

TENDER
WR#52912 – MATH & COMPUTER
RENOVATE SWING SPACES
October 16, 2024



UNIVERSITY OF
WATERLOO

CLOSING DATE:	<u>Tuesday, November 12, 2024</u>
CLOSING TIME:	<u>3:00 pm EDT</u>
INQUIRIES DEADLINE:	<u>Tuesday, November 5, 2024</u>
CLOSING METHOD:	<u>Electronically: Bonfire</u>

University of Waterloo
Plant Operations, General Services Complex (GSC)
200 University Avenue West
Waterloo, Ontario, N2L 3G1

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END OF SECTION

1 PROJECT DESCRIPTION

- .1 The Work is identified as **Renovate Swing Spaces**, also known as **WR#52912** as prepared by the Owner, University of Waterloo.

2 BID DOCUMENTS

- .1 Sets of the bid documents are available on the University of Waterloo electronic plans room hosted by Bonfire.
 - .1 [Prequalified] contractors may view and download drawings at no charge.

3 BID INQUIRIES

- .1 Direct bid inquires in writing by email to one of the following individuals at the office of the Owner;
 - Architectural: **Jutte Dorndorf**, jutte.dorndorf@uwaterloo.ca.
 - Mechanical: **Dillon Pertout**, dpertout@uwaterloo.ca.
 - Electrical: **Kyle Harris**, kyle.harris@uwaterloo.ca.
- .2 Inquires received after **Tuesday, November 5, 2024 @ 3:00** pm will not be responded to.

4 BID FORM

- .1 Submit complete, signed and sealed Bids consisting of the Bid Form and the Bid Form Supplements provided as part of the Bid Documents at the time and place indicated below.

5 BID CALL

- .1 Bids signed under seal, executed and dated will be received in electronic format only on Bonfire on the date and time listed on the cover page.
- .2 Bids submitted after the closing date and time shall not be accepted.
- .3 Submit the Bid Form Supplements with the submitted bid form.
- .4 Bids will be opened privately, immediately after the time for the receipt of Bids.
- .5 Amendments to the submitted offer will be permitted if ammended through Bonfire prior to the closing date and time.
- .6 Bids will not be accepted in person or by fax or email or by any other electronic means of submission other than through Bonfire.
- .7 Upload the Requested Document to the link provided in the **Submission Instructions**.

6 OMISSIONS AND DISCREPANCIES

- .1 Notify the Owner at once of any discrepancies found in, or omissions from the Bid Documents.
- .2 Contact the Owner if in doubt as to the meaning of any of the Bid Documents.

- .3 In the event a discrepancy in the documents occur, the Owner will issue an Addendum to all known Bidders to clarify or correct the discrepancy.
- .4 The Owner will not be responsible for any verbal instructions or clarifications given during the bidding period.
- .5 Should any clarifications, discrepancies or omissions go unreported to the Owner during the bidding period, the proper interpretation shall be at the discretion of the Owner. The Bidder is expected to make “best practice” judgements as to the methods of construction and constructability. If such requirements are not raised during the bid period, they are deemed to be understood by the Bidder and the requirements included in the Bid.
- .6 The Contract Documents include the drawings and specifications, which are complementary in nature. Together, the drawings and specifications set out the requirements of the Work.
 - .1 Refer to CCDC 2, GC 1.1 – Contract Documents
 - .2 Should Products or portions of the Work be indicated either on the Drawings or within the Specifications, they are considered to be part of the Contract Documents, even if not shown on both.
 - .3 Failure to describe a Product that is required to construct a complete system or assembly will not relieve the Contractor from the responsibility of providing a completed Project in accordance with the requirements of the Contract Documents.

7 WITHDRAWAL OF BIDS

- .1 Prior to Bid Closing
 - .1 A Bidder may request that their Bid be withdrawn. Bid withdrawal will be allowed if the request is made before the deadline for receipt of Bids.
 - .2 Withdrawal requests must be directed to the Owner by letter or in person. Telephone, Fax or email requests will not be considered.
 - .3 When withdrawals of unopened Bids are made in person, submit to the Owner a letter confirming the withdrawal details.
 - .1 If the person withdrawing the Bid is someone other than an authorized representative of the company, an authorized representative of the company must confirm the authenticity of the request.
 - .4 Withdrawal letters received after the Bid has been deposited but before the deadline for receipt of Bids, shall, together with the confirmation of withdrawal, be submitted to the Owner.
 - .5 Withdrawn Bids will remain unopened and will be identified at the Bid opening as a Withdrawn Bid.
 - .6 The withdrawal of a Bid does not disqualify a Bidder from submitting a subsequent Bid for the same Bid Call.
- .2 After Bid Closing

- .1 Bids may be withdrawn after the deadline for receipt of Bids, with written request submitted to the Owner.

