

Lakehead

U N I V E R S I T Y

Moksha Yoga Studio
SB14-015

955 Oliver Rd
Thunder Bay, ON
P7B 5E1

PROJECT MANUAL

ISSUED FOR TENDER
Saturday, November 22nd, 2014.

TENDER CLOSURES
Friday, December 19th, 2014

Brook McIlroy/
202-37 Cumberland St. S., Thunder Bay, ON, P7B 2T4
www.brookmcilroy.com

TENDERER'S CHECKLIST

Before submitting your tender, check the following points:

1. Has your tender been signed, sealed and witnessed? ()
2. Have you enclosed the Bid Deposit, Bid Bond? ()
3. Have you enclosed the Agreement to Bond, signed and sealed by your proposed Surety Company? ()
4. Have you indicated the number of Addenda in the Bid Form? ()
5. Have you listed your Sub-Contractors and major Suppliers? ()
6. Have you provided a letter from insurer stating ability to obtain required insurance? ()
7. Are the documents complete? ()

ARCHITECTURAL



STRUCTURAL



MECHANICAL



ELECTRICAL



DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

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DRAWING LIST:

ARCHITECTURAL

**A0 - Index and Site Plan
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STRUCTURAL

14-1829-003 S01 - Structural Details Door Opening

ELECTRICAL

**214060 - E1 Partial Floor Plans, Key Plan, Electrical Demolition, Renovation and Electrical Legend
214060 - E2 Single Line Diagram and Electrical Specifications**

MECHANICAL

**214060 - M1 Partial Main Floor Plan HVAC Demolition and Renovation
214060 - M2 Section and Details
214060 - M3 Mechanical Specifications Equipment List, Scope of Work and Sequence of Operations**

1 GENERAL INSTRUCTIONS

- 1.1 Persons and firms submitting Bids shall be engaged in the type of Work required by the Contract Documents.
- 1.2 No facilities of the Owner or Consultant, such as telephones, facsimile (fax) machines, desks or rooms, may be used by Bidders in the preparation of their Bids.
- 1.3 No cellular phones, portable facsimile machines or other such devices are permitted in the Owner's or Consultant's offices during Bid preparation.

2 BID SUBMITTAL

2.1 BIDDING SCHEDULE:

RFP Available online: **Monday, November 24th, 2014**
Mandatory Site Visit: **Wednesday, November 26th, 2014. 1:30pm**
Last Day for Questions: **Wednesday, December 10th, 2014**
Last Addenda Issued: **Friday, December 12th, 2014**

Tenders Close: **Friday, December 19th, 2014.**

- 2.2 Submit 2 hard copies of the Bid on the Bid Form provided, in a sealed opaque envelope, delivered to Lakehead University Purchasing Department, Room BB-1002A:

Before 3:00:00p.m. Local Time, Friday, December 19th, 2014.

Address Submissions to:

CONFIDENTIAL BID FOR:

Geoffrey Matte, Manager,
Purchasing and Contracts
Room BB-1002A
Lakehead University
955 Oliver Road
Thunder Bay, ON
P7B 5E1

- 2.3 "Local Time" shall mean the time as displayed on the time clock at the above address.
- 2.4 Bidders are solely responsible for the delivery and submission of their Bid in the manner and within the time prescribed. Bids which are submitted by facsimile transmission or by electronic means will not be considered.
- 2.5 Bids submitted after the time specified above will be rejected.

- 2.6 The completed Bid Form shall be without alterations or erasures. Fill in all blank spaces on the Bid Form. Amounts shall be in words as well as figures. Bid forms not completed in full, may be rejected at the discretion of the Owner. Enclose or attach documents required to be submitted with Bid.
- 2.7 Bids shall be signed and sealed by the Bidder. Signatures shall be longhand and executed by the principal duly authorized to bind the company into a Contract.
- 2.8 Amendments to a submitted Bid will be permitted if received in writing prior to Bid closing and also endorsed by the same party or parties who signed the original Bid.

3 QUERIES - ADDENDA

- 3.1 Bidders finding discrepancies or ambiguities in, or omissions from the Drawings, Specifications or other Bidding and Contract Requirements, or having doubt as to the meaning and intent of any part thereof shall contact Geoffrey Matte, at Lakehead University, by **Wednesday, December 10h, 2014** for clarification.
- 3.2 All enquiries shall be in writing and shall be directed to:

LU - Moksha Yoga Studio
Attn: Geoffrey Matte
email: gmatte@lakeheadu.ca
- 3.3 Questions will be accepted only from the Contractor. Subcontractors or suppliers shall obtain interpretations and clarifications from Contractors to whom they are Bidding.
- 3.5 Any interpretation of, or change in Bid Documents prior to Bid closing date will be made only by written addendum issued by the Consultant.
- 3.6 Information contained in Addenda supersedes and amends the Bidding and Contract Documents. Bidders shall include and allow for Addenda accordingly. Bidders shall state in the space provided on the Bid Form, the numbers of all Addenda received and included for by them in the preparation of the Bid. If no Addenda have been received, insert the word "None".
- 3.7 Neither the Owner nor the Consultant will be responsible for instructions, clarifications, or amendments communicated orally. Instructions, clarifications, or amendments which affect the Bid Documents may only be made by addendum.
- 3.8 No other interpretation or explanations shall be valid.
- 3.9 Questions will close at end of the business day at **4:30p.m. Local Time, on Wednesday, December 10th, 2014** to allow one week between issuance of Addenda (if required) and close of tender.

4 BID DOCUMENTS AVAILABILITY

- 4.1 Bid Documents are available online only, bidders may print at their own expense.
- 4.2 Upon receipt of Bid Documents, each Bidder shall verify that they are complete. Notify Owner should Bid Documents be incomplete. Immediately notify Consultant upon finding discrepancies or omissions in Bid Documents.
- 4.3 Drawings and Specification are the property of the Owner.

5 BONDS AND INSURANCE

- 5.1 Bids shall be accompanied with a Bid Bond and a letter or 'Agreement to Bond' Form from a Surety Company doing business in Canada and located in the place of the Work stating that the Surety Company will provide a Performance Bond and Labour and Materials Bond for 50 percent of the Contract price.
- 5.2 The Bid Bond shall be in the amount of 10% of the Contract Price. Certified cheques are also acceptable.
- 5.3 Endorse the Bid Bond in the name of the Owner as Obligee, signed and sealed by the principal and surety.
- 5.4 Bid Bonds and Agreements to Bond shall be valid for ninety (90) days after time and date set for Bid closing.
- 5.5 Failure of the successful Bidder to provide the Owner with the specified insurance policies and Bonds within 7 days of the award date will cause the Bid to be declared invalid at Owner's sole discretion.
- 5.6 Except where specified otherwise, all premiums shall be paid by the Bidder.
- 5.7 Refer to the Bid Form and to the Canadian Standard Construction Document CCDC2-2008, as amended.
- 5.8 Should the successful Bidder fail to enter into a Contract with the Owner or fail to produce the required Performance Bonds within 7 days of the date of acceptance of the bid, or to start work as directed, the Bid Bond will be forfeited to the Owner.
- 5.9 Proof of ability to get insurance. Include Automobile coverage. See Appendix A.

6 ALTERNATIVES

- 6.1 Submit Bid pricing for work specified in the Contract Documents. Alternative(s) may be proposed by the bidder as follows:

- .1 During the Bid period, submit proposals for alternative(s) at least 10 working days prior to Bid closing to allow for analysis and the issuance of an Addendum, should they be acceptable.
- .2 When an Addendum has not been issued, proposed alternative(s) are to be shown separately from the Bid Form, either as a appendix or in an accompanying letter so that the Bid may be accepted with or without the aforesaid alternative(s) or with preservation by the Owner of the right to accept all or any of them for a specified time after executing a Contract.
- .3 Submit each proposed alternative on corporate letterhead with sufficient information to enable Consultant to determine acceptability of alternative including as a minimum the following information:
 - .1 Alternative is referenced to a specified Product, equipment, or system
 - .2 Alternative is completely specified.
 - .3 Reason for proposing the alternative.
 - .4 Dollar amount of additions to or reductions from Bid Price, including cost of required revision to other Work.
 - .5 Differences between specified Product and proposed alternative are defined.
 - .6 Required revisions to Work to accommodate proposed alternative.
 - .7 Impact on schedule
 - .8 Trades affected
 - .9 Proposed alternatives shall be signed, dated and sealed in the same name as the person who has signed and sealed the Bid Form.
- 6.2 The Owner will not necessarily accept alternatives proposed by the bidder.
- 6.3 Base Bid price must be based on specified Products, equipment or systems. Bids will be rejected if alternatives are included in the Bid price.
- 6.4 The Contractor shall accept full responsibility that a proposed alternative will not exceed dimensional requirements as indicated on the Drawings, that it is compatible in all ways with other specified work, that coordination and cost of installation is included in his price for the proposed alternative and that the Contractor will be responsible for additional engineering/design requirements.

7 SUBMISSION REQUIREMENTS

- 7.1 With its Bid, the Bidder shall submit:
 - .1 The executed Bid Bond.
 - .2 The executed Agreement To Bond.
 - .3 Provide signed "Undertaking of Insurance" [standard form provided by insurance

company] stating intention to provide insurance to [Bidder] in accordance with insurance requirements of Contract Documents.

.4 All Appendices.

.5 Complete list of Subcontractors and suppliers of all major equipment, materials, and systems intended for use on the Contract.

8 APPENDICES TO THE BID FORM

8.1 Appendix A - Lakehead University Insurance and Indemnification Requirements

9 OPENING AND ACCEPTANCE OF BIDS

9.1 Once submitted a Bid may be withdrawn or changed only before time of bid closing. A bid may be withdrawn by the Bidder by written notice delivered to Geoffrey Matte, Manager Purchasing and Contracts, Room BB-1002A, Lakehead University, 955 Oliver Road, Thunder Bay, ON, P7B 5E1.

9.2 The Owner has the right to accept or reject any or all Bids without explanation. The lowest or any Bid may not necessarily be accepted.

9.3 The Owner reserves the right to make an award on an overall basis, including consideration of alternative proposals and proposed substitutions which may be offered in writing with the Bid and other requested bid enclosures, without explanation.

9.4 If the Owner decides to award the Contract to a bidder, Owner will issue the successful Bidder a written Bid Acceptance via the Consultant.

9.5 Prior to award of the Contract a meeting may be held to review the Bid and the Contractor's understanding of the scope of work, the terms and conditions which will apply and the requirements of the schedule.

9.6 The Successful Contractor shall sign a formal Contract with the Owner based on the Stipulated Price Contract specified herein.

9.7 Bidders shall not issue or make any statements or news releases concerning their bid, the bid process, the Owner's evaluation of the bids, or the Owner's award or cancellation of the bid process without the express written consent of the Owner.

9.8 This Bid shall constitute an offer by the Bidder open for acceptance with the Owner for a period of ninety (90) days, after which time, if not accepted, the bid shall be null and void. Errors in the bid, whether accidental, caused by negligence of the Bidder or otherwise shall not confer any additional rights of withdraw upon the Bidder.

10 REQUESTS FOR CLARIFICATION

10.1 The Consultant may contact any one or more bidders to request clarification without any obligation to contact other bidders. Such additional clarification shall be provided promptly by the bidder to the Consultant.

10.2 Requests for clarification shall not be construed as bid acceptance.

11 QUALIFICATIONS OF BIDDERS

11.1 Lakehead University may make such investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Corporation all such information and data for the purpose as the Corporation may request. The Corporation reserves the right to reject any Bid if the evidence submitted by or investigation of such Bidder fails to satisfy the Corporation that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work as contemplated therein.

12 BID INELIGIBILITY

12.1 A Bid which is unsigned, improperly completed, signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations or irregularities of any kind may not be considered, at the discretion of the Owner.

12.2 Bids shall be for a Stipulated Lump Sum without escalation clauses. Bids containing escalation clauses will be considered noncompliant.

12.3 Bids that contain prices which appear to be so unbalanced as to likely affect adversely the interests of the Owner, may be rejected.

12.4 Bids not containing enclosures listed in 'Submission Requirements' specified in this Section may be declared noncompliant.

12.5 The Owner will notify bidders who have submitted bids that have been declared noncompliant and have been rejected within a reasonable time after bid closing.

13 TAXES

13.1 Refer to Bid Form and General Conditions of the Contract, as amended by Supplementary Conditions regarding inclusion of taxes.

13.2 The Harmonized Sales Tax (HST) is not to be considered an applicable tax for the purpose of this Contract. Bidders shall therefore not include any amount in their Bid prices for the HST. The successful Contractor shall bill the Owner, upon each progress payment certification, the appropriate amount of HST the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract and will therefore not affect the Contract Price.

- 13.3 The Bidder shall include sales tax in accordance with current sales tax legislation taking into account any changes that have been made known by the Government and that will occur during the life of the Contract.
- 13.4 If sales taxes are increased or decreased, or other amendments are made in the legislation during the course of the Contract that alter tax amounts carried in the Contract price, an adjustment will be made accordingly to the Total Contract Price.
- 13.5 The Contractor shall keep records and invoices of accounts subject to Harmonized Sales Tax for the purpose of establishing taxes paid and for substantiation in the event of changes to the tax legislation during the course of the Contract.
- 13.6 The Bidder shall contact the Sales Tax authorities and determine what the applicable taxes are and the procedures for tax exemption and/or refunding and include related administrative costs in the Bid.

14 MANDATORY PRE-BID MEETING/SITE TOUR

- 14.1 A **Mandatory** Pre-bid Meeting/Site Tour will be held for the benefit of Bidders to familiarize themselves with the site and to answer questions regarding the Bid Documents.
- 14.2 The **Mandatory** Pre-bid Meeting/Site Tour will be held at:

**955 Oliver Road
Lakehead University
1:30pm**

**Attendees are to meet at the Upper Lobby of The Saunders Building
near the Control Desk.**

- 14.3 Pre-bid Meeting/Site tour is mandatory for all General Contract Bidders. Subcontractors and Suppliers may attend.
- 14.4 Purpose of the Pre-bid Meeting/Site Tour is to answer questions regarding the nature of the Work or the Bid and Contract Documents, access to site, work area and tenant coordination; such questions shall be submitted to Geoffrey Matte and, where necessary, written clarification and/or additional information will be issued in the form of Addenda posted in the same manner as the original, and directly to all Bidders who have obtained Bid Documents.

END OF SECTION

1 NAME OF BIDDER: _____

BID FOR:
LU - MOKSHA YOGA
LAKEHEAD UNIVERSITY, THUNDER BAY, ONTARIO

TO: GEOFFREY MATTE
MANAGER, PURCHASING AND CONTRACTS
BRAUN BUILDING - ROOM BB-1002A
LAKEHEAD UNIVERSITY PURCHASING DEPARTMENT
955 OLIVER ROAD
THUNDER BAY, ONTARIO P7B 5E1

2 BID PRICE

2.1 The undersigned (hereinafter referred to as "Contractor") declares that they have carefully examined the Bid Documents and do hereby accept the same as part and parcel of the Contract and propose to provide all labour, supervision, materials, products, equipment and all other services for the proper completion of the Work of the referenced Contract, in accordance with Conditions, Drawings and Specifications included with the Bid Documents, for the Stipulated Contract Price (hereinafter referred to as "Bid Price") of :

_____ Dollars

(\$ _____) in Canadian funds which includes all prime costs, allowances, freight, duties and government excise or sales taxes in force on this date, except the Goods and Services Tax and HST and as otherwise provided in the Bidding Documents.

2.2 The Contractor agrees that this Bid is open to acceptance for a period of ninety (90) days from the Bid closing date.

2.3 The above stated Bid price includes fully for all increases, for whatever cause, in cost or price of labour, materials, products, equipment, or consumables. Escalation shall not apply for the duration of the Contract.

2.4 No allowances or extra consideration on behalf of the Contractor will be allowed by the Owner by reason of additional costs, damages or other difficulties incurred by the Contractor for failure to have fully investigated and determined conditions affecting the Work.

3 SCHEDULE

3.1 The Contractor agrees that "time is of the essence" in the Contract and has examined the Drawings and Specifications and the site of the proposed Work and has satisfied

themselves as to their ability and the ability of the Subcontractors and suppliers that they will execute and perform the Work in accordance with the Bid Documents on or before the dates specified in Section 01 11 00 - Summary of Work, 01 14 00 - Work Restrictions & 01 32 13 - Schedule of Division 1.

- 3.2 It is understood and agreed that the Bid Price stated herein includes all costs on account of premium time or overtime work required in order to meet the completion date, whether or not such work is done by the Contractor's own forces or by their Subcontractors.

4 DOCUMENTS AND ADDENDA

- 4.1 The Contractor submits that they have thoroughly reviewed the Instructions to Bidders, Bid Form, Conditions of the Contract, Specifications, Drawings, and the following Addenda No. _____ to _____ inclusive and hereby accepts and agrees to all provisions and conditions stated therein and has included fully for all requirements in the Bid Price:

Note: If no addenda have been received write in "NONE"

5 SITE EXAMINATION

- 5.1 Contractor warrants that:

.1 the Contractor has visited and assessed the site prior to submitting a bid, and;

.2 that the Contractor and the Subcontractors named by the Contractor are familiar with all matters discussed at any bidder's site meeting, and the Contractor and the subcontractors named by the Contractor are familiar with all visible, known or reasonable inferable site conditions.

- 5.2 No claims for extra payment will be allowed for extra work made necessary or difficulties encountered due to conditions of the site which were visible upon or reasonably inferable from an examination of the site, and the Contract Documents prior to the closing of the bids. Execution of the form of Contract shall be deemed a waiver of all claims for extra payment due to any visible or reasonably inferable condition of the site existing prior to the closing of bids.

