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Project Manual
For a Construction Management Contract

Two and One Half Storey

24 Unit Apartment Reconstruction

48 Wellington Street, Port Hope

November 9, 2021

Prepared by

Gregg Gordon Architect

70 Hunter Street West, Peterborough, Ontario, K9H 2K4

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November 9, 2021

Re: 24 Unit Apartment Reconstruction
48 Wellington Street,
Port Hope
Project No. 19030

Gentlemen:

The Owner of the property at 48 Wellington Street in Port Hope would like to re-build the original 24 Unit Apartment Building that burned down several years ago. The Building was a 2 and ½ storey wood framed brick faced building. The basement framing and concrete block foundation walls were saved during the fire and the first floor assembly was reconstructed by the Insurance Company following the fire to straighten (plumb) walls, replace damaged studs, remove mould and to cover the entire first floor surface with plywood and a tarpaulin to minimize further damage to the structure. The building has been in this condition now for several years; and so there is further mould now that will need to be removed.

Temporary power and lighting has been provided in the building: the building is presently secured.

Drawings have been prepared to replace the original building. The drawings, prepared by the following consultants are presently available on the Gregg Gordon Architect website www.gregggordonarchitect.ca.

Architect: Gregg Gordon Architect, contact Gregg Gordon (705 875-4846)
Structural Engineer: BFP Engineering Solutions Inc., contact Bladimir Feria (705 876-1604)
Mechanical Engineer: Kirkland Engineering Ltd., contact Calvin Muller (705 745-2831)
Electrical Engineer: Kirkland Engineering Ltd., contact David Millen (705 745-2831)

A building permit has been recently provided by the City of Port Hope; the drawings prepared and reviewed for permit approval illustrate the intent and extent of the project requirements. The Construction Manager and Trades should bid on the basis of these drawings; but should feel free to offer other alternatives, where there are potential savings that can be made and these savings can be passed on to the Owner that do not impact on the Building Code and other regulations that govern, and subject to approval of the City of Port Hope, the Client, the Architect and the Consulting Engineers.

The Owner is looking for a Construction Manager to administer the construction contract on behalf of the Owner. We are inviting a small number of firms; and we are asking that each firm provide the Owner with a price for their services. At this time, we are not asking for firm (fixed) construction costs: we are simply looking for your fees to do the following.

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.1 Assisting the Architect and the Client by recommending preferable products, construction techniques, assemblies, detailing, and finishes to obtain the least construction cost without compromising on quality or modifying the documents to the extent that would alter the present permit approvals.

.2 Working with the Architect and the Client in a team approach, to ensure that the project is delivered on time and on budget.

.3 Tendering the various components of the project, including but not limited to: exterior site services, re-finishing of exterior parking areas and soft landscaping, fencing, framing, roofing, windows, exterior finishes, doors and hardware, flooring, drywall, cabinetry, painting, mechanical plumbing, mechanical HVAC, and electrical lighting, power, communications, and data.

.4 Providing a full time supervisor and labourer (or labourers) to carry out the work for the duration of the project. The supervisor being capable of acting also as the health and safety coordinator.

.5 Preparing a reasonable construction cost budget, broken down to illustrate anticipated tender amounts for each of the Trade packages to which all tenders will be compared for each of the tender packages.

.6 Preparing a reasonable schedule showing the start and completion dates for each of the Trades required on the project, illustrating full completion in approximately eight (8) months from the time of commencement on site, or as otherwise determined.

.7 Ensuring the sub-trades are available on a regular basis so as not to delay the project; but to work within an allotted time as illustrated on the Construction Manager's schedule.

.8 Provision of a "Broad Form" property insurance to cover the full costs of replacement of the building under construction. Providing also general liability insurance for work by the Construction Manager and insurance for automobiles, both owned and non-owned up to $2M per occurrence. Notwithstanding reference in the Contract form to the contrary, we prefer the Construction Manager carry these required insurances and provide proof of this insurance prior to the start of the work on site.

.9 Providing a current WSIB Insurance Certificate indicating conformance and good standing.

.10 Ensuring that all Trades brought onto the project are also fully covered to the same extent as the Construction Manager for General Liability and automobiles, both owned and non-owned.

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.11 Ensuring also that all Trades brought onto the project provide current WSIB Insurance Certificates.

.12 Providing, in addition to the supervisor and labourers, office administration to respond to queries from the Architect and the Client, to prepare the necessary paperwork for construction administration including requests for information (RFI's) and recommendations to the Owner with respect to draw claims by the sub-trades for payment by the Client to the sub-trades. The architect will issue Site Instructions, Change Orders, and additional details as required.

There will be a 10% holdback on all draws: there will be no up-front payments. Payments will be made on actual work performed and materials installed. Contracts with the Construction Manager will be in the form of a Construction Management Contract, CCA #5, most recent edition. Contracts between the sub-trades and the Owner will be in the form of the Standard Construction Document CCA #17; a Stipulated Price Contract for Trade Contractors on Construction Management Projects, most recent edition.

Attached is a Project Manual, which includes a Bid Form and Instructions to Bidders. The Bid Form is to be filled out and returned to the Architect's Office: a faxed copy, email submission or hand delivery is acceptable: late submittals will not be acceptable.

A decision by the Client is expected within one week of submission of the Bid Form. The successful Construction Manager will be notified on that day. A meeting between the successful Construction Manager and the Architect is proposed within the following week, to start the process of tendering to the Trades. This process can be reasonably informal provided all tenders received from the Trades are complete, and are based on the drawings prepared by the Architect and the Engineers.

Following the receipt of tender prices from the Trades and Suppliers it is expected that the Construction Manager will require 2 weeks to prepare a budget for presentation to the Client. This proposed budget is to be reviewed and approved by the Owner, prior to the work actually starting on site.

Time is of the essence. The Client would like to have occupancy as early as possible. Every effort to move the occupancy date forward would be appreciated. This can take the form of weekend and evening work as permitted by the Owner and by the City of Port Hope.

Very truly yours,

Gregg Gordon, OAA
Gregg Gordon Architect

Gregg Gordon Architect
70 Hunter Street West, Peterborough, Ontario, K9H 2K4, Telephone: 705-876-6548, Mobile: 705-875-4846, Facsimile: 705-876-9206

Part 1 General

1.1 BID INFORMATION

Date: December 2, 2021

Submitted by:

(name) _____

(address) _____

_____

To: 2381070 Ontario Ltd.
c/o 108 Laurelcrest Ave
Toronto Ontario M3H 2B3

Project: Work of this Contract comprises the reconstruction of a former 24 Unit Apartment Building on this site and within this footprint that burned down to the level of the basement. Framing at the basement level has been salvaged and where necessary reconstructed already (by the Insurance Company) to retain support of the main floor assembly. In this way the foundation and basement framing could be protected by a tarpaulin above the floor assembly and enclosed on the sides to protect and minimize deterioration of the structure.

1.2 OFFER

.1 Having examined all matters referred to in the Consultant's letter, dated November 9, 2021, for the above mentioned project, we, the undersigned, hereby offer to enter into a contract as "Construction Manager" for the above project with the Client, 2381070 Ontario Ltd., for the fee arrangement as outlined in Table 1: Price Breakdown, located at the end of this document.

1.3 BID TABLE

.1 We have provided a Total Fee showing a maximum cost to the Client. This Total Fee is considered to be a maximum upset fee.

.2 We have provided a percentage fee for the administration of the project including project manager, bookkeeping, and office administrative work. The percentage, for the purpose of establishing a Total Fee, is based on $3.25M to $3.75M of approximate construction costs, exclusive of all Construction Management Fees. We have also provided a fixed fee to prepare a construction budget, tender to the various trades and assess the quotations received (3 minimum for each trade) and to make recommendations to the Client, for an

actual budget, meeting the Client's budget requirements.

.3 We have provided fees on an hourly rate for all site staff including a superintendent and one or two labourers as deemed appropriate. Provided with their rate is an estimate of the number of hours required by these individuals to complete the work.

.4 The "total estimated cost to complete" is considered to be the maximum Construction Management costs for all office and field work required until completion based on our estimate of time for completion of construction and our abilities to keep the trades on the site, co-ordinate their work to avoid any delay and insure that all work is expedited in the most appropriate manner. *This is not intended to hold the Construction Manager to an unreasonable fee expectation for unforeseen circumstances such as delivery delays and unco-operative trades, but simply for the client to have a picture of the Construction Manager's expectations.*

.5 We understand that the Contract will be signed on the basis of the unit rates provided by the Construction Manager with a reasonable expectation by the Client that the Construction Manager's total invoicing will not exceed the Construction Manager's total estimated fees by more than 5%; and this would be accompanied by a letter of explanation, if the estimate is exceeded.

1.4 ACCEPTANCE

.1 If this Bid is accepted by the Owner, we will:

.1 Execute the 'Agreement' within seven (7) days of receipt of the Consultant's letter of acceptance. .

.2 Commence work within fourteen (14) days after written notification of acceptance of this bid, and

.3 Substantially Complete the Work within _____ weeks of this commencement date. *(Please fill in the blank space).*

1.5 CHANGES

.1 When there are Changes in the Work, the value of those changes will be calculated as net cost to the subcontractor. The subcontractor will be entitled to a:

.1 Mark up permitted on their own work of 15% for overhead and profit.

.2 There is to be no additional mark up on the sub trade prices by the Construction Manager.

1.6 INSURANCE

.1 General Liability Insurance with limits of not less than $2M per occurrence.

.2 Automobile Liability Insurance with limits of not less than $2M inclusive for bodily injury, death and damage to property covering all vehicles owned or leased by the Construction Manager.

.3 A "Broad Form" property insurance is to be provided by the Construction Manager for full replacement of the completed works should there be any damage to the building and/or property, for whatever reason, during the period of construction. Upon Substantial

Completion of the Building, as authorized by the Consultants, the Owner will provide full Insurance Coverage of the Building and Property. All costs for the Construction Manager's insurance, as noted above, have been included in the Total Fees identified below.

.4 See also CCA#5.

1.7 CONTRACT

.1 Contract between the Owner and the successful Construction Manager will be the most recent CCA#5, Canadian Standard Construction Management Contract form between Owner and Construction Manager.

.2 Contracts between the Owner and the Sub Trades will be the most recent CCA#17, Stipulated Price Contract for Trade Contractors on Construction Management Projects.

1.8 BID FORM SIGNATURE(S)

The Corporate Seal of

_____

(Bidder - please print)
was hereunto affixed in the presence of:
(Seal)

Authorized signing officer	Title
Authorized signing officer	Title

Table 1: **Price Breakdown:** The following are the Contractor's Contract Fees described in the Bid Form, dated December 2, 2021, to which this Table is an integral part. These fees are submitted by:

(Bidder) _____

This pricing below does not necessarily follow the pricing of the project per the Document CCA #5. Document CCA #5 is intended therefore, as a reference guide only in the event of a dispute.

(a) The Owner agrees to pay the Construction Manager as compensation for his services, including office administrative services, a Contract fee of _____% of the "construction costs" for the work as described in the letter dated November 9, 2021, as described in this Bid Form and as shown, generally, on the drawings provided; plus internal office administrative costs for

.1 Long distance telephone charges

.2 Special delivery costs, postage

.3 Printing and reproduction.

"Construction costs" do not include consultant fees or the cost of the Building Permit, being provided by the Owner. Internal office administrative costs are to be itemized with each billing if applicable.

(b) Cost to Owner for administrative services to prepare a budget and to tender the project to the various trades. $_____.00

(c) Provide also a specific cost (dollar value) for the following:

Description of Service Ins. & Specific Overhead Costs and Field Work	Charge Out Rates (Fixed, including payroll burden)	Estimated hours (amount) to complete the work	Total Estimated
Job Superintendent	$ /Hr.	Hrs.	$ .00
Labourer #1 (if required)	$ /Hr.	Hrs.	$ .00
Labourer #2 (if required)	$ /Hr.	Hrs.	$ .00
Insurance and other specific Overhead Costs			$ .00
Estimated Disbursement and Ancillary Office Expenses (Identify, if appropriate)	$		$ .00
Total Estimated Costs to Complete (includes % Fee (a), costs to prepare budget, etc. (b), and Labour (Field) Fees & Disb. Costs (c)).			$ .00
Total Estimated time to Complete			Weeks.

1.1 BID CALL

.1 Offers signed under seal, executed and dated will be received by the Architect:

.1 Located at 70 Hunter Street West, Peterborough, ON K9H 2K4

.2 Before 3:00:00 pm local time on Thursday, the 2nd day of December, 2021.

.3 Offers will be opened privately after the time for receipt of Bids.

.4 Amendments to the submitted offer will be permitted if received in writing prior to Bid closing and if endorsed by the same party or parties who signed and sealed the initial offer.

1.2 SITE VISIT AND IMPORTANT DATES

Drawings available	Tuesday, November 9, 2021
Site Visit (to the site)	**Friday, November 12, 2021, 1:00 p.m.**
Last day for questions from Contractors	Friday, November 26, 2021
Last Addendum to be issued	Monday, November 29, 2021
Bids to be received	Thursday, December 2, 2021, 3:00 p.m.
Contract to be awarded	Monday, December 6, 2021
Meeting with successful Construction Manager to discuss Contract, Sign Contract and initiate Tender to a Consultant for the preparation of a Designated Substance Report specifically required to identify Mould	Thursday, December 9, 2021
Tender Closing for Consultant to prepare Designated Substance Report	Tuesday, December 21, 2021
Award of Contract for D.S. Report	Wednesday, December 22, 2021
Construction Start – Mobilization & Commencement of D.S. Investigation	Monday, January 3, 2022
Tenders released for Mould Abatement, Framing, Mechanical and Electrical Trades by Const. Man.	Tuesday, January 18, 2022
Tenders to remaining Sub Trades and Suppliers	January 25 to January 28, 2022
Receipt of Tenders for Mould Abatement	Thursday, January 27, 2022
Receipt of Tenders for Framing, Mechanical and Electrical Trades	February 2, 3, and 4, 2022
Receipt of Tenders from remaining Sub Trades and Suppliers	February 9, 10, and 11, 2022
Preparation of Preliminary Construction Budget prepared by C. M. for Client Review	Tuesday, February 15, 2022
Construction Completion	Friday, August 26, 2022

.2 A Site Meeting to review the existing building and site will be held on the date noted above for invited and interested Construction Management Bidders only. A time to review the project for interested Trades will come at a later time to be determined by the successful Construction Manager, in consideration of the above schedule.

.3 Standard Covid 19 protocols will be in effect for the Site Visit: masks must be worn.

1.3 BID INTENT

.1 The intent of this invited bid call is to obtain an offer from a General Contractor to perform the work as a Construction Manager in accordance with the Contract Documents.

.2 Work is to be completed as quickly as possible providing a reasonable length of time for weather conditions, delivery times, and other factors. State clearly on the Bid Form provided, the anticipated length of time required between the time of mobilization on site until Substantial Completion.