8 ACCEPTANCE OF BIDS

- .1 In the case of incorporated companies, Bids shall be signed and sealed. In the case of an individual, partnership or unincorporated companies, Bids shall be signed and witnessed.
- .2 The Owner reserves the right to accept any bid or reject any or all bids without explanation. The lowest Bid Price will not necessarily be accepted.
 - .1 The “lowest Bid Price” shall be defined as the lowest base bid price. Alternate Prices, Separate Prices and any Substitutions that may affect the Contract Price shall not be considered in determining the “lowest Bid Price”.
- .3 The Bidder acknowledges and agrees that nothing contained herein, in the Bid Documents or elsewhere, no act done or expense incurred by it in the preparation and submission of this Bid, no trade or industry custom or practice, and no representation or assurance that may have been made or given to it by or on behalf of the Owner, shall in any manner legally bind the Owner, in any circumstances, to accept this Bid, lowest Bid Price, only a Bid submitted in compliance with the requirements of the Bid Documents, or any Bid at all. The Bidder further acknowledges and agrees that the Owner shall have complete and unrestricted liberty in this regard and may reject any or all Bids or may accept any Bid in whatever manner, at whatever Bid Price, on whatever terms and for whatever reasons as the Owner, in its absolute discretion, considers to be in its own best interests, all without liability or obligation of any kind to the Bidder.

9 INFORMAL OR CONDITIONAL BIDS

- .1 Bids that are incomplete, conditional, illegible or obscure, or that contain reservations, erasures, alterations, or irregularities of any kind shall, at the discretion of the Owner, be declared informal.
- .2 Bids that fail to include proof of WSIB coverage or insurance requirements shall, at the discretion of the Owner, be declared informal.
- .3 Bids based upon prices seeming so unbalanced as to adversely affect the interests of the Owner shall, at the discretion of the Owner, be declared informal.
- .4 Bids based upon an unreasonable period of time for completion of the Work shall, at the discretion of the Owner, be declared informal.
- .5 Bids are by invitation only from a list of prequalified bidders. Bids received from unsolicited bidders shall be returned.
- .6 The Owner reserves the right to waive compliance with certain formalities and requirements of the Bid Documents.

10 REQUESTS FOR CLARIFICATION AND BID EVALUATION

- .1 The Owner 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 Owner.
- .2 The Owner may solicit additional information after close of bids from any or all bidders to support bid evaluation. The evaluation of the bids submitted and the decision to award the contract may be made by the Owner on the basis of, but not necessarily limited to, the following criteria:
 - .1 price
 - .2 experience with other projects currently in progress
 - .3 quality assurance
 - .4 ability to handle current and anticipated future workload
 - .5 proposed construction schedule and completion date
 - .6 qualifications and experience of proposed personnel
 - .7 the effect of alternative prices on the bid price
 - .8 ability to ensure continuity of qualified and experienced personnel
- .3 The Owner reserves the right to request supplementary information from one or more bidders after close of bids, without affecting the validity of the bids submitted, as may be required to facilitate the Owner's decision to award a contract, if any.
- .4 Requests for information shall not be construed as acceptance of a bid.

11 BID FORM REQUIREMENTS

- .1 Contractor Identification
 - .1 Print clearly the legally registered name, address, postal code, phone and fax number of your company in the space provided
- .2 Addenda
 - .1 Enter in the space provided on the Bid Form, addenda received prior to close of Bids.
 - .2 Addenda issued by the Owner to known Bidders before the receipt of Bids are considered part of the Contract Documents.
- .3 Taxes
 - .1 Refer to CCDC 2, GC 10.1 – Taxes and Duties. Include all applicable taxes in the Bid Price at the time of Bid closing, except Value Added Taxes. Include any taxes and duties that are known to apply during the course of the stated construction period.