6 ALLOWANCE(S)

- 6.1 None.

7 LIST OF SUBCONTRACTORS AND SUPPLIERS

- 7.1 The following are Subcontractors and suppliers we propose to use for the items of Work listed hereunder and upon which the Bid is based.
- 7.2 The list is subject to the approval of the Owner and no changes from this list will be allowed without the Owners written permission.

	<u>Section of Work</u>	<u>Name</u>
.1	Division 02 - Demolition and Removals:	_____
.2	Division 04 - Masonry	_____
.3	Division 07 - Thermal and Moisture Protection	_____
.4	Division 08 - Openings (doors)	_____
.5	Division 09 - Finishes	_____
.6	Division 23 - Heating, Venitilating	_____
.7	Division 26 - Electrical	_____

Note: If work is performed by Bidder, write in "Own Forces".

9 EXECUTE CONTRACT

- 9.1 The Contractor agrees that if this Bid is acceptable to the Owner, they will:
 - .1 Accept a Letter of Award as authority to commence work before executing a formal Contract.
 - .2 If required by Owner, execute a formal Contract with the Owner in accordance with the conditions of the Bid Documents.
 - .3 Coordinate with Project Manager for submission of Notice of Project.
 - .4 Furnish within seven (7) days, certified copies of insurance policies as required by the Bid and Contract Documents.
 - .5 Furnish within seven (7) days, a Certificate of Clearance from the Workplace Safety and Insurance Board.
 - .6 Furnish within seven (7) days, certified Bonds as required by the Bid and Contract Documents.

- .7 Submit one month prior to the first application for payment, a cash flow schedule by month for the duration of the Contract, based on net payments. Identify holdback releases.

10 DECLARATION OF TENDER

- 10.1 The tender declares that no person, firm or corporation other than the Tenderer has any interest in the tender or in the proposed Contract for which this tender is made.
- 10.2 The Tenderer declares that this tender is made without any connection, comparison of figures or arrangement with, or knowledge of, any other corporation, firm person making a tender for the same Work and is in all respects fair and without collusion or fraud.

11 ADDRESS, LEGAL STATUS, AND SIGNATURE OF BIDDER

11.1 The Contractor does hereby designate the address, given below as the legal address to which all notices, directions or other communication may be served or mailed:

Street _____

City _____ Province _____

Postal Code _____ Tel. _____ Fax _____

Email _____

11.2 Contact for questions relating to this Bid:

Name _____ Title _____

11.3 The undersigned does hereby declare that the Bidder has legal status in the Province of Ontario.

11.4 This Bid is submitted under the seal in the name:

(Company Name - Typed)

Seal

By _____
(Signature)

Name _____ Title _____
(Typed)

Signed and sealed this _____ Day of _____, 2014.

END OF DOCUMENT

Indemnify and hold harmless the Owner from and against claims by third parties that arise out of, or are attributable to, performance of the work provided that such claims are:

1. attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property, and
2. caused by negligent acts or omissions of the contractor or anyone for whose acts the contractor may be liable, and
3. made in writing within the period prescribed by the Ontario limitation statute from the date of Substantial Performance of the Work.

Indemnification shall be limited to \$5,000,000 per occurrence from the commencement of the work until Substantial Performance of the Work, and thereafter to an aggregate limit of \$5,000,000.

Provide, maintain, and pay for the insurance coverage specified below. The duration of each insurance policy shall be from the date of commencement of the work until the date of the final certificate for payment. Prior to commencement of the work and upon the placement, renewal, amendment, or extension of all or any part of the insurance, promptly provide the Owner with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.

1. **General Liability Insurance:**

General liability insurance shall be provided by the contractor with limits of not less than **\$5,000,000 per occurrence** and with a property damage deductible not exceeding \$2,500. Contractor's policy shall be endorsed to include Lakehead University as a "Named Insured" only with respect to this project and for liability arising out of the contractor's operations.

2. **Automobile Liability Insurance:**

Automobile liability insurance in respect of licensed vehicles shall have limits of not less than **\$5,000,000 inclusive per occurrence** for bodily injury, death, and damage to property, covering all licensed vehicles owned or leased by the contractor, and endorsed to provide the Owner with not less than 15 days notice in writing in advance of any cancellation, change or amendment restricting coverage.

Pay deductible amounts under policies.

If the contractor fails to provide or maintain the specified insurance coverage, then the Owner shall have the right to provide and maintain such insurance coverage and will so notify the contractor. The contractor shall pay the cost thereof to the Owner on demand or the Owner may deduct the cost from the amount which is due or may become due to the contractor.

All insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the place of the work.

Date: _____, 20__

“Name & Address of Surety Company”

Lakehead University
955 Oliver Road
Thunder Bay, Ontario P7B 5E1

Sir/Madam:

CONTRACT NO. Lakehead University - Health & Councelling Centre Renovation - 12-026.13

Should Lakehead University [hereinafter referred to as the “Owner”] accept the Tender of and execute an Agreement with _____ [hereinafter referred to as the “Tenderer”], we, the undersigned Surety Company, do hereby consent and agree to become bound to the Owner as Surety for the Tenderer in any of the following Bonds, on the standard format of the Canadian Construction Association.

1. Performance Bond and Labour and Materials Bond for 50 percent of the Contract price.

We, the undersigned Surety Company, agree to furnish the Owner with the said Bonds within 7 days after written notification that the Owner has requested the said Bonds. We hereby further declare that our Company is legally entitled to do business in the Province of Ontario.

Yours Truly,

[name of Surety Company]

[address]

[seal]

Note: This Agreement must be executed on behalf of the Surety Company by its authorized Officers under the Company’s corporate seal.

The Standard Construction Document for Stipulated Price Contract, 2008 English version, consisting of the Agreement Between Owner and Contractor, Definitions, and General Conditions of the Stipulated Price Contract, Parts 1 to 12 inclusive, governing same is hereby made part of these Contract Documents, with the following amendments, additions and modifications. Where these amendments, additions, and modifications specifically reference a change to the Agreement, Definitions, or General Conditions, these amendments, additions and modifications shall govern.

ARTICLE A-6 – RECEIPT AND ADDRESSES FOR NOTICES IN WRITING

Delete Article A-6.1 and substitute new article 6.1:

- 6.1 Notices in Writing between the parties or between them and the Consultant shall be considered to have been received by the addressee on the date of receipt if delivered by hand or by commercial courier or if sent during normal business hours by fax and addressed as set out below. Such Notices in Writing will be deemed to be received by the addressee on the next business day if sent by fax after normal business hours or if sent by overnight commercial courier. Such Notices in Writing will be deemed to be received by the addressee on the fifth Working Day following the date of mailing, if sent by pre-paid registered post, when addressed as set out below. An address for a party may be changed by Notice in Writing to the other party setting out the new address in accordance with this Article.

DEFINITIONS

Add the following definition:

- 19a. Submittals
Submittals are documents or items required by the Contract Documents to be provided by the Contractor, such as:
- Shop Drawings, samples, models, mock-ups to indicate details or characteristics, before the portion of the Work that they represent can be incorporated into the Work; and
 - As-built drawings and manuals to provide instructions to the operation and maintenance of the Work.

1 GENERAL

- 1.1 Where a General Condition or paragraph of the General Conditions of the Stipulated Price Contract is deleted by these Supplementary Conditions, the numbering of the remaining General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained, unused.

GC 1.1 CONTRACT DOCUMENTS

- .1 Add to the end of subparagraph 1.1.2.2

Except where the Consultant shall be indemnified as a third party beneficiary as provided in subparagraphs 9.2.7.4, 9.5.3.4 and in 12.1.3.

- .2 Add new subparagraph 1.1.7.5:

1.1.7.5 In case of discrepancies, noted materials and annotations shall take precedence over graphic indications in the Contract Documents.

GC 2.2 ROLE OF THE CONSULTANT

- .1 Add at the end of paragraph 2.2.9. "The Owner and the Contractor shall waive any claims against the Consultant arising out of the making of such interpretations and findings made in accordance with paragraphs 2.2.7., 2.2.8. and 2.2.9".
- .2 Delete the comma after the word "submittals" and add the words "which are provided" before the words "in accordance" in paragraph 2.2.14.

GC 2.4 DEFECTIVE WORK

- .1 Add new subparagraphs 2.4.1.1 and 2.4.1.2:

2.4.1.1 The Contractor shall rectify, in a manner acceptable to the Owner and the Consultant, all defective work and deficiencies throughout the Work, whether or not they are specifically identified by the Consultant.

2.4.1.2 The Contractor shall prioritize the correction of any defective work which, in the sole discretion of the Owner, adversely affects the day to day operation of the Owner.

GC 3.1 CONTROL OF THE WORK

- .1 Add new paragraph 3.1.3:

3.1.3 Prior to commencing individual procurement, fabrication and construction activities, the Contractor shall verify, at the Place of the Work, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the Work and shall further carefully compare such field measurements and conditions with the requirements of the Contract Documents. Where dimensions are not included or contradictions exist, or exact locations are not apparent, the Contractor shall immediately notify the Consultant in writing and obtain written instructions from the Consultant before proceeding with any part of the affected work.

GC 3.4 DOCUMENT REVIEW

- .1 Delete paragraph 3.4.1 in its entirety and substitute new paragraph 3.4.1:

3.4.1 The Contractor shall review the Contract Documents and shall report promptly to the Consultant any error, inconsistency or omission the Contractor may discover. Such review by the Contractor shall comply with the standard of care described in paragraph 3.14.1 of the Contract. Except for its obligation to make such review and report the result, the Contractor does not assume any responsibility to the Owner or to the Consultant for the accuracy of the Contract Documents. The Contractor shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the Contract Documents, which the Contractor could not reasonably have discovered. If the Contractor does discover any error, inconsistency or omission in the Contract Documents, the Contractor shall not proceed with the work affected until the Contractor has received corrected or missing information from the Consultant.

GC 3.8 LABOUR AND PRODUCTS

- .1 Add new paragraph 3.8.4:

3.8.4 The Contractor is responsible for the safe on-site storage of Products and their protection (including Products supplied by the Owner and other contractors to be installed under the Contract) in such ways as to avoid dangerous conditions or contamination to the Products or other persons or property and in locations at the Place of the Work to the satisfaction of the Owner and the Consultant. The Owner shall provide all relevant information on the Products to be supplied by the Owner.

GC 3.10 SHOP DRAWINGS

- .1 Add the words "AND OTHER SUBMITTALS" to the Title after SHOP DRAWINGS.
- .2 Add "and Submittals" after the words "Shop Drawings" in paragraphs 3.10.1, 3.10.2, 3.10.4, 3.10.7, 3.10.8, 3.10.8.2, 3.10.9, 3.10.10, 3.10.11, and 3.10.12.
- .3 Delete 3.10.3 in its entirety and substitute new paragraph 3.10.3

GC.3.10.3 Prior to the first application for payment, the Contractor and the Consultant shall jointly prepare a schedule of the dates for submission and return of Shop Drawings and any Submittals.

- .4 Delete the words "with reasonable promptness so as to cause no delay in the performance of the Work" and replace with "within 10 working days or such longer period as may be reasonably required" in paragraph 3.10.12.

GC 3.14 PERFORMANCE BY CONTRACTOR

.1 Add new General Condition 3.14.1

3.14.1 In performing its services and obligations under the Contract, the Contractor shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects. The Contractor acknowledges and agrees that throughout the Contract, the Contractor's obligations, duties and responsibilities shall be interpreted in accordance with this standard. The Contractor shall exercise the same standard of due care and diligence in respect of any Products, personnel, or procedures which it may recommend to the Owner.

.2 Add new General Condition 3.14.2

3.14.2 The Contractor further represents, covenants and warrants to the Owner that:

- .1 The personnel it assigns to the Project are appropriately experienced;
- .2 It has a sufficient staff of qualified and competent personnel to replace its designated supervisor and project manager, subject to the Owner's approval, in the event of death, incapacity, removal or resignation.

GC 4.1 CASH ALLOWANCES

.1 Delete paragraph 4.1.4 in its entirety and substitute new paragraph 4.1.4:

4.1.4 Where costs under a cash allowance exceed the amount of the allowance, unexpended amounts from other cash allowances shall be reallocated at the Consultant's direction to cover the shortfall.

.2 Delete paragraph 4.1.5 in its entirety and substitute new paragraph 4.1.5:

4.1.5. The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, shall be deducted from the Contract Price by Change Order.

.3 Delete paragraph 4.1.7 in its entirety and substitute new paragraph 4.1.7.

4.1.7 At the commencement of the Work, the Contractor shall prepare for the review and acceptance of the Owner and the Consultant, a schedule indicating the times, within the construction schedule referred to in GC 3.5, that items called for under cash allowances and items that are specified to be Owner purchased and Contractor installed or hooked up are required at the site to avoid delaying the progress of the Work.

- .4 Add new paragraph 4.1.8:

4.1.8 The Owner reserves the right to call, or to have the Contractor call, for competitive bids for portions of the Work, to be paid for from cash allowances.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

- .1 Add new subparagraph 6.4.5:

6.4.5 The Contractor confirms that, prior to bidding the Project, it carefully investigated the Place of the Work and applied to that investigation the degree of care and skill described in paragraph 3.14.1, given the amount of time provided between the issue of the bid documents and the actual closing of bids, the degree of access provided to the Contractor prior to submission of bid, and the sufficiency and completeness of the information provided by the Owner. The Contractor is not entitled to compensation or to an extension of the Contract Time for conditions which could reasonably have been ascertained by the Contractor by such careful investigation undertaken prior to the submission of the bid.

GC 6.5 DELAYS

- .1 Delete the period at the end of paragraph 6.5.1, and substitute the following words:

“, but excluding any consequential, indirect or special damages.”

- .2 Add new subparagraph 6.5.6.

6.5.6 If the Contractor is delayed in the performance of the Work by an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly, or by any cause within the Contractor's control, then the Contract Time shall be extended for such reasonable time as the Consultant may decide in consultation with the Contractor. The Owner shall be reimbursed by the Contractor for all reasonable costs incurred by the Owner as the result of such delay, including all services required by the Owner from the Consultant as a result of such delay by the Contractor and, in particular, the cost of the Consultant's services during the period between the date of Substantial Performance of the Work stated in Article A-1 herein as the same may be extended through the provisions of these General Conditions and any later, actual date of Substantial Performance of the Work achieved by the Contractor.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

- .1 Add the words “as noted in paragraph 6.6.3” after the words “of the claim” in paragraph 6.6.5 and add the words “and the Consultant”, at the end of paragraph 6.6.5.

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

- .1 Add the following new paragraphs 8.2.9, 8.2.10, 8.2.11, 8.2.12., 8.2.13., and 8.2.14.

8.2.9 Within five days of receipt of the notice of arbitration by the responding party under paragraph 8.2.6, the Owner and the Contractor shall give the Consultant a written notice containing:

- a) a copy of the notice of arbitration
- b) a copy of supplementary conditions 8.2.9 to 8.2.14 of this Contract, and;
- c) any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration

8.2.10 The Owner and the Contractor agree that the Consultant may elect, within ten days of receipt of the notice under paragraph 8.2.9, to become a full party to the arbitration under paragraph 8.2.6 if the Consultant:

- a) has a vested or contingent financial interest in the outcome of the arbitration;
- b) gives the notice of election to the Owner and the Contractor before the arbitrator is appointed;
- c) agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.2.6, and,
- d) agrees to be bound by the arbitral award made in the arbitration.

8.2.11 If an election is made under paragraph 8.2.10, the Consultant may participate in the appointment of the arbitrator and, notwithstanding the rules referred to in paragraph 8.2.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the notice of arbitration.

8.2.12 The arbitrator in the arbitration in which the Consultant has elected under paragraph 8.2.10 to become a full party may:

- a) on application of the Owner or the Contractor, determine whether the Consultant has satisfied the requirements of paragraph 8.2.10, and;
- b) make any procedural order considered necessary to facilitate the addition of the Consultant as a party to the arbitration.

8.2.13 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the Consultant to any sub-consultant;

8.2.14 In the event of notice of arbitration given by the Consultant to a sub-consultant,

the sub-consultant is not entitled to any election with respect to the proceeding as outlined in 8.2.10, and is deemed to be bound by the arbitration proceeding.

GC 9.1 PROTECTION OF WORK AND PROPERTY

- .1 Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1:

9.1.1.1 errors in the Contract Documents which the Contractor could not have discovered applying the standard of care described in paragraph 3.14.1;

- .2 Delete paragraph 9.1.2 in its entirety and substitute the following new paragraph 9.1.2:

9.1.2 Before commencing any Work, the Contractor shall determine the locations of all underground utilities and structures indicated in the Contract Documents, or that are discoverable by applying to an inspection of the Place of the Work the degree of care and skill described in paragraph 3.14.1.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

- .1 Add to paragraph 9.2.6 after the word “responsible”, the following new words:

or whether any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others,

- .2 Add “and the Consultant” after the word “Contractor” in subparagraph 9.2.7.4.

- .3 Add to paragraph 9.2.8 after the word “responsible”, the following new words:

or that any toxic or hazardous substances or materials already at the Place of the Work (and which were then harmless or stored, contained or otherwise dealt with in accordance with legal and regulatory requirements) were dealt with by the Contractor or anyone for whom the Contractor is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment, or material damage to the property of the Owner or others,

GC 9.5 MOULD

- .1 Add “and the Consultant” after “Contractor” in subparagraph 9.5.3.4.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- .1 Delete from the first line of paragraph 10.2.5 the word, “The” and substitute the words: “Subject to paragraph 3.14.1, the”.