.3 It is the Owner's intent to have the building completed and ready for occupancy as early as possible. The date shown in 1.2 above for completion is an anticipated time; it is not mandatory. It is expected however that the successful Construction Manager will start the work on the date indicated above and continue construction on a regular daily basis until the work is completed. Taking forces off site, for even a short period of time, unless due to unusual circumstances will not be permitted.

1.4 CONTRACT DOCUMENTS IDENTIFICATION

.1 The Contract Documents are identified as "24 Unit Apartment Reconstruction, 48 Wellington Street, Port Hope", on the specifications and on the cover sheet of the Architectural Drawings. See also the documents available on the Architect's website, under "24 Unit Apartment Reconstruction, 48 Wellington Street, Port Hope, ON" at http://gregggordonarchitect.ca/.

1.5 BID AND CONTRACT DOCUMENTS

.1 Bid Documents: The Contract Documents supplemented with Covering Letter from Gregg Gordon Architect, dated October 29, 2021, Instructions to Bidders, and Bid Form.

.2 Contract Documents: Defined in CCDC 5A – Construction Management Contract – for Services, latest edition, Agreement (including Schedules), General Conditions and Definitions.

.3 See also the full list of drawings on the cover of the Architectural Drawings. It is to be noted that, for the most part, the technical specifications relating to the Architectural, Structural, Mechanical and Electrical Engineering disciplines, are provided on the drawings.

1.6 DEFINITIONS

.1 Bid, Offer, or Bidding: An act of submitting an offer under seal.

.2 Bid Price: Monetary sum identified by the Bidder in the Bid Form.

1.7 DOCUMENT AVAILABILITY

.1 Bid Documents may be obtained from, or examined on line on the Architect's web site at ggarchitect@cogeco.ca under "24 Unit Apartment Reconstruction, 48 Wellington Street, Port Hope, ON".

.2 It is expected that one (1) set of documents, if requested by the invited General Contract Bidders, will be made available for viewing, to their members, at the Peterborough Construction Association, the Durham Construction Association, and the Quinte Construction Association, by the respective associations.

.3 Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not confer a license or grant for other purposes.

.4 Immediately notify the Consultant upon finding discrepancies or omissions in the Bid Documents.

1.8 QUERIES/ADDENDA

.1 Direct all questions during the bidding period in writing to Gregg Gordon, of Gregg Gordon Architect, at ggarchitect@cogeco.ca.

.2 Addenda may be issued during the bidding period. All addenda become part of the Contract Documents. Include costs in the Bid Price.

.3 Verbal answers are only binding when confirmed by written addenda.

.4 Clarifications requested by bidders must be in writing not less than three (3) days before date set for receipt of bids. The reply will be in the form of an addendum, a copy of which will be forwarded to Construction Management Bidders three (3) days prior to the date set for receipt of bids.

1.9 PRODUCT/SYSTEM OPTIONS

.1 Product Exchange Procedures During the Bid Process: when a request to exchange a Product is made, the Consultant may approve the exchange and will issue an Addendum to known bidders.

.2 The process for submission for exchanging Products after bids have been submitted, is described in Sections 01 29 00 - Payment Procedures and 01 62 00 - Product Exchange Procedures.

.3 Notwithstanding the above, it is preferred that all bids be based upon items in the Contract Documents as specified.

1.10 SITE EXAMINATION

.1 Visit the project site before submitting a bid; and be familiar with limitations of the site and the existing building.

.2 The bidder is directed to contact the Architect, in order to arrange a date and time to visit the place of Work; at a time other than the scheduled site visit noted above. Contractor will be directed to Owner's local representative who will let the Contractor into the Building and lock up the building upon completion of the review. The Architect, the Consulting Engineers and the Owner will not be in attendance at that time.

.3 It would be extremely useful for all invited Construction Management bidders on this project to see the premises, but it is not mandatory. However, extras to the Contract will not be entertained for work that could have been reasonably understood had the Construction Management Bidder visited the site prior to the bid closing.

1.11 BIDDERS BRIEFING

.1 A bidders briefing has been scheduled on the day and at the time of the proposed Site Visit noted above.

.2 The Architect and possibly representatives of the Owner and the Engineering Consultants will be in attendance, to answer any queries arising at that time.

.3 Summarized minutes of this meeting will not be circulated to Construction Management bidders.

.4 Information relevant to the Bid Documents will be recorded in an Addendum.

1.12 BID INELIGIBILITY

.1 Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared non-compliant.

.2 Bid Forms and enclosures which are improperly prepared may at the discretion of the Owner, be declared non-compliant.

.3 Bids which contain qualifying conditions or otherwise fail to conform to these Instructions to Bidders may be disqualified or rejected.

1.13 BID SUBMISSIONS

.1 Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.

.2 Submit one copy of the executed offer on the Bid Form provided, signed and corporate sealed in a closed opaque envelope, clearly identified with bidder’s name, project name and Owner’s name on the outside.

.3 Improperly completed information and other irregularities may be cause not to open the bid envelope and declare the bid invalid or informal.

.4 As an alternative, General Contract Bidders may submit their Bids for Construction Management on the Bid Form provided, properly signed and sealed and submitted to the Architect at or before the time prescribed above by email (ggarchitect@cogeco.ca) or by facsimile (705 876-9206).

1.14 INSURANCE

.1 Provide a signed "Undertaking of Insurance" on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of the Contract Documents.

.2 This document may be submitted at the time for the acceptance of Bids or may be submitted after the closing of Bids, within 24 hours of submission of Bids.

1.15 START AND COMPLETION

.1 State in the Bid Form, the "Time" required to complete the Work. The completion date in the Agreement shall be this completion "Time" added to the commencement date.

.2 The Owner requires that the work of this contract be completed as quickly as possible: consideration will be given to time of completion when reviewing the submitted bids.

1.16 TAXES

.1 Harmonized Sales Tax (HST) is applicable this Contract and is to be shown on the Bid Form and on each Draw Claim.

.2 General Contract Bidder, can provide the Company's Business Number at the time of the first draw.

1.17 FEES FOR CHANGES IN THE WORK

.1 Construction Managers may mark up work performed by their own forces 10% and 5 %, a total of 15% over and above their base costs for work performed by their own forces (provide receipts and time sheets as appropriate and as requested).

.2 Under the Construction Management Contract, there is to be no mark-up on sub-trade prices by the Construction Manager.

1.18 BID SIGNING

.1 The Bid Form shall be signed under seal by the bidder.

.2 Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.

.3 Limited Company: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the President and Secretary of the company, or the President-Secretary-Treasurer of the company, a copy of the by-law resolution of the Board of Directors authorizing them to do so, must also be submitted with the Bid in the Bid envelope.

1.19 APPENDICES TO THE BID FORM

.1 Appendix 'A' - Contract Documents: a complete listing of documents is provided on the cover of the Architectural drawings (drawings) and in the Table of Contents of the Specification (up front specification documents).

1.20 DURATION OF OFFER

.1 Bids shall remain open to acceptance and shall be irrevocable for a period of thirty (30) days after the bid closing date.

1.21 EVALUATION OF BID SUBMISSIONS

.1 Bid Submissions will generally be evaluated on Bid Price, however the Lowest or any Bid, not necessarily accepted.

1.22 ACCEPTANCE OF OFFER

.1 The Owner reserves the right in its absolute discretion to accept any bid which it deems most advantageous to itself and the right to reject any or all bids, in each instance without giving any notice.

.2 In no event will the Owner be responsible for the costs of preparation or submission of a bid.

.3 After acceptance by the Owner, the Architect will issue to the successful bidder, a written bid acceptance letter.

.4 After a bid has been accepted, and the documents required from the successful Bidder have been received by the Owner, the other Bidders will be notified of the Contract Award.

END OF DOCUMENT

24 Unit Apartment Reconstruction
48 Wellington Street, Port Hope

Table of Contents

Part 1 General

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.3 Work expectations.

.4 Work by other parties.

.5 Premises usage.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances

.2 Section 01 78 10 - Closeout Submittals.

1.3 WORDS AND TERMS

.1 Refer to and acknowledge other words, terms, and definitions elsewhere in the Front End Documents and in Section 01 35 41, Waste Managing and Disposal.

1.4 COMPLEMENTARY DOCUMENTS

.1 Where there is a conflict between the Request for Tender/Up Front Documents and the Supplementary Conditions, the Request for Tender/Up Front Documents take precedence.

.2 The Request for Tender/Up Front Documents include the Instructions to Bidders and the Bid Form.

.3 The Technical Specifications are provided on the drawings.

.4 Drawings, specifications, and schedules are complementary to each other and what is called for by one is to be binding as if called for by all. Should any discrepancy appear between documents which leave doubt as to the intent or meaning, abide by Precedence of Documents article in CCDC #5A.

.5 Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.

.6 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.

.7 Locate devices with primary regard for convenience of operation and usage.

.8 Examine all discipline drawings, specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of Consultant.

1.5 DESCRIPTION OF THE WORK

.1 Work of this Contract comprises the reconstruction of a former 24 Unit Apartment Building on this site and within this footprint that burned down to the level of the main floor, leaving only the basement generally intact. Framing at the basement level has been salvaged and where necessary reconstructed already (by the Insurance Company) to retain support of the main floor assembly. In this way the foundation and basement framing could be protected by a tarpaulin above the floor assembly and enclosed on the sides to protect and minimize deterioration of the structure.

.2 Work this Contract includes the preparations required to make full use of the existing structure and services available at the site and to the building. The work includes the completion and finishing of the basement level and the re- building of the additional two floor levels and roof above and site development, all as shown on the drawings.

.3 Division of the Work among Subcontractors suppliers or vendors is solely the Contractor's responsibility. Neither the Owner nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

1.6 CONTRACT METHOD AND CONTRACT REFERENCES

.1 Work is to be awarded to one General Contractor to act in the capacity of Construction Manager. The Contract will be a Construction Management Contract, CCDC #5A.

.2 Refer also to Section 01 21 00 for Cash Allowance amounts.

.3 Contract Documents were prepared by the Consultant for the Owner. Any use which a third party makes of the Contract Documents, or any reliance on or decisions to be made based on them, are the responsibility of such third parties. The Consultant and Owner accept no responsibility for damages, suffered by any third party as a result of decisions made or actions based on the Contract Documents.

.4 For purposes of reference in these Contract Documents, the term "Contractor", “General Contractor” or “Construction Manager” shall have the same meaning and will refer to the party in contract with the Owner.

.5 For purposes of reference in these Contract Documents, the term "Owner" or “Client” shall have the same meaning and will refer to the party in contract with the Construction Manager.

.6 For purposes of reference in these Contract Documents, the term "Architect" or “Consultant” shall have the same meaning and will refer to the firm of Gregg Gordon Architect.

.7 For purposes of reference in these Contract Documents, the term "Trade", Sub-trade”, “Supplier”, or “Sub-contractor” shall have the same meaning and will refer to the “other construction personnel” (other than the Construction Manager) providing services and materials to the Site; and being in contract with the Owner.

1.7 DOCUMENTS PROVIDED

Owner will not supply the successful Construction Manager with Tender or Construction Contract Drawings. Drawings are available on the Consultant’s website at www.gregggordonarchitect.ca. The drawings may be downloaded at any time without a password, and printed at no additional expense to the Owner, as required by the

Contractor, trades, sub-contractors and suppliers. Drawings in auto cadd (dwg,) format can be made available to the successful Construction Manager upon request for use only on this project, as required.

1.8 WORK SEQUENCE

.1 Mobilize on site.

.1 Set up hoardings, fencing, barriers and gates as required by the Construction Manager to adequately protect work within a confined area, bound by these enclosures. Provide access gates, construction, directional and safety signs, trailers, toilet(s) sheds, and storage areas.

.2 It is a small site; and consequently careful planning by the Successful Construction Manager will be required for placement of materials, placement of cranes, parking, deliveries to the site, sequencing of events and other activities.

.3 Construction Manager will be responsible for own arrangements with the City and neighbours for use of adjacent lands and street, if required.

.4 Provide temporary doors, controls, barricades and other devices as necessary to protect the building, construction activity, tools and equipment.

.5 Maintain safe work area at all times.

.4 Remove existing site features identified on the drawings to be removed or relocated.

.2 Maintain fire exits access and fire protection equipment.

.3 Maintain access to building and site areas away from the immediate construction zones.

1.9 ELECTRICAL REQUIREMENTS DEFINED

.1 The Electrical Contractor will be responsible to provide outlet boxes and conduit complete with pull cords to the boxes for telephone, data, communications and security.

1.10 PREPARATION OF EXISTING STRUCTURE

.1 See Section 01 21 00 Allowances for work to prepare existing wood framing for work this Contract.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Cash Allowances.

.2 Designated Substances: Report and Remediation

.3 Inspection and Testing Allowances.

.4 Contingency Allowance

1.2 RELATED SECTIONS

.1 Section 01 29 00 - Payment Procedures.

.2 Section 01 62 00 - Product Exchange Procedures.

1.3 CASH ALLOWANCES

.1 A “Cash Allowance” is to be carried by the successful Construction Manager in the construction budget prepared by the Construction Manager for the overall costs for construction, presented to the Owner for approval prior to general commencement of construction by all Trades.

.2 Costs included in Cash Allowances for Product: Cost of Product to Contractor less applicable trade discounts.

.3 If a Cash Allowance item described in the Allowances Schedule below indicates the inclusion of “installation” only, include in the Cash Allowance amount, the handling of the product at the site, including unloading, uncrating, storage, protection of Product from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, equipment rental, overhead and profit, by the sub trades or by the Construction Manager, if by Construction Manager’s own forces.

.4 If a Cash Allowance item described in the Allowances Schedule below indicates “supply of product” only, this would mean that the Cash Allowance is for the purchase of the Product only, delivered to the site; and that associated work at the site and other related costs are to be included in the Tendered, and consequently the Contract Price, including work associated with Product handling at the site, including unloading, uncrating, storage, protection of Product from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, equipment rental, overhead and profit. If supplied by a sub-trade, the sub-trade would be entitled to a standard mark–up of 10% and 5% for overhead and profit: however, there is to be no further mark up for overhead and profit by the Construction Manager, even if the product is supplied by the Construction Manager.

.5 If a Cash Allowance is for Services, the amount of the Cash Allowance claimed, will be the amount shown on the Service Supplier’s Invoice representing the cost for the work or service only. There is to be no further mark up for overhead and profit by the Construction Manager,

.6 Owner and Consultant Responsibilities:

.1 Consult with Contractor for consideration and selection of Products, Suppliers, and Installers.

.2 Owner and Consultant to select Products.

.3 Consultant to prepare Change Order for signing by Owner.

.7 Contractor Responsibilities:

.1 Assist Owner and Consultant in selection of Products, Suppliers and Installers.

.2 Obtain proposals from Suppliers and Installers, Agencies and Firms as required below for award of Contract and offer recommendations.

.3 On notification of selection by Owner and/or Consultant, execute Change Order with designated Supplier and Installer, Agency or Firm.

.4 Arrange for and process shop drawings, product data, and samples. Arrange for delivery.

.5 Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

.8 Differences in costs will be adjusted by Change Order, prepared by the Consultant.

