner and the Consultant for the cost of review or redesign services associated with re-approval by authorities.
- 2.6 When a request to substitute a Product is accepted, the Construction Manager will issue to the Trade Contractor a formal letter of acceptance.

01 31 13 - PROJECT COORDINATION

1. COORDINATION AND PROJECT CONTROL

- 1.1 Cooperate with the Construction Manager in the coordination of the progress of the Work, progress schedules, submittals, the use of the site, temporary utilities, construction facilities and controls and the relationship of the work of the Trade Contractor to the work of the various sections of the specifications to ensure the efficient and orderly installation of interdependent construction elements.
- 1.2 Coordinate the work with the work of the various sections having interdependent responsibilities for installing, connecting to and placing in service utilities and equipment.
- 1.3 Where applicable, coordinate space requirements, supports and the installation of mechanical and electrical work which is indicated schematically on the drawings. Follow the routing shown for pipes, ducts and conduits as closely as possible; place runs parallel with lines of the building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.
- 1.4 Except where indicated otherwise, in finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings. Coordinate locations of fixtures and outlets with finished elements. Before installation, inform the Construction Manager if there is a contradictory situation. Install as directed by the Construction Manager.
- 1.5 Where applicable, complete and clean up the work in preparation for Substantial Completion.
- 1.6 After Owner occupancy of the premises, coordinate access to the site for correction of defective work and work not in accordance with the Contract Documents, to minimize disruption of the Owner's activities.

2. DOCUMENTS REQUIRED

- 1.1 The Construction Manager will maintain at the Project Site, one copy each of the following:
 1. Contract drawings.
 2. Specifications.
 3. Addenda.
 4. Reviewed shop drawings.
 5. Change orders.
 6. Other modifications to the Contract.
 7. Field test reports.
 8. The latest approved version of the construction schedule.
 9. The latest edition of the Ontario Building Code and other applicable codes and regulations, c/w all revisions.
 10. A complete set of all standards referenced in the Specifications Sections.
 11. Manufacturer's installation and application instructions.
- 1.2 The Trade Contractor and all Subcontractors will be given access to a set of Contract Documents. The Trade Contractor is responsible for having access to the latest edition of codes, regulations and standards that are applicable to the Trade Contractor's portion of the Work.

3. INTERFERENCE DRAWINGS

- 1.1 When directed by the Construction Manager, prepared interference and equipment placing drawings to ensure that all components will be properly accommodated within the spaces provided.
- 1.2 Where the relationship of a system with other systems is critical, prepare drawings to indicate coordination and methods of installation. Ensure that all details of equipment apparatus and connections are coordinated.
- 1.3 Ensure that clearances required by authorities having jurisdiction and clearances for proper maintenance are indicated on the drawings.
- 1.4 Provide all line and layout from the information provide on the Contract Drawings.

4. EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

- 1.1 Power requirements: Where applicable, coordinate the Work with the electrical contractor to ensure the provision of required electrical power with the appropriate electrical characteristics.
- 1.2 Wiring terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes and materials indicated. Size terminal lugs to NFPA 70. Include lugs for terminal boxes.
- 1.3 Cord and plug: Where not otherwise specified in the individual specification Sections, provide minimum 1.8m cord and plug, including grounding connector for connection to electric wiring system.

01 31 19 - PROJECT MEETINGS

1. PRECONSTRUCTION MEETING

- 1.1 The Construction Manager will schedule a preconstruction meeting with Trade Contractors, after award of Contract.
- 1.2 Agenda:
 1. Execution of Project Contract Agreement.
 2. Submission of executed bonds and insurance certificates.
 3. Distribution of Contract Documents.
 4. Submission of List of Subcontractors, Price Breakdown, Contract Price, Unit Prices, Construction Schedule and Proposed Product List.
 5. Designation of the personnel representing the parties in the Contract closeout.
 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, Proposal Change Requests, Change Orders and Contract closeout.
 7. Scheduling.
 8. Scheduling of activities of independent inspection and testing laboratories.
 9. Terms of Payment and proposed cash flow for the project.
 10. Project meeting procedures.
- 1.3 The Construction Manager will record minutes and distribute copies to meeting participants and affected parties not in attendance.

2. SITE MOBILIZATION MEETING

- 1.1 The Construction Manager will schedule a mobilization meeting at the Project Site, prior to Contractor occupancy. Attendance by:
 1. The Construction Manager.
 2. The Consultant,
 3. Specialized sub-consultants.
 4. Major Trade Contractors.
- 1.2 Agenda
 1. Use of the premises by Trade Contractors.
 2. Construction facilities and controls.
 3. Temporary facilities.
 4. Survey and building layout.
 5. Security and housekeeping procedures.
 6. Construction Schedule.
 7. Application for payment procedures.
 8. Procedures for testing.
 9. Procedures for maintaining record documents.
 10. Requirements for start-up of equipment.
 11. Inspection and acceptance of equipment put into service during the construction period.
- 1.3 The Construction Manager will record minutes and distribute copies to meeting participants and affected parties not in attendance.

3. PROGRESS MEETINGS

- 1.1 The Construction Manger will schedule progress meetings at the Project Site, at the same time and day of the week, at two-weekly intervals throughout the progress of the Work. By agreement, additional meetings may be held if circumstances require.
- 1.2 Attendance required (as appropriate to agenda topics for each meeting):
 1. The Construction Manger
 2. The Consultant
 3. Specialized sub-consultants.
 4. Major Trade Contractors.
 5. Other Trade Contractors affected by the work.
- 1.3 Subcontractors and/or suppliers shall be invited only by prior agreement with the Consultant.
- 1.4 The Construction Manager will:
 1. Distribute written notices of meetings to all affected parties.
 2. Provide physical space and make arrangements for meetings.
- 1.5 Agenda
 1. Review of minutes of previous meetings.
 2. Review of Work progress
 3. Field observations, problems and decisions, progress.
 4. Identification of problems which impede planned progress.
 5. Review of Schedule of Submittals and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of Progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on the progress schedule and coordination.'
 13. Other business relating to the work.
- 1.6 The Construction manager will record minutes. Minutes will include significant proceedings and decisions and will identify 'actions by' parties.
- 1.7 The Construction Manager will distribute copies to meeting participants and affected parties not in attendance.

4. PREINSTALLATION MEETINGS

- 1.1 When required by individual Sections of the Specification, the Construction Manager will:
 1. Convene a preinstallation meeting at the site or at an appropriate location, prior to commencing the work of the Section.
 2. Require the attendance of parties directly affecting or affected by the work of the Section.
 3. Distribute written notice of the meeting to all parties required to attend.