GC 12.1 INDEMNIFICATION

- .1 Add new clause 12.1.1.3.

12.1.1. 3. The Contractor shall indemnify and hold harmless the Consultant, its agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings by third parties that arise out of, or are attributable to, the Contractor’s performance of the Contract, provided such claims are attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and caused by negligent acts or omissions of the Contractor or anyone for whose acts the Contractor may be liable, and made in writing within a period of 6 years from the date of Substantial Performance of the Work as set out in the certificate of Substantial Performance of the Work, or within such shorter such period as may be prescribed by any limitation statute or the province or territory of the Place of Work.

GC 12.3 WARRANTY

- .1 Delete from the first line of paragraph 12.3.2 the word, “The” and substitute the words: “Subject to paragraph 3.14.1, the...”.

END OF SECTION

1 SCOPE OF WORK

- 1.1 This Contract is for the renovation and repurposing of the existing squash court to become the Lakehead University Moksha Hot Yoga Studio.

The work includes, but is not limited to: the addition of new insulated walls with finished gypsum wall board and recessed baseboards, exposed spray insulation ceiling, flooring repairs and finishing, painting, 6' wall mirrors and a ballet barre, infill of the existing squash door and the installation of a custom door. Installation of radiant heating panels, lighting fixtures and mechanical equipment.

The contractor will be responsible for the supply and installation of all elements, coordination of work with Lakehead University staff and the application of all permits.

2 GENERAL

- 2.1 The requirements of the Articles of Agreement, Conditions of the Contract, Division 1 apply to and form all Sections of the Contract Documents and the Work.
- 2.2 Work in this Specification is divided into descriptive sections which are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and their Subcontractors. The Contractor is responsible for organizing division of labour and supply of materials essential to complete the Contract.
- 2.3 It is intended that Work supplied under these Contract Documents shall be complete and fully operational in every detail for the purpose required. Including materials not herein mentioned, but which may be found necessary to complete or perfect any portion of Work in accordance with the Contract Documents.
- 2.4 Work designated as "N.I.C." or "by Others" is not included in this Contract.
- 2.5 Specifications, Schedules and Drawings are complementary and items mentioned or indicated on one may not be mentioned or indicated on the others.
- 2.6 Mention in the specifications or indication on the drawings of materials, products, operations, or methods, requires that the Contractor provide each item mentioned or indicated of the quality or subject to the qualifications noted; perform according to the conditions stated each operation prescribed; and provide labour, materials, products, equipment and services to complete the Work.
- 2.7 Where the singular or masculine is used in the Contract Documents, it shall be read and construed as if the plural, feminine or neuter had been used when the context or the statement so requires and as required to complete the Work, and the rest of the sentence, clause, paragraph, or Article shall be construed as if all changes in grammar, gender or terminology thereby rendered necessary had been made.

- 2.8 The terms “approved”, “review”, “acceptance”, “acceptable”, “satisfactory”, “selected”, “directed”, “required”, “submit”, or similar words or phrases are used in standards or elsewhere in Contract Documents, it shall be understood, that words “by (to) the Consultant” follow, unless context provides otherwise.
- 2.9 The terms “exposed” or “exposed to view” refers to surfaces that are within the line of vision of persons from any accessible viewpoint, both within and without the building. Where any part of a surface is exposed to view, all other portions of that surface shall also be considered as exposed to view.

3 COMMENCEMENT, PROGRESS AND COMPLETION

- 3.1 Commencement of on-site work to be on Monday **January 5th, 2015**.
- 3.2 Date for substantial completion of work to be Monday **March 30th, 2015**.
- 3.3 The Bidder shall indicate any work that will not be completed by the substantial completion date prior to beginning work. Bidder shall specify completion date for any portion of the Work that may not be reasonably completed by the stipulated Substantial Completion date.
- 3.4 Final Completion of Work to be on Monday **April 13th, 2015**.

4 SECURITY

- 4.1 Be responsible for security of all areas affected by Work of this Contract until taken over by Owner. Take steps to prevent entry to the Work by unauthorized persons and guard against injury theft, fire and damage by any cause.
- 4.2 Take acceptable precautions to guard Work site, premises, materials and the public during and after working hours due to the Work of this Contract.
- 4.3 Take acceptable precautions to guard the existing entry and existing tenants property, during working hours, due to the Work of this Contract.

5 WEATHER

- 5.1 Incorporate into the Contract Schedule allowances for the number of working days lost due to inclement weather, which can be anticipated, on the basis of analysis of information available from Environment Canada, for weather conditions on and near the Site, over the last ten (10) years. The Contractor may be entitled to a schedule extension for those activities on the critical path which are delayed on account of inclement weather, assessed on a quarterly basis, by the number of days in excess of the anticipated number of working days for the quarter in question by more than 20%. No additional payment will be made on account of any such schedule extension.

Part 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section [01 56 00 Temporary Barriers and Enclosures].

1.2 ACCESS AND EGRESS

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

1.3 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with University Representative to facilitate work as stated.
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Contractor to provide their own sanitary facilities within the construction area.
- .6 Closures: protect work temporarily until permanent enclosures are completed.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to building operations, occupants and normal use of premises. Arrange with University Representative to facilitate execution of work.

1.5 EXISTING SERVICES

- .1 Notify, University Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give University Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
- .3 Provide for personnel, pedestrian and vehicular traffic.
- .4 Construct barriers in accordance with Section [01 56 00 Temporary Barriers and Enclosures].

1.6 SPECIAL REQUIREMENTS

- .1 Submit schedule in accordance with Section [01 32 13 - Schedule].
- .2 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and avenues of ingress and egress.

1.7 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking not allowed except in special areas designated on campus.

Part 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

Part 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 GENERAL

1.1 REFERENCES

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2 [2008], Stipulated Price Contract.
- .2 Project Supplementary Conditions

1.2 CASH ALLOWANCE(S)

- .1 Refer to CCDC 2, GC 4.1 and Section 00 73 00.
- .2 Include in Contract Price specified cash allowances.
- .3 Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, installation and other authorized expenses incurred in performing Work.
- .4 Contract Price, and not cash allowance, includes Contractor's overhead and profit in connection with such cash allowance.
- .5 Contract Price will be adjusted by written order to provide for excess or deficit to each cash allowance.
- .6 Where costs under a cash allowance exceed amount of allowance, Contractor will be compensated for excess incurred and substantiated plus allowance for overhead and profit as set out in Contract Documents.
- .7 Include progress payments on accounts of work authorized under cash allowances in Consultant's monthly certificate for payment.
- .8 Prepare schedule jointly with Consultant and Contractor to show when items called for under cash allowances must be authorized by Consultant for ordering purposes so that progress of Work will not be delayed.
- .9 Material cash allowances shall include payment for:
 - .1 Net cost of material.
 - .2 Applicable duties and taxes.
 - .3 Delivery to site.
 - .4 Handling at site, including unloading, uncrating, storage and hoisting.
 - .5 Protection from damage by elements or otherwise.
 - .6 Labour for installation and finishing, and other expenses required to complete installation unless otherwise indicated in other sections.

.10 Amount of each allowance, for Work specified in respective specification Sections is as follows:

1. There are no cash allowances at this time.

Part 2 PRODUCTS

- 2.1 NOT USED
.1 Not Used.

Part 3 EXECUTION

- 3.1 NOT USED
.1 Not Used.

END OF SECTION

Part 1 GENERAL

1.1 SECTION INCLUDES

- .1 Applications for progress payments.
- .2 Substantial performance procedures.
- .3 Release of hold-back procedures.
- .4 Price adjustments.

1.2 RELATED SECTIONS

- .1 Refer to CCDC 2-2008 for specific requirements.

1.3 RELATED SECTIONS

- .1 Not used.

1.4 FEES FOR CHANGES IN WORK

- .1 Allowable markups on changes to the work will be subject to the following schedule:
- .2 The contractor on work of his own forces:
 - .1 On extras: 10% overhead, 5% profit;
 - .2 On credits: 0% overhead and profit.
- .3 The contractor on work of the subcontractors:
 - .1 On extras: 10% overhead, 0% profit;
 - .2 On credits: 0% overhead and profit.
- .4 The overhead and profit are to be applied to the net value of a change after applicable credits have been deducted.

1.5 APPLICATIONS FOR PROGRESS PAYMENT

- .1 Submit a CCDC 24 electronic form using an authorized electronic signature or printed copy with an authorized signature.
- .2 Make applications for payment on account as monthly progress submissions, to be reviewed and revised as recommended by certifying consultant. Payment within 30 days after submission of reviewed and revised (if necessary) progress draw and after successful (clear) lien search.
- .3 Accompany applications with a CCDC 9A-2001 Statutory Declaration form.

- .4 Date applications for payment last day of agreed payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products Delivered to Place of Work as of that date.
- .5 Submit to Consultant for review, minimum fourteen (14) days before first application for payment, schedule of values for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment.
- .6 Submit required support documentation with applications for payment, including **Workplace Safety and Insurance Board Clearance Certificate** and a **Statutory Declaration (where Sub-trade are involved)** certifying that monies have been appropriately distributed. **Failure to submit a current WSIB clearance Certificate will result in the invoice being returned.** Holdback monies will be administered in accordance with provisions of the Construction Lien Act.

1.6 PROGRESS PAYMENT

- .1 Submit a progress payment schedule on CCDC 24 printed copy with an authorized signature or electronic form using an authorized electronic signature.
- .2 Accompany applications with a CCDC 9A-2001 - Statutory Declaration form.
- .3 Consultant will issue to Owner, no later than ten (10) days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be properly due.
- .4 If Consultant amends application, Consultant will give notification in writing giving reasons for amendment.

1.7 PROGRESSIVE RELEASE OF HOLD-BACK

- .1 Where legislation permits, if Consultant has certified that Work has been performed prior to Substantial Performance of the Work, Owner will pay hold-back amount retained for such Work, or products supplied, on day following expiration of hold-back period for such Work stipulated in lien legislation applicable to Place of the Work.
- .2 Notwithstanding provisions of preceding paragraph, and notwithstanding wording of such certificates, ensure that Subcontract Work or Products is protected pending issuance of final certificate for payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued.

1.8 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Submit a schedule of payments on CCDC 24 printed copy with an authorized signature or

electronic form using an authorized electronic signature.

- .2 Accompany applications with a CCDC 9A-2001 Statutory Declaration form.
- .3 Prepare and submit to Consultant a comprehensive list of items to be completed or corrected. Failure to include an item on the list does not alter responsibility to complete the Contract.
- .4 Request Consultant review to establish Substantial Performance of the Work.
- .5 Where permitted by local lien legislation, Contractor may apply for substantial performance of a designated portion of the Work, subject to Owner acceptance of that portion of the Work being substantially performed.
- .6 No later than ten (10) days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than seven (7) days after completing review, will notify Contractor if the Work, or the designated portion of the Work, is substantially performed.
- .7 Consultant will state in their certificate the date of Substantial Performance of the Work, or the date of the designated portion of the Work, as applicable.
- .8 Immediately following issuance of certificate of Substantial Performance of the Work, in consultation with Consultant, establish reasonable date for finishing Work.

1.9 PAYMENT OF HOLD-BACK ON SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 After issuance of Certificate of Substantial Performance of the Work:
 - .1 Submit an application for payment of hold-back amount.
 - .2 Submit sworn statement that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of the Work and for which Owner might in any way be held responsible have been paid in full, except for amounts properly retained as hold-back or as identified amount in dispute.
- .2 After receipt of application for payment and sworn statement, Consultant will issue certificate for payment of hold-back amount.
- .3 Where hold-back amount has not been placed in a separate hold-back account, Owner will, within ten (10) days prior to expiry of hold-back period stipulated in lien legislation applicable to Place of the Work, place hold-back amount in bank account in joint names of Owner and Contractor.
- .4 Amount authorized by certificate for payment of hold-back amount is due and payable on day following expiration of hold-back period stipulated in lien legislation applicable to Place of the Work.

- .1 Where lien legislation does not exist or apply, hold-back amount is due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between parties.
- .2 Owner may retain out of hold-back amount any sums required by law to satisfy any liens against Work or, if permitted by lien legislation applicable to Place of the Work, other third party monetary claims against Contractor which are enforceable against Owner.

2.0 FINAL PAYMENT

- .1 Submit an application for final payment on a CCDC 24 printed form copy with an authorized signature or electronic form using an authorized electronic signature.
- .2 Consultant will, no later than ten (10) days after receipt of an application for final payment, review Work to verify validity of application. Consultant will give notification that application is valid or give reasons why it is not valid, no later than seven (7) days after reviewing Work.
- .3 Consultant will issue final certificate for payment when application for final payment is determined valid.

END OF SECTION

1 GENERAL

- 1.1 Coordination of the Work of all Sections of the specifications as required to complete the Project is the responsibility of the Contractor.
- 1.2 Cooperate and coordinate with Other Contractors including Other Contractor's employed by Owner. Ensure that Subcontractors and trades cooperate and coordinate their work to have the Work performed expeditiously and to be satisfactory in all respects at completion. Ensure cooperation of workers in laying out and performing Work. Maintain efficient and continuous supervision.
- 1.3 Ensure that Subcontractors and trades cooperate with other subcontractors and trades whose work attaches to or is affected by their own work. Ensure that minor adjustments are made to make adjustable work fit fixed work.
- 1.4 Allow access of Owner's Other Contractors on site and to areas of Work. Cooperate and coordinate with such Other Contractors. Contractor to allow access to others for purposes of completing Work, deficiencies, clean-up, and warranty work. Schedule work to complement work of such Other Contractors.
- 1.5 Entry by the Owner's own forces and by Other Contractors shall not mean acceptance of the Work and shall not relieve the Contractor of their responsibility to complete the Contract.
- 1.6 Placing, installation, application and connection of work by the Owner's own forces or by Other Contractors on and to the Contractor's Work shall not relieve the Contractor of his responsibility to provide and maintain the specified warranties.
- 1.7 Coordinate with removals/installations specified in other Divisions and Other Contracts.
- 1.8 Coordination of the installation of systems specified in other Divisions, including the interrelating operation and functioning between components of a system and between systems, is the responsibility of those performing the work of those Divisions, with final coordination the responsibility of the Contractor.
- 1.9 Coordinate with mechanical and electrical trades to ensure protecting supporting, disconnecting, cutting off, capping, diverting, relocating or removing of existing services in areas of Work before commencement of alteration work.
- 1.10 Pay particular attention to types of ceiling construction and clearances throughout, especially where recessed fixtures are required. Coordinate work with Other Contractors and Subcontractors wherever ventilation ducts or piping installations occur to ensure that conflicts are avoided.
- 1.11 Install ceiling mounted components in accordance with final ceiling plans. Inform Consultant of conflicting installations. Install as directed.

- 1.12 Install and arrange ducts, piping, tubing, conduit, equipment, fixtures, materials and product to conserve headroom and space with minimum interference and in neat, orderly and tidy arrangement. Run pipes, ducts, tubing and conduit, vertical, horizontal and square with building grid unless otherwise indicated. Install piping, ducts, and conduit as close to underside of structure as possible unless shown otherwise.
- 1.13 Make provision for unrestricted relocation of light fixtures to replace ceiling panels at grid spaces of the same size, without interference or restriction by items located within the ceiling space.
- 1.14 Where supports or openings are to be left for the installation of various parts of the Work furnish the necessary information to those concerned in ample time so that proper provision can be made for such items. Have cutting, drilling and other remedial work, and the subsequent patching or other work required for failing to comply with this requirement, performed at a later date at no additional Cost to Owner.
- 1.15 Properly coordinate the work of the various Sections and trades, taking into account the existing installations to assure the best arrangement of pipes, conduits, ducts and mechanical, electrical and other equipment, in the available space. Under no circumstances will any extra payment be allowed due to the failure by the Contractor to coordinate the work. If required, in critical locations, prepare interference and/or installation drawings showing the work of the various Sections as well as the existing installation, and submit these drawings to the Consultant for review before the commencement of work.
- 1.16 Coordinate with mechanical and electrical trades to ensure protecting supporting, disconnecting, cutting off, capping, diverting, relocating or removing of existing services in areas of Work before commencement of alteration work.
- 1.17 In case of damage to active services on utilities, notify Consultant and respective authorities immediately and make all required repairs under direction of Consultant and respective authorities. Carry out repairs to such damaged services and utilities continuously to completion, including working beyond regular working hours.

2 METRIC DIMENSIONS

- 2.1 Not applicable, imperial dimensions utilized for this project.

3 BUILDING DIMENSIONS

- 3.1 Take necessary job dimensions for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for coordination.
- 3.2 Verify that work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by

requirements of the Drawings, and ensure that work installed in error is rectified before construction resumes.

- 3.3 Check and verify dimensions referring to the work and the interfacing of services.
- 3.4 Do not scale directly from the Drawings. If there is ambiguity or lack of information, immediately inform the Consultant. Changes through the disregarding of this clause shall be the responsibility of the Contractor.
- 3.5 All details and measurements of any work which is to fit or to conform with work installed shall be taken at the building.
- 3.6 Advise Consultant of discrepancies and if there are omissions on Drawings, particularly reflected ceiling plans and jointing patterns for surfaces finishes, which affect aesthetics, or which interfere with services, equipment or surfaces. Do not proceed with work affected by such items without direction from the Consultant.
- 3.7 Provide written requirements for site conditions and surfaces necessary for the execution of respective work, and provide setting drawings, templates and all other information necessary for the location and installation of material, holes, sleeves, inserts, anchors, accessories, fastenings, connections and access panels. Inform respective contractors whose work is affected by these requirements and preparatory work.