- .2 Refer to the Supplementary Conditions for amendments to GC 10.1 – Taxes and Duties.
- .4 Allowances
 - .1 Bidders must include allowances specified in Section 01 00 00
 - .2 Allowances do not include Value Added Taxes.
- .5 List of Sub-contractors
 - .1 List in the Bid Form Supplement, the names of requested Sub-contractors whose prices have been included in the Bid Price.
 - .2 Where more than one Sub-contractor is required to perform the work of a section, enter the names of all Sub-contractors required to complete that section of work. If the Bidder names two or more Sub-contractors to perform the work of a section that in the opinion of the Owner will require only one Sub-contractor, the Bid may be ruled informal.
 - .3 No changes will be allowed to the List of Sub-contractors without first receiving written permission of the Owner. To affect such a change, a written release must be obtained from the named Sub-contractor before consideration is given.
 - .4 Work indicated as being completed “BY OWN FORCES” which, in the opinion of the Owner is beyond the capabilities of the the Contractor, will render the Bid informal.
 - .5 After information is available as to the successful Contractor and at the discretion of the Owner interested Sub-contractors may obtain verification from the Owner whether or not they were listed on the List of Sub-contractors submitted with the Bid.
- .6 Substitutions
 - .1 The Bid shall be based upon materials and equipment specified.
 - .2 Should a Bidder wish to substitute products other than those specified, he may do so by submitting on the Bid Form Supplement a list of proposed substitutions and consequent changes to the Bid Price should the substitution be approved for use in the Contract.
 - .3 Difference in cost shall include all work required by all Sub-contractors affected by the substitution.
 - .4 Substitutions shall fit into the space allocations designed for items indicated in the Contract Documents.
 - .5 Where two or more manufacturers are listed as acceptable, provide the name of the manufacturer being carried in the Bid Price.
 - .6 Mechanical and Electrical Sub-contractors shall refer to the Bid Form Supplements and the common work result Sections of the specifications for any additional instructions pertaining to materials and equipment specified and alternates.
 - .7 Substitution Prices do not include Value Added Taxes.

.7 Hourly Rates

- .1 Submit on the Bid Form Supplements, the requested labour rates inclusive of labour burden, mark-ups, supervision, Worker's Safety Insurance and any other direct or indirect costs.
- .2 These labour rates will not be subject to any additional markup.
- .3 The labour rates will be used for assessing additions and deletions to the Contract Price as a result of Changes to the Work.
- .4 Hourly rates do not include Value Added Taxes.

.8 Unit Prices

- .1 Submit on the Bid Form Supplements the requested Unit Prices.
- .2 Unit Prices include all mark-ups, as defined in the Contract Documents.
- .3 The Unit Prices shall be used for additions and deletions to the Contract Price as a result of Changes to the Work.

12 TRADE UNIONS

- .1 It is the Contractor's and Sub-contractor's responsibility to follow Trade Union requirements to which they are party to.
- .2 If conflicts, disputes, pickets or any other disturbances or lost time occurs, the Contractor must take the necessary steps expediently to resolve the matter.
- .3 The Owner will not be held liable for any cost of injunctions or lost time.
- .4 Contractors that have an "All Trades Agreement" must list Sub-contractors on their Bid Form that meet the requirements of this Agreement. Failure to follow this requirement will render the Bid Form informal.

13 MARKUPS FOR EXTRA WORK

- .1 For extra work added to the contract, the Contractor and their Subcontractors are entitled to a combined markup for overhead and profit of 10% on work carried out by their own forces and 5% on work carried out by their Subcontractors.
- .2 The proper interpretation of markup application shall be at the discretion of the Consultant, or at the discretion of the Owner in the case of the Owner acting as the Consultant.
- .3 Contractors and Subcontractors who subcontract work out to separate companies who are considered to be under the same "corporate umbrella" will be eligible for only a single markup on extra work.

14 CONTRACT EXECUTION

- .1 It is the understanding of the Owner that the successful Bidder will enter into a Contract with the Owner within seven (7) days after notification of Contract award.

