All SPEC NOTES are in hidden text and will not be visible when printed.

END OF SECTION

1.1 DESCRIPTION OF THE WORK

.1 Work of this contract includes furnishing labour, materials, equipment, services and other related expenses to execute complete construction as specified in the Contract Documents.
.2 Specifications Divisions prepared by Accent Building Sciences Inc. and their Project Drawings are part of this project.

1.2 KEY MILESTONES

.1 *Key Milestones for the Project are:*

Key Milestones for the Project are:

.1 *Substantial Performance*: July 31, 2025

.2 *Ready-for-Takeover*: August 5, 2025

.3 Total Performance: August 29, 2025

.2 The *Contractor* is required to comply with the *Key Milestones* and is required to coordinate and direct its Trade *Subcontractors* and *Suppliers* in accordance with these requirements.

.3 The *Contractor* shall provide sufficient number of skilled personnel to maintain the progress of the Work.

1.3 KEY INDIVIDUALS

.1 *Key Individuals* will include:

.1 *Contractor* Project Manager

.2 *Contractor* Supervisor

1.4 SECURITY CLEARANCES

.1 In addition to security requirements noted in GC 14.6, as amended, the following security clearance must be obtained:

.1 MGS/OPS clearance.
.2 Ontario Provincial Police (OPP) clearance.

.2 The contractor shall be responsible to obtain the required clearance for the entire workforce including all sub-contractors.

.3 *Security Clearance Checks* can take 6-8 weeks to obtain. The contractor is responsible for ensuring their entire workforce, including all subcontractors, complete their applications promptly upon award.

1.5 SECURITY ESCORT

.1 Personnel employed on this project must be escorted when executing work at all times. Contractor is responsible for coordinating security escorts using owner preferred vendor.

1.6 WORK UNDER SEPARATE CONTRACTS

.1 Owner may have awarded separate contract(s) for construction operations at the Project Site. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts.

1.7 RELICS AND ANTIQUITIES

.1 Relics and antiquities and items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found on Site or in building(s) to be demolished, shall remain property of the Owner. Protect such articles and request direction from Owner

.2 Give immediate notice to Owner if evidence of archaeological finds is encountered during construction, and await written instructions before proceeding with work in this area.

1.8 PERMITS, CERTIFICATES AND FEES

.1 The contractor is responsible for the pickup of all building permits.

1.9 COST BREAKDOWN AND SUBCONTRACTOR INFORMATION

.1 For the Work, the Contractor shall use the Subcontractors and Subcontractor prices as documented on the Bid submission. The Subcontractor and pricing information shall be broken, as defined by the Construction Specifications Institute (CSI)'s Master Format, with HST shown separately. The total of individual prices plus separate HST shall amount to total Contract Price.

.2 Neither the list of Subcontractors nor their Bid prices shall be changed without the Owner’s written approval.

1.1 WORK OF THIS CONTRACT

.2 *Work* of this *Contract* comprises the following:

Absorption Chiller Decommissioning and 230467-247385

1.2 Municipal Address: 777 Memorial Avenue, Orillia ON L3V73V

1.3 DIVISION OF WORK

.1 Division of the *Work* among *Subcontractors* and *Suppliers* is solely *Contractor*'s responsibility. *Consultant* and *Owner* assume no responsibility to act as an arbiter to establish subcontract limits between Sections or Divisions of the *Work*.

1.4 SPECIFICATIONS LANGUAGE AND STYLE

.1 These specifications are written in the imperative mood and in streamlined form. The imperative language is directed to *Contractor*, unless stated otherwise.

.2 Complete sentences by reading "shall", " *Contractor* shall", "shall be", and similar phrases by inference. Where a colon (:) is used within sentences and phrases, read the words "shall be" by inference.

.3 Fulfill and perform all indicated requirements whether stated imperatively or otherwise.

.4 When used in the context of a *Product*, read the word “provide” to mean “supply and install to result in a complete installation ready for its intended use”.

1.5 CONTRACT DOCUMENTS FOR CONSTRUCTION PURPOSES

.1 *Owner* will supply *Contractor* with a complete set of *Contract Documents* in electronic form before commencement of the *Work*. *Contractor* may print hard copies for construction purposes as required.

1.6 DOCUMENTS AT THE SITE

.1 Keep the following documents at *Place of the Work*, stored securely and in good order and available to *Owner* and *Consultant*:

.1 Current *Contract Documents*, including *Drawings*, *Specifications* and addenda.

.2 *Change Orders*, *Change Directives*, and *Supplementary Instructions*.

.3 Reviewed *Shop Drawings*, *Product* data and samples.

.4 Field test reports and records.

.5 Construction progress schedule.

.6 Meeting minutes.

.7 Manufacturer's certifications.

.8 Permits, inspection certificates, and other documents required by authorities having jurisdiction.

.9 Current as-built drawings.

.10 Material Safety Data Sheets (MSDS) for all controlled *Products*.

1.7 CONTRACTOR'S USE OF PREMISES

.1 Owner will occupy the premises during the entire construction period, with the exception of the areas under construction. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage.

.2 Owner will occupy the premises during the entire construction period. Work can be done during regular hours, however, noisy work is to occur after hours and return the premises to it's original condition for operations.

.3 Except as otherwise specified, Contractor has unrestricted use of Place of the Work from time of Contract award until Ready-for-Takeover.

.1 Maintain access to existing walkways, corridors and other adjacent occupied or used facilities. Do no close or obstruct walkways, corridors or other occupied or used facilities without written permission from the Owner and Authorities having Jurisdiction.

.2 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

.4 Confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and all other construction operations to limits required by laws, ordinances, permits, and *Contract Documents*, whichever is most restrictive. Do not unreasonably encumber *Place of the Work*.

.5 The Contractor shall be aware and shall be responsible for making all Subcontractors and Supplier aware of the necessity of maintaining the ongoing operation of the facility and any tenant in adjoining occupancy within the building. All work shall be coordinated and scheduled to prevent any disruption to those operations.

END OF SECTION

1.1 RESTRICTIONS ON USE OF PREMISES

.1 Work shall be confined to Work Site limits indicated on Drawings and/or within area defined by property lines. Work on Municipal property shall be carried out under regulations of respective Municipality and authorities having jurisdiction including without any limitations any associated fees, permits, insurance or bonding required.

.2 Before entering existing premises to carry out *Work* or to obstruct or take out of use any area of existing premises, or to cause any other interference, request meeting with the *Owner*. Work shall not proceed until *Owner* and *Contractor* reach agreement as to time and length of time you may interfere, possess, obstruct or remove from use any such area or services.

1.2 MAINTENANCE OF ONGOING OPERATION OF EXISTING FACILITY

.1 The *Contractor* shall be aware and shall be responsible for making all *Subcontractors* and *Suppliers* aware of the necessity of maintaining the ongoing operations of the facility and of the tenant in the adjoining occupancy within the building. All work shall be coordinated and scheduled to prevent any disruption to those operations. The Contractor shall provide all necessary hoarding and dust barriers.

1.4 RESTRICTED HOURS OF WORK IN OCCUPIED FACILITIES

.1 Regular hours for regular work, except disruptive work (after hours) (After 5PM)

.2 Allow for hours of work restrictions in construction progress schedule.

1.5 NOISY WORK RESTRICTIONS IN OCCUPIED FACILITIES

.1 Schedule excessively noisy work to avoid disturbance to building occupants. Perform excessive noise generating work outside of Owner's business hours.

.2 Schedule generally disruptive work (excessively noisy, vibration, jack hammering, loud noisy activity, heavy demolition and odours) to avoid disturbance to building occupants. Perform excessively noisy work or odourous work outside of the facility operating hours.

.3 Use powder actuated devices only with *Owner's* written permission.

1.6 MAINTAINING LIFE SAFETY SYSTEMS IN OCCUPIED FACILITIES

.1 Maintain operational life safety systems and public access to exits in occupied areas during all stages of the Work.

.2 Determine nature and exact locations of existing fire and smoke sensors prior to the commencement of the *Work*. Avoid direct or indirect jarring while working in adjacent areas and exercise caution to avoid triggering these devices.

.3 Be responsible for costs incurred by Owner on account of false fire alarms activated as a result of the execution of the *Work* without adequate precautions.