1.4 INSPECTING AND TESTING ALLOWANCES

.1 Costs Included in Inspecting and Testing Allowances: Costs incurred by inspecting or testing agency, including lab work if required and as appropriate; execution of inspecting and testing; and reporting results.

.2 The Inspecting and Testing (Allowance) Costs for this “Service” are to be included in the Construction Manager’s overall Construction Budget for presentation to the Owner.

.3 Costs Not Included in the Inspecting and Testing Allowance; but included in the Base Bid Price and consequently the Construction Manager’s Contract Price:

.1 Costs of incidental labour and facilities required to assist inspecting or testing agency.

.4 Payment Procedures:

.1 Submit one (1) copy of the inspecting or testing firm's invoice with next application for payment.

.2 Owner will pay invoice on recommendation of Construction Manager.

.5 Inspecting and Testing Allowances Schedule:

.1 Include the sum of $20,000.00 for all testing and examinations including

.1 Compacted soils

.2 Concrete

.3 Examination of the soils at the time of excavation by a qualified Soils Engineer to advise on the use of the existing excavated materials for backfill.

.4 Asphalt testing.

.5 Roofing inspections.

.6 Differences in cost will be adjusted by Change Order.

.7 **Tender for Services:** It is expected that the Construction Manager will request proposals from interested Inspection and Testing Agencies and that based on the prices received will recommend to the Owner and the Architect a firm that they could work with, for approval of the Owner, prior to engaging this service.

.8 **Inspection and Testing Firms Available Locally**: the following list is provided for the Construction Manager's reference only. It includes firms in the Peterborough and Port Hope area, known to the Architect and capable of providing the Inspection and Testing Services:

.1 Cambium, P.O. Box 325, Peterborough, ON K9H 1G5; 705 742-7900

.2 GHD, 347 Pido Rd #29, Peterborough, ON K9J 6X7; 705 749-3317

1.5 DESIGNATED SUBSTANCE SURVEY ALLOWANCE

.1 Costs Included in Designated Substance Survey Allowance: Cost of engaging an Engineering Firm or Individual qualified to review and report on Designated Substances, including making recommendations for remedial action.

.2 The Designated Substance Survey Costs for this "Service" are to be included in the Construction Manager's overall Construction Budget for presentation to the Owner.

.3 It is expected there is mould in the existing Basement that has been closed in for the past few years. Heat has been provided over the winter months but there has not been ventilation of the basement area. Earlier work, prior to the purchase of the building by the present Owner, included the containment of the mould with an anti-microbial sealant and the full replacement of wood framing in parts of the Basement, as required. Since that time, it would appear there has been further mould growth that needs to be contained or removed.

.4 It would appear that other harmful materials have been removed from the site and that the only Designated Substance to be found will be that of Mould. Consultant Firm or Individual is to advise however if there is any other Designated Substances on site that must also be removed.

.5 Engineering Firm or Individual must provide evidence of their Professional Liability Insurance with coverage of $2,000,000.00 for errors and omissions as a minimum.

.6 Costs Not Included in the Designated Substance Allowance but included in the Base Bid Price and consequently the Construction Manager's Contract Price:

.1 Costs of incidental labour and facilities required to assist agent to carry out the Designated Substance site reviews.

.2 Costs of remedial action to remove or contain the Designated Substance(s).

.7 Payment Procedures:

.1 Submit one (1) copy of the Designated Substance Firm's invoice with next application for payment.

.2 Owner will pay invoice on recommendation of Construction Manager.

.8 Designated Substance Study:

.1 Include the sum of $15,000.00 for the following work:

.1 Initial review, investigations and recommendations for remedial actions.

.2 Overseeing of the remedial action work on site by an experienced, qualified and competent firm or individual engaged in the business of remediation.

.3 Providing a final report stating that the remediation work has been completed and that the building is free of harmful substances to the satisfaction of the Engineering Firm or Individual, for the purpose of other Contractors proceeding with the work of this Contract and for the use of this building as a habitable residential apartment upon completion of the Construction Contract.

.9 Differences in cost will be adjusted by Change Order.

.10 **Designated Substance Survey Firms Available Locally**: the following list is provided for the Construction Manager's reference only. It includes firms in the Peterborough and Port Hope area, known to the Architect and capable of providing the Designated Substance Survey:

.1 Cambium, P.O. Box 325, Peterborough, ON K9H 1G5; 705 742-7900

.2 GHD, 347 Pido Rd #29, Peterborough, ON K9J 6X7; 705 749-3317

.3 D & F, 6721 Hwy 7 N. Peterborough, ON K9J 6X6, 705 745-1389

.11 **Tender for Services:** It is expected that the Construction Manager will request proposals from interested Firms and Individuals capable of providing a Designated Substance Survey; and that based on the prices received will recommend to the Owner and the Architect a firm that they could work with, for approval of the Owner, prior to engaging this service.

.12 **Recommendation:** It would be an easy solution for the Survey Firm to recommend removal of all wood materials; and ask the Owner to rebuild from the bare concrete floor and concrete block foundation walls. The Owner and the Architect would not support that solution as an option; except only if the costs projected for the remedial work would justify this action. Preferred is an approach that would detail a course of action to remedy the problem with a specific change or changes that would leave the existing structure generally intact.

1.6 REMOVAL OF DESIGNATED SUBSTANCES (MOULD)

.1 Construction Manager is to retain the services of a Firm to remove the mould identified in the Designated Substance Survey. A Cash Allowance identified below is to be carried in the Construction Manager's Base Bid for the work to remove, contain, or clean the materials affected by the mould. This may mean in some cases removal and replacement of materials, such as plywood sheathing; and consequently the Cash Allowance also covers the cost of this replacement work by the Mould Abatement Firm retained. Also covered are the chemicals, the control rooms, entryways, equipment and clothing/coverings to contain or clean; the labour and all associated work including showers if required, containment areas and all requirements associated with the Remediation Work.

.2 Costs for this "Service" are to be included in the Construction Manager's overall Construction Budget for presentation to the Owner.

.3 Costs Not Included in the Remediation Work but included in the Base Bid Price and consequently the Construction Manager's Contract Price:

.1 Costs of incidental labour and facilities required by the Construction Manager to retain the services of the Remediation Firm and assist the Remediation Firm in their work.

.4 Payment Procedures:

.1 Submit one (1) copy of the Remediation Firm's invoice with next application for payment.

.2 Owner will pay invoice on recommendation of Construction Manager.

.5 Cash Allowance:

.1 Include in the Base Bid Price a Cash Allowance sum of $50,000.00 for removal, containment or cleaning of mould within the Basement and the first floor level assembly.

.6 Differences in cost will be adjusted by Change Order

.7 **Tender for Services:** It is expected that the Construction Manager will request proposals from interested Firms and Individuals capable of Remediation Work to eliminate the mould problem; and that, based on the prices received will recommend to the Owner and the Architect a firm that they could work with, for approval of the Owner, prior to engaging this service.

.8 **Same Contractor:** it is possible for the firm that provides the Designated Substance Survey, identifying the extent of mould and recommending the removal, cleaning and/or containment of the mould, could also be the firm that performs the actual remedial work. It is not essential; but it is an option available to the Construction Manager, that could be supported by the Owner and the Architect, if recommended. See also #1.5, item #.10 above for list of potential "Abatement Contractors"; however other qualified "Abatement Contractors" are also welcomed to bid.

1.7 SNOW CLEARANCE

.1 Owner will make arrangements directly, outside of the Construction Contract, for the clearance of snow from the property on a regular as needed basis. It is expected that this work for the most part will be performed at times when other Contractors are not on the site at the same time, to facilitate the clearing of the site.

1.8 CONTINGENCY ALLOWANCE

.1 There is no contingency allowance to be provided in the overall construction budget to be presented to the Owner. **THE OWNER WILL CARRY A CONTINGENCY ALLOWANCE IN "HIS CONSTRUCTION BUDGET" FOR UNFORESEEN COSTS.**

1.9 SUMMARY OF ALL CASH ALLOWANCES

.1 The following are the three Cash Allowances that the Construction Manager is to include in the overall Construction Budget to be presented to the Owner for approval prior to awarding of all of the Contracts to the sub-trades and the general commencement of the work on site by all of the trades: by this statement, it may be possible that some work, like framing, mechanical and electrical work may have already been started.

1.	Inspecting and Testing Allowance	$20,000.00
2.	Designated Substance Study	$15,000.00
3.	Designated Substance Removal	$50,000.00
4.	Total Cash Allowances	**$85,000.00**

This amount is to be included in the Construction Manager's proposed overall construction budget, to be presented to the Owner. This Cash Allowance is not to be included in the Construction Manager's Fee Proposal as required on the Bid Form.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Scheduled progress meetings.

1.2 RELATED SECTIONS

.1 Section 01 32 00 - Construction Progress Documentation

.2 Section 01 33 00 - Submittal Procedures.

1.3 COORDINATION

.1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work of all trades and suppliers.

1.4 PROJECT MEETINGS

.1 Schedule and administer project meetings throughout the progress of the Work on an "as required" basis. For budgeting purposes it is expected that this could occur every four weeks.

.2 Schedule and administer pre-installation meetings when specified in sections and when required to coordinate related or affected Work.

.3 Provide physical space and make arrangements for meetings.

.4 Preside at meetings.

.5 Record minutes. Include significant proceedings and decisions. Identify action by parties.

.6 Reproduce and distribute copies of minutes within five (5) days after each meeting and transmit to meeting participants and affected parties not in attendance.

1.5 CONSTRUCTION ORGANIZATION AND START-UP

.1 Immediately following award of Contracts to Sub-Trades, request a meeting of parties in Contract to discuss and resolve administrative procedures and responsibilities.

.2 The Owner, Consultant, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.

.3 Establish time by requesting of Owner and Architect, specific times that may be available for meeting. Notify parties concerned a minimum five (5) days before meeting.

.4 Agenda to include the following:

.1 Appointment of official representative of participants in Work, including contacts, and lines of communication.

.2 Schedule of Work, progress scheduling in accordance with Section 01 32 00.

.3 Schedule of submission of shop drawings, samples, and colour chips in accordance with Section 01 33 00.

.4 Requirements for temporary facilities, hoardings, offices, storage sheds, utilities, and fences in accordance with Section 01 51 00.

.5 Delivery schedule of specified equipment in accordance with Section 01 32 00.

.6 Site safety and security in accordance with Section 01 35 23.

.7 Proposed procedures, approvals and administrative requirements.

.8 Owner-furnished Products.

.9 Record drawings in accordance with Section 01 78 40.

.10 Maintenance material and data in accordance with Section 01 78 40.

.11 Take-over procedures, acceptance, and warranties in accordance with OAA/OGCA document 100 (take over procedures and as further described in) Section 01 78 40.

.12 Monthly progress claims and holdbacks.

.13 Appointment of inspection and testing agencies or firms in accordance with Section 01 43 00 and 01 45 00.

.14 Insurances and transcript of policies.

.5 Identify allocation of mobilization areas of site; for field offices and sheds, access, traffic, and parking facilities.

.6 During construction, coordinate use of site and facilities through Consultant's procedures for intra-project communications: submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

1.6 ON-SITE DOCUMENTS

.1 Maintain at job site, one copy each of the following:

.1 Front End Documents.

.2 Contract drawings.

.3 Specifications.

.4 Addenda.

.5 Reviewed shop drawings.

.6 Change orders.

.7 Change Directives.

.8 Site Instructions and other modifications to Contract.

.9 Field test reports.

.10 Copy of approved Work schedule.

.11 Manufacturers' installation and application instructions.

.12 Labour conditions and wage schedules.

.13 Copy of Contractor’s Health and Safety Plan.

.14 Material Safety Data Sheets (MSDS) of all materials used on the site.

.15 Building Permit.

.16 Notice of Project.

1.7 SCHEDULES

.1 Submit preliminary construction progress schedule in accordance with Section 01 32 00 - Construction Progress Documentation to Consultant.

.2 After review, revise and resubmit schedule to comply with revised project schedule.

.3 During progress of Work revise and resubmit as directed by the Consultant.

1.8 CONSTRUCTION PROGRESS MEETINGS

.1 During course of the Work, schedule progress meetings when required and at a time suitable to all parties.

.2 Contractor, major subcontractors involved in Work, Consultants (as appropriate), and Owner are to be in attendance.

.3 Agenda to include the following:

.1 Review minutes of previous meeting.

.2 New business.

.3 Safety issues.

.4 Field observations, problems, conflicts.

.5 Problems which impede construction schedule.

.6 Corrective measures and procedures to regain projected schedule.

.7 Progress schedule, during succeeding work period.

.8 Other business.

1.9 SUBMITTALS

.1 Submit preliminary shop drawings, product data and samples to Section 01 33 00 for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Consultant.

.2 Submit requests for payment for review and for payment to Owner directly.

.3 Submit requests for interpretation of Contract Documents, and obtain instructions through Consultant.

.4 Process substitutions through Consultant.

.5 Process Change Orders through Consultant.

.6 Deliver closeout submittals for review and preliminary inspections, for transmittal to Consultant.

1.10 CLOSEOUT PROCEDURES

.1 Notify Consultant when Work is considered ready for Substantial Performance.

.2 Accompany Consultant on preliminary inspection to determine items listed for completion or correction.

.3 Comply with Consultant's instructions for correction of items of Work listed in executed certificate of Substantial Performance and for access to owner-occupied areas.

.4 Notify Consultant of instructions for completion of items of Work determined in Consultant’s final inspection.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Schedules, form, content, submissions.

.2 Critical path scheduling.

.3 Submittals schedule.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

1.3 SCHEDULES

.1 Submit schedules as follows:

.1 Submittal Schedule for Shop Drawings and Product Data.

.2 Submittal Schedule for Samples.

.2 Schedule Format

.1 Prepare construction progress schedule in the form of a bar chart.

.2 Provide a separate bar for each major item of work, subcontract, or operation.

.3 Provide horizontal time scale identifying first Working Day of each week.

.4 Format for listings: chronological order of start of each item of work.

.5 Identification of listings: By systems description or as normally provided by the General Contractor/Construction Manager.

.3 Schedule Submission

.1 Submit initial draft of schedule within 15 days after award of Contract.

.2 Submit schedules in electronic format

.3 Consultant will review schedule and return reviewed copy within 10 days after receipt.

.4 Resubmit finalized schedule within 7 days after return of reviewed copy.

.5 Submit revised progress schedule with each application for payment.

.6 Distribute copies of revised schedule to:

.1 Job site office.

.2 Subcontractors.

.3 Other concerned parties.

.7 Instruct recipients to report to Contractor within 10 days, any problems anticipated by timetable shown in schedule.

1.4 CONSTRUCTION PROGRESS SCHEDULING

.1 Indicate progress of each activity to date of submission schedule.

.2 Indicate changes occurring since previous submission of schedule:

.1 Major changes in scope.
.2 Activities modified since previous submission.
.3 Revised projections of progress and completion.
.4 Other identifiable changes.

1.5 CRITICAL PATH SCHEDULING

.1 Include a complete sequence of construction activities.