- 15 APPROVED EQUAL STATUS
- .1 Suppliers and manufacturers wishing to have their product approved “As Equal” to an item specified must make submission to the Owner at least 96 hours prior to Bid closing.
 - .2 If approved, an addendum will be issued granting this approval.
 - .3 No “Approved Equal” status will be allowed on a verbal basis prior to, or after the receipt of Bids.
- 16 PROPOSED PROJECT SCHEDULE
- .1 Carry out the work of this Contract in accordance with the proposed scheduled start and finish dates listed below.
 - .1 Proposed Start Date: Construction is expected to commence not before [*date*]
 - .2 State in the Bid Form the estimated time from award of Contract to commencement of the Work at the Place of the Work, and the time to attain Substantial Performance of the Work. Failure to provide Time of Completion information may render Bid informal.
- 17 FIRE SUPPRESSION SUBCONTRACT BID SUBMISSION
- .1 The Fire Suppression Sub-contractors are to bid directly to the Contractor bidders.
 - .2 Mechanical Subcontract bids will not include for the fire suppression system portions of the Work.
- 18 TESTING, ADJUSTING AND BALANCING
- .1 Ensure the Mechanical Subcontract bid includes the costs for the start-up testing and balancing of the mechanical systems.

END OF SECTION

- 1 General
- 1.1 HAZARDOUS BUILDING MATERIAL REPORT
 - .1 A copy of a report forming part of the Bid Documents is [being made available] [attached as an appendix] [available for viewing at the offices of the Consultant], and is identified as follows:
 - .1 Title: 017-MC-Project Specific DSAssessment Rpt;
 - .2 Reference No.: 100117.334;
 - .3 Dated: October 14, 2024;
 - .4 Prepared By: **Onward Environmental Inc.**
30 Forest Edge Trail
Kitchener, ON N2P 2L9
Telephone: 519-572-7990
Email: shauck@onwardenvironmental.com
 - .2 The Owner and Consultant assume no responsibility for any interpretation or deduction that a third party may make from the contents of the report.
 - .3 The Owner and Consultant assume no responsibility for the scope or accuracy of the information contained in the report.
 - .4 Direct questions pertaining to the report to the [author of the report] [Consultant] [contact named in the bid documents].

END OF SECTION

SUBMITTED TO: UNIVERSITY OF WATERLOO
200 UNIVERSITY AVENUE WEST
WATERLOO, ON, N2L 3G1

STIPULATED BID PRICE

We, _____
(Registered Company Name)

of, _____
(Registered Address and Postal Code)

Business: Phone Number _____
Fax Number _____
Bid Contact Name _____
Email Address _____
Website _____

having visited the Place of the Work and carefully examined the Bidding Requirements, Contract Forms and Conditions of the Contract, along with Specifications and Drawings inclusive for **WR#52912 MC – Renovate swing spaces**:

We hereby offer to enter into a Contract to perform the Work required by the Bid Documents <including the Mechanical and Electrical portions of the Project> for the stipulated sum of:

(\$ _____) In Canadian Dollars

which amount includes the specified cash and contingency Allowances, Itemized Prices, applicable taxes and duties in force at this date, and taxes known to be applicable during the construction period. Value Added Taxes, are not included in the Bid Price.

We acknowledge that we will be required to subscribe and attain good standing in the Owner’s preferred Contractor Compliance software application prior to award of contract.

The Owner’s preferred Contractor Compliance software is a dual-subscription model requiring both the Owner and the Contractor(s) to pay fees. It is the Contractor’s responsibility to review and understand the subscription terms and conditions.

We declare that all site and office personnel assigned to the project have completed, or will complete prior to the start of construction, the University of Waterloo Safety Orientation module in ISN. A written confirmation shall be required, prior to the start of construction.

BREAKDOWN OF BID PRICE (VALUE ADDED TAXES EXCLUDED)

Mechanical Bid Price	\$ _____
Electrical Bid Price	\$ _____
All Other Trades, including General Contractor's overhead and profit	\$ _____
TOTAL BID PRICE (excluding Value Added Taxes)	\$ _____

Interest: Should either party fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest at two percent (2%) per annum above the bank rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The bank rate shall be the rate established by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to the chartered banks.

LIST OF SUBCONTRACTORS

Following is a list of Subcontractors we propose to use for the performance of the identified portions of the Work.

Only one (1) Subcontractor shall be listed for each identified portion of the Work.

Work to be performed by us is indicated by the words "BY OWN FORCES".

We agree that changes to this list will not be allowed without the express written permission of the Owner and a written release from the named Subcontractor.

We acknowledge that Subcontractors on this list may be so notified by the Owner.

Electrical	_____
Mechanical	_____
Abatement	_____

The following list of subcontractors are not required to subscribe to the Owner's preferred Contractor Compliance software application prior to award of contract.