1.7 WEATHER RESTRICTIONS

.1 Continue Work including winter months, if applicable, until the *Work* is completed and accepted.

.2 Inclement weather or extra work caused thereby shall not be considered valid reason for additional payment or delay in satisfactory conclusion of *Work*.

.3 Take precautions during inclement weather and provide adequate protection to Work and construction materials from damage.

1.8 HOT WORK

.1 No “hot work” shall be executed without obtaining the appropriate permit and facility approval. The contractor shall coordinate with the Facility Manager for the required Permit and will be subject to the Facility Manager’s review and approval timelines.

END OF SECTION

1.1 CASH ALLOWANCES FOR SUPPLY ONLY OF PRODUCTS

.1 Amount of each cash allowance includes:

.1 Cost of Products as invoiced by the Supplier, including delivery and applicable taxes but excluding Value Added Taxes.

.2 Amount of each cash allowance does not include costs of the following items, which costs shall be included in the Contract Price and not in the cash allowance:

.1 Unloading, handling and storage on site.

.2 Installation and all other related costs.

.3 Overheads and profits related to the cash allowance.

.3 Allow the stipulated sum of $[ ] for the supply of:

.1 [ ].

.2 Refer to Section [ ] – [ ] for installation and other related requirements.

1.2 CASH ALLOWANCES FOR SUPPLY AND INSTALLATION OF PRODUCTS

.1 Amount of each cash allowance includes:

.1 All costs to provide the specified *Products*, including supply, installation, and related costs, excluding *Value Added Taxes*.

.2 *Subcontractor*'s and sub-*Subcontractor*'s overheads and profits related to the cash allowance.

.2 Amount of each cash allowance does not include *Contractor*'s overhead and profit, and other related costs, which shall be included in the *Contract Price* and not in the cash allowance.

.3 Allow the stipulated sum of $[ ] for the supply and installation of [ ].

1.3 CASH ALLOWANCES FOR SERVICES

.1 Amount of each cash allowance includes:

.1 All costs related to the services, excluding *Value Added Taxes*.

.2 *Subcontractor*'s and sub-*Subcontractor*'s overheads and profits related to the cash allowance.

.2 Amount of each cash allowance does not include Contractor's overhead and profit, and other related costs, which shall be included in the Contract Price and not in the cash allowance.

.3 Allow the stipulated sum of $[ ] for [ ] services.

1.4 CASH ALLOWANCES FOR ASSIGNABLE CONTRACTS

.1 Owner has entered into assignable contracts, which will be assigned to this Contractor as specified in Section 01 11 22 – Assignable Contracts.

.2 Amount of each cash allowance includes the amount payable by Contractor to the designated Subcontractor after assignment of the assignable contract, excluding Value Added Taxes.

.3 Amount of each allowance does not include the Contractor's overhead and profit, and other related costs, which costs shall be included in the Contract Price and not in the cash allowance.

.4 Allow the stipulated sum of $[ ] for the assignment of [ ].

1.5 EXPENDITURE OF CASH ALLOWANCES

.1 *Owne*r, through *Consultant*, will provide *Contractor* with documentation required to permit pricing of a cash allowance item.

.2 *Owner*, through *Consultant*, may request *Contractor* to identify potential *Suppliers* or *Subcontractors*, as applicable, and to obtain at least three competitive prices for each cash allowance item.

.3 *Owner*, through *Consultant*, may request the *Contractor* to disclose originals of all bids, quotations, and other price related information received from potential *Suppliers* or *Subcontractors*.

.4 *Owner,* through *Consultant*, will determine by whom and for what amount each cash allowance item will be performed. Obtain *Owner*'s prior written approval in the form of a *Change Order* before entering into a subcontract, amending an existing subcontract, or performing own forces work included in a cash allowance. Upon issuance of the *Change Order*, the *Contractor*'s responsibilities for a cash allowance item shall be the same as for other work of the *Contract*.

1.1 SCHEDULE OF LABOUR RATES

.1 Prior to the first application for payment, submit for the Consultant's review a schedule of labour rates for all trades and classifications of trades, such as journeymen, apprentices, and foremen that will be employed in the Work. Provide a breakdown of payroll burden component of labour rates.

.2 Labour rates shall reflect the salaries, wages, and benefits paid to personnel in the direct employ of the Contractor, Subcontractors, and sub-Subcontractors, stated as hourly rates, that will be used when:

.1 preparing price quotations for Change Orders, and

.2 determining the cost of work attributable to Change Directives.

.3 Labour rates stated in the schedule of labour rates shall be consistent with rates that will actually be paid, and payroll burden costs that will actually be incurred, in the normal performance of the Work, during regular working hours. Labour rates shall not include any additional overhead and profit component.

.4 Where collective agreements apply, the labour rates shall not exceed those established by collective agreement.

.5 Obtain the Owner's written acceptance of the schedule of labour rates before submitting the first Change Order quotation.

.6 Accepted schedule of labour rates will be used solely for evaluating Change Order quotations and cost of performing work attributable to Change Directives.

.7 The Contractor may request amendments to the accepted schedule of labour rates if changes in the labour rates that will actually be paid, or payroll burden cost that will actually be incurred, in the normal performance of the Work can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.2 SCHEDULE OF EQUIPMENT RATES

.1 Prior to the first application for payment, submit for the Consultant's review a schedule of equipment rates for Contractor owned Construction Equipment.

.2 Equipment rates shall reflect the rates that will be used when:

.1 preparing price quotations for Change Orders, and

.2 determining the cost of work attributable to Change Directives.

.3 Equipment rates stated in the schedule shall be consistent with local equipment rental market rates and shall not include any additional overhead and profit component.

.4 Obtain the Owner's written acceptance of the schedule of equipment rates before submitting the first Change Order quotation.

.5 Accepted schedule of equipment rates will be used solely for evaluating Change Order quotations and cost of performing work attributable to Change Directives.

.6 The Contractor may request amendments to the accepted schedule of equipment rates if changes in local equipment rental market rates can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.3 VALUATION OF CHANGES BASED ON AGREED UNIT PRICES

.1 The Consultant may, at the outset of the Contract or at any other time, request the Contractor to submit unit prices anticipated to be required in valuing changes in the Work.

.2 The Contractor shall submit such unit prices promptly upon request.

.3 The unit prices shall be valid for a specified duration.

.4 The unit prices shall exclude all fees for overhead and profit and shall be subject to the percentage fees specified in the Contract Documents.

.5 The Consultant will evaluate the Contractor's quoted unit prices and, if accepted by the Owner in writing, the agreed unit prices shall be used to value subsequent proposed changes in the Work wherever they are applicable.

1.4 CHANGE ORDER PROCEDURES

.1 Upon issuance by the Consultant to the Contractor of a proposed change in the Work, and unless otherwise requested in the proposed change or unless otherwise agreed:

.1 Submit to the Consultant a fixed price quotation for the proposed change in the Work within 5 days after receipt of the proposed change in the Work.

.2 Provide a detailed breakdown of the price quotation including the following to the extent applicable, with appropriate supporting documentation:

.1 Estimated labour costs, including hours and applicable hourly rates based on the accepted schedule of labour rates.
.2 Estimated Product costs, including Supplier quotations, estimated quantities and unit prices.
.3 Estimated Construction Equipment costs.
.4 Enumeration of all other estimated costs included in the price quotation.
.5 Estimated credit amounts for labour and Products not required on account of the proposed change.
.6 Fees, not exceeding the applicable percentages for overhead and profit as specified within the Contract Documents.
.7 Where applicable, Subcontractor quotations, also including a detailed breakdown of all of the above.

.3 Include in the quotation the increase or decrease to the Contract Time, if any, for the proposed change, stated in number of days.

.4 Include in the quotation the number of days for which the quotation is valid.

.5 The quotation will be evaluated by the Consultant and the Owner and, if accepted by the Owner, be documented in the form of a signed Change Order.

1.5 FEES FOR OVERHEAD AND PROFIT – CHANGE ORDERS AND CHANGE DIRECTIVES

.1 The Contractor's percentage fee for overhead and profit are as identified in GC 6.1.4, as modified by the Supplementary Conditions and Project Specific Supplementary Conditions.