4 INTERFERENCE AND COORDINATION DRAWINGS

- 4.1 Coordinate placement of equipment to ensure that components will be properly accommodated within the spaces provided prior to commencement of work.
- 4.2 Prepare interference and equipment placing drawings to ensure that all components will be properly accommodated within the spaces provided. Provide copies of interference drawings to Consultant when requested by Consultant.
- 4.3 Prepare drawings to indicate coordination and methods of installation of a system with other systems where their relationship is critical. Ensure that all details of equipment apparatus, and connections are coordinated.
- 4.4 Take complete responsibility for any remedial work that results from failure to coordinate any aspect of the Work prior to its fabrication/installation.
- 4.5 Ensure that accesses and clearance required by jurisdictional authorities and/or for easy maintenance of equipment are provided in the layout of equipment and services.

5 SLEEVING AND INSERT DRAWINGS AND TEMPLATES

- 5.1 Prepare sleeving drawings for work of Divisions 21 to 28, showing size and location of all penetrations through load bearing elements. Submit sleeving drawings in the form of

- 4.4 Take complete responsibility for any remedial work that results from failure to coordinate any aspect of the Work prior to its fabrication/installation.
- 4.5 Ensure that accesses and clearance required by jurisdictional authorities and/or for easy maintenance of equipment are provided in the layout of equipment and services.

5 SLEEVING AND INSERT DRAWINGS AND TEMPLATES

- 5.1 Prepare sleeving drawings for work of Divisions 21 to 28, showing size and location of all penetrations through load bearing elements. Submit sleeving drawings in the form of 4 prints to Consultant for review not less than 15 days prior to construction of affected elements.
- 5.2 Prepare insert setting drawings for work to be cast into concrete and/or mortared into masonry elements. Submit insert setting drawings in the form of 4 prints to Consultant for review not less than 15 days prior to construction of affected elements.
- 5.3 Ensure that setting drawings, templates, and all other information necessary for the location and installation of materials, fixtures, equipment, holes, sleeves, inserts, anchors, accessories, fastenings, connections, and access panels are provided by each Section whose work requires cooperative location and installation by other Sections, and that such information is communicated to the applicable installer. Have cutting, fixing and making good to the work of Other Contractors, Subcontractors and trades required for, and make up time lost as result of, failure to comply with this requirement, at no additional cost to Owner.

END OF SECTION

1 PRE-CONSTRUCTION MEETING

- 1.1 Attend a pre-construction meeting, arranged and conducted by the Consultant.
- 1.2 Co-ordinate and organize attendance by representatives of major Subcontractors and parties in contract with the Contractor.
- 1.3 Consultant will arrange attendance of other interested parties not responsible to the Contractor.
- 1.4 Consultant will distribute copies of Agenda prior to meeting.
- 1.5 Agenda will include but not be limited to the following topics as are pertinent to the Contract.
 - .1 Review project communications procedures.
 - .2 Review contract administration requirements including submittals, payment, and change order procedures.
 - .3 Identify all critical points on construction schedule for positive action.
 - .4 Identify any product availability problems and substitution requests.
 - .5 Establish site arrangements and temporary facilities.
 - .6 Review Consultants's inspection requirements.
 - .7 Review any points which, in Owner's, Consultants, and Contractor's opinion, require clarification.
 - .8 Take Inventory of the existing furniture that will be relocated to the new renovated space. Blocking requirements for each piece of furniture will be determined.
- 1.6 Be prepared to provide specific information relative to agenda items as they are pertinent to the Contract.
- 1.7 Record minutes of meeting and distribute type written copies to all participants and other interested parties, within one week of meeting date.

2 PROGRESS MEETINGS

- 2.1 Meetings to be held every two weeks (or as required) at the Physical Plant - Avila Centre Boardroom.
- 2.2 Attend regularly scheduled progress meetings to be held on Site at times and dates that

- are mutually agreed to by the Owner, Consultant, and Contractor.
- 2.3 Co-ordinate and organize attendance of individual Subcontractors and material suppliers when requested. Relationships and discussions between Subcontractor participants are not the responsibility of the Consultant and do not form part of the meetings content.
- 2.4 Ensure that Contractor representatives in attendance at meetings have required authority to commit Contractor to actions agreed upon. Assign same persons to attend such meetings throughout the contract period.
- 2.5 Inform the Consultant in advance of meetings regarding all items to be added to the agenda.
- 2.6 Consultant will distribute copies of Agenda prior to meeting.
- 2.7 Be prepared to provide specific information relative to agenda items at each meeting as they are pertinent to the Contract.
- 2.8 Agenda will include but not be limited to the following topics as are pertinent to the Contract.
- .1 Review and agreement of previous minutes.
 - .2 Construction safety.
 - .3 Status of submittals.
 - .4 Quality control.
 - .5 Co-ordination.
 - .6 Contract Schedule
 - .7 Work plan up to next scheduled meeting.
 - .8 Requests for information/clarification.
 - .9 Contemplated changes.
- 2.9 Record minutes of meeting and distribute type written copies to all participants and other interested parties, within three business days of meeting date.

END OF SECTION

1 GENERAL

- 1.1 Be responsible for planning and scheduling of the Work. As a minimum, prepare and update the following schedules:
 - .1 Contract Schedule.
 - .2 Detailed Construction Schedule.
- 1.2 Be responsible for ensuring that Subcontractors plan and schedule their respective portions of the Work. Subcontractor's schedules shall form part of the above mentioned schedules.
- 1.3 Contractor to review schedule implications outlined in 01 14 00.

2 CONTRACT SCHEDULE

- 2.1 Prepare and submit the Contract Schedule within 14 days following award of Contract. This schedule, once it is reviewed by the Consultant and if it meets the Consultant's project requirements, will become contractual.
- 2.2 The Contract Schedule shall be developed using a critical path method for planning and scheduling.
- 2.3 The Contract Schedule shall be submitted for approval in its optimum levelled form. This presentation may be in either a time scaled network or a bar chart form. It shall be subdivided into either work areas or systems as applicable.
- 2.4 The Contract Schedule shall include the following information:
 - .1 Starting and ending dates of each activity including the float periods;
 - .2 Order and delivery dates for major or critical equipment.
 - .3 Interdependency with activities of other Contractors;
 - .4 Dates specified in the Contract Documents;
 - .5 Dates on which specific data will be required for submittal, i.e., Vendor data, shop drawings, samples, etc.
- 2.5 Review and update schedule every two weeks so as to reflect Contract changes as well as actual progress. Reissue schedule at each construction progress meeting.

3 DETAILED CONSTRUCTION SCHEDULE

- 3.1 Prepare and submit a detailed construction schedule within 14 days of final review and acceptance of the Contract Schedule. This schedule, once it is reviewed and accepted by the Consultant, will be updated to reflect actual progress and submitted monthly with the Contract Schedule and weekly once the Contractor starts on Site.
- 3.2 This schedule shall cover the construction period. It will show, in detail, activities on a daily basis indicating durations, manpower and constraints. The activities shown on this schedule shall further clarify or detail the activities shown on the Contract Schedule.
- 3.3 The detailed construction schedule shall be presented in a bar chart form.

4 CASH FLOW CHART

- 4.1 Within 7 days after award of Contract, submit, in form approved by Consultant, cash flow chart broken down on a monthly basis in an approved manner. Cash flow chart shall indicate anticipated Contractor's monthly progress billings from commencement of work until completion.
- 4.2 Update cash flow chart whenever changes occur to scheduling and in manner and at times satisfactory to Consultant.

END OF SECTION

1 GENERAL

- 1.1 Provide labour, products, equipment, services tools and supervision necessary for submittals. Make submittals specified in this Section to Consultant unless otherwise specified.
 - .1 Verify accuracy and completeness of submittals prior to submission.
 - .2 Co-ordinate each submittal with requirements of the Work and the Contract Documents.
 - .3 Notify Consultant in writing at time of submission, of any deviation in submittals from requirements of the Contract Documents.
- 1.2 Submit in accordance with dates established under Section 01 32 13 for shop drawings, fabrication, manufacture, erection and installation to provide adequate time for reviews, securing necessary approvals, possible revisions and resubmittals, placing orders, securing delivery and to avoid construction delays.
- 1.3 Accompany each submittal with a letter of transmittal in duplicate containing all pertinent information required for identification and checking of submittals including but not limited to the following:
 - .1 Date of initial submission and date of each subsequent submission if required.
 - .2 Project title and Consultant's project number.
 - .3 Names of:
 - .1 Contractor.
 - .2 Subcontractor.
 - .3 Supplier/manufacturer as applicable.
 - .4 Specification section numbers to which submission is related.
 - .5 Countersigned stamp of Contractor certifying that they have reviewed the submission.
- 1.4 When submittals are resubmitted, transmit under a new letter of transmission.
- 1.5 Do not carry out Work until Consultants review of submittals has been completed.
- 1.6 Be responsible for payment of charges for delivery of submissions and resubmission to Consultant.
- 1.7 Electronic submissions (email or FTP server) are acceptable provided submissions follow above procedures. Body of email is not to be used as a transmittal.

2 PRODUCT DATA

- 2.1 Before delivery of Products to the Site, submit Product data as specified in each section

or as requested by the Consultant.

- 2.2 Submit manufacturer's Product data for systems, materials, and methods of installation proposed for use. Such literature shall identify systems, each component, and shall certify compliance of each component with applicable standards.

3 SAMPLES

- 3.1 Before delivery of Products to the Site, submit samples of Products as specified or as requested by the Consultant. Label samples as to origin and intended use in the Work and in accordance with the requirements of the Specification Sections. Samples must represent physical examples to illustrate materials, equipment or work quality and to establish standards by which completed Work is judged.
- 3.2 Ensure samples are of sufficient size and quantity, if not already specified, to illustrate:
- .1 The quality and functional characteristics of Products, with integrally related parts and attachment devices.
 - .2 Full range of colours available.
- 3.3 Notify the Consultant in writing, at time of submission, of any deviations in samples from requirements of the Contract Documents, and state the reasons for such deviations.
- 3.4 Identify samples with Project name, Contract number, date, Contractor's name, number and description.
- 3.5 If samples are not acceptable, both samples will be returned. If samples are acceptable, one sample will be so indicated and returned. Be responsible for the cost of samples that are not accepted and for resubmission of samples.
- 3.6 Acceptable samples shall serve as a model against which the products incorporated in the work shall be judged.
- 3.7 Each Product incorporated in the Work shall be precisely the same in all details as the acceptable sample.
- 3.8 Should there be any change to the accepted sample, submit in writing for approval of the revised characteristics and resubmit samples of the Product for approval if requested.
- 3.9 When samples are very large, require assembly, or require evaluation at the Site, they may be delivered to the Site, but only with approval and as directed.

4 SHOP DRAWINGS

- 4.1 Arrange for the preparation of shop drawings as called for in the Contract Documents

or as may be reasonably requested by the Consultant. The Contractor and each Subcontractor shall operate as experts in their respective fields and all shop drawings and samples shall conform to the requirements of the Contract Documents.

- 4.2 The term "shop drawings" means drawings, diagrams, schematics, illustrations, schedules, performance charts, brochures and other data which are required to illustrate details of the Work.
- 4.3 In addition to shop drawings specified in the specification sections, submit shop drawings required by jurisdictional authorities in accordance with their requirements.
- 4.4 Shop drawings for openings, sleeving and conduit
 - .1 Prior to preparation of shop drawings, coordinate sizes of all structural openings and sleeves with respective fabricators for mechanical ducting. Adjustments to the opening sizes indicated on the Contract Drawings shall not be made without the approval of the Consultant.
 - .2 Prior to detailing structural reinforcement on shop drawings, arrange for the Engineer of structure to review formed holes, recesses and sleeving. Completely dimension openings, recesses and sleeves and relate to suitable grid lines and elevation.
 - .3 Prior to forming of the structure, arrange for the preparation of shop drawings for review by the Consultant showing embedded conduit to be cast within the structure. Shop drawings shall include conduit from all sources.
- 4.5 Shop drawings shall indicate the following minimum criteria and any additional criteria indicated in the individual specification sections requiring shop drawings:
 - .1 Clear and obvious notes of any proposed changes from the Contract Documents.
 - .2 Fabrication and erection dimension.
 - .3 Provisions for allowable construction tolerances and deflections provided for live loading.
 - .4 Details to indicate construction arrangements of the parts and their connections, and interconnections with other work.
 - .5 Location and type of anchors and exposed fastenings.
 - .6 Materials, physical dimensions including thicknesses, and finishes.
 - .7 Descriptive names of equipment.
 - .8 Mechanical and electrical characteristics when applicable.

- .9 Information to verify that superimposed loads will not affect function, appearance, and safety of the work detailed as well as of interconnection work.
- .10 Assumed design loadings, and dimensions and material specifications for load-bearing members.
- 4.6 Include in shop drawing submissions detailed information, templates, and installation instructions required for incorporation and connection of the Work.
- 4.7 Before submitting to the Consultant, review all shop drawings to verify that the Products illustrated therein conform to the Contract Documents. By this review, the Contractor agrees that it has determined and verified all field dimensions, field construction criteria, materials, catalogue numbers and similar data and that it has checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date and signature of a qualified and responsible person possessing the appropriate authorization.
- 4.8 Be responsible for dimensions to be confirmed and correlated at the Site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the Work of all subtrades.
- 4.9 Submit shop drawings for the Consultant's review with reasonable promptness and in orderly sequence so as to cause no delay in the Work nor in the work of Other Contractors. At the time of submission, notify the Consultant in writing of any deviations in the shop drawings from the requirements of the Contract Documents. The Contractor will be held responsible for changes made from the Contract Documents which are not indicated or otherwise communicated in writing with the submission.
- 4.10 Drawings submitted by the Contractor as required herein are the property of the Owner who may use and duplicate such drawings where required in association with the Work.
- 4.11 Submit shop drawings signed and sealed by a licensed Professional Engineer registered in the place of the Work where indicated in individual Sections.
- 4.12 Shop drawings shall have distinct, uniform letters, numerals and line thicknesses that will ensure the production of clear legible prints and also facilitate microfilming and reduced reproduction.
- 4.13 Large size submissions shall be on unfolded paper together with 3 prints of each sheet folded into 216 mm x 280 mm size with title block appearing on outside. However, in instances where catalogue items are specified, three clean copies of the manufacturer's catalogue may be submitted.
- 4.14 Shop drawings shall contain the following identification:
 - .1 Project name and Contract number.

- .2 Applicable 6-digit Contract Specification number describing the item.
- .3 Location.
- .4 Name of equipment or Product.
- .5 Name of Subcontractor or supplier.
- .6 Signature of Contractor certifying that Shop drawing is in conformance with Contract Documents.
- .7 On submissions subsequent to the first, the following additional identification:
 - .1 The revision number.
 - .2 Identification of the item(s) revised.
- 4.15 Dimensions and designations of elements shall be shown in the same system of measurement used on the applicable Contract Drawings.
- 4.16 The Consultant reserves the right to refuse acceptance of drawing submissions not meeting the above requirements.
- 4.17 The Consultant's review will be for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents unless a deviation on the shop drawings has been approved in writing by the Consultant.
- 4.18 The Contractor shall make any changes in shop drawings which the Consultant may require consistent with the Contract Documents and re-submit unless otherwise directed by the Consultant. When re-submitting the shop drawings, the Contractor shall notify the Consultant in writing of any revisions other than those requested by the Consultant.
- 4.19 Only drawings noted for revision and resubmission need be resubmitted.
- 4.20 File one copy of each submitted shop drawing at the Site.

5 CERTIFICATES

- 5.1 Submit certificates that are required by authorities having jurisdiction or that are requested in the specification sections.
- 5.2 Clearly show on each certification the name and location of the Work, name and address of Contractor, quantity and date of shipment and delivery and name of certifying company.
- 5.3 Certificates shall verify that Products and/or methods meet the specified requirements and shall include test reports of acceptable testing laboratories to validate certificates.

- 5.4 Submit certificates in duplicate and signed by an authorized representative of the certifying company.

6 CERTIFICATION OF TRADESMEN

- 6.1 Provide certificates, at the request of the Consultant, to establish qualifications of personnel employed on the Work where such certification is required by authorities having jurisdiction, by the Consultant or by the Contract Documents.

7 WARRANTIES

- 7.1 Submit extended warranties as requested in sections of the Specifications showing title and address of Contract, warranty commencement date and duration of warranty.
- 7.2 Extended warranties shall commence on termination of the standard warranty specified in the conditions of the contract and shall be an extension of these provisions. Clearly indicate what is being warranted and what remedial action is to be taken under the warranty. Ensure warranty bears the signature and seal of the Contractor.
- 7.3 Submit each extended warranty on a form that is acceptable to the Owner and Consultant.

8 INSPECTION AND TEST REPORTS

- 8.1 Submit inspection and test reports as specified in the Sections of the specifications for "Source Quality Control" and "Field Quality Control" within 3 working days of inspection or testing. If immediate action is required by the Contractor or Consultant inform the Consultant immediately and submit inspection and testing report within one working day.
- 8.2 Submit 3 copies of reports submitted with certificates of compliance indicating but not limited to the following:
- .1 Project name and number.
 - .2 Date of inspection or test and date report is issued.
 - .3 Name and address of inspection and testing company.
 - .4 Name and signature of inspector or tester.
 - .5 Identification of Product and Specification Section covering inspected or tested work.
 - .6 Specified requirements for which the inspection or testing was performed and results of inspections or tests.
 - .7 Location of inspection or from which tested material was derived.