- Demolition _____
- Joint Sealants _____
- Hardware _____
- Drywall & Acoustics _____
- Resilient and Carpet Flooring _____
- Painting & Wall Covering _____
- Mechanical Insulation _____
- Testing, Adjusting and Balancing _____
- Fire Suppression _____

PROPOSED SUBSTITUTIONS

The following are our proposed substitutions for the work listed hereunder. Such work and amounts are **NOT** included in our Bid Price. These prices do not include Value Added Taxes.

<u>Item</u>	<u>Amount to be Added to Bid Price</u>	<u>Amount to be Deducted From Bid Price</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____

LABOUR RATES

The following labour rates shall be used for additions or deletions to the Contract Price. These labour rates do not include Value Added Taxes.

Description	<u>Addition to Contract</u>	<u>Deletion From Contract</u>
Superintendent (\$/ hr)	\$ _____	\$ _____
Journeyman Carpenter (\$/ hr)	\$ _____	\$ _____
Labourer (\$/ hr)	\$ _____	\$ _____

The following labour rates shall be used for additions or deletions to the Contract Price by the identified Subcontractors. These labour rates do not include Value Added Taxes.

Description	<u>Addition to Contract</u>	<u>Deletion From Contract</u>
Journeyman Mechanical Tradesman (\$/ hr)	\$ _____	\$ _____
Journeyman Electrical Tradesman (\$/ hr)	\$ _____	\$ _____

UNIT PRICES

The following are our unit prices, including mark-up, for the units of work listed hereunder. The Unit Prices listed apply to performing the units of work only during the time scheduled for such work in the project schedule. These prices do not include Value Added Taxes.

ITEM	ADDITION	DELETION
Acoustic Ceiling Assembly, with hangers, 'T' rails and acoustic lay-in tile (Dune 24" x 48" x 5/8") <M per sq.m.> <I per sq.ft.>	\$ _____	\$ _____

Declarations

We hereby declare that:

- .1 No person, firm or corporation other than the undersigned has any interest in this Bid or in the proposed Contract for which this Bid is made.
- .2 This Bid along with the Bid Form Supplements are irrevocable and open to acceptance for a period of Thirty (30) days from the date of Bid closing.
- .3 We agree to commence work on the site within _____ Working Days of being notified of the acceptance of this Bid and substantially perform the Work in _____ weeks.

SIGNATURES

Signed, sealed and submitted for and on behalf of:

Registered Company Name

Witness

Signature

Witness

Name

Name

Title

DATED AT _____ this _____ day
of _____, 20_____.

(Affix Company Seal Hereto)

- 1 General
- 1.1 AGREEMENT BETWEEN OWNER AND CONTRACTOR
 - .1 CCDC2 - 2008 Stipulated Price Contract, as amended below, and as modified by Section 00 73 00 – Supplementary Conditions, form the basis of Agreement between the Owner and Contractor including Definitions of specific words and terms.
 - .2 The University of Waterloo (the Owner) will provide two copies of the executed CCDC 2 -2008 contract, ready for signatures by both parties. (Contractor and Owner)
 - .3 At the time of signing, the successful Contractor shall provide:
 - .1 Two (2) CCDC 2 – 2008 Copyright Seals (adhesive-backed decal with the copyright message), as required by CCDC to authenticate both copies of the Contract.
 - .2 The successful Contractor shall include in the Contract Price, the supply of the above mentioned Copyright Seals.
 - .4 Notwithstanding sentences 1.1.1, 1.1.2, and 1.1.3 above, a CCDC2 2008 contract in the form of a CCDC2 –MA 2016 Master Agreement, complete with a CCDC 2 Work Authorization may alternatively be signed for Contract values less than \$250,000.00.
- 2 Supplementary Agreement Items
- 2.1 ARTICLE A-5, PAYMENT:
 - .1 For a Contract value of \$100,000.00 and greater, add sentences 5.1.4., and 5.1.5. as follows:
 - 5.1.4. Paragraph 5.1: The holdback will be ten percent (10%), in accordance with applicable Construction Act legislation.
 - 5.1.5. In accordance with Section 00 73 00 – Supplementary Conditions, a separately calculated Deficiency Holdback of two percent (2%) will be applied to each application of payment.
 - .2 For a Contract value less than \$100,000.00 add Sentence 5.1.4. as follows:
 - 5.1.4. 5.1.4. In accordance with Section 00 73 00 – Supplementary Conditions, a separately calculated Deficiency Holdback of two percent (2%) will be applied to each application of payment.