END OF SECTION

1.1 CASH FLOW PROJECTION

.1 Prior to the first application for payment submit, for *Consultant*'s review, a forecast of approximate monthly progress payments for each month of the *Contract Time*.

.2 Submit revised cash flow forecasts when required due to significant changes in rate of progress of the *Work* or significant changes in the *Contract Price* or when requested by *Consultant*.

1.2 PAYMENT FOR PRODUCTS STORED OFF SITE

.1 *Owner* may, due to extraordinary circumstances and at *Owner*'s sole discretion, make payments for *Products* delivered to and stored at a location other than *Place of the Work*, subject to:

.1 a request submitted by *Contractor* in writing, with appropriate justification, and

.2 whatever conditions *Owner* or *Consultant* may establish for such payments, as required to protect *Owner*'s interests.

1.3 INVOICE PROCEDURES

.1 In addition to requirements outlined in the *Contract Documents*, the following Invoice submittal procedures shall apply.

.1 All *Consultant* approved invoices complete with the required backup are to be submitted electronically to ioinvoice@colliersprojectleaders.com, with a copy to the *Owner* Project Manager.

.2 In addition to the requirements set out in the *Contract Documents*, the *Proper Invoice* must be accompanied with the following supporting documentation:
.1 Valid WSIB Certificate
.2 Breakdown of Application of Payment
.3 Certificate of Payment
.4 Statutory Declaration
.5 Publication of Daily Commercial News (holdback draw only)
.6 Monthly Progress Schedule

.3 The subject line of the email must include the Colliers Project Leaders Inc. project manager's name, full project number (10xxxxx-27xxxx) and the Colliers Project Leaders Inc. P.O. number

.4 The invoice must reference the full project number and the Colliers Project Leaders Inc. P.O number

.5 Failure to Comply with the above process will lead to rejection and return of the invoice submission

END OF SECTION

1.1 CONSTRUCTION START-UP MEETING

.1 Promptly after Contract award, *Owner* establish the time and location of a construction kick-off meeting to review and discuss administrative procedures and responsibilities.

.2 Senior representatives of *Owner*, *Consultant*, subconsultants, and *Contractor*, including *Contractor*'s project manager and site superintendent, and major *Subcontractors*, shall be in attendance.

.3 *Owner's* representative will chair the meeting and record and distribute the minutes.

1.2 PROJECT NOTIFICATION MEETING

.1 The Contractor shall schedule a Project Notification meeting must be held at the site no less than 1 week prior to mobilization of the Work to finalize all working constraints.

1.3 CONSTRUCTION PROGRESS MEETINGS

.1 The *Contractor* shall schedule regular [weekly] [bi-weekly] construction progress meetings for the duration of the Work. Additional meetings may be scheduled by the *Owner* as required. *Contractor* shall prepare meeting agendas, chair the meetings, and record and distribute the minutes.

.2 *Contractor* shall record in the meeting minutes significant decisions and identify action items and action dates by attendees or the parties they represent.

.3 *Contractor* shall distribute copies of minutes within three Working Days after each meeting to meeting attendees and any affected parties who may not be in attendance.

.4 The *Contractor* shall ensure that representatives of the *Contractor* and *Subcontractors* attend and those representatives of the *Owner*, the *Consultant* and sub-consultants are invited to attend all meetings.

.5 Agenda for each meeting shall include the following, as a minimum:
- .1 Approval of minutes of previous meeting.
- .2 Work progress since previous meeting.
- .3 Two week look ahead schedule
- .4 Key Milestones and status.
- .5 Field observations, including any problems, difficulties, or concerns.
- .6 Construction progress schedule.
- .7 Submittals schedule.
- .8 Proposed changes in the *Work*.
- .9 Requests for information.
- .10 Site Health and Safety issues.
- .11 Incident Reporting
- .12 Vendor Performance
- .13 Other business.

END OF SECTION

1.1 SUMMARY

.1 This Section specifies Contractor's responsibilities for preparation and submission of schedules and other documentation related to tracking construction progress, in addition to the requirements set out in the Supplementary Conditions and Project Specific Supplementary Conditions.

.2 The purpose of submitting progress schedules is to:

.1 inform Owner and Consultant of actual progress versus planned progress, and

.2 provide assurance that scheduling issues are being proactively identified and addressed in a timely manner, and that planned progress is being maintained as closely as possible.

1.2 CONSTRUCTION SAFETY SUBMITTALS

.1 Prior to commencement of the Work, the Contractor shall submit to the Owner:

.1 Copies of all necessary health and safety permits, notifications and related health and safety documents as called for in the Contract Specifications and/or by any authority having jurisdiction at the Place of the Work;
.2 A Site Specific Hazard Assessment;
.3 A Site Specific Safety Plan;

.2 Copies of all Workplace Hazardous Materials Information System, Material Safety Data Sheet for controlled products to be brought onto or into the Place of the work, or if unknown as at the commencement of the Work, prior to receiving such controlled products at the Place of the Work.

.3 The Contractor shall ensure that all prescribed posting requirements are posted on the Place of the Work for all workers to view.

1.3 CONSTRUCTION PROGRESS SCHEDULE

.1 Format and Content:

.1 Prepare schedule in the form of a Critical Path Method (CPM) Gantt chart using MS Project.

.2 Provide a work breakdown structure identifying key activities, work packages, and major milestones, including long delivery *Products*, inspection and testing activities, preparation and review of mock-ups, *Owner* decisions for cash allowances, shutdown or closure activities, delivery of *Owner* supplied Products, *Owner* performed work, demonstration and training activities, and similar items, at a sufficient level of detail to effectively manage construction progress.

.3 Indicate all *Key Milestone* dates for *Ready-for-Takeover* and *Substantial Performance of the Work*.

.2 Submission:

.1 Submit initial schedule to Owner and Consultant within 20 Working Days after Contract award. The first submission of the Construction schedule shall be accompanied by a Critical Materials Delivery Schedule.

.2 The Contractor shall submit to the Consultant one hard copy of the Contractor's construction schedule and one electronic copy prepared using MS Project. Monthly updates of the Contractor's construction schedule shall similarly be submitted as on hard copy and one electronic copy prepared using MS Project software.

1.4 SCHEDULE REQUIREMENTS

.1 The Contractor will establish and maintain a project schedule which will identify the duration and completion dates for each major construction activity.

.2 For each scheduled activity ("Task") within the Contractor's construction schedule, the Contractor shall identify at least the following:
.1 Task name
.2 Task duration
.3 Task start date
.4 Task end date
.5 Task Value
.6 Interdependency with other Tasks (finish-to-start, start-to-finish, start-to-start, finish-to-finish)
.7 Resource allocation

.3 For each Task in the Contractor's construction schedule the Contractor shall assign a value ("Task Value") corresponding to the total of the labour, material, equipment, overhead and profit associated with that task within the Contractor's fixed price contract amount. The sum of the Task Values for all of the tasks in the Contractor's construction schedule shall equal the total contract amount.

1.5 MATERIAL AVAILABILITY

.1 Immediately upon signing the Contract the Contractor and its Trade Subcontractors and Suppliers shall review Product delivery requirements and anticipate foreseeable supply delays for Products. If delays in supply of Products are foreseeable, the Contractor shall notify the Consultant of such, in order that substitutions or other remedial action may be authorized in time to prevent delay in performance of the Work.

1.4 SUBMITTALS SCHEDULE

.1 Format and Content:

.1 Prepare schedule identifying all required *Shop Drawing*, *Product* data, and sample submissions, including samples required for testing and including those for *Owner*

supplied *Products*.

.2 Prepare schedule in electronic format.

.3 Provide a separate line for each required submittal, organized by *Specifications* section names and numbers, and further broken down by individual *Products* and systems as required.

.4 For each required submittal, show planned date for initial submittal and latest date for return of reviewed submittal without causing delay.

.5 Allow time in schedule for resubmission of submittals, should resubmission be necessary.

.2 Submission:

.1 Submit initial schedule to *Consultant* within 20 *Working Days* after *Contract* award.

.2 Submit schedule via e-mail as .pdf and .mpp files.

.3 Consultant will review format and content of initial schedule and request necessary changes, if any, within 15 *Working Days* after receipt.