- .8 Overview of inspection and testing methods and procedures.
- .9 Remarks and observations on compliance with Contract Documents.
- 8.3 Inspection and test reports shall be signed by a responsible officer of the inspection and testing company.

9 PROGRESS REPORTS

- 9.1 Prepare a monthly progress report current to the last Friday of each month. The report shall indicate the period covered and include but not be limited to the following:
 - .1 Executive Summary.
 - .2 Areas of Concern/Action Required.
 - .3 Work Accomplished This Period.
 - .4 Work Planned Next Period.
 - .5 Schedule Status.
 - .6 Budget Status.
 - .7 Status of Submittals.
 - .8 Quality Control.
 - .9 Contract Changes.
 - .10 Outstanding Actions.
- 9.2 Submit the monthly progress report such that it is received by the Consultant no later than the Wednesday following the last Friday of the month, regardless of whether or not the Monday is a public holiday.

10 OPERATION AND MAINTENANCE MANUALS

- 10.1 Submit Operation and Maintenance Manuals in accordance with Section 01 78 23.

11 RECORD DOCUMENTS

- 11.1 Submit record documents in accordance with Section 01 78 39.

END OF SECTION

1 GENERAL

- 1.1 Be responsible for inspection and testing as required by the Contract Documents, statutes, regulations, by-laws, standards or codes or any other jurisdictional authority. Give the Consultant timely notice of the readiness for inspection, date and time for such inspection for attendance by the Consultant.
- 1.2 Verify by certification that specified products meet the requirements of reference standards specified in the applicable specification sections.
- 1.3 Conduct testing, balancing and adjusting of equipment and systems specified in applicable mechanical and electrical specifications sections by independent testing company.

2 INSPECTION AND TESTING BY THE OWNER

- 2.1 The Owner may appoint an independent inspection and testing company to carry out inspection and testing of the Work for conformance to the Contract Documents. Such costs for inspection and testing will be paid by the Owner. However, any additional inspection and testing due to non-conformance to the Contract Documents shall be at the Contractor's expense.
- 2.2 Inspections and testing by the Owner will be promptly made. Uncover for examination any Work covered up prior to inspection or without approval of the Consultant. Make good such Work at no cost to the Owner.
- 2.3 The Owner may inspect and test Products during manufacture, fabrication, shop testing, installation, construction and testing phases of the Contract. The Consultant will ascertain the quantity and quality of testing to be performed. Inspection and testing may be performed at the place of manufacture/fabrication, storage, or at the Site as designated by the Consultant. Where inspection and testing is done either during manufacture, fabrication, or at Site, ensure that proper facilities and assistance are provided.

3 INSPECTION AND TESTING

- 3.1 Source And Field Quality Control specified in Other Sections:
 - .1 This Section includes requirements for performance of inspection and testing specified under Source Quality Control and Field Quality Control in other Sections of the specifications.
 - .2 Do not include in work of this Section responsibilities and procedures that relate solely to an inspection and testing company's functions that are specified in another Section which is paid for directly by the Owner. Such information is included in this Section for Contractor's information only.

- 3.2 Do not limit responsibility for ensuring that products and execution of the work meet Contract requirements, and inspection and testing required to this end, to specified inspection and testing.

4 QUALIFICATIONS OF INSPECTION AND TESTING COMPANIES

- 4.1 Inspection and testing companies to be certified by the Standards Council of Canada.
- 4.2 Companies engaged for inspection and testing shall provide equipment, methods of recoding and evaluation, and knowledgeable personnel to conduct tests precisely as specified in reference standards.
- 4.3 If requested, submit affidavits and copies of certificates of calibration made by an accredited calibrator to verify that testing equipment was calibrated and its accuracy ensured within the previous twelve months.

5 RESPONSIBILITIES OF THE CONTRACTOR

- 5.1 Be responsible for quality control methods and procedures to ensure performance of the work in accordance with the Contract Documents.

6 RESPONSIBILITIES OF INSPECTION AND TESTING COMPANIES

- 6.1 Determine from specifications and Drawings the extent of inspection and testing required for Work of the Contract. Subcontractors shall notify Consultant of any omissions or discrepancies in the work inspected and/or tested.
- 6.2 Perform applicable inspection and testing described in the Specifications and as may be additionally directed.
- 6.3 Provide competent inspection and testing personnel when notified by the Contractor that applicable work is proceeding. Inspection personnel shall cooperate with the Consultant and Contractor to expedite the Work.
- 6.4 Subcontractors shall notify the Consultant and Contractor of deficiencies and irregularities in the Work immediately when they are observed in the course of inspection and testing.
- 6.5 Inspection and testing companies shall not perform or supervise any of the Contractor's work, and shall not authorize:
- .1 Performance of work that is not in strict accordance with the Contract Documents.
 - .2 Approval or acceptance of any part of the Work.

7 INSPECTION AND TESTING PROCEDURES

- 7.1 Perform specified inspection and testing only in accordance with specified reference standards, or as otherwise approved.
- 7.2 Observe and report on compliance of the Work to requirements of Contract Documents.
- 7.3 Ensure that inspectors are on site or at fabricator's operations for full duration of critical operations, and as otherwise required to determine that the Work is being performed in accordance with the contract Documents.
- 7.4 Identify samples and sources of materials.
- 7.5 Review and report on progress of the work. Report on count of units fabricated and inspected at fabricator's operations.
- 7.6 Observe and report on conditions of significance to work in progress at time of inspection or at fabricator's operations. Include where applicable and if critical to the work in progress:
 - .1 Time and date of inspection.
 - .2 Temperature of air, materials, and adjacent surfaces.
 - .3 Humidity of air, and moisture content of materials and adjacent materials.
 - .4 Presence of sunlight, wind, rain, snow and other weather conditions.
- 7.7 Include in reports all information critical to inspection and testing.
- 7.8 Ensure that only materials from the work and intended for use therein are tested.
- 7.9 Determine locations for work to be tested.

8 TOLERANCES FOR INSTALLATION OF WORK

- 8.1 Unless specifically indicated otherwise, work shall be installed plumb, level, square and straight.
- 8.2 Unless acceptable tolerances are otherwise specified in specification sections or are otherwise required for proper functioning of equipment, site services, and mechanical and electrical systems:
 - .1 "Plumb and level" shall mean plumb or level within 1 mm in 1 m.

- .2 "Square" shall mean not in excess of 10 seconds lesser or greater than 90 degrees.
- .3 "Straight" shall mean within 1 mm under a 1 m long straightedge.
- .4 "Flush" shall mean within:
 - .1 6 mm for exterior concrete, masonry, and paving materials.
 - .2 1 mm for interior concrete, masonry, tile and similar surfaces.
 - .3 0.05 mm for other interior surfaces.

8.3 Allowable tolerances shall not be cumulative.

9 REFERENCE STANDARDS

9.1 Perform inspection and testing in accordance with Standards quoted and as required by procedures described in specified reference standards that are applicable to the work being inspected and tested.

10 DEFECTS

10.1 Defective products, materials and workmanship found at any time prior to Contract Completion will be rejected regardless of previous inspections, testing, and reviews of the Work. Inspections, testing, and reviews shall not relieve the Contractor from their responsibility, but are a precaution against oversight or error. Remove and replace defective and rejected products, materials, systems, and workmanship. Be responsible for delays and expenses caused by rejection.

11 MOCK UPS

- 11.1 Where required by Contract Documents construction, unless indicated herein, mock-ups of work on Site, in size and at location directed by Consultant.
- 11.2 Construct mock-ups prior to start of affected work. Allow sufficient time for Consultant's review. Work affected by mock-ups may not commence prior to acceptance of mock-ups.
- 11.3 Construct mock-ups to include all related specified materials and workmanship. Make revisions as directed by Consultant, in accordance with the intent of the Contract Documents, until mock-ups are acceptable.
- 11.4 Mock-ups, reviewed and accepted by Consultant, shall become the standard of quality against which installed work will be measured.
- 11.5 Mock-ups, by prior arrangement, may be incorporated into finished work if approved by Consultant only.

12 DOCUMENTS ON SITE

- 12.1 Maintain at job site, one copy of each of the following:
- .1 Contract Documents including Drawings, Specifications, Addenda, and other modifications to the Contract.
 - .2 'Reviewed' or 'Reviewed as Modified' Shop Drawings.
 - .3 Project Construction and Shop Drawing Schedules.
 - .4 Supplemental Instructions, Change Orders, and Change Directives.
 - .5 Field Test Reports.
 - .6 Reports by Authorities having Jurisdiction.
 - .7 Building and other applicable permits.
 - .8 Daily log including:
 - .1 Weather conditions.
 - .2 Excavation conditions
 - .3 Start and finish date of each Trade Contractor.
 - .4 Erection and removal dates of formwork.
 - .5 Date, quantities and particulars of each concrete pour.
 - .6 Dates and quantities and particulars of roofing and waterproofing work.
 - .7 Visits to the Site by Owner, Consultants, Jurisdictional Authorities, Testing and Inspection companies, and material and equipment supplier representatives.
 - .9 Material Safety Data Sheet pursuant to WHMIS (Occupational Health & Safety Act).
 - .10 As-built drawings recording as-built conditions, instructions, changes for structure, equipment, wiring, plumbing, etc., as called for in Section 01 78 39.
 - .11 Copies of applicable codes.
- 12.2 The above material shall be made available to the Consultant at their request.

END OF SECTION

1 GENERAL

- 1.1 Provide Labour, Products, equipment, services, tools and Supervision to ensure that Work complies with minimum acceptable standards of materials and performance of Work in accordance with codes and standards referenced in the Specification.
- 1.2 Consider contract forms, codes, Specifications, standards, manuals, and installation and application instructions referred to in these specifications to be the latest published editions at the date of submission of the bid unless otherwise stated in the Specifications or otherwise required by the authorities having jurisdiction.

2 BY-LAWS, PERMITS, AND FEES

- 2.1 The Ontario Building Code 2012, including all amendments, shall govern the construction of the Work.
- 2.2 Comply with all By-Laws and regulations of authorities having jurisdiction. These codes and regulations constitute an integral part of the Contract Documents.
- 2.3 Pay for construction damage deposit required by authorities having jurisdiction.
- 2.4 Where permits, licences, and inspection fees are required by authorities having jurisdiction for specific trade functions, they shall be obtained by particular subtrade responsible for that work. The building permit shall be obtained by the general contractor.
- 2.5 Arrange for inspection, testing of Work and acceptance required by the authorities having jurisdiction. Be responsible for necessary preparations, provisions and pay all costs.
- 2.6 Be responsible for ensuring that no work is undertaken which is conditional on permits, approvals, reviews, licences, fees, until all applicable conditions are met. No time extension will be allowed for delay in obtaining necessary permits.
- 2.7 Obtain permit required to work on Municipal rights of way. Obtain damage deposits for sidewalks, roads and services work, as applicable.
- 2.8 Give notice of completion of project prior to occupancy, as required by applicable legislation.
- 2.9 All electrical and electronic devices to be certified by ESA and shall bear evidence of such certification.

3 EXISTING PUBLIC SERVICE LINES

- 3.1 Where existing public services are indicated to be removed and/or relocated, perform Work in compliance with authorities having jurisdiction.

- 3.2 Make good public roads, walkways and curbs soiled or damaged due to construction to the requirements of local authorities.

4 CODES

- 4.1 Reference is made to standards in the specifications to establish minimum acceptable standards of materials, products and workmanship. Ensure that materials, products and workmanship meet or exceed requirements of the reference standards specified.
- 4.2 In the event of conflict between documents specified herein, execute the Work in accordance with the most stringent requirements.

5 STANDARDS

- 5.1 Where a material or product is specified in conjunction with a referenced standard, do not supply the material or product if it does not meet the requirements of the standard. Supply another specified material or product, or an acceptable material or product of other approved manufacture which does meet the requirements of the standard, at no additional cost to the Owner.
- 5.2 Where no standard is referred to, provide materials, products and workmanship which meet requirements of the applicable standards of the Canadian Standards Association, Canadian General Standards Board, Standards Council of Canada, Ontario Provincial standard specifications (OPSS), Ontario Provincial Standard Drawings (OPSD) and the applicable building code. References to "Measurement for Payment" and "Basis of payment" in OPSS standard documents are not applicable to this Contract.
- 5.3 If there is question as to whether a material, product or system is in conformance with applicable standards, the Consultant reserves the right to have such materials, products or systems tested to prove or disprove conformance. The cost for such testing will be paid by the Owner in the event of conformance with contract Documents or by the Contractor in the event of non-conformance.
- 5.4 Where application, installation and workmanship standards are cited, it is intended that referenced standards form the basis for minimum requirements of the specified item and specifications supplement the standards unless specified otherwise.
- 5.5 Matters may be dealt with in part by these specifications which are also dealt with, under the same or similar headings in cited standard. It is not intended that these specifications take the place of the standards but supplement them, unless specified otherwise.
- 5.6 Where reference is made to manufacturer's directions, instructions or specifications they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated.

5.7 Where standards, specifications, associations, and regulatory bodies are listed in the Specifications by their abbreviated designations. These are but not limited to the following:

AA	The Aluminum Association
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation

Officials

ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association
AIEE	American Institute of Electrical Engineers
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association
AMEU	Association of Municipal Electric Utilities
ANSI	American National Standards Institute
ARI	Air-Conditioning and Refrigeration Institute
ASA	American Standards Association
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning

Engineers

ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWMAC	Architectural Woodwork Manufacturers Association of Canada
AWWA	American Water Works Association
CEMA	Canadian Electrical Manufacturer's Association
CGA	Canadian Gas Association
CGSB	Canadian General Standards Board
CISC	Canadian Institute of Steel Construction
CMHC	Canadian Mortgage and Housing Corporation
CMPA	Canadian Paint Manufacturers Association
COFI	Council of Forest Industries of British Columbia
CRCA	Canadian Roofing Contractors Association
CSA	Canadian Standards Association
CSSBI	Canadian Sheet Steel Building Institute
CWB	Canadian Welding Bureau
CWC	Canadian Wood Council
EEMAC	Electrical and Electronic Manufacturers Association Canada
FM	Factory Mutual
IEEE	Institute of Electrical and Electronic Engineers
MFMA	Maple Flooring Manufacturers Association
MIL	Military Standards
MSS	Manufacturer's Standardization Society
MTO	Ministry of Transportation Ontario
NAAMM	National Association of Architectural Metal Manufacturers

NFPA	National Fire Protection Association
NEMA	National Electrical Manufacturer's Association (U.S.A.)
NLGA	National Lumber Grades Authority
NRC	National Research Council of Canada
OCBA	Ontario Concrete Block Association
OHESC	Ontario Hydro Electrical Safety Code
OPSS	Ontario Provincial Standard Specification
PEI	Porcelain Enamel Institute
PDI	Plumbing Drainage Institute
PHA	Public Health Act
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
TEMA	Tubular Exchange Manufacturer's Association
TTMAC	Terrazzo, Tile and Marble Association of Canada
UL	Underwriters Laboratories Inc. (U.S.)
ULC	Underwriters Laboratories of Canada

6 FIRE RATING, ASSEMBLIES AND SEPARATIONS

- 6.1 Where a material, component, assembly, or separation is required to be fire rated, the fire rating shall be as determined or listed by one of the following testing authorities acceptable to the authorities having jurisdiction:
- .1 Underwriters' Laboratories of Canada.
 - .2 Underwriters' Laboratories Inc.
 - .3 Factory Mutual Laboratories.
 - .4 The National Research Council of Canada.
 - .5 The National Board of Fire Underwriters.
 - .6 Intertek Testing Services.
- 6.2 Where reference is made to only one testing authority an equivalent fire rating as determined or listed by another of the aforementioned testing authorities is acceptable if approved by authorities having jurisdiction. Obtain and submit such approval of authorities, in writing when requesting acceptance of a proposed equivalent rating or test design.
- 6.3 Fire rated door assemblies shall include doors, frame, anchors and hardware and shall bear label of fire rating authority showing opening classification and rating.
- 6.4 Material having a fire hazard classification shall be applied or installed in accordance with fire rating authorities printed instructions.

- 6.5 Fire rated assemblies shall be constructed in accordance with applicable fire test report information issued by fire rating authority. Deviation from fire test report will not be allowed.
- 6.6 Construct fire separations as continuous, uninterrupted elements except for permitted openings. Extend fire rated walls and partitions from floor to underside of structural deck above.
- 6.7 Fire separations may be pierced by openings for electrical and similar service outlets provided such boxes are non-combustible and are tightly fitted and sealed with a ULC approved sealant for the assembly being sealed.
- 6.8 Construction that abuts on or is supported by a non-combustible fire separation shall be constructed so that its collapse under fire conditions will not cause the collapse of the fire separation.
- 6.9 Do not use combustible members, fastenings, attachments and similar items to anchor electrical, mechanical or other fixtures to fire separations.
- 6.10 At penetration through fire rated walls, ceilings or floors, completely seal voids with ULC approved firestopping material; full thickness of the construction element. In locations that require a smoke seal, provide appropriate ULC approved system installed in accordance with the manufacturer's recommendations.