.2 Include dates for commencement and completion of each major element of construction, including:

.1 Site Utilities
.2 Foundation Work
.3 Structural Framing
.4 Block / Brick Masonry
.5 Pouring of Concrete Slab
.6 Roof
.7 Windows
.8 Doors
.9 Framing
.10 Finishes
.11 Mechanical Plumbing
.12 Mechanical HVAC
.13 Electrical
.14 Lighting
.15 Fire Alarm

.3 Indicate progress of each activity to date of submission schedule.

.4 Show changes occurring since previous submission of schedule:

.1 Major changes in scope.
.2 Activities modified since previous submission.
.3 Revised projections of progress and completion.
.4 Other identifiable changes.

1.6 SUBMITTALS SCHEDULE

.1 Include schedule for submitting shop drawings, product data, and samples.

.2 Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.

.3 Include dates when reviewed submittals will be required from Consultant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 RELATED SECTIONS

.1 Section 01 32 00 - Construction Progress Documentation.

.2 Section 01 78 10 - Closeout Submittals.

.3 Other sections requesting submittals.

1.3 ADMINISTRATIVE

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in same metric units or imperial units as specified or as shown on the drawings.

.4 Where items or information is not manufactured or produced in SI Metric units, converted values within the metric measurement tolerances are acceptable.

.5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.

.6 Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be considered rejected.

.7 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent Work are coordinated.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.

.11 Keep one reviewed copy of each submission on site.

1.4 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow ten (10) days for Consultant's review of each submission.

.4 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.5 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.

.6 Accompany submissions with transmittal letter, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.7 Submissions 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, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of 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 Relationship to other parts of the Work.

.8 After Consultant's review, distribute copies.

.9 Submit one (1) electronic copy of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.10 Submit one (1) electronic copy of product data sheets or brochures/literature for requirements requested in specification sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.11 Delete information not applicable to project.

.12 Supplement standard information to provide details applicable to project.

.13 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, one (1) electronic copy will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and re-submission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.5 SAMPLES

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to site office.

.3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.6 Make changes in samples which Consultant may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.6 MOCK-UP

.1 Erect mock-ups in accordance with Section 01 45 00.

1.7 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status, and at other times as reasonably requested by the Consultant.

.2 Submit transcription of insurance immediately after award of Contract, or as otherwise indicated elsewhere in this document.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Safety requirements and adherence.

1.2 RELATED SECTIONS

.1 Section 01 31 00 - Project Managing and Coordination.

.2 Section 01 33 00 - Submittal Procedures.

1.3 REFERENCES

.1 Province of Ontario: Occupational Health and Safety Act.

1.4 SAFETY PLAN

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.5 RESPONSIBILITY

.1 This is a “Construction Management” Contract. Notwithstanding that the Owner has the appearance of being the General Contractor, the Construction Manager is intended to provide for the Health and Safety of all workers and visitors to the site.

.2 The “Construction Manager” and in this case, the "Prime Contractor" according to applicable local jurisdiction, is responsible for health and safety of persons on site, safety of property on site and for the protection of persons adjacent to the site and the environment to the extent that they may be affected by the performance of the Contract, by the Prime Contractor.

.3 Comply with and enforce compliance by employees with the safety requirements of the Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

.4 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, follow procedures in place for the Employee's Right to Refuse Work in accordance with Acts and Regulations of Ontario. Advise Consultant verbally and in writing.

1.6 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00.

.2 Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.3 Submit copies of Contractor's site health and safety inspection reports to Consultant once per month corresponding to progress meeting dates.

.4 Submit copies of reports or directions issued by Provincial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Keep a copy of all Material Safety Data Sheets (MSDS) easily available on site of all materials used on the site.

.7 Consultant's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.8 File Notice of Project with the Ministry of Labour prior to commencement of Work.

1.7 SAFETY ACTIVITIES

.1 Perform site specific safety hazard assessment related to project.

.2 Perform Work in accordance with Section 01 41 00 - Regulatory Requirements and this section.

1.8 HEALTH AND SAFETY COORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:

.1 Have minimum five (5) years' site-related experience.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

.4 Be on site regularly during execution of the Work and report directly to and be under the direction of the site supervisor or alternatively, be the Site Supervisor.

1.9 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario and in consultation with Consultant.

1.10 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.

.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.11 HAZARDOUS WORK

.1 Blasting or other use of explosives is not permitted during normal business hours.

.2 Use powder actuated devices only after receipt of written permission from Owner and only when members of the public are not on the project site.

1.12 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

1.13 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of the Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on site.

.3 Maintain placed or installed fire resistive construction, fireproofing, and firestopping, to protect the portions of the Work during construction.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Site fires.

.2 Site Drainage.

.3 Site clearing and plant protection.

.4 Work adjacent to waterways.

.5 Pollution control.

1.2 RELATED SECTIONS

.1 Section 01 74 00 - Cleaning and Waste Processing.

1.3 FIRES

.1 Fires and burning of rubbish on site not permitted.

1.4 DRAINAGE

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.5 SITE CLEARING AND PLANT PROTECTION

.1 Protect trees and plants on site and adjacent properties where indicated.

.2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 metres.

.3 Protect roots of designated trees to drip-line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.

.4 Minimize stripping of topsoil and vegetation.

.5 Restrict tree removal to areas indicated, or as designated by Consultant.

.6 Provide hoardings to restrict traffic in area of trees.

1.6 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local authorities emission requirements.

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

1.7 **ROADS AND PARKING LOT**

.1 Throughout duration of Contract, maintain the adjacent access driveways, parking areas and street. Contractor is responsible to sweep the roads and asphalt parking areas to maintain these areas in a relatively dust free and dirt/mud free condition.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Waste goals.

.2 Waste management plan.

.3 Third party responsibilities.

.4 Waste management plan implementation.

.5 Disposal of waste.

.6 Forms for documenting program.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

1.3 DEFINITIONS

.1 **Clean Waste:** Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 **Construction and Demolition Waste:** Solid wastes typically, including but not limited to, building materials, packaging, trash, debris, and rubble resulting from construction, re-modelling, repair and demolition operations.

.3 **Hazardous:** Exhibiting the characteristics of hazardous substances including, but not limited to, ignitability, corrosiveness, toxicity or reactivity.

.4 **Non-hazardous**: Exhibiting none of the characteristics of hazardous substances, including, but not limited to, ignitability, corrosiveness, toxicity, or reactivity.

.5 **Non-toxic:** Neither immediately poisonous to humans nor poisonous after a long period of exposure.

.6 **Recyclable:** The ability of a product or material to be recovered at the end of its life cycle and re-manufactured into a new product for reuse by others.

.7 **Recycle:** To remove a waste material from the Project site to another site for re-manufacture into a new product for reuse by others.

.8 **Recycling:** The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.9 **Return:** To give back reusable items or unused products to vendors for credit.

.10 **Reuse:** To reuse a construction waste material in some manner on the Project site.

.11 **Salvage:** To remove a waste material from the Project site to another site for resale or reuse by others.

.12 **Sediment:** Soil and other debris that has been eroded and transported by storm or well production run-off water.

.13 **Source Separation:** The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 **Toxic:** Poisonous to humans either immediately or after a long period of exposure.

.15 **Trash:** Any product or material unable to be reused, returned, recycled, or salvaged.

.16 **Volatile Organic Compounds (VOC's):** Chemical compounds common in and emitted by many building products over time through out gassing:

.1 Solvents in paints and other coatings,

.2 Wood preservatives; strippers and household cleaners,

.3 Adhesives in particle board, fibreboard, and some plywood; and foam insulation,

.4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 **Waste:** Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 **Waste Management Plan:** A Project-related plan for the collection, transportation, and disposal of the waste generated at the construction site. The purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.4 SUBMITTAL

.1 Submit requested submittals in accordance with Section 01 33 00.

.2 Prepare and submit the following prior to project start-up:

.1 Submit one (1) electronic copy of completed Waste Reduction Work Plan.

1.5 OWNER WASTE MANAGEMENT GOALS

.1 Owner has established that this Project is to generate the least amount of waste possible. This requires that construction processes ensure as little waste as possible, either due to error, poor planning, breakage, mishandling, contamination, or other factors.

.2 Owner recognizes that waste in any project is inevitable, but indicates that as much of the waste materials as economically feasible, be re-used, salvaged, or recycled as required.

.3 Minimize waste disposal to landfills.

.4 Items specified in this section represent objectives and goals of the Owner and the Consultant. They are not intended to overly burden the Contractor in any way, nor add costs to the Construction Contract. The Contractor may divert waste and recycle in a

manner that best suits his/her operations in consideration of our environment and future generations.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as directed by the Owner.

.2 Unless specified otherwise, materials for removal become the Contractor's property.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.5 Protect structural components not removed for demolition from movement or damage.

.6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Consultant.

.7 Protect surface drainage, storm sewers, sanitary sewers, and utility services from damage and blockage.

1.7 SCHEDULING

.1 Coordinate work with other activities at site to ensure timely and orderly progress of the work.

1.8 HAZARDOUS MATERIALS

.1 For regulatory requirements, Section 01 41 00, for commentary on “Designated Substance” Report, and potential to encounter hazardous waste materials on site.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 PREPARATION

.1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2 USE OF SITE AND FACILITIES

.1 Execute work with least possible interference or disturbance to normal use of premises.

3.3 DISPOSAL OF WASTE

.1 Burying of rubbish and waste materials is prohibited.

.2 Disposal of waste, volatile materials, mineral spirits, oil and/or paint thinner into waterways, storm, or sanitary sewers is prohibited.

3.4 CLEANING

.1 Remove tools and waste materials on completion of work, leave work area in clean and orderly condition.

.2 Clean-up work area as work progresses.

.3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Laws, notices, permits and fees.

1.2 LAWS, NOTICES, PERMITS AND FEES

.1 The laws of the Place of the Work shall govern the Work.

.2 The Owner will obtain and pay for the building permit. The Contractor shall be responsible for all other permits, licenses or certificates necessary for the performance of the Work which are in force at the date of executing the Agreement.

.3 Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are/or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to construction safety.

.4 If the Contractor knowingly performs or allows work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes. Determine detailed requirements of authorities having jurisdiction.

1.3 HAZARDOUS MATERIAL DISCOVERY

.1 A Designated Substance Report will be prepared as part of the work this Contract: see also Specification Section 01 21 00, Allowances.

.2 Removal of all designated substances that are or will be affected by the work of this Contract, are to be removed by a qualified environmental individual or firm, licensed and insured to perform this type of work, all as part of this Contract prior to the remaining work of this Contract commencing.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 References and standards.

.2 Standards producing industry organizations and their addresses.

1.2 RELATED SECTIONS

.1 Section 01 61 00 - Product Requirements.

1.3 REFERENCES

.1 For Products or quality specified by association, trade, or other references or consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

.2 Conform to reference standard by date of issue current on date for receiving bids, except where a specific date is established or required by code.

.3 Obtain copies of standards where required by product specification sections.

.4 Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Consultant shall be altered from the Contract Documents by mention or inference otherwise, in any reference document.

1.4 STANDARDS PRODUCING INDUSTRY ORGANIZATIONS

.1 The following associations and organizations are cited in specification sections. Acronym, name, address, and Internet URL addresses are as follows.

.2 Canadian Organizations:

.1 ACEC - Association of Consulting Engineers of Canada, 130 Albert Street, Suite 616, Ottawa, ON. K1P 5G4 URL http://www.acec.ca

.2 AWMAC - Architectural Woodwork Manufacturers Association of Canada, 516-4 Street West, High River, Alberta T1V 1B6 URL http://www.awmac.com

.3 Canada Green Building Council; 330 - 55 rue Murray Street, Ottawa, ON, K1N 5M3; Tel: 613-241-1184 Fax: 613-241-5750, URL: www.cagbc.org

.4 CCA - Canadian Construction Association, 75 Albert St., Suite 400 Ottawa, Ontario, K1P 5E7 URL http://www.cca-acc.com

.5 CCDC - Canadian Construction Documents Committee, Refer to ACEC, CCA, CSC or RAIC; www.CCDC.org

.6 CGA - Canadian Gas Association, 20 Eglinton Avenue West, Suite 1305, Toronto, Ontario M4R 1K8 URL http://www.cga.ca

.7 CGSB - Canadian General Standards Board, Place du Portage, Phase III, 6B1, 11 Laurier Street, Hull, Quebec K1A 0S5 URL http://w3.pwgsc.gc.ca/cgsb

.8 CISC - Canadian Institute of Steel Construction, 201 Consumers Road, Suite 300, Willowdale, Ontario M2J 4G8 URL http://www.cisc-icca.ca

.9 CLA - Canadian Lumbermen's Association, 27 Goulburn Avenue, Ottawa, Ontario, K1N 8C7 URL http://www.cla-ca.ca

.10 CNLA - Canadian Nursery Landscape Association, RR #4, Stn. Main, 7856 Fifth Street, Milton, Ontario. L9T 2X8 URL http://www.canadanursery.com

.11 CRCA - Canadian Roofing Contractors Association, 155 Queen Street, Suite 1300, Ottawa, Ontario K1P 6L1 URL http://www.roofingcanada.com

.12 CSA - Canadian Standards Association International, 178 Rexdale Blvd., Toronto, Ontario M9W 1R3 URL http://www.csa-international.org

.13 CSC - Construction Specifications Canada, 120 Carlton Street, Suite 312, Toronto, Ontario M5A 4K2 URL http://www.csc-dcc.ca

.14 CSDMA - Canadian Steel Door Manufacturers Association, One Yonge Street, Suite 1801, Toronto, Ontario M5E 1W7; http://www.csdma.org/

.15 CSPI - Corrugated Steel Pipe Institute, 652 Bishop Street N, Unit 2A, Cambridge, Ontario N3H 4V6 URL http://www.cspi.ca

.16 CSSBI - Canadian Sheet Steel Building Institute, 652 Bishop St. N., Unit 2A, Cambridge, Ontario N3H 4V6 URL http://www.cssbi.ca

.17 CUFCA - Canadian Urethane Foam Contractor's Association, Box 3214, Winnipeg, Manitoba, R3C 4E7 URL http://www.cufca.ca

.18 CWC - Canadian Wood Council, 1400 Blair Place, Suite 210, Ottawa, Ontario K1J 9B8 URL http://www.cwc.ca

.19 EC - Environment Canada, Conservation and Protection, Inquiry Centre, 351 St. Joseph Blvd, Hull, Québec KIA 0H3 URL http://www.ec.gc.ca

.20 EFC - Electro Federation of Canada, 5800 Explorer Drive, Suite 200, Mississauga, Ontario L4W 5K9 URL http://www.electrofed.com

.21 EIMA - EIFS Industry Manufacturer's Association, 3000 Corporate Center Drive, Suite 270, Morrow, Georgia U.S.A. 30260 URL http://www.eima.com

.22 MPI - The Master Painters Institute, 4090 Graveley Street, Burnaby, BC V5C 3T6 URL http://www.paintinfo.com

.23 NABA - National Air Barrier Association, PO Box 2747, Winnipeg, Manitoba R3C 4E7 URL http://www.naba.ca

.24 NLGA - National Lumber Grades Authority, 406-First Capital Place, 960 Quayside Drive, New Westminster, B.C. V3M 6G2; http://www.nlga.org/