4. Prepare the agenda and preside at the meeting:
 - A) review conditions of installation, preparation and installation procedures.
 - B) Review coordination with related work.
5. Record minutes and distribute copies to meeting participants and affected parties not in attendance.

01 33 00 - SUMITTAL PROCEDURES

1. GENERAL

- 1.1 Submit to the Construction Manager for review by the Construction Manager and the Consultant for review, shop drawings, product data and samples specified in the respective specification Sections.
- 1.2 Until a submission is reviewed, work involving the relevant product may not proceed.
- 1.3 Arrange and pay for all deliveries and pick-ups to and from the office of the Construction Manager.

2. SHOP DRAWINGS

- 1.1 Drawings to be originals prepared by the Trade Contractor, Subcontractor, Supplier or Distributor, which illustrate the appropriate portion of the Work; showing fabrication, layout, setting or erection details, as specified in the appropriate Sections.
- 1.2 Identify content of shop drawings by reference to specification Section numbers.
- 1.3 Identify details by reference to sheet and detail numbers shown on the Contract Drawings.
- 1.4 Drawing Format Submissions:
 1. Sheet Sizes: 215 x 280 mm (8-1/2" x 11")
 2. Submit: Three (3) copies printed on the left side of 430 x 280 mm (17" x 11") sheets, leaving the right side clear to receive review stamps.
 3. Requirements: Spec. Section 01 33 00. Subsections:
 - A) Product data.
 - B) Coordination of submission.
 - C) Submission requirements.

3. PRODUCT DATA

- 1.1 Certain specification Sections specify that manufacturer's standard schematic drawings, catalogue sheets, illustration and other standard descriptive data will be accepted in lieu of shop drawings.
- 1.2 The above will be accepted only if they conform to the following:
 1. Delete information which is not applicable to project.
 2. Supplement standard information to provide additional information applicable to project.
 3. Show dimensions and clearances required.
 4. Show performance characteristics and capacities.
 5. Show wiring diagrams (where applicable) and controls.

4. SAMPLES AND MOCK-UPS

- 1.1 Submit samples in sizes and quantities specified.
- 1.2 Where colour, pattern or texture is criterion, submit full range of samples.

- 1.3 Construct field samples and mock-up at locations acceptable to the Construction Manager.
- 1.4 Coordinate with related other trades to construct each sample or mock-up complete, including the work of all trades required to finish the work.
- 1.5 Reviewed samples or mock-ups will become standards of workmanship and material against which, installed work will be checked on project.

5. COORDINATION OF SUBMISSIONS

- 1.1 Review shop drawings, product data and samples prior to submission.
- 1.2 Verify:
 1. Field measurements.
 2. Field construction criteria.
 3. Catalogue numbers and similar data.
- 1.3 Coordinate each submission with the requirements of the Work and the Contract Documents. Individual shop drawings will not be reviews until all related drawings are available.
- 1.4 The Trade Contractor's responsibility for errors and omissions in submission is not relieved by the Construction Manager's and/or the Consultant's review of submittals.
- 1.5 The Trade Contractor's responsibility for deviations in submission from the requirements of the Contract Documents is not relieved by the Construction Manager's and/or the Consultant's review of the submission, unless the Construction Manager gives written acceptance of specified deviations.
- 1.6 Notify the Construction Manager and the Consultant, in writing at the time of submission, of deviations from the requirements of the Contract Documents.
- 1.7 After the Construction Manager's and the Consultant's review, the mylar or sepia shop drawing or one copy of the trade literature format submission will be returned to the Construction Manager who will distribute copies to affected parties, including record copies of each shop drawing for the Consultant.
- 1.8 Originators preparing more than one submission, shall prepare a list of all shop drawings, complete with submission dates, to the Construction Manager. This list shall be included with the first submission.

6. SUBMISSION REQUIREMENTS

- 1.1 Schedule submissions at least twenty (20) days before the dates reviewed submissions will be needed.
- 1.2 Accompany each submission with a transmittal letter, in duplicate, containing:
 1. Date and revision dates.
 2. Project title and number.

3. Name of:
 - A) Date
 - B) Project title and number.
 - C) Applicable Specification Section number.
 - D) Trade Contractor's name and address.
 - E) Number of each shop drawing, product data, and sample submitted.
 - F) Other pertinent data.
 4. Identification of product or material.
 5. Relation to adjacent structure or materials.
 6. Field dimensions, clearly identified as such.
 7. Specification Section number.
 8. Applicable standards, such as CSA or CGSB numbers.
 9. Originator's stamp, on the front face of the submission initialed or signed certifying review of submission, verification of field measurements and compliance with Contract documents.
 10. Trade Contractor's stamp, on the front face to the submission initialed or signed certifying review of submission.
 11. Professional Engineer's stamp and signature, on the front face of the submission where specific sections of the specification so direct. Note that drawings will not be reviewed unless the Professional Engineer's stamp and signature is present.
 12. CSA/CGSB/ASTM or other conformance certificates where applicable.
- 1.4 The Trade Contractor's stamp, certifying review of Submission shall be interpreted to mean that the Trade Contractor has review the Drawings and coordinated them with the work of other trades. Drawings which have not been so reviewed and coordinated by the Trade Contractor will be returned for re-submission before Construction Manager and Consultant review will be undertaken.

7. SHOP DRAWINGS REVIEW

- 1.1 The review of shop drawings by the Construction Manager and/or the Consultant is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the Construction Manager and the Consultant approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Trade Contractor submitting same, and such review shall not relieve the Trade Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents.
- 1.2 Without restricting the generality of the foregoing, the Trade Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the work with all inter-dependant trades.