.4 If changes are required, resubmit finalized schedule within 15 *Working Days* after return of review copy.

.5 Submit updated submittals schedule monthly to *Owner* and *Consultant*.

1.5 SCHEDULE MANAGEMENT

.1 A schedule submitted as specified and accepted by *Consultant* shall become the baseline schedule and shall be used as the baseline for updates.

.2 At each regular progress meeting, review and discuss current construction progress and submittals schedules with *Consultant* and Owner, including activities that are behind schedule and planned measures to regain schedule slippage in key areas on or near the critical path.

.3 Activities considered behind schedule are those with start or completion dates later than the dates shown on the baseline schedule.

1.6 RECORDING ACTUAL SITE CONDITIONS ON AS-BUILT DRAWINGS

.1 Obtain an electronic copy of construction Drawings for the purpose of creating as-built drawings. Record information on hard copy drawings and maintain as-built drawings in clean, dry and legible condition.

.2 Clearly label each drawing as “AS-BUILT DRAWING”. Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.3 Record actual construction including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and

.3 appurtenances, referenced to permanent surface improvements.

.4 Measured locations of pipes, ducts, conduits, outlets, fixtures, access panels, and appurtenances, referenced to visible and accessible features of construction.

.5 Field changes of dimension and detail.

.6 Changes made by Change Orders and Supplemental Instructions

.7 References to Shop Drawings, where Shop Drawings show more detail.

.4 Do not use as-built drawings for construction purposes.

.5 Prior to issuance of a Certificate of Substantial Performance of the Work, the Contractor shall transfer all recorded deviations to a clean sets of white prints, neatly printed to match original drawings, and annotated as "AS-BUILT RECORD" and which shall be promptly submitted by the Contractor to the Consultant for review and conversion to Record Drawings in accordance to IO CAD Standards.

1.7 REPORTING REQUIREMENTS

.1 Establish a shop drawing control system at the *Place of the Work* to expedite and track shop drawings. Maintain and update on a daily basis the shop drawing control system and provide report during Progress meetings.

.2 Maintain a record-keeping database system at the Place of the Work to monitor and track the progress of the Work. Such records shall include a consolidation of Change Orders and Change Directives, Submittals, correspondence, contracts, purchase orders, meeting minutes, daily reports, logs, progress schedules, jobsite manpower reports, progress reports, incident reports and material delivery shipment tickets;

.3 *Site Supervisor*, or such competent individual as the *Contractor* may delegate, to prepare a detailed daily log or diary reporting on weather conditions, work force of the Service Provider, Subcontractors and any other forces on site and also record the general nature of Construction Services. Such log or diary shall also include any extraordinary or emergency events which may occur and also the identities of any persons who visit the site who are not part of the day-to-day work force.

1.8 PROGRESS PHOTOGRAPHS

.1 Arrange for the taking of Project photographs to record the progress of the *Work*, such photographs to be taken on a monthly basis. Upon request by the *Owner*, the *Contractor* shall make available for inspection and copying all of the record and photographs

generated.

.2 Identify each photograph by project name and date taken.

.3 Do not use progress or any other *Project* photographs for promotional purposes without *Owner*'s written consent.

END OF SECTION

1.1 ADMINISTRATIVE

.1 Arrange for the preparation of all Shop Drawings and Samples by the Subcontractors and Suppliers immediately upon notification of award.

.2 Within five (5) working days following the contract execution, submit specified submittals to *Consultant* for review. Submit in orderly sequence so as to not cause delay in the *Work*. Failure to submit in ample time is not considered sufficient reason for an extension of *Contract Time* or for *Product* substitutions or other deviations from the *Drawings* and *Specifications*.

.3 Where required by authorities having jurisdiction, provide submittals to such authorities for review and approval.

.4 Do not proceed with *Work* affected by a submittal until review is complete.

.5 Review submittals, provide verified field measurements where applicable, and affix *Contractor*'s review stamp prior to submission to *Consultant*. *Contractor*'s review stamp represents that necessary requirements have been determined and verified, and that the submittal has been checked and coordinated with requirements of the *Work* and *Contract Documents*.

.6 Verify field measurements and that affected adjacent work is coordinated.

.7 Submittals not meeting specified requirements will be returned with comments.

.8 Do not propose Substitutions or deviations from *Contract Documents* via *Shop Drawing*, *Product* data and sample submittals.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 Indicate *Products*, methods of construction, and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the *Work*.

.2 Where *Products* attach or connect to other *Products*, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross-references to *Drawings, Specifications* and other already reviewed *Shop Drawings*.

.3 Accompany submittals with a transmittal information including:

.1 Date.
.2 *Project* title and number.
.3 *Contractor*'s name and address.
.4 Identification of each submittal item and quantity.
.5 Other pertinent data.

.4 *Shop Drawing* submittals shall include:
.1 Date and revision dates.

.2 *Project title and number.*
.3 *Name and address of:*
.1 *Subcontractor*.
.2 *Supplier*.
.3 Manufacturer.
.4 *Contractor's* stamp, date, and signature of *Contractor's* authorized representative responsible for Shop Drawing review, indicating that each Shop Drawing has been reviewed for compliance with *Contract Documents* and, where applicable, that field measurements have been verified.
.5 Details of appropriate portions of the *Work* as applicable:
.1 Fabrication.
.2 Layout, showing dimensions, including identified field dimensions, and clearances.
.3 Setting or erection details.
.4 Capacities.
.5 Performance characteristics.
.6 Standards.
.7 Operating weight.
.8 Wiring diagrams.
.9 Single line and schematic diagrams.
.10 Relationships to other parts of the *Work*.

.3 *Product* data submittals shall include material safety data sheets (MSDS) for all controlled Products.

.4 Submit electronic copy of *Shop Drawings* where specified in the technical *Specifications*.

.5 Submit electronic copy of Product data sheets or brochures where specified in the technical *Specifications*.

.6 Where a submittal includes information not applicable to the *Work,* clearly identify applicable information and strike out non-applicable information.

.7 Supplement standard information to include details applicable to *Project*.

.8 Allow 20 *Working Days* for *Consultant*'s review of each submittal and incorporate in submittals schedule specified in Section 01 32 00 – Construction Progress Documentation. Allow additional 15 *Working Days* where sub-*Consultant* or commissioning agent review is required.

.9 If upon *Consultant*'s review no errors or omissions are discovered, or if only minor corrections are required as indicated, submittal will be returned and fabrication or installation of *Work* may proceed.

.10 If upon *Consultant*'s review significant errors or omissions are discovered, a so noted copy will be returned for correction and resubmission. Do not commence fabrication or installation.

.11 *Consultant*'s notations on submittals are intended to ensure compliance with *Contract Documents* and are not intended to constitute a change in the *Work* requiring change to the

Contract Price or *Contract Time*. If *Contractor* considers any *Consultant*'s notation to be a change in the *Work*, promptly notify *Consultant* in writing before proceeding with the *Work*.

.12 Resubmit corrected submittals through same procedure indicated above, before any fabrication or installation of the *Work* proceeds. When resubmitting, notify *Consultant* in writing of any revisions other than those requested by *Consultant*.

1.3 SAMPLES

.1 Submit samples for *Consultant*'s review in where specified in the technical *Specifications*. Label samples as to origin, *Project* name, and intended use.

.2 Deliver samples prepaid to *Consultant*'s

MAT 4SITE ENGINEERS LTD.
620 Wilson Ave, Suite 320, Toronto
ON M3K 1Z3

Contact: Peter Portanova

Email: peter@mat4site.com

.3 Notify *Consultant* in writing of any deviations in samples from requirements of *Contract Documents*.

.4 Where a required colour, pattern or texture has not been specified, submit full range of available *Products* meeting other specified requirements.

.5 *Consultant* selection from samples is not intended to change the *Contract Price* or *Contract Time*. If a selection would affect the *Contract Price* or *Contract Time*, notify *Consultant* in writing prior to proceeding with the *Work*.

.6 Resubmit samples as required by *Consultant* to comply with *Contract Documents*.

.7 Reviewed and accepted samples will establish the standard against which installed *Work* will be reviewed.

1.4 COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM (CMMS)

.1 Contractor is responsible for logging data related to newly installed equipment in the Equipment Update Form provided by the *Owner*.

