

PROJECT SPECIFICATIONS

River Ridge Park for the Municipality of Lakeshore

Project #21-103



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Architectural Specification River Ridge Park
Municipality of Lakeshore, ON

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SPECIFICATION

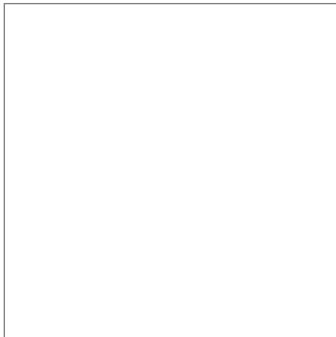
OF LABOUR AND MATERIALS REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE RIVER RIDGE PARK, LAKESHORE, ONTARIO

For

The Municipality of Lakeshore
419 Notre Dame St
Belle River, ON
N0R 1A0

In conformity with the accompanying drawings prepared for this purpose by:

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01 32 10-Project Progress

1.1 PROGRESS RECORD

- .1 Maintain on site, permanent written record of progress of work. Record shall be open to inspection by Consultant at all times and copy shall be furnished to Consultant upon request.
- .2 Record weather conditions, dates of commencement, progress etc. Particulars pertaining to erection and removal of forms, pouring of concrete, installation of roofing and other critical or major components as well as number of employees of various trades and type and quantity of equipment employed daily, shall be noted.
- .3 Display a copy of the construction schedule in the site office from start of construction to completion. Superimpose actual progress of work on schedule at least once a week.

1.2 RECORD DRAWINGS

- .1 Obtain and keep on site a complete and separate set of black line white prints.
- .2 Note clearly, neatly, accurately and promptly as the work progresses all architectural, structural, mechanical and electrical field changes, revisions and additions to the work and deviations from the Contract Documents.
- .3 Note accurate location, depth, position, size and type of concealed and underground services, both inside and outside, on record drawings.
- .4 Record drawings shall be available for review at each site meeting.
- .5 Refer to Section 01 77 00 for requirements on submission of As-Built drawings.

1.3 PRODUCT DELIVERY CONTROL

- .1 The Contractor shall issue a shop drawing schedule to the consultants that is all inclusive of Divisions of the specifications and required within the drawings. The dates of submittals shall correspond the time sensitive products required in order to maintain the schedule.
- .2 It is the responsibility of the Contractor to ensure that the supplier or distributor of materials specified or alternatives accepted, which is intended for use, has materials on the site when required. The Contractor shall obtain confirmed delivery dates from the supplier.
- .3 Provide equipment delivery schedule, co-ordinated with construction and submittals' schedule, showing delivery dates for major and/or critical equipment.
- .4 The Contractor shall contact the Consultant immediately upon receipt of information indicating that any material, item, will not be available on time, in accordance with the original schedule and similarly it shall be the responsibility of all sub-contractors and suppliers to so inform the Contractor.

END OF SECTION

01 33 00-Submittals

1.1 GENERAL

- .1 Unless specified or directed otherwise, make all submissions to the Consultant.
- .2 Make all submissions required by the Contract Documents with reasonable promptness and in orderly sequence so as to cause no delay in the work.

1.2 SCHEDULE OF SUBMITTALS

- .1 Within 15 days of submission of construction schedule submit a schedule of submittals for shop drawings, samples, lists of materials and other documentation requiring Consultant's review.
- .2 For each item requiring submission and review show anticipated date of submission and critical date for return of reviewed submission.
- .3 Design sequence of submissions to reflect requirements of construction schedule.
- .4 Allow 10 working days for Consultant's review of each submission. Stagger submissions to permit adequate review time for each item submitted. If several submissions are made at the time or within a short time of each other, indicate order of priority in which submissions should be reviewed. Multiple submissions may result in delays to processing of submissions.
- .5 Include sufficient time to permit corrections and re-submission, if necessary, without affecting construction schedule.

1.3 SHOP DRAWINGS

- .1 Submit shop drawings required by Contract Documents, in accordance with requirements of the Contract and the following:
 - .1 Shop drawings received without review stamps by the subtrade submitting and the General Contractor will be returned for resubmission.
 - .2 Shop drawings requiring stamped, dated and signed certification of a professional engineer received without such certification will be rejected and returned.
- .2 Prepare shop drawings in imperial or metric measurements to match that of the contract documents.
- .3 Unless otherwise directed by the Consultant, submit all shop drawing electronically in PDF format.
- .4 After review Consultant will return to the Contractor a electronic version of the reviewed shop drawings. The Contractor shall distribute the reviewed shop drawing to the appropriate subtrade(s) and supplier(s).

-
- .5 Shop drawings which require the approval of a legally constituted authority having jurisdiction shall be submitted by Contractor to such authority for approval. Such shop drawings shall receive final approval of authority having jurisdiction before Consultant's final review.
 - .6 No work requiring a shop drawing submission shall be commenced until the submission has received Consultant's final review. Do not use any shop drawing, erection drawing or setting drawing which does not bear the stamp and signature of the Consultant.
 - .7 The Consultant's review is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Consultant approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same. This review shall not relieve the Contractor of his responsibility for meeting the requirements of the Contract Documents. The 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 co-ordination of the work of all sub-trades.
 - .8 The Consultant will review and return shop drawings in accordance with a Shop Drawings Schedule prepared by the Contractor and agreed upon at the commencement of the Work. The Contractor shall allow the Consultant a minimum of 10 Working Days to review shop drawings from the date of receipt, to the date of issuance, for return by post or courier, based upon a regular and reasonable flow of shop drawings. If the Consultant requires resubmission of the shop drawings, allow for an additional 10 Working Days review. If, at any time, the Contractor submits an unusually large number of shop drawings, such that the Consultant, within 3 Working Days of receipt of such shop drawings, will provide the Contractor with an estimate of the time necessary for processing. The Contractor shall periodically re-submit the Shop Drawings Schedule to correspond to changes in the construction schedule. The schedule re-submissions shall maintain the minimum 10 Working Days period for the Consultant's review.
 - .9 Only shop drawings bearing the Consultant's shop drawing review stamp, date and initials, shall be used at the Place of Work or for the manufacture or fabrication of Products.
 - .10 The review of shop drawings, by the Consultant, does not authorize a change in the Contract Price or Contract Time.
 - .11 The Consultant will not approve payment for materials, equipment etc. that have yet to have reviewed shop drawings (not rejected and/or required re-submittal) that arrive, stored and/or are installed within the Place of the Work.