01 35 29 - HEALTH AND SAFETY REQUIREMENTS

1. RESPONSIBILITY

- 1.1 Each Trade Contractor shall assume responsibility for safety of persons and property on site and for protection of person off site and environment to extent that they may be affected by conduct of Work.
- 1.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- 1.3 Execute the terms of the Contract in strict compliance with the requirements of the Occupational Health and Safety Act, R.S.O 1990, c.O.1 (the 'Act') and Ontario Regulation 213/91 (which regulates Construction Projects) and any other regulations under the Act (the 'Regulations') which may affect the performance of the Work. The Construction Manager will assume the role and responsibilities of the 'constructor' or 'employer', as defined by the Act, as the case may be. In support of the Construction Manager, each Trade Contractor shall ensure that:
 1. Worker safety is given first priority in planning, pricing, and performing the Work.
 2. Its officers and supervisory employees have a working knowledge of the duties of a 'constructor' and 'employee' as defined by the Act and the provisions of the Regulations applicable to the Work, and a personal commitment to comply with them.
 3. A copy of the most current version of the Act and the Regulations are available to the Trade Contractor at the Place of Work.
 4. Workers employed to carry out the Work possess the knowledge, skills and protective devices required by lay or recommended for use by a recognized industry association to allow them to work in safety.
 5. Supervisory employed carry out their duties in a diligent and responsible manner with due consideration for the health and safety of the workers.
 6. All Trade Contractors, Subcontractors and their employees are properly protected from injury while they are at the Place of Work.
- 1.4 The Construction Manager will present a project-specific the health and safety policy and program at the preconstruction meeting. Trade Contractors shall respond promptly to requests from the Construction Manager and/or the Consultant, for confirmation that the methods and procedures for carrying out the Work comply with the Act and Regulations. Cooperate with the Construction Manager and the Owner's representatives appointed to enforce the Act and Regulations in any investigations of worker health and safety in the performance of the Work. Indemnify and save the Owner harmless from any additional expense which the Owner may incur to have the Work performed as a result of the Trade Contractor's failure to comply with the requirements of the Act and the Regulations.
- 1.5 Prior to commencement of the Work, provide a list of those products controlled under the Workplace Hazardous Materials Information System (WHMIS), which are proposed for use on the project. Include in the submission related Materials Safety Data Sheets. All containers used in the application of projects controlled under WHMIS shall be labeled. Notify the Construction Manager of changes in writing and provide relevant Materials Safety Data Sheets.

- 1.6 Trade Contractors shall each appoint an authorized representative to be on the site while any work is being performed, and to act for or on the Trade Contractor's behalf. Prior to commencement of construction, notify the Construction Manager of the names, addresses positions and telephone numbers of the Trade Contractor's representatives who can be contracted at any time to deal with matters relating to the Contract.

01 35 43 - ENVIRONMENT PROTECTION

1. FIRES

- 1.1 Fires and burning of rubbish on site is not permitted.

2. DISPOSAL OF WASTES

- 1.1 Do not bury rubbish and waste materials on site.
- 1.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- 1.3 Dispose of waste of volatile materials which could be hazardous to the health, in strict accordance with the requirements of the authorities having jurisdiction and in a manner which will protect construction personnel, visitors to the site and the public from all such hazards.

3. DRAINAGE

- 1.1 Where applicable, provide temporary drainage and pumping as necessary to keep excavations and the site free from water.
- 1.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- 1.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

4. POLLUTION CONTROL

- 1.1 Control emissions from equipment and plant to conform to local authorities' emission requirements.
- 1.2 Prevent sandblasting and other extraneous materials from contaminating air beyond the application area by providing temporary enclosures.
- 1.3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

01 41 00 - REGULATORY REQUIREMENTS

1. REFERENCES AND CODES

- 1.1 Perform the Work in accordance with the Ontario Building Code, OBC-2012, including amendments up to tender closing date another codes of provincial and local application provided that, in case of conflict or discrepancy, the more stringent requirements apply.
- 1.2 Meet or exceed requirements of:
 1. The Contract documents.
 2. Specified standards, codes and referenced documents.
 3. Ontario Regulation for Industrial Establishments O.Reg. 851.
 4. CAN/CSA-B651-12, Accessible Design for the Built Environment.

2. BUILDING SMOKING ENVIRONMENT

- 1.1 Smoking is prohibited within the building.

3. PERMITS AND FEES

- 1.1 The Trade Contractor shall pay for all permits, fees and inspections by all authorities having jurisdiction required for the Trade Contractor's work.
- 1.2 The Owner will apply and pay for the Building Permit and any municipal development fees.
- 1.3 The Construction Manager will be responsible for following up with the City, to facilitate the expeditious issue of the Building Permit.
- 1.4 The Trade Contractor shall provide the Construction Manager with photocopies of all permits require for the Trade Contractor's work.

01 45 00 - QUALITY CONTROL

1. QUALITY ASSURANCE - CONTROL OF INSTALLATION

- 1.1 Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship to produce work of the specified quality.
- 1.2 Comply with manufacturers' instructions, including each step in the sequence.
- 1.3 Should manufacturer's instructions conflict with the Contract Documents, request clarification from the Consultant before proceeding.
- 1.4 Comply with specified standards as a minimum quality for the Work, except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- 1.5 Perform work by person qualified to produce the required and specified quality.
- 1.6 Wherever critical to a proper fit, verify dimensions on site prior to commencement of manufacture.
- 1.7 Secure materials and products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

2. TOLERANCES

- 1.1 Monitor fabrication and installation tolerance control of products to produce acceptable work. Do not permit tolerances to accumulate.
- 1.2 Comply with manufacturers' tolerances. Should a manufacturer's tolerances conflict with the Contract Documents, request clarification from the Consultant before proceeding.
- 1.3 Adjust products to appropriate dimensions; position products before securing in place.

3. REFERENCES, CODES, AND STANDARDS

- 1.1 Perform the Work in accordance with the latest edition, including all revisions, of applicable codes and regulations of federal, provincial, or local application, provided that, in any case of conflict or discrepancy, the more stringent requirements shall apply.
- 1.2 Meet or exceed the requirements of specified standards, codes, and referenced documents.
- 1.3 For materials, products, or workmanship specified by association, trade or other consensus standards, comply with the requirements of the standard, except where more rigid requirements are specified or are required by applicable codes.
- 1.4 In each case, where a standard, code or other document is referenced, the latest edition or revision shall apply, unless specified otherwise, except where a specific date of issue is established by code.

- 1.5 Neither the contractual relationships, duties, or responsibilities of the parties in the Contract shall be altered from those defined by the Contract Documents by mention or inference otherwise in any referenced document.

4. MOCK-UPS

- 1.1 Procedures for the preparation and submission of mock-ups are specified in Section 01 33 00 'Submittals Procedures'.
- 1.2 Tests will be formed under the provisions identified in this Section.

5. INSPECTION AND TESTING

- 1.1 Inspection:
1. Provide access to the Work at all times.
 2. Provide full cooperation and sufficient, safe, and proper facilities at all times for review of the Work by and for inspection of the Work by authorized agencies.
 3. If portions of the Work are in preparation off site, provide access to such work, whenever it is in progress.
 4. Provide the Construction Manager and the Consultant with reasonable notice of when work designated for tests, inspection or approvals will be ready for review and inspection.
 5. Provide the Construction Manager and the Consultant with reasonable notice of the date and time of inspections by other authorities.
- 1.2 Independent Inspection Agencies:
1. Independent Inspection/Testing Agencies will be engaged by the Construction Manager for the purpose of inspecting and/or testing portions of the Work. The Cost of initial inspections and/or testing will be paid by the owner.
 2. Cooperate with Inspection/Testing Agencies. Furnish samples of materials, design mix, equipment, tools, storage, safe access and assistance by incidental labour as requested.
 3. If additional tests are required by the Construction Manager, make arrangements with the Inspection/Testing Agency and pay for additional samples and tests.
 4. The cost of additional inspection and/or testing required because of non-compliance with the Contract Documents at the initial test, shall be paid by the Trade Contractor.
- 1.3 Reports: All inspection and test reports shall include for, one copy to each of the following:
1. The Construction Manager
 2. The Consultant.
 3. Applicable Specialist Consultant(s) (if applicable).
 4. The Trade Contractor responsible for the work.
 5. Material/product manufacturers and/or suppliers, as applicable.
- 1.4 Covering Installed Work: Do not cover installed work with subsequent work until the installed work has been reviewed on site by the Construction Manager and the Consultant.