.2 The form will be completed in the format identified by the *Owner*.

END OF SECTION

1.1 UTILITIES SHUTDOWN PROCESS (CRQ)

.1 If a service disruption will have an impact, or potential impact, to the operation of IT services, twenty (20) working days' notice must be provided by submitting a form provided by the Facility Manager or the Owner. This period does not include Government of Ontario statutory holidays. The following information will need to be provided to the client. The following information will need to be provided to the client in order to submit a request:

.1 Planned outage start date and time;
.2 Planned outage end date and time;
.3 Estimated duration of outage (length of time an outage will occur within the implementation window);
.1 Reason for outage;
.2 Impact to environment (what would be the state of the environment during the implementation of the change);
.3 Description of the implementation;
.4 What steps will be executed to revert the environment or service to its pre-change state;
.5 What steps will be taken after the change is executed to verify that the change was successful.

.2 The contractor shall be responsible to confirm the utility shutdown requirements during the bidding process and shall allow for cost and schedule adjustments.

1.2 PERMIT TO WORK

.1 This project is taking place at a Critical Environment and subject to a Permit to Work (PTW) process. The PTW will ensure that the contractor acknowledges the site-specific requirements, take appropriate actions to minimize any disruption to Tenant's day-to-day operations. It is important that the Tenant is fully briefed on type of work that is taking place and made aware of the associated risks.

.2 The following activities are subject to PTW approval:

.1 Utility feeds including electrical, water, fuel or gas;
.2 Emergency Power Systems (ATS, UPS and Generator);
.3 Fire Life Safety Systems;
.4 HVAC and Computer Room Air Conditioning(CRAC) systems;
.5 Any systems or equipment supporting the critical program (BAS, Controllers, Fume Hoods, Pumps)
.6 Any major repairs that potentially cause risk to the site operations.

.3 The contractor is responsible for the following activities/tasks:

.1 Follow the contract documents pertaining to PTW/MOP process.
.2 Prepare, complete and submit PTW, MOP and pre-job checklist in accordance with reference documents attached with the Request for Tender (RFT);
.3 Revise documents(PTW and MOP) if requested (up to 5 times);
.4 Do not start any work requiring a PTW, until it has been approved;

.5 Follow the instructions specified in the approved PTW and MOP;
.6 If there is a reasonable doubt to the site conditions provided by the BGIS/Tenant or if circumstances change, stop work and consult with PTW approver through the Project Manager (PM);
.7 Ensure people working on the project understand the process and are qualified to do the work safely;
.8 Understand limitations, constraints and PPE requirements for the facility where their crew is to work;
.9 Responsible for monitoring (health and safety, quality, compliance) and the training of their workforce;
.10 If there is a work stoppage or program disruption due to any reason, notify all stakeholders;
.11 Follow agreed upon timelines for review and approval of PTW and MOP documents;
.12 Provide input into the Go/No-Go date.

.4 The Contractor will complete the relevant sections from the PTW, MOP and pre-job checklist and submit to the Project Manager for review and approval by all relevant stakeholders. The contractor must follow the specified timelines required for the Permit to Work process. Below is the timeline for the PTW process:

.1 Day 1: The Contractor to initiate PTW by sending to Project Manager and BGIS;
.2 Allow 5 Business days for initial review by BGIS;
.3 Day 6: PTW Returned to the Contractor with Comments (1st draft with revisions);
.4 3 business days for comments to be incorporated by the Contractor;
.5 Day 9: BGIS Receives comments;
.6 Allow 3 business days for second review;
.7 Day 12: PTW Returned to the Contractor with comments (2nd draft with revisions, if required);
.8 3 business days for comments to be incorporated by the Contractor;
.9 Day 15: BGIS receives 2nd comments;
.10 3 business days for third review;
.11 Day 18: PTW Returned to the Contractor with Comments (3rd draft with revision, if required);
.12 3 Business days for Accepted PTW to be sent to Tenant by BGIS;
.13 Day 21: Tenant accepts PTW;
.14 5 business days tenant review;
.15 Day 26: Tenant Provides comments (draft with revisions, if required. This could happen in the 1st, 2nd, 3rd, 4th or 5th drafts);
.16 3 Business days for Comments incorporation;
.17 Day 29: PTW Returned to the Contractor with comments;
.18 3 Business days tenant and/or whole team review meeting;
.19 Day 32: Accepted PTW.

.5 The PTW process is activity based and not for the entire project. A project may require multiple PTW form approvals. All PTW forms must follow the Method of Procedure(MOP) and pre-job checklist. The MOP to include a title, description of the procedure, author, approval authority/signature, date, unique identifier, and version control. MOPs must also include information relating to prerequisites, safety requirements, special tools and parts, procedure sequencing, and a back-out plan.

.6 Refer to the attached Permit to Work guidelines for details.

1.3 CLASS EA CATEGORY B

.1 This project is subject to a Class Environmental Assessment (EA) Category B under the Ministry of Infrastructure (MOI) Public Work Class Environmental Assessment (2012) process. The Contractor is responsible to meet all requirements of the Specifications for Monitoring and Mitigation and to implement the monitoring and mitigation measures described in Part IV of the Consultation & Documentation (C&D) report included in the tender documents.

.2 Bidders shall include in their Bid all consequential costs of meeting the prescribed monitoring and mitigation measures.

.3 In addition to all requirements of the Specifications for Monitoring and Mitigation, the Contractor shall, at a minimum, document adherence to each monitoring and mitigation measure by means of daily site photographs, which shall be made available to the Project Manager and Consultant upon request. Furthermore, the Contractor shall summarize the status of each monitoring and mitigation measure in the minutes of each construction meeting.

1.4 INCIDENT REPORTING PROCESS

.1 Incidents are classified as Levels 1, 2 and 3 and each have reporting timelines between Colliers and IO, related to the level of urgency between 24 hours and 5 days. Incidents include but are not limited to any hazardous environmental, building equipment / utility failure, fire and life safety impact to the building and or ministry tenants. It would include any event where a facility is evacuated and or any time in which the Ministry of Labour, Police, Fire Department or any other Authority having Jurisdiction is called to the building in response to an emergency situation.

.2 Immediately following occurrence of any incident at the site, the contractor must call RPS Assist at 1-877-590-5090 to notify them of what has occurred.

.3 Immediately following contacting RPS assist, the contractor is to notify the Colliers Project Manager.

.4 Once the incident has been reported, the contractor is responsible for conducting investigations to identify the root cause.

.5 **Root Cause Analysis (RCS)** - An RCA is required for incidents that are categorized as Level 1 or Level 2 per the matrices provided by Owner and detailed in this process. RCAs must be completed in DRAFT for Owners review and provided to Owner after completion of an incident's management and when safety of all occupants, employees and visitors to the applicable facility has been verified. RCAs must be completed in DRAFT within 48 hours of the completion of incident management and prior to initiation of any mitigation measures that are not emergency in nature i.e., ones that must occur immediately to prevent further incident from occurring in short order, a continued threat to occupants or visitors or damage to IO facility infrastructure.

.6 Note: Not all incidents require a fulsome investigation and mitigation plan. This includes but is not limited to natural disasters and other unforeseen circumstances that are recognized as risks but cannot be prevented from occurring. The RCA documentation must contain wording that details the preliminary assessment and if this is the case.

.7 The following information is to be detailed in an acceptable RCA Report Template:

- Date incident occurred
- Date and Time SP was made aware of incident
- Date and Time SP informed IO staff of incident
- Statement of whether incident requires a fulsome RCA and justification if an RCA is deemed to not be required.
- Specific details related to the incident, including photographs, where possible.
  - › Date of Incident Report
  - › Location
  - › Incident Description - provide details
  - › Categorization with justification
  - › Persons made aware initially
  - › Persons who managed incident
  - › Chronology of Incident up to closure of incident management
  - › Investigation, assessment, cause of incident
  - › How cause was determined
  - › Root Causes and Recommendations with proposed mitigation measures, options, timelines projected and estimated costs
  - › Next steps

END OF SECTION

1.1 INDEPENDENT INSPECTION AND TESTING AGENCIES

.1 The cost of Independent Testing & Inspection shall be paid for by the *Contractor*, as authorized by the *Owner*, from the Cash Allowance, provided such allowance is identified in the contract documents.