1.4 SAMPLES

- .1 Submit samples required by Contract Documents and as directed by the Consultant.
- .2 Unless indicated otherwise submit samples in duplicate.

- .3 Where colour selection is required, submit manufacturer's full colour range for specified product line. Photo copy or electronic colour samples are not acceptable.
- .4 Submit samples with identifying labels bearing material or component description, manufacturer's name and brand name, Contractor's name, project name, location in which material or component is to be used, and dated.

1.5 REQUESTS FOR SUBSTITUTIONS

- .1 A substitution, also known as an "alternate" or "equal" by a nontechnical party, is a product which the Contractor proposes to replace that which is specified within these contract documents.
- .2 No requests for substitutions, alternates or "equals" will be accepted on this project without the Consultant's express written approval prior to the tender close date. The Consultant is under NO obligation to review requests for substitution prior to the tender close date.
- .3 No requests for substitutions, alternates or "equals" will be accepted on this project without the Consultant's express written approval after the tender close date except as follows:
 - .1 Where a specified product has been removed from the market or has been altered significantly or renamed by the product manufacturer after the tender close date, a substituted product may be proposed by the Contractor provided it is accompanied by the following information for review by the Consultant:
 - .1 Cover Letter – written by the supplier/manufacturer identifying the reason for the request for substitution.
 - .2 Side-by-Side Comparison – showing how the requested substitution or alternate product compares to the original product. This comparison is meant to be an exact side-by-side comparison for ease of review by the Consultant and is to include all testing reports and documentation as was specified herein. Company brochures, data sheets, etc may be appended to the Side-by-Side Comparison but are not considered to be the comparison itself. Comparison will include compliance with the Building Code and other Codes and Regulations governing the use and application of the product.
 - .3 Cost Adjustment Proposal – all requests must be accompanied by a cost adjustment (ie credit, extra or cost neutral) value in dollars. The value is to include all work related to the substitution or alternate to complete the intent of the work of the original specified product.
 - .4 Depending on the request, additional information, including testing or engineering (licenced in the Province of Ontario) may be required as follows:

- .1 Re-Design and Documentation – provide documentation which clearly identifies how the work impacts the overall design intent, adjacent building systems, materials or other component(s). Engineering to facilitate the request for substitution may be required and the requirement for such information is to the sole discretion of the Consultant.
- .2 Where the Contractor is requesting a review of a substitution or alternate, which is not the result of the above exemption (item 1.5.3.1), the follow applies:
 - .1 The Consultant will reject the request in its entirety.
 - .2 Or, if the Consultant decides to undertake, at its sole and unfettered discretion, a review of the request, the Contractor will reimburse the Consultant for time required to conduct such review. Terms of reimbursement will be identified by the Consultant prior to any review and will include time, material and all resources required for the review. Undertaking a review is NO guarantee of acceptance of a requested substitution. The Consultant has full authority to reject, deny or otherwise not review any or all requests for substitution. Due to the amount of time required for building component and building analysis review, any delay caused by the review itself is the full responsibility of the Contractor. The Consultant makes no guarantee of timelines for review which depends on numerous factors outside of the Consultant's control.

END OF SECTION

01 41 00-Regulatory Requirements

1.1 PERMITS, LICENCES, FEES

- .1 Where permits, licences and inspection fees are required by authorities having jurisdiction for specific trade functions, they shall be obtained by the particular sub-trade responsible for that work.
- .2 Review building permit set with Consultant immediately following receipt of building permit and jointly determine whether or not changes to Contract are required.
- .3 Be responsible for ensuring that no work is undertaken which is conditional on permits, approvals, reviews, licences, fees, until all applicable conditions are met. No time extension will be allowed for delay in obtaining necessary permits.
- .4 Report to the Consultant in writing any condition which would prohibit granting of any permit or approval before work affecting such items is commenced.
- .5 Give notice of completion of project prior to occupancy, as required by applicable legislation.

1.2 BUILDING CODE, BY-LAWS, REGULATIONS

- .1 Carry out work in accordance with requirements of the Ontario Building Code, latest issue, including all amendments and revisions.
- .2 Comply with requirements, regulations and ordinances of other jurisdictional authorities.
- .3 Where it is necessary to carry out work outside property lines, such as sidewalks, paving or concrete curbs, comply with applicable municipal requirements.
- .4 Submit written notice to Consultant, of observed variance of Contract Documents from requirements of Building Code and authorities having jurisdiction. Assume responsibility for work known to be contrary to such requirements and performed without notifying Consultant.

1.3 CONSTRUCTION SAFETY

- .1 Be governed by pertinent safety requirements of Federal or Provincial Governments and of municipal bodies having authority, particularly the Ontario Construction Safety Act, and regulations of Ontario Ministry of Labour, and work in conjunction with proper safety associations operating under the authority of Ontario Worker's Compensation Act.
- .2 Do not, in the performance of the work, in any manner endanger the safety or unlawfully interfere with the convenience of the public.
- .3 Notify the Ontario Ministry of Labour of intended work of this Contact as required by the Occupational Health and Safety Act. A copy of the "Notice of Project" shall be submitted to Consultant and Owner.