Definitions

 - .2 Add new Definition for Markup as follows: "Markup means the Contractor's or the Subcontractor's (in case of work being done by the Subcontractor) profit and overhead costs as related to the General Conditions and the Sections of Division 1 of the specification including costs of extension of contract time, office overhead, field supervision, layouts, co-ordination, travelling expenses, and any other direct or indirect costs."
 - .3 Add new Definition for Schedules as follows: "Schedules are supplementary details and lists contained within or appended to the Drawings and Specifications."
 - .4 Add new Definition for Bid Documents as follows: "The Bid Documents shall consist of the Contract Documents, Instructions to Bidders, Available Project Information, Bid Form, and other information issued for the benefit of bidders."

- .5 Add new Definition for Toxic or Hazardous Substances as follows: "Toxic or Hazardous Substances means designated substances, as currently defined by applicable statutory and regulatory requirements."
- .6 Add new Definition for Make Good as follows: "Make Good means to restore new or existing work after being damaged, cut or patched, or rejected by the Consultant. Use materials identical to the original materials, with visible surfaces matching the appearance of the original surfaces in all details, and with no apparent junctions between new and original surfaces."

END OF SECTION

The Agreement, Definitions and General Conditions of the Contract (CCDC 2-2008), are hereby amended as follows:

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
- Project record documents, drawings and manuals to provide instructions for the operation and maintenance of the Work.

GENERAL

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.

GC1.1 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, 9.2.8.4, 9.5.2.4 and 9.5.3.4 and in 12.1.1."
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. Delete paragraph 2.2.4. in its entirety.
2. Add the word "schedules" after the word "techniques" in paragraph 2.2.6.
3. Add to the end of the second sentence of paragraph 2.2.6.; "or to adhere to the construction schedule."
4. 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 in accordance with paragraphs 2.2.7, 2.2.8 and 2.2.9".
5. Delete the comma after the word "submittals" and add the words "which are provided" before the words "in accordance" in paragraph 2.2.14.

6. Add new sentence to end of paragraph 2.2.11; "The *Consultant's* obligation to make findings on a large claim or large number of claims is subject to the terms and conditions of the *Owner/Consultant* agreement."

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 the word "schedules" after the word "techniques" in paragraph 3.1.2.
2. 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 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. "

GC3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

1. Delete paragraph 3.2.2.2.
2. Add the following paragraphs:
 - "3.2.6 Entry by the *Owner's* own forces and by other contractors shall not mean acceptance of the *Work* and shall not relieve the *Contractor's* responsibility to complete the *Work*.
 - 3.2.7 Placing, installation, application, and connection of work by *Owner's* forces or by other contractors on and to, the *Work* shall not relieve the *Contractor's* responsibility to provide and maintain the specified warranties."

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*. "

GC3.5 CONSTRUCTION SCHEDULE

1. Amend paragraph 3.5.1.1 as follows:

"prepare and submit to the *Owner* and the *Consultant* within 10 days following award of *Contract*, a construction schedule"

GC3.6 CONSTRUCTION SAFETY

1. Amend paragraph 3.6.1 as follows:
"The *Contractor* shall be solely responsible"
2. Add following paragraph:
"3.6.2 The *Contractor* acknowledges and is aware of the *Contractor's* responsibilities under the Occupational Health and Safety Act having jurisdiction in the *Place of the Work* and that such responsibilities have been brought to the *Contractor's* attention by the *Owner*."

GC3.7 SUBCONTRACTORS AND SUPPLIERS

1. Add new paragraph 3.7.7:
"3.7.7 Once accepted by the *Owner*, the *Contractor* may not change any Subcontractor without valid reason. The *Contractor* shall advise the *Consultant* and the *Owner* in writing of a proposed change in Subcontractor, giving valid reason for the change. No change may be made without prior written approval of the *Owner*. Any change in Subcontractors made by the *Contractor* without proper notification and written approval from the *Owner*, may be considered a breach of the *Contract*."

GC3.8 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*."