6. MANUFACTURERS' FIELD SERVICES

- 1.1 When individual specification Section require material or product supplier or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment and testing, adjusting and balancing of equipment, as applicable, and to initiate instructions when necessary.
- 1.2 Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to the manufacturer's written instructions.
- 1.3 Refer to Section 01 33 00 'Submittal Procedures'.

01 50 00 - TEMPORARY FACILITIES AND CONTROLS

1. INSTALLATION/REMOVAL

- 1.1 The Construction Manager will provide basic construction facilities and temporary controls. Trade Contractors shall provide additional facilities as required to execute their work expeditiously.
- 1.2 Prior to Substantial Completion or when directed by the Construction Manager, remove from the site all construction facilities and temporary controls.
- 1.3 Make good any damage to or disturbance of existing property caused by such work. Restore affected existing property to a condition at least equal to that which existed prior to construction.

2. TEMPORARY ELECTRICAL POWER

- 1.1 The Construction Manager will provide and pay for temporary power required during construction for temporary lighting and operating of power tools.
- 1.2 Connect to delivery points in accordance with the Canadian electrical Code and to the Satisfaction of the local authority having jurisdiction. Provide all equipment and temporary lines to bring power services to the point of use. Provide flexible power cords as required.
- 1.3 The permanent power system of the building may not be used during construction without the permission of the Construction Manager.

3. TEMPORARY LIGHTING

- 1.1 The Construction Manager will provide and maintain general level temporary lighting for construction operation to achieve a minimum lighting level of 2 watts/sq.ft. (21 watts/m²).
- 1.2 Trade Contractors shall provide and pay for additional temporary lighting equipment required for the proper execution of specific tasks. Provide branch wiring from the power source to distribution boxes with lighting conductors, pigtails and lamps, as required.
- 1.3 The Construction manager will provide and maintain temporary lighting to interior and exterior staging and storage areas, after dark, for security purposes.
- 1.4 The permanent lighting system of the building may be used during construction, provided warranties are not affected.

4. TEMPORARY HEATING

- 1.1 The Construction Manager will provide temporary heating required during the construction period, including attendance, maintenance and fuel, as required to maintain temperatures of minimum 10 deg. C in interior areas where construction is in progress.
- 1.2 Trade Contractors shall provide and pay for additional heating where required for specific tasks.

- 1.3 Construction heaters used inside the building must be vented to the outside or be flame-less type. Solid fuel salamanders are not permitted.
- 1.4 Ventilate heated areas and keep the building free of exhaust or combustion gases.
- 1.5 Use of permanent heating system:
 1. The permanent heating system of the building, or portions thereof, may be used when available, subject to the approval of the Construction Manager, provided warranties are not affected.
 2. Prior to operation of permanent equipment for temporary heating purposes, verify that the installation is approved for operation, equipment is lubricated and filters are in place.
 3. Be responsible for damage thereto. Before takeover buy the Owner, change all filters, vacuum all duct work, replace any worn or consumed parts and perform such other maintenance work as required to leave the system in proper operating condition.

5. TEMPORARY VENTILATION

- 1.1 Ventilate enclosed areas as required to cure materials, to dissipate humidity and to prevent accumulation of dust, fumes, vapors or gasses.
- 1.2 The permanent ventilation system of the building may be used, subject to the same provisions as specified above for the use of the permanent heating system and provided such use does not result in contamination of the air outside the area of construction. Extend and supplement the permanent equipment with temporary fan units as required to maintain clean air for construction operations.

6. TELEPHONE AND FACSIMILE

- 1.1 The Construction Manager will provide telephone and facsimile machine for own use and the use of the Consultant. These facilities may be used by Trade Contractors, subject to the Construction Manager's approval.
- 1.2 The cost of long distance telephone calls and telecopier transmissions shall be paid for by the respective party.

7. TEMPORARY WATER SERVICE

- 1.1 The Construction Manager will provide and pay for water service required for construction use. Connect to delivery points to the approval the authorities having jurisdiction.
- 1.2 Provide all equipment and temporary lines to bring water to the point of use. Provide flexible hoses as required.

8. SANITARY FACILITIES

- 1.1 The Construction Manager will provide sufficient temporary sanitary facilities for construction personnel.

- 1.2 Maintain the facilities in a clean and sanitary condition.

9. WEATHER ENCLOSURES

- 1.1 The Construction Manager will provide weather-tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- 1.2 The Construction Manager will enclose the building interior work area for temporary heat.

10. DUST-TIGHT SCREENS

- 1.1 Provide dust-tight screens or partitions to localize dust generating activities, and for the protection of workers, finished areas of work and the public.
- 1.2 Maintain and relocate protection until such Work is complete.

11. PROTECTION OF INSTALLED WORK

- 1.1 Protect installed work and provide special protection where specified in individual specification Sections.
- 1.2 Provide temporary and removable protection for installed products. Cooperate with other trades to control activity in the immediate work area to prevent damage.
- 1.3 Where applicable, provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- 1.4 Where applicable, protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage or movement of heavy objects by covering with durable sheet materials.
- 1.5 The Construction Manager will prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, follow the recommendations for protection from the waterproofing or roofing material manufacturer.
- 1.6 Prohibited traffic from landscaped areas.

12. SECURITY

- 1.1 The Construction Manager will provide security and facilities as required to protect the Work from unauthorized entry, vandalism or theft.

13. STORAGE OF MATERIALS

- 1.1 Do not unreasonably encumber site with materials or equipment. Store materials and equipment where directed by the Construction Manager. Move same when directed.

- 1.2 Do not permit any part of the Work to be loaded with a weight or force which will endanger the safety of the Work or cause undue deflection.

14. FIELD OFFICES

- 1.1 The Construction Manager will provide office space of sufficient size to accommodate site meetings.