1.4 FIRE PROTECTION

- .1 Refer to technical sections of Specifications and Drawings for fire protection requirements.
- .2 Test methods used to determine fire hazard classification and fire endurance rating shall be as required by Ontario Building Code.
- .3 Upon request, furnish to Consultant with evidence of compliance with project fire protection requirements.
- .4 Materials and components used to construct fire rated assemblies and materials requiring fire hazard classification shall be listed and labelled, or otherwise approved, by fire rating authority. Labelled materials and their packaging shall bear fire rating authorities label showing product classification.
- .5 Fire rated door assemblies shall include doors, frame, anchors and hardware and shall bear label of fire rating authority showing opening classification and rating.
- .6 Materials having a fire hazard classification shall be applied or installed in accordance with fire rating authority's printed instructions.
- .7 Fire rated assemblies shall be constructed in accordance with applicable fire test report information issued by fire rating authority. Deviation from fire test report will not be allowed.
- .8 Construct fire separations as continuous, uninterrupted elements except for permitted openings, extend fire rated walls and partitions from floor to underside of structural deck above.
- .9 Fill and patch voids and gaps around openings and penetrations in and at perimeter of assemblies so as to maintain continuity and to produce a fire-resistant smoke tight seal, acceptable to jurisdictional authorities and Consultant.

1.5 HAZARDOUS MATERIALS

- .1 Comply with provisions of the Occupational Health and Safety Act as amended to include WHMIS (Workplace Hazardous Materials Information System).
- .2 Ensure that Material Safety Data Sheets (MSDS) are available on site prior to first delivery to site of any controlled material or substance.
- .3 Maintain on site for duration of Contact a hazardous materials log containing all required MSDS.
- .4 Log shall be open for inspection for Owner, Consultant and all personnel on site.
- .5 Ensure that workers are instructed in the purpose and content of MSDS.

END OF SECTION

01 45 00-Quality Control

1.1 INDEPENDENT INSPECTION AND TESTING

- .1 Requirements specified herein apply to independent inspection and testing specified under technical Specification Sections, Divisions 2 to 33. Costs for independent inspection and testing services shall be paid by Contractor out of cash allowance carried in the contract.
- .2 Requirements specified herein do not apply to the following:
 - .1 Inspection and testing required by law, ordinances, rules, regulations and orders of public authorities.
 - .2 Testing, adjustment and balancing of mechanical and electrical systems and equipment.
 - .3 Inspection and testing performed exclusively for Contractor's convenience.
 - .4 Tests specified in Division 2 to 16 inclusive, to be included in Contract such as mill tests, certificates of compliance and testing to be carried out by Contractor under direction of Consultant.
- .3 Failures by independent inspection and testing agency to detect defective work or materials shall not in any way prevent later rejection, when a defect is discovered or shall it obligate Consultant for final acceptance.
- .4 Independent inspection and testing agency (hereinafter referred to as testing agency) is expected to do the following:
 - .1 Carry out inspection and testing functions to establish compliance with requirements of Contract Documents.
 - .2 Check work as it progresses and prepare reports stating results of tests and conditions. Work and state in each report whether specimens tested conform to requirements of Contract Documents, specifically noting deviations.
 - .3 Distribute reports as follows:

.1	Owner:	1 copy
.2	Consultant:	1 copy
.3	Sub-consultants affected:	1 copy
.4	Contractor:	2 copies
.5	Building Department:	1 copy
- .5 The testing agency is not authorized to amend or release any requirements of Contract Documents, nor to approve or accept any portion of work.
- .6 The Contractor shall do the following:

- .1 Notify testing agency minimum 48 hours in advance of operations to allow for assignment of personnel and scheduling of tests without causing delay in work.
- .2 Provide testing agency with access to work at all times.
- .3 Supply material samples for testing.
- .4 Supply casual labour and other incidental services required by testing agency.
- .5 Provide facilities for site storage of samples.
- .6 Make good work disturbed by testing agency.
- .7 When initial inspection and testing indicates non-compliance with Contract Documents, any subsequent re-inspection and retesting occasioned by non-compliance shall be performed by same testing agency and cost thereof borne by Contractor.

1.2 MOCK- UPS

- .1 Where required by Contract Documents construct mock-ups of work on site, in size and at location directed by Consultant.
- .2 Construct mock-ups prior to start of affected work. Work affected by mock-ups may not commence prior to acceptance of mock-up.
- .3 Construct mock-ups to include all related specified materials and workmanship. Make revisions as directed by Consultant, in accordance with intent of Contract Documents, until mock-ups are acceptable.
- .4 Mock-ups, reviewed and accepted by Consultant, shall become the standard of quality.
- .5 Mock-ups, by prior arrangement, may be incorporated into finished work if approved by Consultant.

1.3 TOLERANCES

- .1 Unless more stringent tolerances are required by a Section of the Specifications or a referenced standard, meet the following non-cumulative tolerances for installed work:
 - .1 "plumb" shall mean plumb within ¼" in 10'-0" (6 mm in 3 m).
 - .2 "level" shall mean level within ¼" in 10'-0" (6 mm in 3 m).
 - .3 "square" shall mean not in excess of 30 seconds less or more than 90E.

- .4 "straight" shall mean within ¼" in 10'-0" (6 mm in 3 m) under a 10'-0" (3 m) straightedge.