.25 NRC - National Research Council, Building M-58, 1200 Montreal Road, Ottawa, Ontario K1A 0R6 URL http://www.nrc.gc.ca

.26 QPL - Qualification Program List, c/o Canadian General Standards Board, Place du Portage, Phase III, 6B1, 11 Laurier Street, Hull, Quebec K1A 1G6 URL http://www.pwgsc.gc.ca/cgsb

.27 RAIC - Royal Architectural Institute of Canada, 55 Murray Street, Suite 330, Ottawa, Ontario, K1N 5M3 URL http://www.raic.org

.28 SCC - Standards Council of Canada, 270 Albert Street, Suite 2000, Ottawa, Ontario K1P 6N7 URL http://www.scc.ca

.29 TTMAC - Terrazzo, Tile and Marble Association of Canada, 30 Capston Gate, Unit 5 Concord, Ontario L4K 3E8 URL http://www.ttmac.com

.30 ULC - Underwriters' Laboratories of Canada, 7 Crouse Road, Toronto, Ontario M1R 3A9 URL http://www.ulc.ca

.3 USA Organizations:

.1 AA - Aluminum Association, 900 19th Street N.W., Washington, D.C., U.S.A. 20006 URL http://www.aluminum.org

.2 AASHTO - American Association of State Highway and Transportation Officials, 444 N Capitol Street N.W., Suite 249, Washington, D.C., U.S.A. 20001 URL http://www.aashto.org

.3 AHA - American Hardboard Association, 1210W Northwest Hwy., Palatine, Illinois, U.S.A. 60067 URL: http://www.hardboard.org

.4 AITC - American Institute of Timber Construction, 7012 S. Revere Parkway, Suite 140, Englewood, Colorado, U.S.A. 80112 URL http://www.aitc-glulam.org

.5 AMCA - Air Movement and Control Association Inc., 30 West University Drive, Arlington Heights, Illinois, U.S.A. 60004-1893 URL http://www.amca.org

.6 ANSI - American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York, U.S.A. 10036 URL http://www.ansi.org

.7 APA - The Engineered Wood Association, P.O. Box 11700, Tacoma, Washington, U.S.A. 98411-0700 URL http://www.apawood.org

.8 API - American Petroleum Institute, 1220 L St. Northwest, Washington, D.C., U.S.A. 20005-4070 URL http://www.api.org

.9 ARI - Air Conditioning and Refrigeration Institute, 4100 N Fairfax Drive, Suite 200, Arlington, Virginia, U.S.A. 22203 URL http://www.ari.org

.10 ASHRAE - American Society of Heating, Refrigeration and Air-Conditioning Engineers, 1791 Tullie Circle NE, Atlanta, Georgia, U.S.A. 30329 URL http://www.ashrae.org

.11 ASME - American Society of Mechanical Engineers, ASME Headquarters, 3 Park Avenue, New York, New York, U.S.A. 10016-5990 URL http://www.asme.org

.12 ASTM International, 100 Barr Harbor Drive West, Conshohocken, Pennsylvania 19428-2959 URL http://www.astm.org

.13 AWCI - Association of the Wall and Ceiling Industries International, 803 West Broad Street, Suite 600, Falls Church, UA, U.S.A. 22046 URL http://www.awci.org

.14 AWPA - American Wire Producer's Association, 801 N Fairfax Street, Suite 211, Alexandria, VA U.S.A. 22314-1757 URL http://www.awpa.org

.15 AWPA - American Wood Preservers' Association, P.O. Box 5690, Granbury Texas, U.S.A. 76049-0690 URL http://www.awpa.com

.16 AWS - American Welding Society, 550 N.W. LeJeune Road, Miami, Florida U.S.A. 33126 URL http://www.amweld.org

.17 AWWA - American Water Works Association, 6666 W. Quincy Avenue, Denver, Colorado, U.S.A. 80235 URL http://www.awwa.org

.18 ISAP - International Society for Asphalt Paving, 400 Selby Avenue, Suite 1, St. Paul, MN 55102 U.S.A. URL http://www.asphalt.org

.19 IEEE - Institute of Electrical and Electronics Engineers, IEE Corporate Office, 3 Park Avenue, 17th Floor, New York, New York U.S.A. 10016-5997 URL http://www.ieee.org

.20 MSS - Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street, N.E., Vienna, Virginia U.S.A. 22180-4602 URL http://www.mss-hq.com

.21 NAAMM - National Association of Architectural Metal Manufacturers, 8 South Michigan Avenue, Suite 1000, Chicago, Illinois U.S.A. 60603 URL http://www.naamm.org

.22 NEMA - National Electrical Manufacturers Association, 1300 N. 17th Street, Suite 1847, Rosslyn, Virginia 22209 URL http://www.nema.org

.23 NFPA - National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101Quincy, Massachusetts, U.S.A. 02269-9101 URL http://www.nfpa.org

.24 NFSA - National Fire Sprinkler Association, P.O. Box 1000, Patterson, New York, U.S.A. 12563 URL http://www.nfsa.org

.25 NHLA - National Hardwood Lumber Association, 6830 Raleigh-La Grange Road, Memphis, TN, U.S.A 38184-0518 URL http://www.natlhardwood.org

.26 NSPE - National Society of Professional Engineers, 1420 King Street, Alexandria, VA U.S.A. 22314-2794 URL http://www.nspe.org

.27 PCI - Prestressed Concrete Institute, 209 W. Jackson Blvd., Suite 500, Chicago, Illinois, U.S.A. 60606-6938 URL http://www.pci.org

.28 PEI - Porcelain Enamel Institute, PO Box 920220, Norcross, GA U.S.A. 30010 URL http://www.porecelainenamel.com

.29 SSPC - The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh, Pennsylvania 15222-4656 URL http://www.sspc.org

.30 TPI - Truss Plate Institute, 583 D'Onofrio Drive, Suite 200, Madison, WI, U.S.A. 53719 URL http://www.tpinst.org

.31 UL - Underwriters' Laboratories, 333 Pfingsten Road, Northbrook, Illinois, U.S.A. 60062-2096 URL http://www.ul.com

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Quality assurance criteria.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 Section 01 21 00 – Allowances.

1.3 REFERENCES

.1 Associated Air Balance Council (AABC): National Standards For Field Measurements and Instrumentation, Total Systems Balance, Air Distribution-Hydronics Systems.

1.4 QUALITY ASSURANCE

.1 Provide testing organization services as specified in Section 01 45 00 - Quality Control, Section 017519 – Testing, Adjusting and Balancing and Section 01 91 00 – Commissioning.

.2 Testing organization: Current member in good standing of their respective professional or industry organization and certified to perform specified services.

.3 Comply with applicable procedures and standards of the certification sponsoring association.

.4 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

.5 Qualifications:

.1 Provide adequate workforce training through meetings and demonstrations.

.2 Have someone on site with construction experience throughout project for consultation and supervision purposes.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspection and testing, administrative and enforcement requirements.

.2 Tests and mix designs.

.3 Mock-ups.

.4 Mill tests.

.5 Written and electronic reports.

.6 Equipment and system adjust and balance.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

.2 Section 01 43 00 - Quality Assurance.

1.3 REFERENCES

.1 ISO/IEC 17025:2005 - General Requirements for the Competence of Testing and Calibration Laboratories.

.2 SCC (Standards Council of Canada).

1.4 INSPECTION BY AUTHORITY

.1 Allow Authorities Having Jurisdiction access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

1.5 REVIEW BY CONSULTANT

.1 Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.

.2 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

.3 If such Work is found in accordance with Contract Documents, the Owner will pay cost of review and replacement.

1.6 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection and Testing Agencies are to be engaged by the Contractor on behalf of the Owner for purpose of inspecting and testing portions of the Work. Cost of such services will be paid for from the Cash Allowance for this purpose.

.2 A Soils Inspection and Testing Agency will be engaged for the purpose of inspection and testing during excavation, for the placement of footings and depths required for the removal of fill/topsoil.

.3 Air Balancing Contractor will be engaged by the Mechanical Contractor. Cost of such service will be paid for by the Mechanical Contractor within the Contract Price.

.4 Concrete testing to be performed by a firm or agency specializing in this type of testing and having the lab facilities or access to the lab facilities capable of performing these tests. The concrete testing agent or firm is to be retained by the Contractor on behalf of the Owner. Cost of such testing will be paid for from the Cash Allowance.

.5 Roofing inspections are to be performed by a qualified independent roofing inspector recommended by the Owner, and retained directly by the Contractor on behalf of the Owner. Cost of the roofing inspector is to be paid for from the Cash Allowance.

.6 Asphalt testing is to be carried out by an independent asphalt testing individual or firm qualified to assess the quality and type of asphalt, with access to labs capable of performing the necessary tests. The asphalt testing agent or agency is to be retained by the Contractor directly on behalf of the Owner. Costs for such testing will be paid for from the Cash Allowance.

.7 Testing Organizations: Listed by SCC within info.palcan@scc.ca listings.

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

.9 Employment of inspection and testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.10 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and testing, to ascertain the full degree of defect. Correct the defect and irregularities as advised by the Consultant at no cost to the Owner. Pay costs for re-testing and re-inspection from Cash Allowance: assignment of costs attributable to re-testing and re-inspection may be assigned to the Party responsible for the re-testing re-inspection at the discretion of the Consultant.

1.7 ACCESS TO WORK

.1 Allow inspection and testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Cooperate to provide reasonable access and facilities for such access.

1.8 PROCEDURES

.1 Notify appropriate agency, Owner and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.9 REJECTED WORK

.1 Remove defective Work, whether a result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with the Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in the opinion of the Consultant it is not expedient to correct defective Work or Work has not been performed in accordance with Contract Documents, Owner may, at the discretion of the Owner, deduct from the Contract Price the difference in value between Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Consultant and Construction Manager.

1.10 REPORTS

.1 Submit one (1) electronic copy of signed inspection and test reports to Consultant with copy to the Owner.

1.11 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as may be requested.

.2 The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by the Consultant and may be authorized as payable from the Cash Allowance, at the discretion of the Consultant.

1.12 MOCK-UP

.1 Prepare mock-up for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups. Construct in all locations acceptable to Consultant and as specified in specific Section.

.2 Prepare mock-ups for Owner's and Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.

.3 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. Approved mock-up may remain as part of Work.

1.13 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

.2 Refer to Technical Section for definitive requirements.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Temporary utilities.

.2 Salvaging products for reuse.

1.2 RELATED SECTIONS

.1 Section 01 52 00 - Construction Facilities.

.2 Section 01 53 00 - Temporary Construction.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary utilities controls in order to execute work expeditiously.

.2 Salvage and assist in recycling products for potential reuse.

.3 Remove from site all such work after use.

1.4 DEWATERING

.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.5 WATER SUPPLY

.1 Water is available on site presently. Arrange for continuous supply of potable water for construction use as part of the work this Contract.

.2 Arrange temporary connection with appropriate utility company including installation, maintenance and removal.

.3 Owner will pay for utility connection, maintenance, removal and charges at prevailing rates, where reasonably used.

1.6 TEMPORARY HEATING AND VENTILATION

.1 Temporary electric heating has been provided in the basement areas. Additional heating may be required during the construction period in the basement and/or on other floors as work proceeds; and is to be provided this contract as appropriate.

.2 If fuel fired heaters are provided as additional construction heaters or in place of existing electrical temporary heaters, and used inside, the building must be vented to the outside or the heaters must be the non-flameless type. Solid fuel salamanders are not permitted.

.3 Provide temporary heat and ventilation in enclosed areas as required to:

.1 Facilitate progress of work.

.2 Protect work and products against dampness and cold.

.3 Prevent moisture and condensation on surfaces.

.4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.

.5 Provide adequate ventilation to meet health regulations for safe working environment.

.4 Maintain temperatures of minimum 10°C in areas where construction is in progress.

1.7 VENTILATION

.1 Ventilating

.1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.

.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

.3 Dispose of exhaust materials in manner that will not result in harmful exposure

.4 Ventilate storage spaces containing hazardous or volatile materials.

.5 Ventilate temporary sanitary facilities.

.6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.2 Maintain strict supervision of operation of temporary ventilating equipment to:

.1 Conform to applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

1.8 TEMPORARY POWER AND LIGHT

.1 Power is available on site. Contractor to arrange for temporary power and Owner will pay for the costs of the temporary power during construction for temporary lighting and operating of power tools, when / where reasonably used.

.2 Arrange for connection with appropriate utility company. Owner will pay all costs for installation, temporary connections, maintenance and removal. Connect to existing power supply in accordance with Canadian Electrical Code.

.3 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Consultant provided that guarantees are not affected. Power and lighting presently provided in the basement may be used as is (or modified as required by the Contractor) this Contract.

1.9 TEMPORARY COMMUNICATION FACILITIES

.1 Job Superintendent is to be available by cellular phone communication during regular construction hours.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Construction aids.

.2 Office and sheds.

.3 Parking.

.4 Project identification.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

1.3 INSTALLATION AND REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 SCAFFOLDING

.1 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms and temporary stairs.

.2 Payment for scaffolding, ramps, ladders, swing staging, platforms and temporary stairs by Owner. Actual erection, set-up, movement and dismantling costs attributable to labour for same are to be included in Construction Manager’s base costs for labourers.

1.5 HOISTING

.1 Provide, operate and maintain hoists and cranes required for moving of materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2 Hoists and cranes shall be operated by qualified operators.

1.6 USE OF THE WORK

.1 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.7 CONSTRUCTION PARKING

.1 Limited parking will be permitted on site provided it does not disrupt performance of the Work.

.2 Provide and maintain adequate access to the project site including access for emergency vehicles.

.3 Maintain existing roads where indicated or directed by Consultant.

.4 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

.5 Asphalted, paved, and landscaped areas damaged as a result of vehicular access and parking, to be repaired to original or better condition, if area is to be otherwise left unfinished.

1.8 OFFICES

.1 Provide an office, lighted and ventilated, of sufficient size to accommodate site meetings and furnished with a drawing layout table. The cost of the Construction Managers Office, placement on the site and removal from the site upon completion is to be borne by the Construction Manager and included in the administrative costs of the Construction Manager in the Bid Price/Contract Price. As an alternative to the Site Office however and in consideration of the limited space on site for an independent Site Office, the Construction Manager may use a space within the apartment building for Storage and Office Space; and regular construction (site) meetings may be conducted nearby at another property owned by the Owner.

.2 Provide a clearly marked and fully stocked first-aid case in a locked readily available location.

.3 Subcontractors may provide their own offices as necessary. Direct location of these offices.

1.9 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.10 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities.

.3 Except where connected to municipal sewer system, periodically remove wastes from Site.

.4 New and existing permanent facilities may not be used.

.5 Keep sanitary facilities clean and fully stocked with the necessary supplies at all times.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Site enclosure.

.2 Guardrails and barriers.

.3 Weather enclosures.

.4 Dust tight barriers.

.5 Protection for off-site and public property.

.6 Protection of applied finishes and surrounding Work.