15. PROJECT CLEANLINESS

- 1.1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.
- 1.2 Remove debris and rubbish from pipe chases, plenums attics, crawl spaces or other closed or remote spaces.
- 1.3 Broom and vacuum clean interior areas prior to the start of finish work; maintain areas free of dust and other contaminants during finishing operations.
- 1.4 Remove waste material and debris from site and deposit in a designated waste container at the end of each working day.
- 1.5 Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

16. PROJECT IDENTIFICATION SIGNAGE

- 1.1 The Construction Manager will provide temporary project identification signage.
- 1.2 No other signs are allowed, except those required by law, without the Consultant's prior permission.

01 60 00 - PRODUCT REQUIREMENTS

1. REFERENCE STANDARDS

- 1.1 Within the individual specifications Sections, reference standards are identified. Conform to these standards, in whole or part, as specifically specified.
- 1.2 Conform to latest date of issue of referenced standards in effect on the date of submission of tenders, except where a date or issue is specifically noted.

2. QUALITY

- 1.1 Products, materials, equipment, and articles (referred to as materials or products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with the specifications) for the purpose intended. If requests, furnish evidence as to the type, source and quality of materials or products provided.
- 1.2 Should any dispute arise as to the quality or fitness of materials or products, the decision rests strictly with the Consultant, based upon the requirements of the Contract Documents.

3. PRODUCT AVAILABILITY

- 1.1 Immediately review material and product delivery requirements and anticipate foreseeable supply delays for any items. Notify the Construction Manager.
- 1.2 In the event of failure to notify the Construction Manager at the commencement of the Work, the Construction Manager reserves the right to substitute more readily available products of similar character, at no increase in the Contract Price.

4. TRANSPORTATION AND HANDLING

- 1.1 Transport and handle materials and products in accordance with the manufacturer's instructions.
- 1.2 Promptly, upon arrival on site, inspect shipments to ensure that products comply with the requirements, quantities are correct and materials and products are undamaged.
- 1.3 Handle and store materials and products in a manner which will prevent damage, adulteration, deterioration and soiling and in accordance with the manufacturer's instructions when applicable.

5. STORAGE AND PROTECTION

- 1.1 Store sensitive materials and products in weather-tight, climate controlled enclosures, in an environment favourable to the material or product.
- 1.2 Store sensitive materials and products in weather-tight, climate controlled enclosures, in an environment favourable to the material or product.

- 1.3 For exterior storage of fabricated products, place on sloped supports, above ground.
- 1.4 Remove and replace damaged materials and products at own expenses and to the Consultant's satisfaction.
- 1.5 Provide off-site storage and protection when the site does not permit on-site storage or protection, of products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of materials and products.
- 1.6 Store loose granular materials on solid flat surfaces, in a well-drained area. Prevent mixing with foreign matter.
- 1.7 Provide equipment and personnel to store materials and products by methods to prevent soiling, disfigurement, or damage.
- 1.8 Arrange storage of materials and products to permit access for inspection. Periodically inspect to verify materials and products are undamaged and are maintained in acceptable condition.

6. MANUFACTURER'S INSTRUCTIONS

- 1.1 Unless otherwise indicated in the specifications, install or erect materials and products in accordance with the manufacturers' instructions.
- 1.2 Improper installation or erection of materials and products, due to failure in complying with these requirements, authorizes the Construction Manager and/or the Consultant to require removal and re-installation at no increase in the Contract Price.

7. WORKMANSHIP

- 1.1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Construction Manager if required Work is such as to make it impractical to produce the required results.
- 1.2 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Consultant whose decision is final.

8. CONCEALMENT

- 1.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

9. REMEDIAL WORK

- 1.1 Perform remedial work required to repair or replace the parts or portions of the Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

- 1.2 Perform remedial work by specialists familiar with the materials affected. Perform work in a manner which will neither damage nor endanger any portion of the Work.

10. FASTENINGS

- 1.1 Provide metal fastenings and accessories in the same texture, colour and finish as adjacent materials, unless indicated otherwise.
- 1.2 Prevent electrolytic action between dissimilar metals and materials.
- 1.3 Use noncorrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically specified in the affected specification Section.

11. PROTECTION OF WORK IN PROGRESS

- 1.1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Construction Manager, at no increase in the Contract Price.

12. OVERLOADING

- 1.1 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without the Consultant's written approval.

13. EXISTING UTILITIES

- 1.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with a minimum of disturbance to the Work, and/or pedestrian and vehicular traffic.
- 1.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in a manner approved by the authority having jurisdiction. Stake and record the location of the capped service.

14. PRODUCT OPTIONS

- 1.1 Products specified by reference standards or by description only: any product meetings those standards or description.
- 1.2 Products specified by naming one or more manufacturers with substitutions specifically excluded: products of manufacturers named and meeting the specifications; no options or substitutions allowed.

- 1.3 Products specified by naming one or more manufacturers with no specific exclusion of substitutions: submit a request for substitution for any manufacturer not named, in accordance with Section 01 25 00 'Substitutions'.

01 71 12 - EXAMINATION AND PREPARATION

1. FIELD ENGINEERING

- 1.1 The Construction Manager will be responsible for all survey and field engineering work required for the project.
- 1.2 The Construction Manager will employ a Registered Ontario Land Surveyor (OLS) to execute the field engineering work.
- 1.3 Survey Reference Points: The OLS will:
 - 1. Establish two permanent bench marks on site, referenced to established bench marks by survey control points.
 - 2. Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
 - 3. Record locations, with horizontal and vertical data in the Project Record Documents.
 - 4. Make no changes or relocation without prior written notice to the Construction Manager.
 - 5. Replace control points which are lost, or destroyed or require relocation because of changes in grade.
 - 6. Establish lines and levels, locate and lay out the work by instrumentation.
 - 7. Stake for grading, fill and topsoil.
 - 8. Establish pipe invert elevations.
 - 9. Stake batter boards for foundations.
 - 10. Establish foundation, column locations and floor elevations.
 - 11. Establish lines and levels for mechanical and electrical work.
 - 12. Maintain a complete, accurate log of control and survey work as it progresses.
 - 13. On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of the work.
 - 14. Submit certificate signed by Surveyor certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.
- 1.4 The Trade Contractor shall:
 - 1. Lay out his/her own work relative to the established survey control points and to adjacent work already in place.
 - 2. Report to the Construction Manager when a reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.

2. DIMENSIONS

- 1.1 Check and verify dimensions wherever referring to the work. Dimensions, when pertaining to the work of another trade, shall be verified with the trade concerned. Details and measurements of work which is to fit or conform with work installed shall be taken at the site.
- 1.2 Do not scale drawings. If there is ambiguity, lack of information or inconsistency, immediately consult the Construction Manager for directions. Be responsible for extra costs caused by the disregarding of this requirement.