1.4 BUILDING ENVELOPE

- .1 Requirements specified herein apply to all elements of the exterior building envelope.
- .2 The continuity of air barrier/vapour retarder and insulation components is critical and must be maintained at all locations. Where different systems meet, ensure proper interface and continuity between adjacent components by implementing suitable construction sequences and by using compatible materials only.
- .3 Provide control joints in exterior building components of design and spacing which will permit expansion and contraction of components without causing distortion, failure of joint seals, undue stress, cracking, bowing or other defects detrimental to appearance and performance. Review design and location of control joints with Consultant prior to start of work and follow directions given by Consultant.
- .4 Anchor exterior cladding and glazing components to structure in manner suitable to accommodate structural deflection and creep. Design anchorage to withstand expected wind loads, positive and negative, in accordance with applicable regulations.
- .5 Ensure that air spaces within exterior building components are fire stopped in accordance with applicable regulations.
- .6 Ensure that air spaces on the outside of vertical air barrier/vapour retarder (walls) are constructed with adequate drainage provisions to the exterior.

1.5 DRAINAGE

- .1 Layout and construct work to ensure that positive drainage is provided to roof drains, floor drains, site drains and catch basins, as set in their final position to prevent un-drained areas and ponding.
- .2 Ensure that allowable construction tolerances and structural deflection do not cause ponding of water.
- .3 Issue a written report to the Consultant prior to executing work affected, for areas that adequate drainage cannot be provided.

END OF SECTION

01 51 00-Temporary Facilities

1.1 GENERAL

- .1 Provide all temporary facilities and controls required for the proper execution of the work.
- .2 Provide and maintain temporary systems in accordance with applicable regulations and requirements. Arrange for, obtain and pay for any permits required.

1.2 TEMPORARY ELECTRICITY AND LIGHTING

- .1 Provide temporary power, electrical lighting and sub-power system for use by all Sections.
- .2 Arrange, obtain and pay for service, including meter, of sufficient size to allow use of required tools and equipment and to ensure adequate lighting levels for the proper execution work.
- .3 Install and maintain temporary electrical systems in accord with Construction Safety Association's "Temporary Wiring Standards on Construction Sites", the Ontario Electrical Code and other authorities having jurisdiction.
- .4 The cost of electrical usage to be paid by the Owner.

1.3 TEMPORARY HEATING

- .1 The General Contractor shall provide all necessary heating, dehumidification etc. to areas as required to permit the installations of all materials and as required to maintain schedule and mandatory completion dates.
- .2 Furnish equipment, labour and hook-up to provide temporary heat as required for proper execution of work should the existing temporary heat not suffice.
- .3 Heat the enclosed building to minimum 15 degrees C at all times until taken over by Owner.
- .4 Provide all humidity control devices to achieve moisture levels in associated materials to permit installation in accordance with manufacturer's recommendations.
- .5 The use of propane or natural gas heaters of a type where the flame is not exposed is permitted. Open flame heaters are not permitted.
- .6 Uniformly distributes heat to avoid hot and cold areas and to prevent excessive drying.
- .7 The General Contractor shall pay for all charges for fuel.

1.4 TEMPORARY VENTILATION

- .1 Provide minimum 1 air change per hour for enclosed areas receiving architectural finishes.
- .2 Install adequate mechanical ventilation prior to commencement of work where hazardous or volatile adhesives, coatings or substances are used.
- .3 Do not allow excessive build-up of moisture inside building.

1.5 TEMPORARY TELEPHONE AND DATA

- .1 Provide and maintain site telephone service for duration of contract.
- .2 Provide and maintain internet and e-mail capability on site.

1.6 TEMPORARY WATER

- .1 Provide temporary clean and potable water supply, for use by all Sections.
- .2 General Contractor to pay for related charges.

1.7 TEMPORARY SANITARY FACILITIES

- .1 Provide toilet facilities, including hand wash facilities, for all personnel on site.
- .2 Keep facilities clean, sanitary and provided with required supplies at all times.
- .3 Comply with requirements of Ministry of Labour and Board of Health.
- .4 The use of the Owner washroom facilities is not permitted.

1.8 TEMPORARY FIRST-AID FACILITIES

- .1 Provide equipment and medical facilities as necessary to supply first-aid service to injured personnel in accordance with regulations of the Workmen's Compensation Act. Maintain facilities for duration of Contract.

1.9 TEMPORARY FIRE PROTECTION

- .1 Provide and maintain in proper working order fire extinguishers on each floor, prominently placed, until completion of work.
- .2 Fire extinguishers shall be minimum 9 kg 4A 60BC type or other as deemed necessary.
- .3 Where gas welding or cutting is to be done within 3 m or above combustible material, or above space that may be occupied by persons, interpose shields of non-combustible material. Tanks supplying gases for welding or cutting shall be placed at no greater distance from the work than is necessary and shall be securely fastened in an upright position. Such tanks shall be free from exposure to the sun or high temperature.

- .4 Coordinate welding and torch, etc. permits with the Owner.

1.10 TEMPORARY USE OF NEW PERMANENT SERVICE & EQUIPMENT

- .1 Do not use any new permanent service or equipment without Consultant's written approval.
- .2 Where permission is granted to use permanent services and equipment provide competent persons to operate services and equipment; inspect frequently and maintain facilities in proper operating condition at all times.
- .3 Permanent services and equipment shall be turned over to Owner in "as new" and perfect operating condition.
- .4 Use of permanent systems and equipment as temporary facilities shall not affect the warranty conditions and warranty period for such systems and equipment. Make due allowance to ensure that Owner will receive full benefits of equipment manufacturers warranty after project takeover.
- .5 The equipment manufacturer/warrantor shall inspect equipment and provide a written report of review.