1.2 RELATED SECTIONS

.1 Section 01 51 00 - Temporary Utilities.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 SITE ENCLOSURE

.1 Erect temporary site enclosure (hoarding) using minimum 1.8 m high metal mesh fencing with metal frames and metal pedestal supports for connecting adjacent panels, complete with a further metal bracket at the top to connect the two adjacent panels and maintain them in a secure upright position

.2 Provide lockable truck entrance gates as directed.

.3 Provide barriers around trees and plants designated to remain.

.4 Protect buildings, trees, plants, shrubs, and other site features from damage by equipment and construction procedures.

.5 Hoarding gates are to be locked at night, and when there is no activity on site.

1.5 GUARD RAILS AND BARRIERS

.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open edges of floors and roofs.

.2 Provide as required by governing authorities and as indicated to a minimum height of 1.070 m high.

1.6 WEATHER ENCLOSURES

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

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work.

.3 Design enclosures to withstand wind pressure.

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

1.8 PROTECTION OF APPLIED FINISHES

.1 Provide protection for finished and partially finished surfaces and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Be responsible for damage incurred due to lack of or improper protection.

1.9 PROTECTION OF SURROUNDING WORK

.1 Provide protection for finished and partially finished Work from damage.

.2 Provide necessary cover and protection.

.3 Be responsible for damage incurred due to lack of or improper or inappropriate protection.

1.10 PAYMENT FOR TEMPORARY PROTECTION

.1 Construction Manager to provide receipts for materials used in site enclosures, guard rails and barriers, weather enclosures and other temporary protection measures for payment by Owner.

.2 Labour to erect, maintain and dismantle site enclosures, guard rails and barriers, weather enclosures and other temporary protection measures is to be included as part of the Construction Manager's labour costs included in the Bid Price/Contract Price.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Construction signage.

1.2 RELATED SECTIONS

.1 Section 01 53 00 - Temporary Construction.

1.3 PROJECT SIGN

.1 Erect a project sign if requested by the Owner. Owner may or may not require a project sign: however, if required, sign will be purchased and provided by the Owner and the materials required for the erection of the project sign will be paid for by the Owner.

.2 Construction sign:

.1 Size: 1.8 x 3.6 m.

.2 Wood frame and plywood construction.

.3 Locate project identification sign as directed by Owner and constructed as follows:

.1 Set concrete foundation at and below frost line, erect framework and attach signboard to framing.

.4 Erection of the Project Sign is to be by the Construction Manager. The costs for the erection, maintenance and dismantling of the Project Sign are to be included in the Construction Manager’s Labour costs when Tendered and included in the Contract Price.

1.4 GENERAL SIGNAGE

.1 Signs for safety purposes or for traffic flow are permitted where appropriate.

.2 Signs and notices for safety and instruction in English.

.3 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Product quality, availability, storage, handling, protection, and transportation.

.2 Product substitution procedures.

.3 Manufacturer's instructions.

.4 Quality of Work, coordination and fastenings.

.5 Existing facilities.

1.2 RELATED SECTIONS

.1 Section 01 42 00 - References.

.2 Section 01 62 00 - Product Exchange Procedures.

1.3 TERMINOLOGY

.1 New: Produced from new materials.

.2 Renewed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.

.3 Defective: A condition determined by the Construction Manager, Consultant and Owner.

1.4 PRODUCT QUALITY

.1 Products, materials, equipment, parts or assemblies (referred to as Products) incorporated in Work: new or renewed, not damaged or defective, of best quality (compatible with specification requirements) for purpose intended. If requested, provide evidence as to type, source and quality of Products provided.

.2 Defective Products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant.

.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items.

.2 If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.3 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE AND PROTECTION

.1 Store and protect products in accordance with manufacturers' written instructions.

.2 Store with seals and labels intact and legible.

.3 Store sensitive products in weather tight, climate controlled, enclosures in an environment favourable to product.

.4 For exterior storage of fabricated products, place on sloped supports above ground.

.5 Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

.6 Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

.7 Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

.8 Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.7 TRANSPORTATION AND HANDLING

.1 Transport and handle products in accordance with manufacturer's written instructions.

.2 Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

.3 Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.8 PRODUCT CHANGES

.1 Change in product(s): Submit request for substitution or alternative in accordance with Section 01 62 00.

1.9 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work and pedestrian and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

1.10 MANUFACTURER'S WRITTEN INSTRUCTIONS

.1 Unless otherwise indicated in specifications install or erect products in accordance with manufacturer's written instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.11 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site any workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

1.12 COORDINATION

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.13 CONCEALMENT

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

.2 Before installation, inform Consultant if there is interference. Install as directed by Consultant.

1.14 REMEDIAL WORK

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

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.15 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform Consultant of conflicting installation. Install as directed.

1.16 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.17 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use Type 304 or 316 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.18 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of any part of the Project.

.2 Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated, without written approval of Consultant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Substitutions.

.2 Alternatives.

.3 Separate prices.

1.2 RELATED SECTIONS

.1 Section 01 21 00 - Allowances.

1.3 SUBSTITUTIONS

.1 Substitutions will be considered by the Owner and Consultant if:

.1 Materials and products specified in the Contract Documents are not available;

.2 Delivery date of material or product specified would unduly delay the completion of the Contract; or

.3 The substitute material or product to be considered by the Owner is comparable or better than the material or product specified and will result in a **credit** to the Owner.

.2 Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

.3 A request constitutes a representation that the Sub-Contractor/Sub-trade:

.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

.2 Will provide the same warranty for the Substitution as for the specified Product.

.3 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

.4 Waives claims for additional costs or time extension which may subsequently become apparent.

.5 Is prepared to offer a credit for the product or material carried in the Tender price in order to pass on the savings to the Owner for this substitution. Alternatively, for the same cost as the product or material specified, show that the substituted product or material is superior, or of better quality, more sustainable and/or longer lasting than the product or material specified and carried in the Tender Price. Otherwise a change in product or material will not be considered, if it represents also an extra to the Contract.

.6 Will reimburse the Consultant for review or redesign services associated with re-approval by authorities.

.4 Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

.5 If in the Owner's opinion, the proposed substitution **does not** meet the requirements of the Contract Documents, the Contractor shall at no extra cost to the Owner, provide a product which, in the Owner's opinion, does meet the requirements of the Contract Documents. The Owner's decision is **final.**

.6 Acceptable Products and Manufacturers accepted by the Owner and the Consultant shall not be changed without the written approval of the Owner or the Consultant.

.7 Substitution Submittal Procedure:

.1 Submit request for Substitution for consideration: limit each request to one (1) proposed Substitution.

.2 Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence or superiority. Burden of proof is on proposer.

.3 The Consultant will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Field engineering survey services to measure and stake site.

.2 Recording of subsurface conditions found.

.3 Survey services to determine measurement inverts for the Work.

.4 Requirements and limitations for cutting and patching the Work.

1.2 RELATED SECTIONS

.1 Section 01 62 00 - Product Exchange Procedures.

1.3 REFERENCES

.1 Owner's identification of existing survey control points and property limits.

1.4 QUALIFICATIONS OF SURVEYOR

.1 Qualified registered land surveyor, licensed to practise in the Province of Ontario acceptable to the Consultant.

1.5 SURVEY REFERENCE POINTS

.1 Existing base horizontal and vertical control points are designated on Drawings.

.2 Locate, confirm and protect control points prior to starting site Work. Preserve permanent reference points during construction.

.3 Make no changes or relocations without prior written notice to Consultant.

.4 Report to Consultant when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

.5 Require surveyor to replace control points in accordance with original survey control.

1.6 SURVEY REQUIREMENTS

.1 Establish two (2) permanent bench marks on site, referenced to established bench marks by survey control points.

.2 Record locations, with horizontal and vertical data in Project Record Documents.

.3 Establish lines and levels, locate and lay out, by instrumentation.

.4 Establish pipe invert elevations.

.5 Stake batter boards for foundations.

.6 Establish foundation column locations and floor elevations.

.7 Establish lines and levels for mechanical and electrical work.

1.7 SUBSURFACE CONDITIONS

.1 Promptly notify Consultant in writing if discovered surface or subsurface conditions at Place of Work differ materially from those anticipated from or implied by Contract Documents.

.2 Advise the Consultant of a reasonable assumption of probable conditions when determined.

.3 After prompt investigation, should Consultant determine that conditions do differ materially, instructions will be issued for changes in the Work.

1.8 EXAMINATION

.1 Inspect existing conditions, including elements or adjacent Work subject to irregularities, damage, movement, including Work during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of the Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

1.9 PREPARATION

.1 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.2 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.10 EXISTING SERVICES

.1 Before commencing work, establish location and extent of service lines in area of Work and notify Consultant of findings.

.2 Remove abandoned service lines within two (2) metres of structures. Cap or seal lines at cut-off points as directed by the Consultant.

.3 Retain the services of a firm or individual to provide “locates” for all buried power lines, telephone lines, cable lines, data lines, water, sanitary, gas and storm sewer lines.

.4 Services are illustrated on the drawings to indicate the general placement, depth, orientation, size, direction of flow and material, where these are known; and have been identified by the specific service agent. There is no guarantee as to the accuracy of this information; the contractor should consider this information for guidance only and determine exact placement, depth, orientation, size, direction of flow and material by uncovering the service as it is required.

1.11 LOCATION OF EQUIPMENT AND FIXTURES

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Consultant of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

1.12 SURVEY RECORD

.1 Maintain a complete, accurate log of control and survey work as it progresses.

.2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of the Work.

.3 Record locations of maintained, re-routed and abandoned service lines.

.4 Cost of surveyor and cost to locate services, if applicable, to be paid for by Owner as part of overall construction budget.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Submittal requirements associated with connecting to new and existing facilities.

.2 Execution requirements for all Work.

1.2 RELATED SECTIONS

.1 Section 01 70 00 - Examination and Preparation.

1.3 SUBMITTALS - ATTACHING TO EXISTING WORK

.1 Submit written request to the Consultant in advance of cutting or alteration which affects:

.1 Structural integrity of any element of Project.
.2 Integrity of weather-exposed or moisture-resistant elements.
.3 Efficiency, maintenance, or safety of any operational element.
.4 Visual qualities of sight-exposed elements.
.5 Work of Owner or separate contractor.

1.4 TOLERANCES

.1 Monitor fabrication and installation tolerance control of Products to produce acceptable Work.

.2 Do not permit tolerances to accumulate beyond effective or practical limits.

.3 Comply with manufacturers' tolerances. In case of conflict between manufacturers' tolerances and Contract Documents, request clarification from Consultant before proceeding.

.4 Adjust Products to appropriate dimensions; position and confirm tolerance acceptability, before permanently securing Products in place.

1.5 EXECUTION

.1 Execute cutting, fitting, and patching to complete the Work.

.2 Perform all required excavation and fill to complete the Work.

.3 Fit several parts together, to integrate with other Work.

.4 Uncover Work to install ill-timed Work.

.5 Remove and replace defective or non-conforming Work.

.6 Remove samples of installed Work for testing if not designated in the respective Section as remaining as part of the Work.

.7 Provide openings in non-structural elements of Work for penetrations of mechanical, electrical, and associated Work. Limit opening dimensions to minimal sizes required, and performed in a neat and clean fashion.

.8 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.9 Employ competent, qualified workers to perform cutting and patching, for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.10 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.

.11 Restore work with new products in accordance with requirements of Contract Documents.

.12 Fit Work reasonably close to opening size to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.13 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping or other similar materials by Hilti or the equivalent, and as appropriate for the conditions required.

.14 Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.

.15 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Requirements and limitations for cutting and patching of Work.

1.2 RELATED SECTIONS

.1 Section 01 10 00 - Summary of Work.

.2 Section 01 32 00 - Construction Progress Documentation.

.3 Section 01 61 00 - Product Requirements.

.4 Section 01 62 00 - Product Exchange Procedures.

1.3 SUBMITTALS

.1 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of any element of Project.
- .2 Integrity of weather exposed or moisture resistant element.
- .3 Efficiency, maintenance, or safety of any operational element.
- .4 Visual qualities of sight exposed elements.
- .5 Work of Owner or separate contractor.

Part 2 Products

2.1 MATERIALS

.1 Primary Products: Those required for original installation.

.2 Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 62 00.

Part 3 Execution

3.1 EXAMINATION

.1 Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

.2 After uncovering existing Work, assess conditions affecting performance of work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

.1 Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

.2 Provide protection from elements for areas which may be exposed by uncovering work.

.3 Maintain excavations free of water.

3.3 CUTTING

.1 Execute cutting and fitting, including excavation and fill to complete the Work.

.2 Uncover work to install improperly sequenced work.

.3 Remove and replace defective or non-conforming work.

.4 Remove samples of installed work for testing when requested.

.5 Provide openings in the Work for penetration of mechanical and electrical work.

.6 Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

.7 Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.4 PATCHING

.1 Execute patching to complement adjacent Work.

.2 Fit products together to integrate with other Work.

.3 Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

.4 Restore work with new products in accordance with requirements of Contract Documents.

.5 Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.6 At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated, fire resistant products/material to full thickness of the penetrated element.

.7 Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Progressive cleaning.

.2 Cleaning prior to acceptance.

1.2 RELATED SECTIONS

.1 Section 01 35 41 - Waste Managing and Disposal.

Part 2 Products

2.1 CLEANING MATERIALS

.1 Cleaning Agents and Materials: Low VOC content.

Part 3 Execution

3.1 PROGRESSIVE CLEANING

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.

.3 Clear snow and ice from area of construction, bank or pile snow in designated areas only. This would apply in small areas where deemed appropriate to facilitate work at hand and will not be reimbursable: it is considered to be part of the work required by the Construction Manager's labourer(s). Otherwise all snow clearing is to be performed at the Owner's direct expense. See also item #1.7 in Section 01 21 00, Allowances.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris containers.

.1 Provide on-site steel framed, hinged lid containers for collection of waste materials and debris.

.2 Provide and use clearly marked, separate bins for recycling.

.3 Refer to Section 01 35 41.

.5 Remove waste material and debris from site and deposit in waste container at end of each working day.

.6 Dispose of waste materials and debris off site.

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

.8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.9 Provide adequate ventilation during use of volatile or noxious substances. Use of enclosure ventilation systems is not permitted for this purpose.

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

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

3.2 CLEANING PRIOR TO ACCEPTANCE

.1 Prior to applying for Substantial Performance of the Work, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.3 Prior to final review, remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products and debris.

.5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings.

.9 Clean lighting reflectors, lenses, and other lighting surfaces.

.10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.11 Clean and polish surface finishes, as recommended by manufacturer.

.12 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.13 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.14 Remove dirt and other disfiguration from exterior surfaces.

.15 Clean and sweep roofs, gutters, areaways, and sunken wells.

.16 Sweep and wash clean paved areas.

.17 Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.

.18 Clean roof surfaces, down-spouts, and drainage components.

.19 Remove debris and surplus materials from accessible concealed spaces.

.20 Remove snow and ice from access to facilities.

3.3 FINAL PRODUCT CLEANING

.1 Execute final cleaning prior to final project assessment.

.2 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

.3 Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

.4 Clean and/or replace filters of operating equipment.

.5 Clean site; sweep paved areas, rake clean landscaped surfaces.