END OF SECTION

1 TEMPORARY CONTROLS

- 1.1 Prevent unauthorized entry to the Site. Provide metal fencing to the satisfaction of the Project Manager, with appropriate signage, as required. Any signage to be approved by owner, prior to installation. Barricade, guard or lock access points to the satisfaction of the Project Manager.
- 1.2 Hoarding, fencing and barriers:
 - .1 Before commencing operations, supply, erect and maintain hoarding, fencing, and barriers around entire perimeter of Site. Relocate as directed by Project Manager.
 - .2 Provide temporary enclosures as required to protect the new and existing buildings in it's entirety or in it's parts, against the elements, to maintain environmental conditions required for work within the enclosure, and to prevent damage to materials stored within.
 - .3 Provide lockable gates through hoarding, fencing, and barriers for access to Site by workers and vehicles.
- 1.3 Provide barriers and covered walkways required by governing authorities for public rights-of-way and for public access to buildings. Snow fencing is not allowed as protection for sidewalk.
- 1.4 Install signs for movement of people around Work Site as required and directed by the Project Manager.
- 1.5 Provide secure, rigid guide rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs as required for protection of Work, workers, and the public.
- 1.6 Remove hoarding, fencing, barriers, building enclosures, guide rails and barricades upon Contract Completion unless otherwise noted on the Contract Drawings.

2 SERVICE AND UTILITY SYSTEMS

- 2.1 Consult with Project Manager, utility companies, and other authorities having jurisdiction to ascertain the locations of existing services on or adjacent to site.
- 2.2 Information as to the location of existing services, if shown on the Drawings, does not relieve the Contractor of his responsibility to determine the exact number and location of existing services.
- 2.3 Give proper notices for new services as may be required. Make arrangements with authorities and utilities for service connections required.
- 2.4 Pay any charges levied by utilities or authorities for work carried out by them in

connection with this Contract, unless specified otherwise.

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

3 SCAFFOLDING, HOISTS AND CRANES

- 3.1 Select, operate, and maintain scaffolding, hoisting equipment and cranes as may be required.
- 3.2 Do not erect or operate equipment that will endanger existing structures, local municipalities hydro installations, or traffic signals.
- 3.3 Design and construct scaffolding in accordance with CAN/ CSA S2 69.2-M.

4 TEMPORARY WORKS

- 4.1 Installation and Removal: Provide temporary utilities, facilities and controls in order to execute the Work expeditiously. Remove from Site all such Work after use.
- 4.2 Arrange for connections with appropriate utility company and pay all costs for installation, maintenance and removal. Coordinate with Project Manager.
- 4.3 Pay all costs for temporary works consumed prior to Contract Completion.
- 4.4 Temporary Power and Lighting Systems:
 - .1 Supply, install and maintain electrical power and necessary electrical equipment including overhead and underground feeders, transformers, motors, starters, protective devices and equipment. Connections will be made available to any part of the Work within distance of a 30 m extension. Coordinate with Project Manager for location of power supply.
 - .2 Provide temporary lighting inside and outside structure of adequate intensity to illuminate construction activities.
 - .3 Supply and install the type and quantity of minimum lighting equipment in each location to ensure adequate, continual illumination 24 hours per day, 7 days per week for the following:
 - .1 Emergency evacuation, safety and security throughout the Project at intensity levels required by jurisdictional authorities.
 - .2 General lighting for performance of the Work throughout the Project, evenly distributed,

and at intensities to ensure that proper installations and applications are achieved.

.3 Performance of finishing trades in area as required evenly distributed, and of an intensity of at least 50 Lux.

.4 In locations approved by the Project Manager. install and support the electrical plant, distribution and temporary lighting systems including service equipment and local hydro authority meter energized by the local hydro circuits. Installations shall be approved by the Project Manager and shall be carried out in a neat manner to avoid interference with the application of finish material and to facilitate removal when the installed permanent lighting system is in operation.

.5 Make all necessary arrangements for and pay all costs for a temporary electrical service of sufficient capacity to supply temporary lighting, operation of power tools, cranes and equipment for all construction, implementation, and inspection and testing purposes. Supply and install necessary temporary cables and other electrical equipment and make all temporary connections as required.

.6 Temporary power distribution wiring shall comply with Ontario Hydro Electrical Safety Code. Obtain inspection certificates for temporary electrical work.

.7 Maintain the lighting systems in operation during the life of the Contract. Replace burned or missing lamps immediately.

.8 Upon Contract Completion, remove electrical plant and temporary lighting from the Site.

4.5 Water Supply:

- .1 Provide and pay for a continuous supply of potable water for construction use.
- .2 Provide and maintain all temporary lines, extensions and hoses as required. Remove all temporary connections and lines on completion of the Work and make good any damage.

4.6 Temporary Heating:

- .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- .2 Construction heaters used inside buildings must be vented to the outside or be flame less type. Solid fuel salamanders are not permitted.
- .3 Maintain temperatures of minimum 10°C in areas where construction is in progress unless otherwise indicated in the Contract Documents. Protect exposed and adjacent services from freezing. Repair at no cost to the Owner any such services, buildings or other utilities disrupted by freezing.
- .4 Ventilate heated areas and keep structures free from exhaust combustion gases.
- .5 The permanent heating system of the building or portions thereof may be used when available only upon written permission by Consultant.

- 4.7 Temporary Telephone and facsimile: Provide and pay for separate telephones and facsimile services, for local call only, as required for own use and use of the Consultant and Owner. Long distance call shall be paid by party making call.
- 4.8 Sanitary Facilities: Provide sanitary facilities in accordance with occupational health and safety requirements in the place of the Work. Use of Owner's existing sanitary facilities or new sanitary facilities is not allowed.

5 PROTECTION

- 5.1 Protection of Public Area: Protect surrounding private and public property from damage during performance of the Work.
- 5.2 Protection of Building Finishes and Equipment:
- .1 Provide protection for existing structure, finished and partially finished building finishes, waterproofing systems, and equipment during performance of the Work.
 - .2 Cover Owner's equipment and plant within the Site with 6 mil PVC sheet, or equal, taped to make it dust-tight. Equipment and existing work moved or altered to facilitate construction, movement of Products or equipment shall be stored, protected with dust-tight covers and subsequently returned to its original location.
 - .3 Obtain approval from the Consultant prior to the installation of temporary supporting devices into existing roof, ceiling, or wall members for the erecting of equipment or machinery. Repair roof, ceiling, and wall members used for this purpose to the satisfaction of the Consultant.
 - .4 Provide necessary screens, covers and hoarding as required.
 - .5 Any Products or equipment damaged while carrying out the Work shall be restored with new Products or equipment matching the original equipment. Damage shall include harm resulting from all construction work, such as falling objects, wheel and foot traffic, failure to remove debris, operation of machinery and equipment, and scaffolding and hoisting operations.
- 5.3 Fire Protection:
- .1 Take precautions to prevent fires. Provide and maintain temporary fire protection equipment of a type appropriate to the hazard anticipated in accordance with authorities having jurisdiction, governing codes, regulations, by-laws and to the satisfaction of the Consultant and insurance authorities.
 - .2 Excessive storage of flammable liquids and other hazardous materials is not allowed on Site. Flammable liquids must be handled in approved containers. Remove combustible wastes frequently.

- .3 Inspect temporary wiring, drop cords, extension cables for defective insulation or connections frequently.
 - .4 Open burning of rubbish is not permitted on the Site.
 - .5 Handle, transport, store, use and dispose of gasoline, benzene or other flammable materials with good and safe practice as required by authorities having jurisdiction.
 - .6 Provide fire extinguishers of the non-freezing chemical type in each temporary building, enclosure and trailer. Use only fire-proofed tarpaulins.
 - .7 A fire watch shall be required for each of the following activities regardless of the number, duration or size of the activity in operation:
 - .1 any open flame activities(e.g., soldering and welding);
 - .2 shutdown of fire detection system;
 - .3 shutdown of sprinkler system.
- 5.4 Maintain adequate cover over services as required by Utility Authorities.

6 PEST CONTROL

- 6.1 Be responsible to provide control measures, restraining procedures, and treatments to prevent infestation and spread of insects, rodents and other pests deemed to be present at Site and/or noticed during course of the Work. Carry out fumigation, pest control procedure, and posting of warning signs, notices including contents of such notices in accordance with requirements of Pesticides Act and any other authorities having jurisdictions. Pesticides used shall be in accordance with Canada Pest Control Products Act, and provincial and municipal regulations.

7 FIRST-AID FACILITIES

- 7.1 Provide site equipment and medical facilities necessary to supply first-aid service to injured personnel in accordance with regulations of the Workplace Safety and Insurance Board. Maintain facilities for duration of Contract.

8 USE OF NEW PERMANENT SERVICE & EQUIPMENT

- 8.1 Do not use any new permanent service or equipment without Owner's written approval.
- 8.2 Where permission is granted to use permanent services and equipment provide competent persons to operate services and equipment; inspect frequently and maintain facilities in proper operating condition at all times.
- 8.3 Permanent services and equipment shall be turned over to Owner in "as new" and perfect operating condition.

- 8.4 Use of permanent systems and equipment as temporary facilities shall not affect the warranty conditions and warranty period for such systems and equipment. Make due allowance to ensure that Owner will receive full benefits of equipment manufacturers warranty after project takeover.

9 PROJECT IDENTIFICATION

- 9.1 If required, obtain approvals from jurisdictional authorities for temporary signs.
- 9.2 Do not display signs without the Owners written consent.
- 9.3 Maintain signs in good condition for the duration of Contract.

10 SITE MAINTENANCE

- 10.1 Maintain the Site and adjacent premises in a clean and orderly condition, free from debris and other objectionable matter. Immediately remove rubbish and surplus Products, equipment and structures from the Site. If the Site is not cleaned (within 48 hours after the Contractor has been instructed to do so), the Owner may clean the Site and retain the cost from monies due, or to become due, to the Contractor.
- 10.2 When the Work is substantially performed, remove surplus Products, tools, construction machinery and equipment not required for the performance of the remaining Work.

11 SITE STORAGE AND OVER LOADING

- 11.1 Confine the Work and operations of employees to limits indicated by the Contract Documents. Do not unreasonably encumber the Site with Products.
- 11.2 Products shall be stored only in areas designated or approved by the Project Manager, and shall not be left lying on streets, sidewalks, boulevards or elsewhere within public view. Products which the Project Manager may permit to be stored elsewhere than in the Contractor's storage areas shall be neatly stacked or otherwise disposed and shall be so maintained.
- 11.3 Fabrication shops shall not be set up within the structure except as directed by or with the permission of the Consultant.
- 11.4 Do not load or permit to be loaded any part of the Work with a weight or force that it is not calculated to bear safely. Be solely responsible and liable for damages resulting from violation of this requirement. Provide temporary supports as strong as permanent support.
- 11.5 Do not cut, drill or sleeve load bearing members unless shown on drawings or otherwise approved by the Consultant in writing for each location.

11.6 Site storage and loading requirements to be in accordance with the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

12 ACCESS AND EGRESS TO SITE

12.1 Where construction requirements demand, construct access roads capable of withstanding construction equipment and haul traffic. Maintain access roads in good condition at all times. Remove access roads prior to completion of the Work unless otherwise noted and restore area as shown on the Contract Drawings.

13 PUBLIC TRAFFIC FLOW

13.1 Provide and maintain flag persons, Police Officers, traffic signals, barricades and illumination as required by Authorities having jurisdiction and/or as necessary to perform the Work and protect the public and other Contractors.

14 PUBLIC UTILITIES AND SERVICES

14.1 Verify limitations imposed on project work by presence of utilities and services, and ensure no damage occurs to them.

14.2 Notify service authorities concerned so that they protect, remove, relocate, or discontinue them, as they may require.

14.3 Make arrangements and pay for connection charges for services required for project work.

14.4 Locate poles, pipes, conduit, wires, fill pipes, vents, regulators, meters, and sanitary services work in inconspicuous locations. If not shown on Drawings, verify location of service work with Consultant before commencing installation.

15 CONSTRUCTION PARKING

15.1 Parking will be permitted on Site provided it does not disrupt the performance of Work, Site safety or the movement of vehicular or pedestrian traffic and is acceptable to the Project Manager.

16 SITE VISITORS

16.1 During the progress of the Work, afford access to visitors duly authorized and facilitate inspections or tests they may desire to make. Record site visitors in log book maintained on site.

16.2 Ensure Site visitors wear appropriate safety apparel.

17 EROSION AND SEDIMENTATION CONTROL

- 17.1 Control drainage on site to prevent flooding, erosion and run-off onto adjacent properties and waterways as a result of construction operations.
- 17.2 Dispose of water containing silt in suspension in accordance with requirements of jurisdictional authorities.
- 17.3 Conform to sedimentation and erosion control requirements of the conservation and/or municipal authority having jurisdiction. Provide and maintain until completion of work or until directed by Consultant to be removed, sediment control devices at catch basins, drainage courses and at other locations on site as directed. Comply with requirements of the local Conservation Authority.
- 17.4 Provide storm drain inlet protection consisting of a sediment control barrier or an excavated ponding area around storm drain inlet or curb inlet; add bracing where necessary to withstand high flow volumes and depth. Inspect inlet protection after each rainfall and repair damage. Sweep up accumulated sediment and dispose of in a controlled area. Remove inlet protection after area has been stabilized with permanent vegetation.

18 TEMPORARY DRAINAGE AND DEWATERING

- 18.1 Drainage lines and gutters shall be kept open at all times. No flow of water shall be directed across or over pavements except through pipes or properly constructed troughs. Keep all portions of Work properly and efficiently drained during construction and until completion. Be responsible for all disturbances, dirt and damage which may be caused by or result from water backing up or flowing over, through, from or along any part of Work, or due to operations which may cause water to flow elsewhere.
- 18.2 Keep trenches and other excavations free of water at all times. Employ adequate means to remove water in a manner that will prevent loss of soil, and maintain the stability of excavation.
- 18.3 Dispose of such water in a manner that will not be dangerous to public health, private property or to any portion of Work completed or under construction, nor which causes an impediment to the use of streets by the public.
- 18.4 Drainage of trenches or other excavation through newly laid storm drainage pipe will be allowed only with the express permission of the authority having jurisdiction.
- 18.5 When drainage is directed to existing catch basins, regularly inspect and clean such catch basins of debris and sediment.

19 SNOW REMOVAL

- 19.1 Allow no accumulation of ice and snow on Site, and on roof deck when roofing operations are scheduled to take place.
- 19.2 Remove snow from access road, Site circulation paths and elsewhere as required to permit access to Work, parking and uninterrupted construction progress.
- 19.3 Review and coordinate snow removal with Lakehead University.

20 POLLUTION (DUST, DEBRIS, AND NOISE) CONTROL

- 20.1 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- 20.2 Keep premises free of waste material.
- 20.3 Arrange and pay for removal of all waste generated by the work in manner acceptable to authorities having jurisdiction.
- 20.4 Limit noise levels in accordance with requirements of authorities having jurisdiction.
- 20.5 Maintain temporary erosion and pollution control features installed under this contract.
- 20.6 Control emissions from equipment and plant to local authorities emission requirements.
- 20.7 Prevent abrasive-blasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

END OF SECTION

Part 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section [02 40 00 Demolition and Removals].

1.2 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.59 [97], Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA O121 [M1978(R2003)], Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

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 HOARDING

- .1 Erect temporary site enclosures using 38 x 89mm construction grade lumber framing at 600mm centres and 1200 x 2400 x 13mm exterior grade fir plywood to CSA O121.
- .2 Apply plywood panels vertically flush and butt jointed.
- .3 Provide at least one pedestrian door as directed. Equip door with lock and key.
- .4 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.
- .5 Paint public side of enclosure in selected colours with one coat primer to CAN/CGSB 1.189 and one coat exterior paint to CGSB 1.59. Maintain public side of enclosure in clean condition.

1.5 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around open stair wells and open edges of floors.

- .2 Provide as required by governing authorities.

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 for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT SCREENS

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.
- .3 Contractor may have to employ mechanical dust extraction equipment venting to exterior to prevent dust from migrating into adjacent existing BRI lab.

1.8 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.9 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.10 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.11 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.

1.12 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with University Representative the locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

1.13 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section [02 40 00 Demolition and Removals].

Part 2 PRODUCTS

2.1 NOT USED

- .1 Not Used.

Part 3 EXECUTION

3.1 NOT USED

- .1 Not Used.

END OF SECTION

1 SPECIFIED PRODUCTS

- 1.1 Work of this Contract is based on Products specified by:
- .1 Manufacturer's catalogued trade names and/or;
 - .2 References to standards (i.e. CAN, CGSB, CSA, ASTM) or;
 - .3 Prescriptive Specifications or;
 - .4 Performance Specifications.
- 1.2 When one or more manufacturer's trade name is specified for a Product, any one of the specified Products will be acceptable. Products by other manufacturers are subject to the Consultant's acceptance as an equivalent substitution in accordance with the specified requirements of substitutions.
- 1.3 When more than one manufacturer's catalogued trade name Product is specified along with a referenced standard, any one of the specified Products will be acceptable on condition the Product complies with the referenced standard.
- 1.4 When a Product is specified by reference to a standard only, the Contractor may select any Product that meets or exceeds the specified standard for the intended purpose. The onus shall be on the Contractor to establish that such Products meet the reference standard requirements. Products exceeding minimum requirements established by reference standards will be accepted for the Work if such Products are compatible with the Work with which they are incorporated.
- 1.5 When a Product is specified by prescriptive or performance Specification, any Product meeting or exceeding the Specification will be accepted.
- 1.6 When a Product is specified by reference to a standard or by prescriptive or performance Specification, upon request of the Consultant, obtain from the manufacturer, an independent testing laboratory report showing that the Product meets or exceeds the specified requirements.
- 1.7 Unless otherwise indicated in the Specifications, maintain uniformity of manufacture for any particular or like item throughout the Work.
- 1.8 In all instances, endeavour to provide products manufactured and/or distributed in Canada, except where specific products are otherwise specified.