1.11 CONSTRUCTION AIDS

- .1 Provide temporary stairs, railing guards, ladders, ramps etc. required for movement and placing of materials, equipment and personnel.
- .2 Provide mechanical hoisting equipment and fully qualified operators as required during construction.
- .3 Erect required scaffolding independent of walls, arranged to avoid interference with work of other Sections as much as possible.
- .4 Provide and maintain required shoring and bracing in accordance with Construction Safety Act and other applicable regulations.
- .5 Shoring and all false work over one tier in height shall be designed and shall bear the stamp of a registered professional engineer, having experience in this field.
- .6 The use of explosive power tools will not be permitted under any circumstances unless equipped with a device which positively prevents free flight of the stud.

1.12 BARRIERS

- .1 Protect public and workmen from injury.
- .2 Provide and maintain required hoardings, barricades, guardrails, and lights in accordance with applicable regulations.

- .3 Construction site fencing to be a pre-manufactured 6'-0" high metal fencing and/or 6'-0" high chain link fencing. **NOTE:** Construction fence to protect the Place of the Work complete with traffic gates for equipment/vehicle access.
- .4 Provide a temporary covered hoarding as required.

1.13 TEMPORARY CONTROLS

- .1 Provide protective coverings to protect work against damage caused by weather, including but not necessarily limited to rain, snow, ice, wind, frost and excessive heat.
- .2 Provide wind breaks and sun shades to allow proper setting and curing of cement type materials.
- .3 Protect building materials from freezing.
- .4 Prevent sprayed materials from contaminating air beyond application area, by providing temporary enclosures.
- .5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .6 Prevent tracking of mud and dirt from site onto paved roads. Provide stabilized vehicle access/egress points, constructed of coarse granular material. Place additional granular materials as required to maintain access/egress points in proper working order. Clean mud and dirt from paved roads at end of each day by shovelling or sweeping and subsequent washing. Dispose of mud and dirt in a controlled disposal area.
- .7 Provide temporary vestibule/door enclosures as required to ensure the building security.

1.14 PEST CONTROL

- .1 Provide rodent control and other pest control programs during construction, in accordance with requirements of jurisdictional authorities.

1.15 SIGNS

- .1 Except as specified herein, do not erect any signs unless approved by Consultant.
- .2 Supply and erect signage related to safety for the place of the work or mandatory regulations notices.
- .3 Prior to commencement of work wherein hazardous or volatile cements, coatings, or substances are used, barricade entire area and post adequate number of warning signs.

1.16 FIELD OFFICE AND SHEDS

- .1 Except as specified herein, do not erect any signs unless approved by Consultant. Provide a temporary office as required for work, large enough to accommodate site administrative activities and site meetings, complete with light, heating and cooling equipment to maintain 21C, ventilation, table and chairs. Do not store materials, tools, equipment in meeting areas; keep clean and tidy.
- .2 Provide temporary covers, sheds, and platforms of weatherproof construction as may be required for protection and preservation of materials, small tools, equipment etc.

1.17 TEMPORARY SEDIMENT, DUST AND DRAINAGE CONTROL

- .1 Provide and maintain adequate temporary pumping and drainage systems to keep excavations and structures free of water. Prevent flow of surface water into excavations. Locate sumps away from foundations. Prevent pumped water from carrying soil in suspension in sufficient quantity to cause settlement of adjacent earth. Provide sufficient standby equipment to ensure continuity of pumping systems.

1.18 EROSION AND SEDIMENTATION CONTROL

- .1 Control the drainage on the site to prevent flooding, erosion and run-off onto adjacent properties and road ways.
- .2 Dispose of water containing silt in suspension in accordance with requirements of jurisdictional authorities.
- .3 Determine and conform to sedimentation and erosion control requirements of jurisdictional authorities. Provide and maintain until completion of work or until directed by Consultant to be removed, sediment control devices at catch basins, drainage courses and at other locations on site as directed.
- .4 Provide storm drain inlet protection consisting of a sediment control barrier or an excavated ponding area around storm drain inlet or curb inlet; add bracing where necessary to withstand high flow volumes and depth. Inspect inlet protection after each rainfall and repair damage.
- .5 Sweep up accumulated sediment and dispose of in a controlled area. Remove inlet protection after area has been stabilized with permanent vegetation.
- .6 Sweep and wash adjacent roads daily of accumulated sediment from the activities of the Place of the Work.

END OF SECTION

01 61 50-Project Requirements

1.1 PROJECT QUALITY

- .1 Products supplied for work shall be new and as far as possible and unless otherwise specified, of Canadian manufacture.
- .2 Materials used for temporary facilities are not required to be new, provided they are structurally sound and in suitable and safe operating condition.

1.2 STANDARDS AND TERMINOLOGY

- .1 Where a standard has been adopted by these Specifications, incorporate minimum requirements of such standard into the work. Where requirements of Specifications are more stringent than those of the standard, follow more stringent requirements.
- .2 References to standards, specifications, handbooks and manufacturer's catalogues refer to latest edition thereof and all amendments or revisions applicable at bid closing date, unless date suffix is included with document number.
- .3 Wherever words "acceptable", "approved", "satisfactory", "selected", "directed", "designated", "permitted", "inspected", "instructed", "required", "submit", or similar words or phrases are used in standards or elsewhere in Contract Documents, it shall be understood, that "by (to) the Consultant" follow, unless context provides otherwise.
- .4 Where the word "provide" is used in these Contract Documents, it shall be taken to mean "supply and install" unless specifically noted otherwise.

1.3 CERTIFICATION

- .1 Building materials, components and elements specified without the use of trade or proprietary names shall meet requirements specified.
- .2 If requested by Consultant, submit evidence of meeting requirements specified. Evidence shall consist of certification based on tests carried out by an independent testing agency.
- .3 Certifications based on previous tests for same materials, components or elements are acceptable. Certification shall be in form of written test reports prepared by testing agency.