.6 Remove waste and surplus materials, rubbish, and construction facilities from the site.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Starting equipment in preparation for adjusting and commissioning.

.2 To bring the facility to a fully operational state, free of deficiencies, in the most efficient and timely manner achievable.

.3 Contractor's and Owner's responsibilities during each of the following successive sub phases of facility start-up:

.1 Contractor start-up which leads to Interim Acceptance of the Work.

.2 Performance testing which leads to Practical Completion of the Work.

1.2 RELATED SECTIONS

.1 Section 01 75 19 - Testing, Adjusting and Balancing.

.2 Section 01 79 00 - Demonstration and Training.

.3 Section 01 91 00 - Commissioning.

1.3 DEFINITIONS

.1 See Section 01 91 00, Commissioning, for definitions, roles and responsibilities.

1.4 SUBMISSIONS

.1 Advise Commissioning Agent of report forms required for equipment and systems but not yet supplied by the commissioning agent.

.2 Provide a sample of manufacturer's start-up forms for equipment or systems not included.

.3 Submit completed and verified commissioning manual to the Owner with all data entered and sign-offs, prior to Substantial Completion of the Work.

1.5 CONFLICT

.1 Where there is a conflict between this Section and wording on the drawings, the wording on the drawings, is to govern.

1.6 RESPONSIBLITIES

.1 Owner is responsible for paying all costs relating to a Commissioning Agent.

.2 Testing and Air Balancing is to be the responsibility of the Mechanical Contractor.

.3 Commissioning Agent to be approved by the Owner, Construction Manager and Consultants; and must be perceived as being “at arm’s length” in relationship to the Sub-trade Contractors.

Part 2 Products

2.1 NOT USED.

Part 3 Execution

3.1 STARTING SYSTEMS

.1 Coordinate schedule for start-up of various equipment and systems.

.2 Notify Consultant and Owner seven (7) days prior to start-up of each item.

.3 Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

.4 Verify tests, metre readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

.5 Verify that wiring and support components for equipment are complete and tested.

.6 Execute start-up under supervision of applicable manufacturer's representative or Contractors' personnel in accordance with manufacturers' written instructions.

.7 When specified on the drawings; and specifications require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation, provide authorized representative.

.8 Submit a written report in accordance with Section 01 33 00 that equipment or system has been properly installed and is functioning correctly.

3.2 START-UP REPORT

.1 Commissioning agent will provide start up report forms (check sheets) with the exception of controls.

.2 Sub-trade Contractors to develop, complete and provide the report forms for all control points, software and hardware

.3 Submit completed report forms to Commissioning agent for review within ninety (90) days of award of contract.

.4 Commissioning agent will assemble completed report forms into a "commissioning manual" on the following subjects:

.1 Each mechanical system (except for controls).

.2 Each electrical system.

.5 Include manufacturer's equipment start-up reports and test certificates as an appendix to the commissioning manual.

.6 The commissioning manual will be kept on site for use by appropriate contractors and the commissioning agent.

.1 Maintain this manual current.

.2 Maintain a schedule for work of the commissioning agent in conjunction with the commissioning schedule.

.7 The report forms are to be divided into three (3) parts:

.1 Technical Data

.2 Static Checks

.3 Operational Checks

.8 Sub-trade Contractors are to complete each part prior to verification by the Commissioning agent.

.9 Sub-trade Contractors are responsible for completing the report forms as follows:

.1 Technical Data

.1 Specified: Commissioning Agent

.2 Shop Drawing: Sub-trade Contractor

.3 Installed: Sub-trade Contractor

.4 Verified: Commissioning Agent

.5 Date/Checked By: Sub-trade Contractor to sign when all shop drawing and installed information is completed.

.2 Static Checks

.1 Confirmation of Completion: Sub-trade Contractor to confirm all items listed are completed prior to verification by the Commissioning agent.

.2 Date / Checked By: Sub-trade Contractor to sign when the installation of the equipment and or systems are complete and ready for the Commissioning agent to verify.

.3 Operational Checks

.1 Operational checks will be performed by the Commissioning agent using the balancing report and control's forms.

3.3 CONTRACTOR START UP

.1 Sub-trade Contractor to perform the following during start-up:

.1 Start equipment and systems.

.2 Test, adjust and balance equipment and systems as specified in Section 01 75 19.

.3 Demonstrate equipment and systems as specified in Section 01 79 00.

.2 Complete and submit start-up reports including:

.1 Sub-trade Contractor's system and equipment start up reports.

.2 Manufacturers' equipment start up reports.

.3 Review Contract Documents and inspect the Work to ensure completeness of the Work and compliance with requirements of Contract Documents.

.4 Correct Contract deficiencies and defects identified as a result of the foregoing and as may be identified by the Consultant.

.5 Execute and complete approved Change Orders.

.6 Perform other work and activities required for fulfillment of prerequisites to Interim Acceptance of the Work.

.7 Commissioning Agent will perform the following during start-up:

.1 Perform preliminary interim inspections as necessary.
.2 Witness manufacturers' equipment start-up.
.3 Verify starting, testing, adjusting and balancing by Sub-trade Contractor.
.4 Provide start-up reports for all systems and equipment and review and approve Sub-trade Contractor start-up reports.
.5 Cooperate in systems and equipment demonstration and instruction.
.6 Initiate Change Orders as required.
.7 Verify correction of Contract deficiencies and defects by Sub-trade Contractor r.
.8 Verify execution of Change Orders performed by Sub-trade Contractor.
.9 Perform other activities related to Substantial Completion of the Work as specified in Section 01 91 00.

.8 The following will be performed to an on-going cycle of:

.1 Owner's inspections.
.2 Documentation of results.
.3 Diagnosis of problems.
.4 Correction of Contract Deficiencies and execution of Change Orders as required.
.5 Verification of results.

3.4 PERFORMANCE TESTING

.1 Performance testing will be performed by the Commissioning Agent and:

.1 Completed prior to Substantial Completion,
.2 Completed when all systems have been balanced and tested and are operating to the satisfaction of the Commissioning Agent, and

.2 Contractor to perform the following during Performance Testing:

.1 Correct Contract deficiencies and defects previously outstanding and those identified during performance testing.
.2 Execute Change Orders.

.3 The following will be performed to an on-going cycle of:

.1 Performance testing.
.2 Documentation of results.
.3 Diagnosis of problems.
.4 Correction of Contract deficiencies, defects and execution of Change Orders as required.
.5 Verification of results.

3.5 SEASONAL CONSTRAINTS

.1 Notwithstanding requirements in this section, additional separate cycles of Sub-trade Contractor start-up, performance testing and fine tuning may be necessitated at a later time on equipment and systems whose full operation is dependent on seasonal conditions.

.2 Sub-trade Contractor's responsibilities with respect to later facility start-up activities are specified in this section.

3.6 PARTIAL UTILIZATION OF WORK

.1 When partial utilization of the Work is required, the applicable requirements specified in this section apply to the part(s) of the Work to be utilized.

3.7 THIRD PARTY TESTING

.1 Third party independent testing will be carried out for the following prior to substantial completion. See Section 01 75 19; Testing Adjusting and Balancing.

.1 Air Balancing

.2 Cooperate with independent testing agencies to enable thorough and detailed testing of all systems and equipment.

.3 See also Section 01 21 00, Allowances, for Asphalt Testing, Concrete Testing and Soil Testing.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Adjusting products and equipment required by all specifications sections for this Project.

1.2 RELATED SECTIONS

.1 Section 01 74 00 - Cleaning and Waste Processing.

.2 Section 01 75 16 - Start-Up Procedures.

1.3 PURPOSE

.1 Perform testing adjusting and balancing of operating systems in contract by an agency selected by the Construction Manager, and consigned to this Contract:

.2 Prior to start of balancing, ensure systems are:

.1 piped, ducted, wired and wireless services and systems, including components and equipment forming part thereof,

.2 manually and mechanically operated, including components and equipment forming any part,

.3 testing, adjusting and balancing will not be started until after all static checks have been completed for the system being balanced and signed off on the commissioning report forms,

.4 Sub-trade Contractor to ensure systems are operated at designated times, under conditions required for proper testing, adjusting, and balancing,

.5 report any deficiencies or defects which may effect the balancing or noted during testing, adjusting and balancing, which cannot be promptly corrected.

Part 2 Products

2.1 NOT USED.

Part 3 Execution

3.1 PREPARATION

.1 Prepare each system and item of equipment for testing, adjusting and balancing.

.2 Verify that each system and equipment installation is complete and in functional operation.

.3 Verify appropriate ambient conditions.

3.2 TESTING

.1 Tests will be conducted to confirm compliance with requirements of Contract Documents. Take corrective action as necessary.

3.3 ADJUSTING

.1 Adjust operating Products and equipment to ensure smooth and unhindered operation.

.2 Provide equipment required to ensure proper, efficient and safe operation of all equipment including belts and sheaves.

3.4 BALANCING

.1 Cooperate with, and assist the balancing agent to ensure that the various parts of system are in a proper state of equilibrium.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Inspections and declarations.

.2 Closeout submittals

.3 Operation and maintenance manual format.

.4 Contents each volume.

.5 Recording actual site conditions.

.6 Record (as-built) documents and samples.

.7 Record documents.

.8 Final survey.

.9 Warranties and bonds.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 Section 01 79 00 - Demonstration and Training.

1.3 INSPECTIONS AND DECLARATIONS

.1 Construction Manager's Inspection: Construction Manager and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.

.1 Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.

.2 Request Consultant's Inspection.

.2 Consultant's Inspection: Construction Manager, Consultant and Owner will perform inspection of Work to identify defects or deficiencies. Correct defective and deficient Work accordingly.

.3 Completion: Construction Manager to submit a written certificate that the following have been performed:

.1 Work has been completed and inspected for compliance with Contract Documents.

.2 Defects have been corrected and deficiencies have been completed.

.3 Equipment and systems have been tested, adjusted and balanced and are fully operational.

.4 Certificates required by authorities having jurisdiction have been submitted.

.5 Operations of systems have been demonstrated to Owner's personnel.

.6 Work is complete and ready for Final Inspection.

.4 Final Inspection: when items noted above are completed, request final inspection of Work by Owner, and Consultant. If Work is deemed incomplete by Owner and Consultant, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Performance: when Owner and Consultant consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Substantial Performance of the Work.

.6 Commencement of Warranty Periods: the date of Substantial Performance of the Work as authorized by the Consultant shall be the date for commencement of the warranty period.

.7 Commencement of Lien Periods: the date of publication of the certificate of Substantial Performance of the Work shall be the date for commencement of the lien period, under the Construction Act.

.8 Final Payment: When Owner and Consultant consider final deficiencies and defects have been corrected and it appears requirements of Contract have been completed, make application for final payment.

.9 Payment of Hold-back: After issuance of certificate of Substantial Performance of the Work, submit an application for payment of hold-back amount. The hold-back amount will be released in compliance with the new Construction Act.

1.4 CLOSEOUT SUBMITTALS

.1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.2 Revise content of documents as required by the Consultant.

.3 Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant, Two (2) final copies of operating and maintenance manuals and one (1) electronic copy in a form that can be downloaded and stored.

.4 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.5 If requested, furnish evidence as to type, source and quality of products provided.

.6 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.7 Pay costs of transportation.

1.5 OPERATION AND MAINTENANCE MANUAL FORMAT

.1 Construction Manager to be responsible for overall submission of Operation and Maintenance Manuals.

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

.3 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 8.5 x 11 inch with spine and face pockets.

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

.5 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

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

.7 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

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

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

.10 Provide 1:1 scaled drawing files in .dwg AutoCAD format and in PDF format on CD-ROM. Architect and Engineering Consultants will be responsible for the “As-Built Record Drawings” pertaining to their individual discipline and provide the AutoCadd and PDF files to the Construction Manager for this purpose.

1.6 CONTENTS - EACH VOLUME

.1 Table of Contents: provide title of project;

.1 Date of submission;

.2 Names, addresses, and telephone numbers of Consultant, Construction Manager, and Sub-trade Contractor with name of responsible parties; and

.3 Schedule of products and systems, indexed to content of volume.

.2 For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00.

.4 Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Certificate of Acceptance: Relevant certificates issued by authorities having jurisdiction, and Consultant/Engineers including code compliance certificates and life safety systems performance certificate.

.6 Training: Refer to Section 01 79 00.

1.7 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of black line opaque drawings, and within the Project Manual, provided by Consultant.

.2 Annotate with coloured felt tip marking pens, maintaining separate colours for each major system, for recording changed information.

.3 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.

.4 Contract drawings and shop drawings: legibly mark each item to 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 appurtenances, referenced to permanent surface improvements.
- .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
- .4 Field changes of dimension and detail.
- .5 Changes made by change orders.
- .6 Details not on original Contract Drawings.
- .7 References to related shop drawings and modifications.

.5 Specifications: legibly mark each item to record actual construction, including:

- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
- .2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, inspection certifications, and field test records, required by individual specifications sections.

1.8 RECORD (AS-BUILT) DOCUMENTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for the Consultant, and Owner, one record copy of:

- .1 Contract Drawings.
- .2 Specifications.
- .3 Addenda.
- .4 Change Orders and other modifications to the Contract.
- .5 Reviewed shop drawings, product data, and samples.
- .6 Field test records.
- .7 Inspection certificates.
- .8 Manufacturer's certificates.

.2 Store as-built documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label as-built documents and file in accordance with section number listings in List of Contents of the Project Manual. Label each document "AS-BUILT DOCUMENTS" in neat, large, printed letters.

.4 Maintain as-built documents in clean, dry and legible condition. Do not use as-built documents for construction purposes.

.5 Keep as-built documents and samples available for inspection by Consultant.

1.9 RECORD DOCUMENTS

.1 Prior to Substantial Performance of the Work, provide to the Consultants all changes to the contract and other specific information such as buried depths, locations of services and other data for recording purposes in order for the Consultants to provide this information on the autocadd drawings. The Consultants will provide a disc or submit the “As-Built Record drawings in the following formats for the records of the Owner as follows:

.1 Drawings: AutoCAD latest Release.

.2 Drawings and Specifications: Adobe Acrobat.

.2 Mark revised documents as "RECORD DOCUMENTS". Include all revisions, with special emphasis on mechanical, electrical, structural steel, and reinforced concrete.

.3 Submit completed record documents to Construction Manager for submission to the Owner.

1.10 WARRANTIES

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

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work.

.4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.

.5 Verify that documents are in proper form, contain full information, and are notarized.

.6 Co-execute submittals when required.

.7 Retain warranties until time specified for submittals.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Equipment and systems.

.2 Materials and finishes.

.3 Spare parts.

.4 Maintenance manuals.

.5 Special tools.

.6 Storage, handling and protection.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 Section 01 91 00 - Commissioning.

1.3 EQUIPMENT AND SYSTEMS

.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 Sub-trade 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 test and balancing reports.

.15 Additional requirements: As specified in individual specification sections.

Part 2 Products

2.1 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, 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 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Building Envelope: include copies of drawings of building envelope components, illustrating the interface with similar or dissimilar items to provide an effective air, vapour and thermal barrier between indoor and outdoor environments. Include an outline of requirements for regular inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.