01 73 00 - EXECUTION

1. WORKMANSHIP

- 1.1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify the Construction Manager if required work is such as to make it impractical to produce the required results.
- 1.2 Do not employ any unfit person or anyone unskilled in his/her required duties.
- 1.3 In cases of dispute, decision as to quality to fitness of workmanship rest with the Consultant.

2. CONCEALMENT

- 1.1 Except where indicated otherwise, in finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings.
- 1.2 Before installation, inform the Construction Manager if there is a contradictory situation. Install as directed by the Construction Manager.

3. LOCATION OF FIXTURES

- 1.1 The locations of fixtures, apparatus, equipment, fittings, outlets, conduits, pipes and ducts shown or specified, but not dimension-ed, shall be considered approximate.
- 1.2 Request clarification from the Consultant, to establish exact locations. Any relocation caused by the Trade Contractor's Failure to request clarification shall be done by the Trade Contractor as part of the Work. Where job conditions require reasonable changes in indicated locations and arrangements, make such changes at no additional cost.
- 1.3 Conserve space and coordinate with the work of other trades to ensure that ducts, pipes and conduits will fit into allocated wall and ceiling spaces.
- 1.4 Where ducts, piping and conduits are permitted to be exposed, they shall be neatly and uniformly laid out, parallel to adjacent building lines and parallel to each other where they run in the same direction. Request the Consultant's review of exposed installations prior to the start of work. Where exposed work is not installed in accordance with the Consultant's prior review, make changes to such work, as directed by the Consultant, at no extra cost to the Contract.
- 1.5 Except where locations are specifically noted on the drawings, install exposed mechanical and electrical fixtures, including outlets, switches, thermostats, panels and other items located on walls in an orderly and neatly laid out manner, lining up with each other and grouped together where possible. Request the Consultant's review of the proposed installation prior to the start of rough-in work. Relocate at no extra cost to the Contract any work for which the Consultant's review prior to the start of work was not requested.

4. REMOVED MATERIAL

- 1.1 Unless otherwise specified, materials designed for removal become the Trade Contractor's property and shall be taken from site.
- 1.2 Deposit removed unsalvageable materials in a garbage container daily or more frequently if directed by the Construction Manager.
- 1.3 Locate the garbage container where directed by the Construction Manager.
- 1.4 Arrange for removal of containers immediately as soon as they are full. Legally dispose of content.

5. CONSTRUCTION SAFETY REQUIREMENTS

- 1.1 Execute all work in strict compliance with construction health and safety requirements specified in Section 01 35 29 'Health and Safety Procedures'.

6. POWDER ACTUATED FASTENING DEVICES

- 1.1 Do not use powder actuated tools using explosives, unless permitted expressly by the Construction Manager; comply with requirements of CAN3-Z166.2-M85, Use and Handling of Powder Actuated Tools.

7. CUTTING, PATCHING AND MAKING GOOD

- 1.1 Approvals: Submit written request in advance of cutting or alteration which affects:
 1. Structural integrity of any element of Project.
 2. Integrity of weather-exposed or moisture-resistant elements.
 3. Efficiency, maintenance, or safety of any operational element.
 4. Visual qualities of sight-exposed elements.
 5. Work of the Owner or a separate contractor.
- 1.2 Inspection:
 1. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
 2. After uncovering, inspect conditions affecting performance of work.
 3. Beginnings of cutting or patching shall be construed to mean acceptance of existing conditions.
- 1.3 Execution:
 1. Perform cutting, fitting, and patching including excavation and fill, as required to complete the Work.
 2. Remove and replace defective and non-conforming work.
 3. Provide openings in non-structural elements of the Work for penetrations of mechanical and electrical work.
 4. Perform work in a manner which will avoid damage to other work.
 5. Prepare proper surfaces to receive patching and finishing.

6. Where possible, employ the original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
7. Cut rigid materials using a power saw or core drill. Pneumatic or impact tools will not be allowed.
8. Restore work with new products in accordance with the Contract Documents.
9. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
10. At penetrations of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, acceptable to the authorities having jurisdiction, full thickness of construction element.
11. Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to the nearest intersection; for an assembly, refinish the entire unit.
12. In the finished work there shall be no detectable difference in appearance between existing surfaces, patched surfaces and new surfaces.

8. SLEEVES, HANGERS, AND INSERTS

- 1.1 Co-ordinate the setting and packing of sleeves and supply and installation of hangers and inserts. Obtain Consultant's approval before cutting into structure.

01 74 13 - PROGRESS AND FINAL CLEANING

1. GENERAL

- 1.1 Be responsible for the cleanliness of assigned work areas to the satisfaction of the Construction Manager. Maintain the work areas in a neat and orderly condition at all times.
- 1.2 Periodically, or when directed by the Construction Manager, remove from work areas rubbish and waste materials.
- 1.3 Burning or burying of rubbish and waste materials on site is not permitted.
- 1.4 Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.
- 1.5 Use cleaning material only on surfaces recommended by the cleaning material manufacturer.

2. CLEANING DURING CONSTRUCTION

- 2.1 Keep work areas free from the accumulation of waste products, packaging and debris.
- 2.2 Remove waste material, packaging and debris from the site and deposit in waste container at the end of each working day or more often if required.
- 2.3 Keep dust and dirt to an acceptable level, as directed by the Construction Manager.
- 2.4 Remove oily rags, waste and other hazardous substances from the premises at the end of each working day or more often if required of waste.
- 2.5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal and debris.
- 2.6 Upon verbal or written instruction from the Construction Manager, conduct clean-up as instructed.

3. FINAL CLEANING

- 3.1 Prior to Substantial Performance, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining work.
- 3.2 Remove stains, dirt, and smudges from finished surfaces.
- 3.3 Clean exposed finished surfaces in accordance with respective material manufacturers' recommendations.
- 3.4 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched, or disfigured glass.

- 3.5 Remove stains, spots, marks, and dirt from decorative work, electrical, and mechanical fixtures, furniture fitments, walls, and fl;doors and other surfaces.
- 3.6 Vacuum clean and dust building interiors, behind grilles, louvres and screens.
- 3.7 Wax, seal, shampoo or prepare floor finishes, as recommended by the manufacturer.
- 3.8 Inspect finishes, fitments, and equipment and ensure specified workmanship and operation.
- 3.9 Broom clean and wash exterior walks, steps, and surfaces.
- 3.10 Remove dirt and other dis-figuration from exterior surfaces.
- 3.11 Clean and sweep roofs, gutters, area-ways, sunken wells.
- 3.12 Sweep and wash clean paved areas.
- 3.13 Clean mechanical and electrical fixtures and other fittings and other fittings of labels, wrappings, paper, and other foreign material.
- 3.14 Replace heating, ventilation and air condition filters, if units were operated during construction.
- 3.15 Clean ducts, blowers, and coils if heating, ventilation and air conditioning systems were operated without filters during construction.
- 3.16 Clean roofs, downspouts, and drainage systems.
- 3.17 When the Work is Totally Performed, remove surplus products, tools, construction machinery and equipment. Remove waste products and debris.