1.4 AVAILABILITY AND SUBSTITUTIONS

- .1 Products which are specified by their proprietary names or by part or catalogue number form the basis of the Contract. No substitutes for these may be used without Consultant's approval in writing.
- .2 Where it is found that specified materials have become unavailable for incorporating into work, notify Consultant immediately of proposed substitution.

- .3 In order to substantiate equivalency of proposed materials, products or processes, submit samples, printed product descriptions, test data, installations, standards, certification, sample, guarantee/warranty forms, list of successful projects incorporating such proposals, and similar information requested by Consultant in accordance with Section 01 33 00 - Submittals.
- .4 Whenever a substitute is proposed, any change to contract price as a result of acceptance of proposed product shall include any adjustments to adjacent structure or space in order to accept minor differences in size or weight between proposed items and corresponding specified items.
- .5 Prevent any substitution or request for substitution from delaying construction progress in any way.
- .6 Requests for substitution resulting from failure to place orders in time will not be entertained. Be responsible for ordering products in time to ensure their required delivery; bearing all costs for failure to comply with these requirements.
- .7 Refer to also to Section 01 33 00 - Submittals.

1.5 PRODUCT HANDLING AND STORAGE

- .1 Package, crate and protect products during transportation to site to preserve their quality and fitness for the purpose intended.
- .2 Store products in original, undamaged condition with manufacturer's labels and seals intact until they are being incorporated into completed work.
- .3 Handle and store materials in accordance with manufacturer's and supplier's recommendations and so as to ensure preservation of their quality, appearance and fitness for work.
- .4 Arrange materials so as to facilitate prompt inspection, and remove faulty, damaged or rejected materials immediately from site.

END OF SECTION

01 73 03-Execution Requirements

1.1 EXAMINATION

- .1 Examine the site, existing premises and surrounding areas and be fully informed as to the conditions and limitations under which the work has to be executed. Claims for additional costs will not be entertained with respect to conditions which could reasonably have been ascertained by an inspection prior to bid closing.
- .2 Prior to commencement of work the contractor shall make careful examination of previously executed work, existing conditions, levels, dimensions and clearances. Promptly advise Consultant of unsatisfactory preparatory work and substrate conditions; commencement of work implies acceptance of conditions.

1.2 PROTECTION

- .1 Ensure no damage is caused to existing adjacent structures, buildings, foundations, pavement, fences, curbs, grounds, plant, property, utilities, services, etc. finishes during the progress of Work. Repair and make good any damage caused at no extra cost to Owner to the complete satisfaction of the respective property owners and authorities having jurisdiction. Only trades specifically capable of performing the work will be allowed to make remedial or repair work.
- .2 Keep surfaces to receive finished flooring dry and free from oil and grease. Stockpiling of damp or wet building materials and use of mixing boxes or water buckets without protecting floors from moisture gain by approved means, is prohibited.
- .3 Keep municipal roads clean of mud and debris resulting from construction traffic.
- .4 Prevent soiling of pavement due to spillage, mixing of material or any other cause. Make good any damage caused.
- .5 Protect new work from damage with suitable protective coverings.
- .6 Protect the place of the work during periods of down time.

1.3 SERVICES AND UTILITY SYSTEMS

- .1 Consult with utility companies and other authorities having jurisdiction to ascertain the locations of existing services on or adjacent to site.
- .2 The location of the existing services, if shown on the Drawings, does not relieve the Contractor of his responsibility to determine the exact number and location of existing services.
- .3 Give proper notices for new services as may be required. Make arrangements with authorities and utilities for service connections required.
- .4 Pay any charges levied by utilities or authorities for work carried out by them in connection with this Contract, unless specified otherwise.

- .5 Operate and maintain all utility systems affected by work of this Contract, until the building or specific portions thereof have been accepted by the Owner.
- .6 Report existing unknown services encountered during excavation to Consultant for instructions; cut back and cap or plug unused services. Be responsible for the protection of all active services encountered and for repair of such services if damaged.

1.4 SLEEVES, SUPPORTS AND FASTENERS

- .1 Unless specified in other Sections, furnish set and secure inserts, hangers, sleeves, fasteners, adhesives, anchors and other supports and fittings required for proper installation of work.
- .2 Use exposed metal fastenings and accessories of same texture, colour and finish as base metal on which they occur.
- .3 Select appropriate type of anchoring and fastening devices in sufficient quantity and in such a manner as to provide positive permanent anchorage of unit to be anchored in position. Keep exposed fasteners to a minimum, evenly spaced and neatly laid out.
- .4 Fasteners shall be of permanent type. Do not use wood plugs.
- .5 Fasteners which cause spalling or cracking of material to which anchorage is being made shall not be used.

1.5 CONCEALMENT

- .1 Conceal ductwork, piping, conduit and wiring located in finished areas, in ceiling spaces and furred construction unless specifically noted to be exposed.
- .2 If any doubt arises as to means of concealment, or intent of Contract Documents in this connection, request clarification from Consultant before proceeding with portion of work in question.

1.6 WORKMANSHIP

- .1 All work shall be carried out in accordance with the best trade practice, by mechanics skilled in the type of work concerned.
- .2 Products, materials, systems and equipment shall be applied, installed, connected, erected, used cleaned and conditioned in accordance with the applicable manufacturer's printed directions.
- .3 Where specified requirements are in conflict with manufacturer's written directions, follow manufacturer's directions, but inform Consultant in writing prior to proceeding with affected work. Where specified requirements are more stringent than manufacturer's directions, comply with specified requirements.