2 SUBSTITUTIONS

- 2.1 Requests for substitutions will not be accepted prior to the Notification of Award. Substitutions will be considered by the Consultant provided that:

- .1 The proposed substitutions have been investigated and complete data are submitted which clearly includes highlighting all aspects that meet the specifications. Consultant will only review data submitted. Incomplete data will be grounds for non-acceptance.
 - .2 Data relating to changes in the Contract Schedule, if any, and relation to other Work have been submitted.
 - .3 Same warranty is given for the substitution as for the original Product specified.
 - .4 All claims are waived for additional costs related to the substitution which may subsequently arise.
 - .5 Installation of the accepted substitution is co-ordinated into the Work and that full responsibility is assumed when substitutions affect other work. Make any necessary changes required to complete the Work. Revisions to the drawings for incorporation of the substitutions shall be made by the Consultant and all costs associated with the revisions shall be borne by the Contractor.
- 2.2 Substitutions to methods or process described in the Specifications or drawings, may be proposed for the consideration of the Consultant. Ensure that such substitutions are in accordance with the following requirements:
- .1 Time spent by the Consultant in evaluating the substitution shall not be the basis for a claim by the Contractor for extensions to the Contract Time.
 - .2 Clearly indicate how the proposed substitutions would be advantageous to the Owner or in the opinion of the Contractor would improve the operation of the installation.
 - .3 Be responsible for substitutions to methods or processes concerning such Work and ensure that the warranty covering all parts of the Work will not be affected.
 - .4 The cost of all changes in the work of Other Contractors, necessitated by the substituted methods or processes, if accepted, is borne by the Contractor.
 - .5 The substituted methods or processes fit into space allotted for the specified methods or processes. Revisions to the drawings for incorporation of the substitutions shall be made by the Consultant and all costs associated with the revisions shall be borne by the Contractor.
- 2.3 Substitutions will not be considered if:
- .1 They are indicated or implied on shop drawings or Product data without formal request.
 - .2 Acceptance will require substantial revision of the Specifications and Drawings.
- 2.4 Do not substitute Products or methods or processes into the Work unless such

substitutions have been specifically approved for the Work by the Consultant.

- 2.5 Approved substituted Products shall be subject to the Consultant's inspection and testing procedures. Approved substituted Products shall only be installed after receipt of the Consultant's written approval.
- 2.6 The Contract Price will be adjusted accordingly to any and all credits arising from the substitutions mentioned above.

3 APPROVAL OF PRODUCTS AND INSTALLATION METHODS

- 3.1 Wherever in the Specifications it is specified that Products and installation methods shall meet approval of Authorities having Jurisdiction, underwriters, the Consultant, or others, such approval shall be in writing.

4 PRODUCT DELIVERY CONTROL

- 4.1 It is the responsibility of the Contractor to ensure that the supplier or distributor of materials specified or alternatives accepted, which he intends to use, has materials on the site when required. The Contractor shall obtain confirmed delivery dates from the supplier.
- 4.2 The Contractor shall contact the Consultant immediately upon receipt of information indicating that any material or item, will not be available on time, in accordance with the original schedule, and similarly it shall be the responsibility of all subcontractors and suppliers to so inform the Contractor.
- 4.3 The Consultant reserves the right to receive from the Contractor at any time, upon request, copies of actual purchase or work orders of any material or products to be supplied for the work.
- 4.4 If materials and products have not been placed on order, the Consultant may instruct such items to be placed on order, if direct communication in writing from the manufacturer or prime suppliers is not available indicating that delivery of said material will be made in sufficient time for the orderly completion of the Work.
- 4.5 The Consultant's review of purchase orders or other related documentation shall in no way release the Contractor, or his subcontractors and suppliers from their responsibility for ensuring the timely ordering of all materials and items required, including the necessary expediting, to complete the work as scheduled in accordance with the Contract Documents.
- 4.6 In the event of failure to notify the Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, the Consultant reserves the right to direct the Contractor to take the following measures at no increase in Contract Price:

- .1 Substitute more readily available Products of similar or better quality and character, or
- .2 Temporarily install another Product until such time as the specified Product becomes available, at which time the temporarily installed product shall be removed and the specified Product installed.

5 TRADEMARKS AND LABELS

- 5.1 Permanent labels, trademarks and nameplates on Products are not acceptable in the finished Work, except where required by authorities having jurisdiction, for operating instructions, or when located in service rooms.
- 5.2 Remove trademarks and labels by grinding, if necessary, painting out where the particular surface is being painted, or if on plated parts, replace with new plain plated or non-ferrous metal parts.

6 DELIVERY, STORAGE, HANDLING AND PROTECTION

- 6.1 Be responsible for handling and delivery of Products. Protect Products from damage during handling, storage and installation. Deliver store and handle items in accordance with manufacturer's instructions and as specified. Be responsible for all costs of delivery, loading and off-loading, and for transportation back to its origin for correction, if required, due to damage or defect. Reject materials and Products delivered to the Site which are damaged.
- 6.2 Manufacture, pack, ship, deliver, and handle Products so that no damage occurs to structural qualities and finish appearance, nor in any other way which is detrimental to their function and appearance.
- 6.3 Ensure that Products, while transported, are not exposed to an environment which would increase their moisture content beyond the maximum specified.
- 6.4 Organize delivery of materials, Products and equipment to, and removal of debris and equipment from, the site and surrounding property.
- 6.5 Schedule early delivery of Products to enable Work to be executed without delay. Before delivery, arrange for receiving at the Place of the Work.
- 6.6 Coordinate mechanical and electrical equipment and apparatus deliveries with the manufacturer's and suppliers such that equipment and apparatus is delivered to the site when it is required, or so that it can be stored within the building and protected from the elements.
- 6.7 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.

- 6.8 Deliver packaged Products, in original unopened wrapping or containers, with manufacturer's seals and labels intact.
- 6.9 Label packaged products to describe contents, quantity, and other information as specified.
- 6.10 Labels attesting that materials conform to specified reference standards will be acceptable as verification that contents meet specified requirements. In the absence of labels, submit affidavits to validate conformance of Product to reference standards, as requested by the Consultant.
- 6.11 Label fire-rated Products to indicate Underwriters' Laboratories approval.
- 6.12 Handle and store materials and products in such a manner that no damage is caused to the materials and products, the Work, the site and surrounding property.
- 6.13 Do not obstruct or disrupt local traffic flow during construction period.
- 6.14 Allocate an area within the limits of the Work acceptable to the Owner for storage of Products brought to the site by all trades. Keep storage area tidy at all times and do not use other parts of the property for storage. Arrange and pay for off-site storage when required.
- 6.15 Locate products on site in a manner to cause minimal interference with the Work.
- 6.16 Store Products off the ground, in a manner to prevent damage, adulteration, deterioration and soiling to the Products, other building components, assemblies, other products, the structure, the site and surrounding property, and in accordance with manufacturer's instructions when applicable.
- 6.17 Store packaged or bundled Products in original and undamaged condition complete with written application instructions. Keep manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in the Work.
- 6.18 Do not place or store materials and Products in corridors, public areas, streets, lanes, passageways or similar locations.
- 6.19 Store Products so as not to create any overloading conditions to any part of the building, structure, falsework, form work and scaffolding.
- 6.20 Store Products subject to damage from weather in weatherproof enclosures.
- 6.21 Store cementitious Products clear of earth or concrete floors, and away from walls.
- 6.22 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

- 6.23 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- 6.24 Store and handle flammable liquids and other hazardous materials in approved safety containers and as otherwise prescribed by safety authorities. Store no flammable liquids or other hazardous material in bulk within the Work.
- 6.25 Store and mix paints in a heated and ventilated room or area assigned for this purpose. Keep this room or area locked when unattended. Remove oily rags and other combustible debris from the Place of the Work daily. Take every precaution necessary to prevent spontaneous combustion.
- 6.26 Protect prefinished metal surfaces by protective coatings or wrappings until time of final cleanup specified in Section 01 74 00. Protection shall be easily removable under work of Section 01 74 00 without damage to finishes. Do not permit strippable tape or coatings to become baked on surfaces which they protect.
- 6.27 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use primer and paint to match original.
- 6.28 Protect glass and other finishes against heat, slag and weld splatter by provision on adequate shielding. Do not apply Visible markings to surfaces exposed to view in finished state or that receive transparent finishes.
- 6.29 Protect surfaces of completed work exposed to view from staining, disfigurement and all other damage by restriction of access or by use of physical means suitable of the material and surface location.
- 6.30 Adequately protect trowelled concrete floors from damage. Take special measure when moving heavy loads or equipment on them.
- 6.31 Keep finished concrete floors free from oils, grease or other material likely to damage or discolour them or affect bond of applied finishes. Once building is enclosed, keep floors as dry as possible after curing.
- 6.32 Protect finished flooring from pedestrian traffic with reinforced kraft paper as a minimum, secured in place and with joints sealed by reinforced pressure sensitive tape. Maintain protection in place until contract completion.
- 6.33 Protect finished flooring from continuing construction work and delivery of products with plywood panels of minimum 6 mm thickness with joints between panels sealed with reinforced pressure sensitive tape. Maintain protection in place until work and deliveries are complete.
- 6.34 Make good or replace damaged materials to the satisfaction of the Consultant.
- 6.35 Hazardous Materials Information:

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets (MSDS) in accordance with jurisdictional authorities.
- .2 Deliver copies of Material Safety Data Sheets (MSDS) to the Consultant on all Products intended for use in the Work and designated as a “controlled product.”

7 MANUFACTURER’S INSTRUCTIONS

- 7.1 Unless otherwise indicated in the Specifications, fabricate, install, apply, connect, install, erect, use, clean, and condition Products in accordance with manufacturer’s instructions except where more stringent requirements are specified. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- 7.2 Notify the Consultant in writing, of conflicts between the Specifications and manufacturer’s instructions, so that the Consultant may establish the course of action. If requested, make a copy of those instructions available at the site.
- 7.3 In cases of improper installation or erection of Products, due to failure in complying with these requirements, the Consultant may direct removal and re-installation at no increase in Contract Price.

8 WORKMANSHIP

- 8.1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required Work is such as to make it impractical to produce required results.
- 8.2 Do not employ any unfit person or anyone unskilled in their required duties. The Consultant reserves the right to require the dismissal from the Place of the Work, workers deemed incompetent, careless, insubordinate or otherwise objectionable.
- 8.3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Consultant, whose decision is final.
- 8.4 Give particular attention to finished dimensions and elevations of the Work. Make finished Work fit indicated spaces accurately. Make finished Work flush, plumb, true to lines and levels and accurate in all respects.
- 8.5 In finished areas, conceal pipes, ducts, conduit and wiring in floors, walls, ceilings, chases, or behind furring except where indicated otherwise.
- 8.6 Ensure that service poles, fill-pipes, vents, regulators, meters and similar service installations are located in inconspicuous locations. If not indicated on drawings, verify

location of service installations with Consultant prior to commencing installation.

- 8.7 Ensure that integrity of fire separations is maintained where they are penetrated.
- 8.8 Finish access panels and doors to match adjacent wall and/or ceiling finish unless otherwise specified or indicated.
- 8.9 Keep surfaces, on which finished materials will be applied, free from grease, oil, and other contamination which would be detrimental in any way to the application of finish materials.
- 8.10 Enforce fire prevention methods at site. Do not permit fires, open flame heating devices or accumulation or debris. Use flammable materials only if all safety precautions are taken. Provide and maintain in working order ULC labelled fire extinguishers of types suitable for fire hazard in each case, and locate them in prominent location and to approval of jurisdictional authorities.
- 8.11 Where flammable materials are being applied, ensure that adequate ventilation is provided, spark-proof equipment is used, and smoking and open flames are prohibited.

9 DIMENSIONS

- 9.1 Check all dimensions at the site before fabrication and installation commences and report discrepancies to the Consultant.
- 9.2 Where dimensions are not available before fabrication commences, ensure that dimensions required are agreed upon between the parties concerned.
- 9.3 Prior to commencing work, ensure that clearances required by jurisdictional authorities can be maintained
- 9.4 Wall thicknesses and openings shown on the drawings may be nominal only; ascertain actual sizes at the site.
- 9.5 Verify dimensions of shop fabricated portions of the Work at the site before shop drawings and fabrications are commenced. The Owner will not accept claims for extra expense by reason of non-compliance with this requirement.
- 9.6 Fabricate and erect manufactured items, shop fabricated items, and items fabricated on or off site, to suit site dimensions and site conditions.
- 9.7 In areas where equipment is to be installed, check dimensional data on equipment to ensure that area and equipment dimensions are compatible with necessary access and clearance provided. Ensure that equipment supplied is dimensionally suitable for space provided.
- 9.8 The mechanical and electrical drawings are intended to show approximate locations of mechanical apparatus, fixtures, equipment, piping and duct runs, electrical apparatus,

fixtures, outlets, equipment, units, and conduit in diagrammatic form and wherein the mechanical and electrical items are not dimensioned, consider their locations to be approximate. Check the drawings and confer with the Consultant to settle the actual locations of these items as may be required to suit aesthetic and site conditions. Such relocation shall be done without change to the Contract Price.

- 9.9 Leave areas clear where space is indicated to be reserved for future equipment, including access to such future equipment.
- 9.10 Whether shown on the Drawings or not, leave adequate space and provision for servicing of equipment and removal and reinstallation of replaceable items such as motors, coils and tubes.

10 RELOCATION OF MECHANICAL AND ELECTRICAL ITEMS

- 10.1 The Owner and the Consultant reserve the right to relocate outlets at a later date, but prior to installation, without additional cost to Owner, assuming that the relocation per outlet does not exceed 3000 mm from the original location. No credits will be anticipated where relocation per outlet of up to and including 3000 mm reduces materials, products and labour.
- 10.2 Should relocations per outlet exceed 3000 mm from the original location the Contract Price will be adjusted in accordance with the provisions for changes in the Contract Documents.
- 10.3 Alter the location of pipes and other equipment, without additional cost to the Owner, if approved, provided the change is made before installation.
- 10.4 Make necessary changes, due to lack of coordination, as required and when approved, at no additional cost, to accommodate structural and building conditions.

11 EXPANSION, CONTRACTION, AND DEFLECTION

- 11.1 Conform to manufacturer's recommended installation temperatures. If items, components, assemblies, systems, and finishes are installed at temperatures different from operation or service temperatures, make provisions for expansion and contraction in service as acceptable to manufacturer and consultant. Repair all resulting damage should expansion and contraction provisions provide inadequate.
- 11.2 Make provisions for expansion and contraction due to temperature changes within components, Products and assemblies, and between adjacent components, Products and assemblies, and due to building movements including but not limited to creep, column shortening, deflection, sway and twist. Ensure provisions for expansion, contraction and building movements prevent damages from occurring to and within components, Products and assemblies.

11.3 Make adequate allowance at wall and partition heads for deflection of the structure above. Determine requirements from Consultant where additional information is required. Where partitions butt to underside of floor assembly, or structural framing, the clearance shall be based on the span of the members supporting the floor or structural framing. In making such allowance use methods which maintain the integrity of the wall or partition as a sound, and/or fire barrier.

11.4 Make provisions in pipes, plenums, ducts and vessels containing air and fluids as is necessary to prevent damage due to fluid and air induced pressure, surges and vibrations, to pipes, plenums, ducts and vessels and to adjacent components, assemblies and construction to which pipes, ducts, plenums and vessels are attached or pass through.

12 DIELECTRIC SEPARATION

12.1 Ensure that a dielectric separator is provided in a permanent manner over entire contact surfaces to prevent electrolytic action (galvanic corrosion) between dissimilar materials. Similarly, prevent corrosion to aluminum in contact with alkaline materials such as contained in cementitious materials.

13 PRODUCTS AT SOUND ATTENUATING PARTITIONS

13.1 Avoid sound transfer at sound attenuating partitions by careful location and treatment of mechanical and electrical equipments, ducts, grilles, diffusers, electrical outlets and boxes, and similar items. Where electrical boxes are back to back, serving each side, locate them at least 250 mm apart laterally and, if interconnected, use flexible connections.

14 FASTENINGS

14.1 Include in the work of each section necessary fastenings, anchors, inserts, attachment accessories, and adhesives. Where installation of devices is in work or other sections, deliver and locate devices in ample time for installation.

14.2 Do not install fibre, plastic or wood plugs or blocking for fastenings in masonry, concrete, or metal construction, unless specified or indicated on drawings.

14.3 Install work with fastenings or adhesives in sufficient quantity to ensure permanent secure anchorage of materials, construction, components and equipment under static conditions, and to resist building thermal movement, creep and vibration.

14.4 Provide metal fastenings and accessories in same material, texture, colour, sheen and finish as metal on which they occur, unless indicated otherwise.

14.5 Prevent electrolytic action between dissimilar metals and materials.

- 14.6 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior Work, and where attached to, or contained within, exterior walls and slabs, unless stainless steel or other material is specified. Leave steel anchors bare where cast in concrete.
- 14.7 Space anchors within their load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- 14.8 Conceal fasteners where indicated. Keep exposed fastenings to a minimum, space evenly and in an organized symmetrical pattern.
- 14.9 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- 14.10 Powder Actuated Fastenings:
 - .1 Do not use powder actuated fasteners for the support of ceilings.
 - .2 Do not use powder actuated fastenings on any portion of the Work, unless written consent for a specific use is obtained from the Consultant.
 - .3 Only low velocity tools will be permitted under any condition. Operators to be qualified and to be in possession of a valid operator's certificate.