01 74 21 - WASTE MANAGEMENT AND DISPOSAL

1. GENERAL

- 1.1 The Construction Manager will designate one person as "Waste Management Coordinator (WMC)" to be responsible for implementation of the waste management plan and ensuring compliance by all construction personnel with the requirements of this Section.
- 1.2 Comply with the Environment Protection Act, Ontario Regulations O. Reg. 102/94 and O. Reg. 103/94 for waste management program on construction and demolition projects.

2. WASTE MANAGEMENT PLAN

- 2.1 The WMC will develop and implement as waste management plan for the project to implement procedures to reduce, reuse and recycle materials to the maximum extent possible.
- 2.2 A copy of the waste management plan will be posted in a conspicuous location where it can be readily seen by all construction personnel.

3. WASTE DISPOSAL

- 3.1 Trade Contractors are required to conform to the waste management plan and implement throughout the project a materials source separation program to collect re-usable and recyclable materials in an orderly fashion for diversion from the general waste stream and alternative disposal at appropriate materials recycling and re-use facilities. The Construction Manager will provide appropriate on-site disposal bins.
- 3.2 Collect and separate packaging for disposal at recycling facilities. Include paper, plastic, polystyrene, corrugated cardboard, metal banding, and other recyclable packaging materials.

4. ENVIRONMENTAL PROTECTION

- 4.1 Dispose of unused adhesive, sealant, volatile materials such as mineral spirits, oil or paint thinner, and other volatile materials which could be hazardous to the health, including empty containers, at an official hazardous materials collection site acceptable to the Consultant, in strict accordance with the requirements of the authorities having jurisdiction and in a manner which will protect construction personnel, visitors to the site, and the public from all such hazards.
- 4.2 Do not permit such materials to enter waterways, storm or sanitary sewers; do not dispose onto ground or other location that might pose a health or environmental hazard. Do not bury or burn rubbish and waste materials on site.

01 75 16 - START-UP PROCEDURES

1. STARTING SYSTEMS

- 1.1 The Construction Manager will coordinate the schedule for start-up of various equipment and systems.
- 1.2 Notify the Construction Manager four (4) days prior to start-up of each item.
- 1.3 Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- 1.4 Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- 1.5 Verify that wiring and support components for equipment are complete and tested.
- 1.6 Execute start-up under the supervision of the applicable manufacturer's representative and Trade Contractors' personnel in accordance with the manufacturer's instructions.
- 1.7 When specified in individual specification Sections, require the manufacturer to provide an authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise the placing of equipment or the system in operation.
- 1.8 Submit a written report in accordance with Section 01 33 00 "Submittal Procedures", stating that equipment or system has been properly installed and is functioning correctly.

2. DEMONSTRATION AND INSTRUCTIONS

- 2.1 Demonstrate the operation and maintenance of equipment, products and systems to the Owner's personnel two weeks prior to the date of final inspection.
- 2.2 Demonstrate Project equipment and instruct in a classroom environment, by a qualified manufacturer's representative who is knowledgeable about the Project.
- 2.3 For equipment or systems requiring seasonal operation, perform a demonstration for other season within seven (7) months.
- 2.4 Utilize the operation and maintenance manuals as the basis for instruction. Review the contents of the manual with the Owner's personnel, in detail, to explain all aspects of the operation and maintenance.
- 2.5 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at an agreed time, at the equipment location.
- 2.6 Prepare and insert additional data in the operations and maintenance manuals when the need for additional data becomes apparent during instruction.

3. TESTING, ADJUSTING, AND BALANCING

- 3.1 The applicable Trade Contractor shall pay for the services of an independent firm, acceptable to the Construction Manger, to perform testing, adjusting, and balancing.
- 3.2 Reports shall be submitted by the independent firm to the Construction Manager indicating observations and results of tests and indicating compliance or non-compliance with the requirements.

01 77 00 - CONTRACT CLOSEOUT PROCEDURES

1. INSPECTION AND DELARATION PROCEDURES

- 1.1 Follow the recommended procedures concerning substantial performance of construction contracts and completion take-over of projects as prescribed in OAA/OGCA Document 100 "Take Over Procedures".

2. REINSPECTION

- 2.1 Should status of the Work require re-inspection by The Consultant due to failure of Work to comply with the Contract Documents, the Owner will deduct the costs of re-inspection services from payment to the Trade Contractor.

3. FINAL CLEANING

- 3.1 Refer to Section 01 74 13 "Progress and Final Cleaning".

4. ADJUSTING

- 4.1 Adjust operating products and equipment to ensure smooth and unhindered operation.

5. PROJECT CLOSEOUT SUMMITTALS

- 5.1 Proper to application for Certificate of Substantial Performance, submit the documentation applicable to the Trade Contractor's work for incorporation into the following documents, in accordance with the requirements of the Contract Documents:
1. Project Record Documents: Refer to Section 01 78 39.
 2. Operation and Maintenance Manual: Refer to Section 01 78 23. Include:
 - A) Warranties and maintenance service agreements: Refer to Section 01 78 36.
 - B) Final shop drawings: Refer to Section 01 33 00
- 5.2 Where called for in the applicable specification sections, provide spare parts and maintenance materials. Refer to Section 01 78 43.
- 5.3 The Certificate of Substantial Performance will not be issued until the above documents and items have been submitted and are deemed by the Construction Manager to be acceptable.

01 78 00 - CLOSEOUT SUBMITTALS

1. MAINTENANCE DATA

- 1.1 Provide operation and maintenance data specified in individual sections of the specifications for inclusion in the operation and maintenance manual to be prepared by the Construction Manager.
- 1.2 Include the requirements of all Sections of the specifications for maintenance instructions.
- 1.3 Coordinate with the Construction Manager and provide the required number of copies in the format prescribed for the manual.
- 1.4 Provide one complete set of final shop drawings indicating corrections and changes made during fabrication and installation.

2. THE TRADE CONTRACTOR'S SUBMITTAL

- 1.1 Each trade Contractor shall submit to the Construction Manager the required documentation as applicable to his/her work for incorporation into the operation and maintenance manual.
- 1.2 Provide three (3) copies of the information and data. Each set shall be organized and presented in accordance with the format prescribed by the Construction Manager.
- 1.3 Neatly type lists and notes. Use clear drawings, diagrams and manufacturer's literature.
- 1.4 Include one complete set of final shop drawings (bound separately) including corrections and changes made during fabrication and installation.