.2 The Independent Testing and Inspection Company shall have the authority to stop work should the perceived deficiencies in the quality of material or workmanship warrant. The *Contractor* shall be responsible for conveying all Reports and Test Results from the Independent Testing and Inspection Company to the *Owner* and *Consultant*.

.1 [Section 01 21 00 – Allowances specifies a cash allowance for independent inspection and testing services to be retained and paid for by *Contractor*. Cash allowance excludes any inspection and testing that is for *Contractor*'s own quality control or is required by regulatory requirements.]

.2 Employment of inspection and testing agencies by *Contractor* or *Owner* does not relieve *Contractor* from responsibility to perform the *Work* in accordance with *Contract Documents*.

.3 Allow and arrange for inspection and testing agencies to have access to the *Work*, including access to off site manufacturing and fabrication plants.

.4 For inspection and testing required by *Contract Documents* or by authorities having jurisdiction, provide *Consultant* and inspection and testing agencies with timely notification in advance of required inspection and testing.

.5 Submit test samples required for testing [in accordance with submittals schedule specified in Section 01 32 00 – Construction Progress Documentation].

.6 Provide labour, *Construction Equipment* and temporary facilities to obtain and handle test samples on site.

1.2 INSPECTION AND TESTING AGENCY REPORTS

.1 For inspection and testing required by *Contract Documents* or by regulatory requirements, and performed by *Contractor* retained inspection and testing agencies, submit to *Consultant* [and *Owner*] copies of reports. Submit within [ ] days after completion of inspection and testing.

.2 For inspection and testing performed by *Owner* retained inspection and testing agencies, copies of inspection and testing agency reports will be provided to *Contractor*.

1.3 MOCK-UPS

.2 Prepare mock-ups of *Work* as specified in the technical *Specifications*. If a mock-up location is not indicated in the *Drawings* or *Specifications*, locate where directed by *Consultant*.

.3 Modify mock-up as required until *Consultant* approval is obtained.

.4 Approved mock-ups establish an acceptable standard for the *Work*.

.5 Protect mock-ups from damage until the *Work* they represent is complete.

.6 Unless otherwise specified in the technical *Specifications*, approved mock-ups forming part of the *Work* may remain as part of the *Work*.

.7 Remove mock-ups only when the *Work* they represent is complete or when otherwise directed by *Consultant*.

END OF SECTION

1.1 GENERAL CONSTRUCTION FACILITIES

.1 Provide and maintain all fences, barricades, lights and other protective structure or devices necessary for the safety of workers, equipment, the public and property as required by authorities having jurisdiction with regard to safety precautions, operation and fire hazards.

1.2 TEMPORARY FACILITIES AND SERVICES

.1 Temporary power, water and heating for construction purposes are provided on site for the Contractor.

.2 The existing building space shall be maintained with heat such that the inside temperature is held above freezing at all times. The Contractor shall carry the cost of any supplemental heating.

.3 Contractor to use their own washrooms.

.4 The Contractor shall provide and pay for temporary internet and cellular services.

.5 The Landlord is responsible for general snow clearing of the site. The Contractor shall be responsible for any additional snow or ice clearing required for safety or work reasons.

END OF SECTION

1.1 BARRIERS AND ENCLOSURES - GENERAL

.1 Provide temporary barriers and enclosures necessary to protect the public and building occupants and to secure *Place of the Work* during performance of *the Work*.

.2 Comply with applicable regulatory requirements.

.3 Maintain temporary barriers and enclosures in good condition for the duration of the *Work*.

.4 Remove temporary barriers and enclosures from *Place of the Work* when no longer required.

1.2 WEATHER ENCLOSURES

.1 Provide weather tight enclosures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.

.2 Provide weather enclosures to protect floor areas where walls are not finished and to enclose work areas that require temporary heating.

.3 Design weather enclosures to withstand wind pressure and snow loading requirements.

1.3 FIRE ROUTES

.1 Maintain fire access routes, including overhead clearances, for use by emergency response vehicles.

1.4 PROTECTION OF BUILDING FINISHES

.1 Provide necessary temporary barriers and enclosures to protect existing and completed or partially completed finished surfaces from damage during performance of the Work.

END OF SECTION

1.1 TEMPORARY CONTROLS - GENERAL

.1 Provide temporary controls as necessary for performance of the *Work* and in compliance with applicable regulatory requirements.

.2 Maintain temporary controls in good condition for the duration of the *Work*.

.3 Remove temporary controls and *Construction Equipment* used to provide temporary controls from *Place of the Work* when no longer required.

.4 Provide roads, walks, ramps, stairs and such other means of access as required.

.5 Maintain temporary entrances to building(s) including enclosed hoardings as required.

.6 Maintain access to existing service entrance(s) at all times, including ready access for fuel oil trucks and delivery vehicles.

.7 Bridge excavations to safely support any load that could be imposed or provide personnel to assist in deliveries to building(s) as required.

1.2 PLANT PROTECTION

.1 Protect trees and other plant material designated to remain on site and on adjacent properties where indicated on Drawings.

.2 Protect trees and shrubs susceptible to damage during construction by encasing with protective wood framework from grade to height of [one] [two] [metre[s]].

.3 For trees designated to remain, protect roots inside dripline from disturbance or damage during excavation and grading. Avoid traffic, dumping and storage of materials over root zones.

.4 Minimize stripping of topsoil and vegetation.

1.3 DUST AND PARTICULATE CONTROL

.1 Implement and maintain dust and particulate control measures in accordance with applicable regulatory requirements.

.2 Execute *Work* by methods that minimize dust from construction operations and spreading of dust on site or to adjacent properties.

.3 Provide temporary enclosures to prevent extraneous materials resulting from sandblasting or similar operations from contaminating air beyond immediate work area.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

.5 Use appropriate covers on trucks hauling fine, dusty, or loose materials.

1.4 DEWATERING

.1 Provide temporary drainage and pumping as necessary to dewater excavations, trenches, foundations, and other parts of the Work. Maintain such areas free of water arising from groundwater or surface run-off, as required to keep them stable, dry, and protected from damage due to flooding.

.2 Maintain standby equipment necessary to ensure continuous operation of dewatering system.

.3 Do not pump water containing suspended materials or other harmful substances into waterways, sewers or surface drainage systems. Treat or dispose of such water in accordance with applicable regulatory requirements

1.5 SITE DRAINAGE

.1 Maintain grades to ensure proper site drainage.

.2 Prevent surface water runoff from leaving the site [except as otherwise provided by [site grading] [stormwater management] plan].

.3 Prevent precipitation from infiltrating or from directly running off stockpiled [waste] materials. Cover stockpiled [waste] materials with an impermeable liner during periods of work stoppage including at end of each *Working Day*.

.4 Control surface drainage from cuts and fills, from borrow and waste disposal areas, from stockpiles, staging areas, and other work areas as required to prevent erosion and sedimentation.

.5 Control surface drainage by ensuring that gutters are kept open and water is not directed across or over pavements or sidewalks, except through pipes or properly constructed troughs. Ensure that runoff from unfinished areas is intercepted and diverted to suitable outlets.

1.6 EROSION AND SEDIMENT CONTROL

.1 Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and watercourses, and repair damage caused by soil erosion and sedimentation.

.2 Provide and maintain appropriate temporary measures such as silt fences, straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping, sedimentation basins, vegetative cover, dikes, and other measures that may be required to prevent erosion and migration of silt, mud, sediment, and other debris.

.6 Do not disturb existing embankments or embankment protection.

.7 Periodically inspect erosion and sediment control measures to detect evidence of erosion and sedimentation. Promptly take corrective measures when necessary.

.8 If soil and debris from site accumulate in ditches or other low areas, remove accumulation and restore area to original condition.

1.7 POLLUTION CONTROL

.1 Take measures to prevent contamination of soil, water, and atmosphere through uncontrolled discharge of noxious or toxic substances and other pollutants, potentially causing environmental damage.

.2 Be prepared, by maintaining appropriate materials, equipment, and trained personnel on site, to intercept, clean up, and dispose of spills or releases that may occur. Promptly report spills and releases that may occur to:

.1 authority having jurisdiction,

.2 person causing or having control of pollution source, if known, and

.3 *Owner* and *Consultant*.