1.7 LINES AND LEVELS

- .1 Verify all elevations, lines, levels and dimensions as indicated and report errors, any conflicts, or inconsistencies to the Consultant before commencing work or as soon as discovered.
- .2 Arrange to have building base lines laid out by an Ontario Land Surveyor.
- .3 Accurately layout work and establish lines and levels in accord with requirements of Contract Documents.
- .4 Set up, maintain and protect permanent reference points and provide general dimensions and elevations for all Sections of Work.

1.8 DIMENSIONS

- .1 Check and verify dimensions wherever referring to work. Dimensions, when pertaining to work of another Section, shall be verified with Section concerned. Details and measurements of work which is to fit or conform with work installed, shall be taken at site/.
- .2 Do not scale Drawings. If there is ambiguity, lack of information or inconsistency, immediately consult Consultant for directions. Be responsible for extra costs involved through the disregarding to this notice.
- .3 Walls, partitions and screens shall be considered as extending from floor to underside of structural deck unless specifically indicated otherwise on Drawings.

1.9 LOCATION OF FIXTURES

- .1 Locations of fixtures, apparatus, equipment, fittings, outlets, conduits, pipes and ducts shown or specified, but not dimensioned, shall be considered approximate.
- .2 Request from the Consultant to establish exact locations. Any re-locations caused by Contractor's failure to request direction from Consultant shall be done by Contractor at no extra cost. Where job conditions require reasonable changes in indicated locations and arrangements, make changes at no additional cost.
- .3 Conserve space and co-ordinate with work of other Sections to ensure that ducts, pipes, conduits and other items will fit into allocated wall and ceiling spaces, while ensuring adequate space for access and maintenance.

END OF SECTION

01 74 11-Cleaning

1.1 GENERAL

- .1 Be responsible for cleanliness of assigned work areas to satisfaction of Consultant. Maintain work area in neat and orderly conditions at all times.
- .2 Periodically, or when directed by the Consultant, remove from work areas rubbish and waste materials.
- .3 Use only cleaning materials as recommended by manufacturer of surface to be cleaned.
- .4 Deficiencies review will commence after final cleaning has been executed.

1.2 CLEANING DURING CONSTRUCTION

- .1 Remove all debris, packaging, waste materials etc. from the place of the work on a weekly basis.
- .2 Keep dust and dirt to an acceptable level as directed or requested by the Consultant and/or Owner.
- .3 Remove oily rags, waste and other hazardous substances from premises at close of each day, or more often if required.

1.3 FINAL CLEANING

- .1 Upon completion of work, or, where work is phased, upon completion of each phase, thoroughly clean all interior and exterior surfaces and components. Provide professional cleaning by a recognized, established cleaning company, to allow Owner to occupy without further cleaning except where specifically indicated otherwise. In the event cleaning is not done on timely basis, the Owner reserves the right to bring own forces to clean surfaces and components and back charge the Contractor for the costs.
- .2 Remove stains, dirt and smudges from interior and exterior finished surfaces.
- .3 Clean exposed finished surfaces in accordance with respective material manufacturer's recommendations.
- .4 Clean mechanical and electrical fixtures and other fittings of labels, wrappings, paper and other foreign material.
- .5 Replace heating, ventilation and air conditioning filters if units were operated during the late stages of construction, testing and balancing procedures etc. Clean inside of ducts, blowers and coils.
- .6 Remove from work areas all waste and surplus materials from all areas, including roofs and ceiling spaces.

- .7 Remove snow and ice as required.
- .8 Power wash paved surfaces.
- .9 Clean all glass and glazing, interior and exterior.
- .10 Clean debris from the roof and power wash roof membrane.

1.4 DISPOSAL OF WASTE MATERIALS

- .1 All waste materials resulting from demolition and construction activities belong to the Contractor and shall be removed and legally disposed unless clearly stated otherwise.
- .2 Separate & recycle reusable materials to maximum extent possible from general waste stream and transport to recycling/reuse facilities.
- .3 Fires and burning of waste or materials are not permitted on site.
- .4 Do not bury waste or materials on site.
- .5 Do not dispose of liquid waste or volatile materials into watercourses, storm or sanitary sewers.
- .6 Comply with Ontario Regulations 102/94,103/94 and all current regulations under the Environmental Protection Act.

END OF SECTION

01 77 00-Project Close-Out

1.1 REFERENCE STANDARD

- .1 Comply with provisions of OAA/OGCA Document No. 100, December 2007 "Take-Over Procedures" except as modified within the Specifications.

1.2 OPERATING AND MAINTENANCE MANUALS

- .1 Provide operation and maintenance manuals. Data shall be contained in D-ring binders with hard covers. Binders shall have clean plastic pocket at back of spine identification containing label "Operation and Maintenance Manual" and project name and volume number, if applicable. Each manual shall contain a title sheet listing project name, date and volume number and names and addresses of Contractors and Subcontractors, Consultant and Sub-consultants.
- .2 Provide all of the above in a PDF digital format.
- .3 Data shall be assembled in systematic order, generally following the specification format. Provide labelled, celluloid covered tabs fastened to hard paper dividers to identify different Sections.
- .4 Provide the following material as applicable to work of this Contract:
 - .1 List of contents. If more than one volume is required, provide a cross-reference contents page of front of each volume.
 - .2 Complete list of subcontractors and suppliers, showing name, address, telephone/fax numbers, name of contact person and description of work done.
 - .3 Complete list of products used in the work showing product name, part number or code and manufacturer for each listing; follow specification format.
 - .4 Copy of finish hardware list, complete with all amendments and revisions.
 - .5 Schedule of paints and coatings. Include sufficient explanation to fully identify each surface with the applicable paint or coating used. Enclose copy of colour schedule.
 - .6 Maintenance instructions for all finished surfaces.
 - .7 Brochures, cuts of all equipment and fixtures.
 - .8 Operating and maintenance instruction for all equipment.
 - .9 Valve manual.
 - .10 Controls schematics.