.5 Additional Requirements: as specified in individual specifications sections.

2.2 SPARE PARTS

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

.4 Obtain receipt for delivered products and submit prior to final payment.

2.3 MAINTENANCE MATERIALS

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

.4 Obtain receipt for delivered products and submit prior to final payment.

2.4 SPECIAL TOOLS

.1 Provide special tools, in quantities specified in individual specification section.

.2 Provide items with tags identifying their associated function and equipment.

.3 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

Part 3 Execution

3.1 DELIVER TO SITE

.1 Deliver to location as directed; place and store.

3.2 STORAGE, HANDLING AND PROTECTION

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and to satisfaction of Consultant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Procedures for demonstration and instruction of Products, equipment and systems to Owner's personnel.

.2 Seminars and demonstrations.

1.2 RELATED SECTIONS

.1 Section 01 91 00 - Commissioning.

1.3 DESCRIPTION

.1 Demonstrate scheduled operation and maintenance of equipment and building envelope systems to Owner's personnel two (2) weeks prior to date of substantial performance.

.2 Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.4 COMPONENT DEMONSTRATION

.1 Manufacturer to provide authorized representative to demonstrate operation of equipment and systems.

.2 Instruct Owner's personnel, and provide written report that demonstration and instructions have been completed.

1.5 SUBMITTALS

.1 Submit schedule of time and date for demonstration of each item of equipment and each system two (2) weeks prior to designated dates, for Consultant's approval.

.2 Submit reports within one (1) week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.

.3 Give time and date of each demonstration, with list of persons present.

1.6 CONDITIONS FOR DEMONSTRATIONS

.1 Equipment has been inspected and put into operation.

.2 Testing, adjusting, and balancing has been performed in accordance with Section 01 91 00, and equipment and systems are fully operational.

.3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 PREPARATION

.1 Verify that suitable conditions for demonstration and instructions are available.

.2 Verify that designated personnel are present.

.3 Prepare agendas and outlines.

.4 Establish seminar organization.

.5 Explain component design and operational philosophy and strategy.

.6 Develop equipment presentations.

.7 Present system demonstrations.

.8 Accept and respond to seminar and demonstration questions with appropriate answers.

3.2 PREPARATION OF AGENDAS AND OUTLINES

.1 Prepare agendas and outlines including the following:

.1 Equipment and systems to be included in seminar presentations.
.2 Name of companies and representatives presenting at seminars.
.3 Outline of each seminar's content.
.4 Time and date allocated to each system and item of equipment.
.5 Provide separate agenda for each system

3.3 SEMINAR ORGANIZATION

.1 Coordinate content and presentations for seminars.

.2 Coordinate individual presentations and ensure representatives scheduled to present at seminars are in attendance.

.3 Arrange for presentation leaders familiar with the design, operation, maintenance and troubleshooting of the equipment and systems. Where a single person is not familiar with all aspects of the equipment or system, arrange for specialists familiar with each aspect.

.4 Coordinate proposed dates for seminars with Owner and select mutually agreeable dates.

3.4 EXPLANATION OF DESIGN STRATEGY

.1 Explain design philosophy of each system. Include following information:

.1 An overview of how system is intended to operate.

.2 Description of design parameters, constraints and operational requirements.

.3 Description of system operation strategies.

.4 Information to help in identifying and troubleshooting system problems.

3.5 DEMONSTRATION AND INSTRUCTIONS

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment at scheduled and/or agreed upon times.

.2 Instruct personnel in all phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.

.3 Instruct personnel on control and maintenance of sensory equipment and operational equipment associated with maintaining energy efficiency and longevity of service.

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

.5 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Commissioning, testing and documentation.

.2 Audit testing and the commissioning auditor.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 70 00 - Examination and Preparation.

.3 Section 01 75 16 - Start-up Procedures.

.4 Section 01 75 19 - Testing, Adjusting and Balancing.

.5 Section 01 79 00 - Demonstration and Training.

1.3 DEFINITIONS, ROLES AND RESPONSIBILITIES

.1 Commissioning: The process for achieving, verifying, and documenting that the facility and its systems are planned, designed, installed, and tested to ensure that they meet the original project requirements established by the Consultant.

.2 Commissioning Team:

.1 Owner's Representative: Representative of the Owner, as defined in the Agreement. This person could be the Project Manager, paid by the Owner.

.2 Consultant: Consultant, as defined in the Agreement.

.3 Commissioning Manager: Party engaged by the Contractor to lead commissioning activities, and coordinate other team members.

.4 Construction Manager’s Representatives: Representatives of the Construction Manager, including any sub-contractors whose scope of work includes items requiring commissioning. These individuals are the sub-trades retained for this contract by the Construction Manager.

.5 Commissioning Auditor: Party engaged by the Owner to audit or verify results assembled by the Commissioning Team. This person may be a specialist brought in after all work is performed; or if there is a problem, to assist or adjudicate; and is paid directly by the Owner.

.6 Testing Agency: Specialty agency engaged by the Owner to perform tests on components or systems to verify conformance to Owner's requirements or specified requirements. Payment to Testing Agency (Agencies) to be made by Contractor out of the Cash Allowance for that purpose.

.3 Commissioning Documents:

.1 Commissioning Plan: A project-specific document which defines the scope and approach to commissioning of this facility.

.2 Submittal: Contract submittal, as specified in Contract Documents.

.3 Static check certificate: A document used to verify equipment data actually installed, prior to startup or operation.

.4 Operating check certificate. A document used to verify equipment operation, including performance statistics.

.5 Startup Reports: Report prepared by equipment startup personnel, including start-up sequence, and performance statistics. Refer to Section 01 75 16.

.6 Balancing Report: Report prepared by the balancing agency, indicating initial and final system performance, to Section 01 75 19.

.7 Maintenance Manual: A document containing detailed descriptions and technical information about start-up, operation and maintenance of equipment, to Section 01 78 40.

1.4 METHODOLOGY

.1 The Commissioning Manager shall develop a Commissioning Plan, including as a minimum the management of commissioning meetings, and the management of project-specific commissioning documents.

.2 Commissioning Plan to include:

.1 Assembly of owner's requirements, including design criteria, performance goals, budgets, and schedules.

.2 Scheduling and chairing of commissioning meetings between team members.

.3 Development of static and operating check certificates for individual equipment.

.4 Assembly of commissioning reports, including testing and balancing reports, maintenance manuals, startup reports, and testing reports.

.5 Verification of data by testing agency.

.6 Audit procedure, to be performed in the event of dispute or failure.

.3 Execute the commissioning plan.

1.5 REGULATORY REQUIREMENTS

.1 Arrange for regulatory authorities to witness those commissioning start up procedures which are also required by regulatory authorities.

.2 Obtain certificates of approval and for compliance with regulations from Authorities Having Jurisdiction; include copies of certificates with start up reports.

1.6 CONTRACT COMMISSIONING REQUIREMENTS

.1 Witnessing: Allow commissioning team members to witness starting, testing, adjusting, and balancing procedures.

.2 Allow Commissioning Manager and Auditor free access to the site.

.3 Costs: Owner to pay costs associated with starting, initial testing, adjusting, and relevant instruments and supplies required to perform those duties.

.4 Employ experienced personnel for equipment startup and commissioning, who are able to interpret results of readings and tests, and report the system status in a clear and concise manner.

.5 Provide all equipment required to perform testing, balancing, and commissioning of systems. Calibrate instruments used in start up as accurate; provide calibration certificates if requested by the Commissioning Manager.

.6 Utilize equipment check certificates and other commissioning documents required by the Commissioning Manager.

.7 Verify that equipment is installed in accordance with Contract Documents, and reviewed shop drawings. Sign and date static check certificates.

.8 Do not start up equipment unless static check sheets have been completed and submitted.

.9 Complete in detail, and sign operating check certificates.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 COMMISSION TESTING

.1 Allow for work, effort, and associated costs necessary to assist the Sub-trade Contractor appointed and remunerated Commissioning Manager, for fulfilment of a commission testing process of the facility and Work.

.2 Coordinate, cooperate, and harmonize efforts with the Commissioning Manager.

.3 Commission testing will include a random testing and evaluation process as determined by the Owner and the Commissioning Manager.

.4 System and device checks to be suitably logged, tabulated, signed, and incorporated into project Operating and Maintenance Manuals:

.1 Prior to start of testing, provide two (2) complete sets of up-to-date contract drawings and specifications including addenda to the Commissioning Manager.

.2 Provide one (1) copy of each approved notice of change and clarification.

.3 Coordinate site visits by the Commission Manager and the affected parties during warranty periods.

.5 The commissioning process will not:

.1 preclude the duties and responsibilities described in the Contract Documents nor the requirements and obligations of the Contract,

.2 circumvent any required warranties,

.3 relieve the Sub-trade Contractor from warranty requirements, responsibilities, or obligations.

.6 Prior to commission testing, perform the following and provide copies to the Commissioning Manager, of component and assembly Contract Document compliance:

.1 Static test certificates.

.2 Equipment operating certificates.

.3 Three (3) copies of valve tag list.

.4 Inspection certificates from authorities having jurisdiction.

.5 Required copies of shop drawings.

.6 Manufacturer's operating and maintenance brochures of all major equipment.

.7 Ensure all systems have been started, adjusted to design criteria, and are functionally operational, ready for independent testing.

.8 Cooperate with the Commissioning Manager in advance of activating operating systems.

.9 Test results that illustrate failure to conform to the Contract Documents, may result in the Owner arranging and paying to correct the Work at the Owner's discretion, and recovering all associated costs from the Sub-trade Contractor.

3.2 AUDIT TESTING AND THE COMMISSIONING AUDITOR

.1 In the event of non-compliance or test failure described in the commission testing process above, comply with the following requirements, at the discretion of the Owner.

.2 Allow for work, effort, and associated costs necessary to assist an Owner appointed and remunerated Auditor, for fulfilment of a further audit testing of the facility and Work.

.3 Coordinate, cooperate, and harmonize efforts with the Auditor.

.4 Audit testing will include further random testing and evaluation as determined by the Owner, the Auditor, and the Commissioning Manager.

.5 Suitably log, tabulate, and incorporate signed system and device check certificates into Operating and Maintenance Manuals.

.6 Coordinate site visits by the Auditor, Commission Manager and the affected parties during warranty periods.

.7 The audit process will not:

.1 preclude the duties and responsibilities described in the Contract nor the requirements and obligations of the Contract,

.2 circumvent any required warranties,

.3 relieve the Contractor from warranty requirements, responsibilities, or obligations.

.8 Cooperate with the Auditor prior to testing of operating systems.

.9 Test results that demonstrate failure to conform to the Contract Documents, may result in the following, at the Owner's sole discretion:

.1 Complete rejection of the subject component, assembly, or system.

.2 Removal of defective items from the Work.

.3 An adjustment credit to the Contract Price for the Owner's estimated value of the subject item plus remuneration for associated damages and inconvenience.

.4 Provision of a suitable substitute Product in place of the defective Product.

.5 Substituted Products will be required to be commissioned and audited and undergo the same scrutiny as described for commission testing and audit testing described above.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Alteration project procedures.

.2 Disposal of materials.

.3 Storage of removed materials.

.4 Identification of utilities.

.5 Refer to items schedule at end of section and as indicated.

1.2 RELATED SECTIONS

.1 Section 01 35 26 – Environmental Protection.

.2 Section 01 35 41 – Waste Management and Disposal.

.3 Section 01 73 30 - Cutting and Patching.

.4 Electrical Drawings, Mechanical Drawings and Civil Engineering Drawings showing location of existing services.

1.3 DESIGNATED SUBSTANCES

.1 A Designated Substance Report has been prepared for this property. The report is provided on the Architect's website. It is proposed because a number of years have passed since the report was prepared that the property be reassessed for mould (in particular) but for other substances as well that may have been either overlooked or developed since the time of the original report.

.2 See Section 01 21 00 Allowances for work to be done to identify mould and other substances.

.3 The Contract for the removal of designated materials will be part of the General Contract and will precede all other work on site this Contract within the Building.

.4 See Section 01 21 00 Allowances for work to be done to remove mould and other possible substances.

1.4 ALTERATION PROJECT PROCEDURES

.1 Materials: as specified in product section; match existing products and work for patching and extending work.

.2 Employ skilled and experienced installer to perform alteration work.

.3 Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

.4 Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original or as good condition.

.5 Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes. In the absence of specific direction, make path/repair virtually invisible when viewed from a distance of 3.0m.

.6 Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

.7 When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Consultant for review.

.8 Where a change of plane of 6 mm or more occurs, submit recommendation for providing a smooth transition; to Consultant for review.

.9 Patch or replace portions of existing surfaces which are damaged, lifted, discoloured, or showing other imperfections.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Sequence work to requirements of Section 01 10 00.

1.6 REGULATORY REQUIREMENTS

.1 Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection, and as further described in these documents.

.2 Obtain required permits from authorities.

.3 Do not close or obstruct egress width to any building or site exit.

.4 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.7 PROJECT CONDITIONS

.1 Conduct demolition to minimize interference with adjacent and occupied building areas.

.2 Cease operations immediately if structure appears to be in danger and notify Consultant. Do not resume operations until directed.

Part 2 Products

.1 Not Used

Part 3 Execution

3.1 PREPARATION

.1 Provide, erect, and maintain temporary barriers and partitions at locations indicated.

.2 Erect and maintain weatherproof closures for exterior openings.

.3 Protect existing materials and finishes which are not to be demolished.

.4 Prevent movement of structure; provide bracing and shoring.

.5 Notify affected utility companies before starting work and comply with their requirements.

.6 Mark location and termination of all utilities both inside the building and over the entire site area.

.7 Provide appropriate temporary signage including signage for exit or building egress.

3.2 DEMOLITION

.1 Disconnect, remove, cap, and identify designated utilities within demolition areas.

.2 Demolish in an orderly and careful manner. Protect existing supporting structural members.

.3 Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

.4 Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

.5 Remove temporary Work.

3.3 GENERAL REQUIREMENTS

.1 Notes on Drawings:

.1 See notes on drawings for demolition references.

.2 Provide temporary support on sides of all walls being removed, where new beams and lintels are being installed and where areas of existing walls are being removed.

.3 Provide temporary support below the floor structure to support the floor in areas where the floor is being removed or where sections of the floor are being opened up or modified.

.4 Take directions from the Structural Engineer and request approval of the Structural Engineer for all temporary shoring and supports, before work begins.

.2 General:

.1 Remove walls, doors, windows, frames and other features of the existing facility as shown on the drawings.

.2 Remove and hand over to the Owner, materials identified for turning over on the drawings and other salvageable items that can continue to be used by the Owner.

.3 Items not identified on the drawings to be turned over to the Owner and other items that cannot be reasonably used by the Owner, are the property of the Construction Manager and shall be removed from the site. The Construction

Manager is encouraged to recycle or re-use before taking these materials to a land fill site.

.3 Schedule

.1 Selective demolition includes those items identified on the drawings and items not specifically identified but implied or required n order to perform new work.

END OF SECTION