15 ADJUSTING

- 15.1 Ensure that all components of assemblies fit snugly, accurately and in true planes, and that moving parts operate positively and freely, without binding and scraping.
- 15.2 Verify that work functions properly and adjust it accordingly to ensure satisfactory operation. Lubricate Products as recommended by manufacturer.

END OF SECTION

1 DEMONSTRATION AND INSPECTION OF PRODUCTS AND SYSTEMS

- 1.1 Arrange for a demonstration of systems and operating Products upon the 100% completion of their installation and prior to certification for Substantial Performance.
- 1.2 Include in the arrangements for the attendance of the Consultant, Owner, jurisdictional authorities, and personnel assigned by the Owner for the operation of the systems and/or Products.
- 1.3 Demonstrations shall be conducted by the Subcontractor responsible for the installation of the systems and/or Product, assisted by representatives of the manufacturer or supplier. All personnel conducting the demonstration shall be completely knowledgeable of all conditions of the operating, functioning and maintenance of the systems and/or Products.
- 1.4 Owner's representative will acknowledge the successful completion of each demonstration on a form provided by the Contractor. The form shall be agreed to by the Owner, Consultant and Contractor prior to demonstration and testing.
- 1.5 Submit copies of letters from manufacturers of Systems and/or Products before making application for certificate of Substantial Performance to verify that the Products has been installed and connected correctly, and that it is operating in a satisfactory manner. The certification shall be based upon inspection and testing of the Products by competent technical personnel. Include in letter of certification the names of personnel conducting the testing and inspection, the methods of inspection utilized, and the location in the building of the Products certified.
- 1.6 Following submission of letters of certification and their acceptance by the Owner, the owner shall have the right to use the Products on a trial basis and for instructing their personnel in its use.

2 FINAL INSPECTIONS AND CLOSE OUT

- 2.1 Submit proposed closeout procedures and schedule of inspection to Consultant for approval before final demonstrations and inspections commence.
- 2.2 Submit layout and survey requirements required by Owner and Authorities having jurisdiction.
- 2.3 Arrange for, conduct and document final demonstrations, inspections, close-out and take-over at completion of the Work in accordance with procedures described in OAA/OGCA TAKE-OVER PROCEDURES, OAA/OGCA Document No. 100. Where "Architect" is referred to in Document No. 100 it shall mean Consultant.

3 CERTIFICATE OF COMPLIANCE

- 3.1 Submit Certificates of Compliance, prior to the application for Substantial Performance,

for each of the following items.

- .1 An affidavit relative to the use of lead-free solder for all domestic water lines, regardless of location.
 - .2 Products for which Material Safety Data Sheets have been submitted and accepted.
 - .3 Other Work/Products identified in the Contract Documents as requiring a Certificate of Compliance.
- 3.2 Each Certificate of Compliance shall indicated names and addresses of the project, the Owner, the date of issue, product description including name, number, manufacturer, with a statement verifying that the Work/Product installed meets specified requirements and, if applicable, complies with the submitted and accepted Material Safety Data Sheets.
 - 3.3 Each Certificate of compliance shall be issued on the subcontractor's letterhead, properly executed, under whose work the prospective Work/Product has been provided.
 - 3.4 Each Certificate of Compliance shall be endorsed by the Contractor with his authorized stamp/signature. Ensure that submissions are made to allow sufficient time for review without delaying progress of scheduled completion.

END OF SECTION

1 GENERAL

- 1.1 Provide labour, Products, equipment, services, tools, and supervision necessary for cutting and patching work in accordance with the Contract Documents.
- 1.2 Obtain Consultant's approval prior to cutting, boring or sleeving load-bearing members.

2 DEFINITION(S)

- 2.1 The terms "make good", "making good", "made good", "restore to existing", "patch", "repair", or similar words or phrases are used in standards and these Contract Documents to mean the following, unless context provides otherwise:
 - .1 Make good materials and finishes which are damaged or disturbed during the process of additions and reconstruction under the Contract.
 - .2 Where existing work is to be made good, match new work exactly with the existing work in material, form, construction and finish unless otherwise noted or specified.
 - .3 Where existing work is to be made good, there shall be no visible difference in appearance, performance, or aesthetics between the existing work and the new work by the naked eye at a distance of 3 metres from the surface being made good.

3 SUBMITTALS

- 3.1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of any element of the Structure or Contract.
 - .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's or Other Contractors.
- 3.2 Include in request:
 - .1 Identification of Contract.
 - .2 Location and description of affected Work.
 - .3 Statement of necessity for cutting or alteration.
 - .4 Description of proposed Work and products to be used.

- .5 Alternatives to cutting and patching.
 - .6 Effect on work of Owner's or Other Contractors.
 - .7 Date and time Work will be executed.
- 3.3 Obtain Consultant's approval of proposed method of cutting prior to proceeding with the Work.

4 PRODUCTS

- 4.1 Same quality or better than Products incorporated in original installation.

5 PREPARATION

- 5.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
- 5.2 After uncovering, inspect conditions affecting performance of the Work.
- 5.3 Beginning of cutting or patching means acceptance of existing conditions.
- 5.4 Provide supports to assure structural integrity of surroundings; devices and methods to protect other portions of the project from damage.
- 5.5 Provide protection from elements for areas which may be exposed by uncovering Work; maintain excavations free of water.

6 EXECUTION

- 6.1 Execute Work to avoid damage to other Work.
- 6.2 Execute cutting, fitting and patching including excavation and fill to complete the Work.
- 6.3 Employ appropriate trades with skilled labour to perform cutting Work.
- 6.4 Fit Work segments together, to integrate with penetrations through surfaces and with other Work.
- 6.5 Remove and replace defective and non-conforming Work.
- 6.6 Do any drilling, cutting, fitting, patching and finishing that may be required to make the various classes and kinds of other Work fit together in a professional and finished manner. Make watertight connections with adjoining structures.
- 6.7 Provide openings in non-structural elements of Work for penetrations of mechanical and

- electrical Work.
- 6.8 Execute Work by methods to avoid damage to other Work and which will provide proper surfaces to receive patching and finishing.
 - 6.9 Cut Products using proper equipment and methods. On rigid materials, use a masonry saw or core drill. Pneumatic or impact tools are not allowed on masonry work without prior approval.
 - 6.10 Where new Work connects with existing structures, cut, patch and make good existing work to match original condition.
 - 6.11 Be responsible for correct formation and bridging of openings in masonry and structural walls as required.
 - 6.12 Ensure compatibility between installed Products and security of installation.
 - 6.13 Restore Work with new Products in accordance with requirements of the Contract Documents.
 - 6.14 Fit Work airtight to pipes, sleeves, ducts, conduits and other penetrations through surfaces.
 - 6.15 Properly prepare surfaces to receive patching and finishing.
 - 6.16 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

END OF SECTION

1 PROGRESS CLEANING

- 1.1 Remove from finish work, spatters, droppings, soil, labels, and debris, before they set up.
- 1.2 Ensure that only cleaning materials are used which are recommended for the purpose by both the manufacturer of the surface to be cleaned and of the cleaning material.
- 1.3 Maintain building work areas "broom clean" at least on a daily basis, but shall also be done immediately before finishing work.
- 1.4 No waste material may be burned or buried at site. Remove as often as required to avoid accumulation, no less than, at the end of each working day.
- 1.5 Remove packaging materials and debris from the site immediately product and equipment is unwrapped or uncrated.
- 1.6 Ensure that volatile fluid wastes are not disposed of in storm or sanitary sewers, in open drain courses, or anywhere on site.
- 1.7 Do not allow waste material and debris to accumulate in an unsightly or hazardous manner. Sprinkle dusty accumulations with water. Provide containers in which to collect waste material and debris. Dispose of hazardous products in accordance with requirements of jurisdictional authorities.
- 1.8 Ensure that cleaning operations are scheduled to avoid deposits, of dust or other foreign matter on surfaces during finishing work and until wet or tacky surfaces are cured.
- 1.9 Provide instructions for final cleaning of finishing work, and for inclusion in Maintenance and Operating Manuals.

2 FINAL CLEANING

- 2.1 Before final inspection, replace glass and mirrors broken, damaged, and etched during construction, or which are otherwise defective.
- 2.2 In addition to requirements for progress cleaning, Work shall include final cleaning by skilled cleaning specialists on completion of construction.
- 2.3 Remove temporary protections and make good defects before commencement of final cleaning.
- 2.4 Final cleaning shall remove dust, stains, paint spots, soil, grease, fingerprints, and accumulations of construction materials, interior and exterior to the building for all new work throughout new and existing Building. Work shall be done in accordance with manufacturer's instructions for each material. This work shall include:

- .1 Washing of exterior paved surfaces, and of interior stone, brick, and concrete floors.
 - .2 Cleaning and polishing of glass, mirrors, porcelain, enamel and finish metals.
 - .3 Vacuum cleaning of ceilings, walls and floors.
 - .4 Cleaning and polishing of terrazzo, ceramic and quarry tile floors.
 - .5 Cleaning of resilient flooring.
 - .6 Buffing of resilient flooring followed by two light coats of wax, each buffed as required by manufacturer.
 - .7 Washing clean of glazed wall surfaces.
 - .8 Cleaning of hardware, mechanical fixtures, plumbing fixtures, lighting fixtures, cover plates, and equipment, including polishing of the finish metal, porcelain, vitreous, and glass components.
 - .9 Cleaning of windows, entrances and skylights, both interior and exterior surfaces.
 - .10 Ensure mechanical ducts, grilles, etc. are clean, free of debris and dust.
- 2.5 Maintain cleaning until Owner has taken possession of building or portions thereof.

END OF SECTION

1 GENERAL

- 1.1 Hand over to the Consultant two (2) hard copies and two (2) electronic copies of a comprehensive operations and maintenance manual and material suitable for the Owner's maintenance employees. Manuals shall cover all Products supplied and installed under the Contract.
- 1.2 Submit draft of the operation and maintenance manuals for the Consultant's review at least 30 days prior to Substantial Completion. Incorporate alterations and additions, as found to be necessary during testing, and prepare the final version of the manual from the corrected draft.
- 1.3 Submit final version of operation and maintenance manuals prior to Contract Completion.
- 1.4 Testing of systems and equipment will not be deemed to be complete until the requisite number of copies of the final version of the manuals has been handed over to the Consultant.
- 1.5 If standard literature is incorporated into the operations and maintenance manual, any irrelevant information shall be deleted.
- 1.6 The manuals shall have sufficient detail in order that the Owner can totally maintain the equipment without outside help.
- 1.7 Submit all material in English.
- 1.8 \$5,000 will be withheld from the Contractor's payment pending successful completion and acceptance by the Consultant and the Owner of the requirements of this section.

2 FORMAT

- 2.1 Organize data in the form of an instructional manual.
- 2.2 Binders: Commercial quality, 219 x 279 mm, maximum "D" ring size, black colour.
- 2.3 When multiple binders are used, correlate data into related consistent groupings.
- 2.4 Cover: Identify each binder with type or printed title "Contract Record Documents"; list title of Contract, identify subject matter of contents.
- 2.5 Arrange content by systems or process flow, under Section numbers and sequence of Table of Contents.
- 2.6 Provide tabbed fly leaf for each separate Product and system, with typed description of Product and major component parts of equipment.

- 2.7 Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- 2.8 Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- 2.9 Electronic copies: Provide on CD in hard jewel case appropriately labelled. Contents of CD to be organized to match that of hard copy binders. All contents to be in PDF format. Drawings to be provided in both CAD and PDF.

3 CONTENTS

- 3.1 Operation and maintenance manuals shall contain the following minimum information and data:
 - .1 Table of contents: Provide title of Contract; names, addresses, and telephone numbers of Consultants and Contractor with name of responsible parties; schedule of Products and systems, indexed to content of the volume.
 - .2 For each Product or system: List names, addresses and telephone numbers of Subcontractors, suppliers and service representatives, including local source of replacement supplies and parts including telephone numbers.
 - .3 Warranties: Warranties are between the Contractor and Owner. Warranties shall include, as a minimum:
 - .1 Description of warranty coverage.
 - .2 Date warranty starts (being date of Contract Completion).
 - .3 Date warranty expires.
 - .4 Contact name, address and phone number (the Contractor shall also be responsible for advising the Owner of changes in contact information during the warranty period).
 - .5 Equipment and components performance curves.
 - .6 Hydro certificates.
 - .4 Reports: For each Product or system provide the following:
 - .1 Manufacturer's certified reports
 - .2 Factory test reports.
 - .3 Field testing reports.
 - .4 Details of design, construction and/or fabrication features, component function and maintenance requirements, to permit effective start-up, operation, maintenance, repair, modification, extension and expansion of any portion or feature of the installation.
 - .5 Technical data, Product data, supplemented by bulletins, component illustrations, de tailed views, technical descriptions of items and parts lists.
 - .6 Schematics, interconnection lists: Manuals shall be complete with schematic and wiring diagrams, wiring interconnection lists and diagrams fully cross referenced and coordinated, printed circuit board layouts including the component identification, component parts list with electronic substitution equivalent. Provide cross referenced components lists and sequence of operations.

- .8 Trouble shooting and fault location guide: Instructions to facilitate quick return of malfunctioning equipment to operation.
- .9 Routine servicing and preventative maintenance schedule for Products and/or estimated hours required for routine servicing and preventative maintenance tasks.
- .10 List of recommended spare parts and recommended quantity of each item to be stocked based on spare part availability and re-order time.
- .11 Complete set of reviewed shop drawings.
- .12 Product data: Mark each sheet to clearly identify specific Products and component parts, and data applicable to installation; delete inapplicable information.
- .13 Drawings: Supplement Product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams and as required in the Specifications.
- .14 Typed text: As required to supplement Product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions and as required in the Specification.

4 DRAWINGS

- 4.1 Prepare all required drawings on CAD, using Autocad Version 2004 or higher.
- 4.2 Prepare CAD drawings to meet the requirements of the Owners or Consultant's CAD Standards and Procedures.
- 4.3 Supply and hand over to the Consultant one CD of drawings for each final drawing prepared under this Contract, including but not limited to circuit drawings, equipment layout drawings, and shop drawings.
- 4.4 The final size of drawings shall be 560 mm x 860 mm. Half size reproductions (280mm x 430 mm) shall also be provided.
- 4.5 Prior to Contract Completion, supply and hand over to the Consultant, one complete set of CAD Drawing Files in Autocad format on storage media acceptable to Consultant for each final drawing prepared under this Contract, including but not limited to circuit drawings, equipment layout drawings, and shop drawings.
- 4.6 Text files shall be provided in PDF.
- 4.7 Include marked up copy of as-builts as prepared by the Contractor.

5 TRANSMITTAL

- 5.1 Forward storage media to the Owner through the Consultant with a transmittal form. Transmittal shall contain the list of file names contained on the storage media.
- 5.2 Data forwarded to the Owner shall contain the following files in addition to the design information:

- .1 Library parts/cells used in the design files.
- .2 Level convention used for each design file.
- .3 Plotting instructions used to prepare hard copies including colour tables, pen tables and plot scale.
- .4 Working units of the design files.
- .5 Font library, if the standard is not used.

END OF SECTION

1 PROGRESS RECORDS

- 1.1 Maintain on site, permanent written records of daily progress of the Work. Records shall be open to review by Consultant and Owner at all times.
- 1.2 Records shall show dates of commencement, progress and completion of various trades and items of work. Particulars pertaining to number of employees of various trades and type and quantity of equipment employed daily, temperature, protection methods and other such data shall be noted.

2 RECORD DRAWINGS

- 2.1 Authorized deviations from drawings shall be marked in red accurately on one set of drawing prints in a neat, legibly printed manner and shall be dated. Prior to final inspection, neatly transfer the recorded information to a second set of drawing prints of the most recent revision to the drawings and submit both sets to the Consultant.
- 2.2 Maintain record drawings up to date as Work progresses. Status of maintained record drawings may be considered as a condition for validation of applications for payment.
- 2.3 Identify each record drawing as "Contract Record Copy" and maintain the record drawings in good condition. Make record drawings available to the Consultant at all times.
- 2.4 Record drawings shall include accurate dimensioned record of deviations and changes in Work from drawings.
- 2.5 Record drawings shall be signed and dated by Contractor.
- 2.6 Submit record drawing to Consultant for review and make corrections as directed by Consultant.
- 2.7 Record accurately all deviations in the Work.
- 2.8 Accurately record locations of concealed structure, mechanical and electrical services and similar Work not clearly in view, the location of which is required for maintenance, alteration Work and future additions. Do not conceal such Work until the location has been recorded.
- 2.9 Accurately record locations of equipment bases, anchors, concrete pads and roof curbs, sleeves, piping, conduits, ducts, maintenance holes and valves, etc. located either below, outside or within structure.
- 2.10 Where piping, conduits and ducts are underground, underfloor, embedded in concrete or otherwise in inaccessible locations, accurately record with respect to structure column lines or walls and elevations with respect to finished floor levels or grades referenced to the centre line of components.

- 2.11 Accurately record any components which will be in inaccessible locations for Consultant's review before the component is covered, or buried, or made inaccessible.
- 2.12 Clearly and prominently mark each drawing "RECORD DRAWING prepared by _____(name of Contractor)"
- 2.13 Provide record drawings for review at progress meetings once per month.
- 2.14 A total of \$5,000 will be withheld from the Contractor's payment pending successful completion, submission of Operations & Maintenance manuals, Record Drawings, and acceptance by the Consultant and the Owner of the requirements of this section.

END OF SECTION