- .11 Extended warranties.
- .12 Maintenance contracts.
- .13 Other data required elsewhere in Contract Documents or deemed necessary by Consultant.

1.3 EXTENDED WARRANTIES

- .1 Definition: Warranty = guarantee.
- .2 Submission Requirements:
 - .1 Submit extended warranties as part of "Operating and Maintenance Manuals".
 - .2 Arrange extended warranties in systematic order matching Specification format. Include a table of contents listing warranties in same order.
 - .3 Each warranty must show:
 - .1 Name and address of Project.
 - .2 Name of Owner.
 - .3 Section of Number and Title.
 - .4 All extended warranties must be presented under Contractor's letterhead, seal and signature and must be similar wording to that specified in Contract Documents.
 - .5 Submit manufacturers' Product warranties in accordance with contract.

1.4 RECORD DRAWINGS

- .1 Prior to Substantial Performance obtain a CAD file of all Contract Drawings from Consultant and transfer field changes, revisions, deletions and additions made throughout the execution of the Work, from the set of prints kept onsite to the CAD file. Consultant will incorporate modifications made to existing drawings and add new drawings issued during the course of construction into the CAD file prior to issuing CAD file to Contractor.
- .2 Clearly and prominently mark each drawing "RECORD DRAWING" prepared by name of Contractor.
- .3 Submit CAD file of record drawings on CD's and two (2) complete sets of Xerox prints of updated CAD file to Consultant prior to application for Final Payment.

1.5 MAINTENANCE MATERIALS

- .1 Deliver to the location directed by Consultant maintenance materials as required elsewhere in these Specifications. Obtain receipt for delivered materials and submit copy of receipt to Consultant.

- .2 Package materials so that they are protected from damage and loss of essential properties.
- .3 Label packaged materials for proper identification of contents and project name.

1.6 OPERATING AND MAINTENANCE INSTRUCTIONS

- .1 Prior to requesting Substantial Performance, at a time acceptable to Owner and Consultant, but not before operating and maintenance data has been reviewed and accepted by Consultant, instruct designated Owner's representatives in the operation and maintenance of all systems and equipment.
- .2 Arrange training sessions for each type of operating system and equipment. Sessions shall be conducted by qualified instructors and shall be of sufficient duration and depth to adequately instruct participants.
- .3 Throughout the training sessions, make reference to reviewed operation and maintenance manuals to familiarize participants with the data provided.
- .4 Prepare an attendance record for each training session, to be signed by each participant upon conclusion of session. Show date and time of session, subject of session and name, title and organization of each participant. Submit a copy of each record to Consultant.
- .5 Subcontractor whose work is subject of training session and Contractor shall be represented during training session by qualified personnel.

1.7 INSPECTION AND ACCEPTANCE OF WORK

- .1 Prior to requesting Substantial Performance submit the following:
 - .1 Three (3) copies of operating and maintenance manuals (manuals must be submitted minimum 2 weeks prior to requesting Substantial Performance).
 - .2 Inspection and acceptance certificates required from regulatory agencies.
- .2 Advise the Consultant in writing, when work has been substantially completed. If Consultant agrees that this stage has been reached, prepare a complete list of deficiencies and submit this list to Consultant.
- .3 On receipt of the above deficiency list in a satisfactory form, the Consultant, accompanied by Sub-consultants, the Contractor and the Owner will carry out a review of the contractor issued deficiency list. The consultants will add to the list should additional items be encountered. The review will be issued to contractor and owner.
- .4 Add to the deficiency list, in accordance with Consultant's directions, any additional deficiencies which are identified during inspection and reissue updated deficiency list. A 'Deficiency' dollar value will therein be established.

- .5 Upon completion, inspection and acceptance of work, Owner will take over and occupy completed work. Refer to Supplementary Conditions for procedures relating to certification of Substantial Performance and release of holdback.

END OF SECTION

01 79 00-Demonstration and Training

1.1 GENERAL

- .1 The Contractor shall co-ordinate and participate in all aspects of the Commissioning of all Mechanical, Building Management Systems (BMS), Security Systems, Door Hardware Systems, Electrical systems, etc. that are applicable to the Work of the contract.
- .2 The Contractor shall co-ordinate and participate in all aspects of the Demonstration and Training.
- .3 The Contractor shall issue to the Consultant a schedule of all Demonstration and Train activities that has been established in consultation with the Owner representative to insure attendance.
- .4 The Contractor shall submit to the Consultant a copy of a sign-in sheet of all attendee's, Owner, Contractor, Subtrades, material/equipment representatives etc. having name, title and organization of each participant. The sign-in sheet shall have the project name, address and the specification section(s)/session being addressed.
- .5 The Contractor, Subtrades, material/equipment representatives etc. shall include for one (1) Demonstration and Training session for each/all aspects of the work.

1.2 DEMONSTRATION AND TRAINING

- .1 The Demonstration and Training sessions shall provide to the owner all necessary instructions as to the operation and maintenance of all materials and equipment provided within the execution of the contract.
- .2 The sessions shall be a classroom seminar environment complete with material manuals, operating manuals, product and system drawings etc.
- .3 Provide audio/visual aids. As requested by the owner provide a recorded version of each session.
- .4 The sessions shall demonstrate the operating procedure for each service/equipment.
- .5 The sessions shall train in the maintenance procedure for each material or piece of equipment.
- .6 Inform the owner of all required safe and proper access to equipment for operation and maintenance.

END OF SECTION