.9 Contact manufacturer of pollutant, if known and applicable, to obtain material safety data sheets (MSDS) and ascertain hazards involved and precautions and measures required in cleanup or mitigating actions.

.10 Take immediate action to contain and mitigate harmful effects of the spill or release.

END OF SECTION

1.1 EXISTING UTILITIES AND STRUCTURES

.1 In accordance with GC 9.1.2 as modified by Supplementary Condition 9.1.2, establish locations and protect all existing utilities and services.

.2 Notwithstanding requirements outlined in GC 9.1, as amended, promptly notify *Consultant* if underground utilities, structures, or their locations differ from those indicated in *Contract Documents* or in available project information. *Consultant* will provide appropriate direction.

.3 Contractor shall protect all existing utilities and services.

.4 Record locations of maintained, re-routed and abandoned utility lines.

1.2 VERIFICATION OF EXISTING CONDITIONS

.1 Conduct a pre-construction site condition survey c/w the report to document existing conditions in the project work area and other areas to be used by the contractor during construction.

.2 Where work specified in any Section is dependent on the work of another Section or Sections having been properly completed, verify that work is complete and in a condition suitable to receive the subsequent work. Commencement of work of a Section that is dependent on the work of another Section or Sections having been properly completed, means acceptance of the existing conditions.

.3 Verify that ambient conditions are suitable before commencing the work of any Section and will remain suitable for as long as required for proper setting, curing, or drying of *Products* used.

.4 Ensure that substrate surfaces are clean, dimensionally stable, cured and free of contaminants.

.5 Notify *Consultant* in writing of unacceptable conditions.

END OF SECTION

1.1 REGULATORY REQUIREMENTS

.1 Comply with applicable regulatory requirements when disposing of waste materials.

.2 Obtain permits from authorities having jurisdiction and pay disposal fees where required for disposal of waste materials and recyclables.

1.2 GENERAL CLEANING REQUIREMENTS

.1 Provide adequate ventilation during use of volatile or noxious substances. Do not rely on building ventilation systems for this purpose.

.2 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.3 Prevent cross-contamination during the cleaning process.

1.3 PROGRESSIVE CLEANING AND WASTE MANAGEMENT

.1 Maintain the *Work* in a tidy and safe condition, free from accumulation of waste materials and construction debris and swept daily

.2 Maintain cleaning of all areas of the *Place of the Work* until the Owner has taken full possession or until Total Performance of the *Work*.

.3 Provide appropriate, clearly marked, containers for collection of waste materials and recyclables.

.4 Remove waste materials and recyclables from work areas, separate, and deposit in designated containers at end of each *Working Day*. Collect packaging materials for recycling or reuse.

.5 Clean interior building areas prior to start of finish work and maintain free of dust and other contaminants during finishing operations.

.6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly finished surfaces nor contaminate building systems.

.7 Clear snow and ice from public sidewalks as required to comply with applicable municipal regulatory requirements.

1.4 FINAL CLEANING

.1 Prior to Total Performance of the *Work* and application for final payment, provide a final cleanup of the *Place of the Work* to the satisfaction of the *Consultant*.

.2 Remove from *Place of the Work* surplus *Products*, waste materials, recyclables, *Temporary Work*, and *Construction Equipment* not required to perform any remaining work.

.3 Provide professional cleaning by a qualified, established cleaning company.

.4 Re-clean as necessary areas that have been accessed by *Contractor*'s workers prior to *Owner* occupancy.

.5 Clean mechanical, electrical, and other equipment. Replace filters for mechanical equipment if equipment is used during construction.

.6 Remove waste material and debris from crawlspaces and other accessible concealed spaces.

1.5 TOXIC AND HAZARDOUS SUBSTANCES

.1 Notwithstanding General Condition GC 9.2; if instructed to do so by the Owner, the Contractor shall take all necessary steps in accordance with applicable legislation in force at the Place of the Work to safely remove and dispose the toxic or hazardous substances, while ensuring minimal impact on Contract Time. Assignment of all costs associated with such Contractor action shall be settled as provided for in General Condition GC 9.2.

END OF SECTION

1.1 INSPECTION AND REVIEW BEFORE READY-FOR-TAKEOVER

.1 The OAA/OGCA Take-Over Procedures document shall be followed with regard to *Substantial Performance* and Project Completion take-over procedures.

.2 *Contractor's* Inspection: Before applying for the *Consultant's* review to establish *Ready-for-Takeover* of the *Work*:

.1 Prior to any inspection for *Ready-for-Takeover* of the *Work*, provide full clean up by approved cleaning company, replace any damaged or broken materials, remove temporary protections and remove dust, stains, sealant and adhesives and any accumulations of construction materials, debris or rubbish both in the interior and exterior of the Place of the Work.

.2 Ensure that the specified prerequisites to *Ready-for-Takeover* of the *Work* are completed.

.3 Conduct an inspection of the *Work* to identify defective, deficient, or incomplete work.

.4 Prepare a comprehensive and detailed list of items to be completed or corrected.

.5 Provide an anticipated schedule and costs for items to be completed or corrected.

.3 Review for *Ready-for-Takeover* of the *Work* will not take place until authorities having jurisdiction have inspected the *Work* and provided certificates of approval, and all Warranty information, guarantees, maintenance manuals and As-Built Drawings have been received, reviewed and approved.

.4 *Consultant*'s Review: Upon receipt of the *Contractor*'s application for review, together with the *Contractor*'s list of items to be completed or corrected, the *Consultant* and the *Contractor* shall arrange a mutually satisfactory agreed date and time to jointly review the *Work*. The *Consultant* will advise the *Contractor* whether or not the *Work* is *Ready-for-Takeover*. Add additional items, if any, to the *Contractor*'s list of items to be completed or corrected. Provide the *Consultant* with a copy of the revised list.

.5 At the completion of the Work, the Contractor shall attend a Project Handover meeting with the *Owner* to provide a demonstration of the mechanical components of the *Work* and to answer any questions regarding the *Work*.

.6 Maintain the list of items to be completed or corrected and promptly correct or complete defective, deficient and incomplete work. The Contractor's inspection and *Consultant*'s review procedures specified above shall be repeated until the *Work* is *Ready-for-Takeover* and no items remain on the *Contractor*'s list of items to be completed or corrected.

.7 Should the *Consultant's* review procedures need to be repeated due to uncorrected deficiencies, all costs incurred by the *Consultant* and *Owner* for additional inspections shall be back-charged to the *Contractor*.

.8 When the *Consultant* determines that the *Work* is *Ready-for-Takeover*, the *Consultant* will notify the *Contractor* and the *Owner* in writing to that effect.

1.2 PREREQUISITES TO FINAL PAYMENT

.1 In addition to the requirements set out in GC 5.5 as amended by the Supplementary Conditions and the Project Specific Supplementary conditions, the following are required.

.2 After *Ready-for-Takeover* of the *Work* and before submitting an application for final payment in accordance with the General Conditions of Contract:

.1 Correct or complete all remaining defective, deficient, and incomplete work.

.2 Remove from the *Place of the Work* all remaining surplus *Products*, *Construction Equipment*, and *Temporary Work*.

.3 Perform final cleaning and waste removal necessitated by the *Contractor*'s work performed after *Ready-for-Takeover*, as specified in Section 01 74 00 – Cleaning and Waste Management.

1.3 WARRANTY REVIEW

.1 One month prior to the expiry of the one-year warranty period, the *Contractor*, *Consultant*, and *Owner* shall visit *the Place of the Work* in order to document all outstanding deficiency or Warranty items. The *Contractor* shall promptly rectify all outstanding Warranty and deficiency items.

END OF SECTION

1.1 OPERATION AND MAINTENANCE MANUAL

.1 During the course of the work, the *Contractor* shall prepare a comprehensive operation and maintenance manual, in accordance with the requirements indicated in the specifications, in the language of the *Contract*, using personnel qualified and experienced for this task.

.2 Prior to application for *Substantial Performance* of the *Work* submit an initial draft of the operation and maintenance manual in electronic, .pdf format, for *Consultant*'s review. If required by *Consultant*'s review comments, revise manual contents and resubmit for *Consultant*'s review. If required, repeat this process until *Consultant* accepts the draft manual in writing.