3. WARRANTIES

- 3.1 Provide duplicate notarized copies of warranties called for in the application specifications Sections.
- 3.2 Refer to individual sections of the specifications for specific requirements of the warranties.
- 3.3 Execute and assemble transferable warranty documents from Subcontractors, Suppliers, and Manufacturers.
- 3.4 Submit warranties immediately after the issuance of the Certificate of Substantial Completion, to facilitate release of hold-back monies.
- 3.5 For items of work delayed beyond the date of Substantial Performance of the Work, provide an update submittal within ten (10) days after acceptance, listing the date of acceptance as the start of the warranty period.
- 3.6 If the validity of an extended warranty is related to proper maintenance and servicing of equipment, etc., provide full details of maintenance requirements.

4. MAINTENANCE SERVICE

- 4.1 Furnished service and maintenance of components indicated in specification sections for the specified time period commencing on the date of Substantial Performance.
- 4.2 Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- 4.3 Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- 4.4 Maintenance service shall not be assigned or transferred to any agent or subcontractor without the Owner's prior written consent.

5. AS-BUILT AND PROJECT RECORD DRAWINGS

- 5.1 The Construction Manager will maintain on site one set of black-line prints for recording as-built conditions.
- 5.2 The Trade Contractor is required to record accurately on the As-Built Drawings significant deviations from the Contract Documents caused by site conditions and changes ordered by the Construction Manager or the Consultant.
- 5.3 Mark changes in red ink.
- 5.4 Where applicable, record the following information:
 - 1. Depths of various elements of foundations in relation to finish ground floor.
 - 2. Horizontal and vertical locations of underground utilities and appurtenances referenced to a permanent surface improvement.
 - 3. Locations of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - 4. Field changes of dimension and detail.
 - 5. Changes made by Change Order, Additional Instruction or order minor change in the Work.
- 5.5 Each Trade Contractor shall provide the Construction Manager with the as-built information applicable to the work of his/her contract.

6. PROJECT RECORD DRAWINGS

- 6.1 At the completion of the project and prior to final inspection, the Construction Manager will submit the As-Built Drawings to the Consultant and the specialist sub-consultants for the production of Project Record Drawings by revising the electronic drawing files to incorporate the as-built information provided by the various Trade contractors and the Construction Manager.
- 6.2 The provision of complete information for the production of the Project Record Drawings is the responsibility of each Trade Contractor. The cost of the Consultant's and the specialist sub-consultants' fees for the production of project Record Drawings based on the Contractor's As-Built Drawings will be paid by the Construction Manager.

7. SPARE PARTS AND MAINTENANCE MATERIALS

- 7.1 Quality:
1. Spare parts, maintenance materials and special tools provided shall be new, not damaged or defective, and of the same quality and manufacture as materials and products provided in the Work.
 2. If requested, furnish evidence as to type, source and quality of products provided.
 3. Defective materials and products will be rejected, regardless of previous inspections. Replace materials and products at no additional cost to the Contract.
- 7.2 Pay costs of transportation.
- 7.3 Storage, handling, and protection:
1. Store spare parts, maintenance materials and special tools in a manner which will prevent damage, or deterioration.
 2. Store in original and undamaged condition with the manufacturer's seals and labels intact.
 3. Store components subject to damage from weather in weatherproof enclosures.
 4. Store paints and freezable materials in a heated and ventilated room.
 5. Remove and replace damaged products at no additional cost to the Contract and to the Construction Manager's and the Consultant's satisfaction.
- 7.4 Spare parts:
1. Provide spare parts in quantities specified in the individual specification Sections.
 2. Provide items of the same manufacture and quality as items in the Work.
 3. Deliver to the Project Site, place and store where directed by the Construction Manager.
 4. Receive and catalogue all items. Submit an inventory listing to the Consultant. Include the accepted listings in the Operation and Maintenance Manual specified in Section 01 78 23.
 5. Obtain receipts for delivered products and submit receipts prior to final payment.
- 7.5 Maintenance materials:
1. Provide maintenance and extra materials in quantities specified in individual specification Sections.
 2. Provide items of same the manufacture and quality as items in the Work.
 3. Provide materials from the same production run as installed materials.
 4. Deliver to the Project Site, place and store where directed by the Construction Manager.
 5. Receive and catalogue all items. Submit an inventory listing to the Construction Manager. Include the approved listings in the Operation and Maintenance Manual.
 6. Obtain receipts for delivered products and submit receipts prior to final payment.
- 7.6 Special tools:
1. Provide special tools in quantities specified in the individual specification Sections.
 2. Provide items with tags identifying their function and the equipment with which they are associated.
 3. Deliver to the Project Site, place and store where directed by the Construction Manager.
 4. Receive and catalogue all items. Include the accepted listing sin the Operation and Maintenance m Manual

01 78 36 - WARRANTIES

1. SUMMARY

- 1.1 This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
 1. Refer to the General Conditions for terms of the Trade Contractor's period for correction of the Work.
- 1.2 Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and Subcontractors required to countersign special warranties with the Trade Contractor.
- 1.3 Separate Trade Contracts: Each Trade Contractor is responsible for warranties related to his/her own Contract.

2. WARRANTY REQUIREMENTS

- 2.1 Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- 2.2 Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original and shall commence on the date of completion and acceptance of the corrective work.
- 2.3 Replacement Cost: Upon determination that Work covered by a warranty has failed replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Trade Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- 2.4 Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to projects with warranties not in conflict with requirements of the Contract Documents.
- 2.5 Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

3. SUBMITTALS

- 3.1 Submit written warranties to the Consultant prior to the date certified for Substantial Performance. If the Consultant's Certificate of Substantial Performance designates a commencement date for warranties other than the date of Substantial Performance for the Work, or a designated portion of the Work, submit written warranties upon request of the Consultant.
 1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Consultant within 15 days of completion of that designated portion of the Work.
 2. For items of work delayed beyond the date of Substantial Performance of the Work, provide an updated submittal within ten (10) days after acceptance, listing the date of acceptance as the start of the warranty period.
- 3.2 When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacture to execute a special warranty, prepare warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Consultant, for approval prior to final execution.
 1. Refer to Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.
- 3.3 Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Trade Contractors, Subcontractor, Supplier, or manufacturer and assembled by the Construction Manager. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 1. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 216 mm x 281 mm paper.
 2. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES", Project title or name, and name of the Contractor.
- 3.4 If the validity of an extended warranty is related to proper maintenance and servicing of equipment, etc, provide full details of maintenance requirements.
- 3.5 When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.