.3 Submit final version to *Owner* in hard copy and soft copy as well.

1.2 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Organize data in the form of an instructional manual.

.2 Binders: vinyl, hard covered, three D-rings, loose leaf, 216 x 279 mm, with spine and face pockets.

.3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

.4 Cover: Identify each binder with typed or printed title "Operation and Maintenance Manual", name of Project or facility, and subject matter of contents.

.5 Arrange content [by systems,] [process flow,] under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate *Product* or system, with typed description of *Product* and major component parts of equipment.

.7 Text: Manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.9 Provide electronic copy of manual in PDF format.

.10 Provide electronic copy of Shop *Drawings* in manual as 1:1 scaled .pdf format on electronic media acceptable to *Owner*.

1.3 OPERATION AND MAINTENANCE MANUAL – GENERAL CONTENT

.1 Table of contents for each volume.

.2 Introductory information including:

.1 Date of manual submission.

.2 Complete contact information for *Consultant*, subconsultants, other consultants, and *Contractor*, with names of responsible parties.

.3 Schedule of *Products* and systems indexed to content of volume.

.4 For each *Product* or system, include complete contact information for *Subcontractors*, *Suppliers* and manufacturers, including local sources for supplies and replacement parts.

.5 *Product* Data: mark each sheet to clearly identify specific products, options, and component parts, and data applicable to installation. Delete or strike out inapplicable information. Supplement with additional information as required.

.6 Reviewed *Shop Drawings*.

.7 Permits, certificates, letters of assurance and other relevant documents issued by or required by authorities having jurisdiction.

.8 Warranties.

.9 Operating and maintenance procedures, incorporating manufacturer's operating and maintenance instructions, in a logical sequence.

.10 Training materials as specified in Section 01 79 00 - Demonstration and Training].

1.4 OPERATION AND MAINTENANCE MANUAL - EQUIPMENT AND SYSTEMS CONTENT

.1 Each Item of Equipment and Each System: include description of unit or system and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel Board Circuit Directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide *Contractor*'s coordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include testing and balancing reports.

.15 Include additional content as specified in technical *Specifications* sections.

1.5 OPERATION AND MAINTENANCE MANUAL - PRODUCTS AND FINISHES CONTENT

.1 Include *Product* data, with catalogue number, options selected, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured *Products*.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Include an outline of requirements for routine and special inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.

.4 Include additional content as specified in technical *Specifications* sections.

1.6 OPERATION AND MAINTENANCE MANUAL - WARRANTIES CONTENT

.1 Separate each warranty with index tab sheets keyed to Table of Contents listing.

.2 List each warrantor with complete contact information.

.3 Verify that documents are in proper form and contain full information. Ensure that warranties are for the correct duration and are in Owner’s name.

.4 Include maintenance bond(s).

1.7 CONTRACTOR'S AS-BUILT DRAWINGS

.1 Submit final as-built drawings in the form specified in Section 01 32 00 – Construction Progress Documentation to *Consultant*.

1.8 SPARE PARTS, MAINTENANCE MATERIALS, AND SPECIAL TOOLS

.1 Supply spare parts, maintenance materials, and special tools in quantities specified in technical *Specifications* sections.

.2 Ensure spare parts and maintenance materials are new, not damaged nor defective, and of same quality, manufacturer, and batch or production run as installed *Products*.

.3 Provide tags for special tools identifying their function and associated *Product*.

.4 Deliver to and store items at location directed by *Owner* at *Place of the Work*. Store in original packaging with manufacturer's labels intact and in a manner to prevent damage or deterioration.

.5 Catalogue all items and submit to *Consultant* an inventory listing organized by *Specifications* section. Include *Consultant* reviewed inventory listing in operation and maintenance manual.

END OF SECTION

1.1 SUMMARY

.1 Demonstrate and provide training to Owner's personnel on operation and maintenance of [equipment] [building envelope] [and] [systems] prior to scheduled date of [*Ready-for-Takeover of the Work*] [*Substantial Performance* of the *Work*].

.2 *Owner* will provide list of personnel to receive training and will coordinate their attendance at agreed upon times.

.3 Coordinate and schedule demonstration and training provided by *Subcontractors* and *Suppliers*.

1.2 SUBMITTALS

.1 Submit proposed dates, times, durations, and locations for demonstration and training of each item of equipment and each system for which demonstration and training is required. Allow sufficient time for training and demonstration for each item of equipment or system, or time as may be specified in technical *Specifications*.

.2 *Consultant* and *Owner* will review submittal and advise *Contractor* of any necessary revisions.

.3 Submit report(s) within [5] [ ] Working Days after completion of demonstration and training:

.1 identifying time and date of each demonstration and training session,
.2 summarizing the demonstration and training performed, and
.3 including a list of attendees.

.4 [Submit video record of demonstration and training together with report.]

1.3 PREREQUISITES TO DEMONSTRATION AND TRAINING

.1 Testing, adjusting, and balancing has been performed in accordance with *Contract Documents*.

.2 Equipment and systems are fully operational.

.3 Copy of completed operation and maintenance manual is available for use in demonstration and training.

.4 Conditions for demonstration and training comply with requirements specified in technical *Specifications*.

1.4 DEMONSTRATION AND TRAINING

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, [ ] and maintenance of each item of equipment and system.

.2 Review operation and maintenance manual in detail to explain all aspects of operation and maintenance.

.3 Prepare and insert additional information in operation and maintenance manual if required.

END OF SECTION

1.1 CONTRACTOR RESPONSIBILITIES

.1 Prepare each system ready for commissioning. Verify systems installation is complete and in operation.

.2 Coordinate commissioning with and assist commissioning agency.

.3 Perform and document verification, performance testing, adjusting, and balancing operations.

.4 Cooperate with commissioning agency and provide access to equipment and systems.

.5 Provide personnel and operate systems at designated times, and under conditions required for proper commissioning.

.6 Make instruments available to commissioning agency to facilitate spot checks during commissioning.

.7 Participate in commissioning meetings.

.8 Complete commissioning forms as requested by commissioning agency.

.9 Correct deficiencies identified in commissioning process.

.10 Incorporate commissioning data into operation and maintenance manual.

.11 Ensure that commissioning agency participates in demonstration and training as specified in Section 01 79 00 – Demonstration and Training.

.12 [Provide instruments necessary for commissioning.]

1.2 COMMISSIONING AGENCY RESPONSIBILITIES

.1 The commissioning agency [will] [shall]:

.1 Prepare a commissioning plan, including systems to be commissioned, forms, checklists and responsibilities of commissioning team members.

.2 Implement the commissioning plan and lead the commissioning team through start-up, verification, performance testing, training, and document preparation.

.3 Convene, chair, prepare and distribute minutes of commissioning meetings.

.4 Supervise commissioning activities and witness inspections and tests.

.5 Make periodic site visits for the purpose of selective checking of accuracy of commissioning form submissions, witness testing, and review of mock-ups.

.6 Review content of operations and maintenance manual.

.7 [Provide instruments necessary for commissioning.]

1.3 CONSULTANT RESPONSIBILITIES

.1 Consultant will:

.1 Participate in commissioning meetings.

.2 Coordinate commissioning agency's involvement in *Shop Drawing* review process.

.3 Review verification and performance test results and direct *Contractor* to correct defects or deficiencies in the *Work*.

.4 Initiate *Change Orders* or *Change Directives* identified as necessary by the commissioning process.

.5 Review final commissioning report.

1.4 OWNER RESPONSIBILITIES

.1 Owner will:

.1 Assign operations and maintenance personnel to participate in meetings, and witnessing of demonstration, and training.

.2 Designate a person to acknowledge receipt of reports.

1.5 SCHEDULE OF EQUIPMENT AND SYSTEMS TO BE COMMISSIONED

.1 Division [ ] – [ ]

.1 [ ]

.2 [ ]

.3 [ ]

.2 Division [ ] – [ ]

.1 [ ]

.2 [ ]

.3 [ ]

.3 Division [ ] – [ ]

.1 [ ]

.2 [ ]

.3 [ ]

END OF SECTION