GC3.9 DOCUMENTS AT THE SITE

1. Amend paragraph 3.9.1 as follows:
".... *Contract Documents* including Addenda, Changes to the *Work*, *Supplemental Instructions*, *Submittals*,"

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;
"3.10.3 The *Contractor* shall prepare a schedule of the dates for provision, review and return of *Shop Drawings* and *Submittals* and submit it to the *Consultant* for review.
4. Delete the last sentence in paragraph 3.10.9
5. Delete the words "so as to cause no delay in the performance of the Work" in paragraph 3.10.12.

GC 3.14 PERFORMANCE BY CONTRACTOR

1. Add new General Condition 3.14 PERFORMANCE BY THE CONTRACTOR

"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*.

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 direct access to qualified and competent personnel to replace its designated site supervisor and project manager, subject to the *Owner's* approval, in the event of death, incapacity, removal or resignation. "

GC4.1 CASH ALLOWANCES

1. Delete paragraph 4.1.4 and substitute the following:

"4.1.4 Where the actual cost of the *Work* under any cash allowance exceeds the amount of the allowance, any unexpended amounts from other cash allowances shall be reallocated, at the *Consultant's* direction, to cover the shortfall, and, in that case, there shall be no additional amount added to the *Contract Price* for overhead and profit. Only where the actual cost of the *Work* under all cash allowances exceeds the total amount of all cash allowances shall the *Contractor* be compensated for the excess incurred and substantiated, plus an amount for overhead and profit on the excess only, as set out in the *Contract Documents*. Where the actual cost of the *Work* under all cash allowances is less than the total amount of all cash allowances, the *Owner* shall be credited for the unexpended portion of the total of all cash allowances, but not for *Contractor's* overhead and profit on such amount."

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* without any adjustment for the *Contractor's* overhead and profit on such amount. "

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

"4.1.7 The *Contractor* shall prepare a schedule that shows when the *Owner* must authorize ordering of items called for under cash allowances 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. "

GC5.2 APPLICATIONS FOR PROGRESS PAYMENT

1. Add new paragraph 5.2.8:

"5.2.8 The second and all subsequent applications for payment made by the *Contractor*, *Subcontractor*, or *Supplier* shall include, without limitation, the following:

.1 A Statutory Declaration CCDC 9A-2001 Document, amended as follows:

2. "..... by the said contract relating to Payment Certificate No _____, except the accounts listed on Schedule "A" attached hereto and holdback monies properly retained.

.2 A "Certificate of Standing" from the Workplace Safety & Insurance Board stating that the *Contractor* has complied with the requirements of the Act and is in good standing as of the date of Certificate."

GC5.3 PROGRESS PAYMENT

1. Delete subparagraph 5.3.1.1 in its entirety.

GC5.7 FINAL PAYMENT

1. Amend paragraph 5.7.4 as follows:
".... no later than 20 days"

GC6.4 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. Delete the period at the end of paragraph 6.5.2, and substitute the following words:
", but excluding any consequential, indirect or special damages."
3. 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. Delete paragraph 6.6.5. in its entirety and substitute new paragraph 6.6.5;
"6.6.5. The *Consultant's* findings, with respect to a claim made by either party will be given by Notice in Writing by the *Consultant* to both parties within reasonable time after receipt of the claim information noted in paragraph 6.6.3. "
2. Add new paragraph 6.6.7;
"6.6.7. The *Owner* may make claims arising out of the costs incurred for additional services provided by the *Consultant* resulting from the *Contractor's* failure to reasonably perform the *Work* in accordance with the terms and conditions of the *Contract*, including the *Contractor's* issuance of unnecessary Requests for Information. The *Consultant* will notify the *Owner* and *Contractor* where it has been determined that additional services will be required or have been provided in order not to cause a delay. The *Owner* shall make claims based on the *Consultant's* invoices. "

GC8.1 AUTHORITY OF THE CONSULTANT

1. Amend paragraph 8.1.2 as follows:
".... and paragraphs 8.2.3 to 8.2.15 of GC8.2"

GC8.2 NEGOTIATION, MEDIATION, AND ARBITRATION

1. Add the following:

- "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 8.2.15 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 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 the *Consultant* is not given the written notice required under paragraph 8.2.9, both the *Owner* and the *Contractor* are estopped from pursuing an action, counter claim or other proceeding or making an application against the *Consultant* arising out of the issues in dispute in the arbitration between the *Owner* and the *Contractor* under paragraph 8.2.6.
- 8.2.12 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 *Owner* issues or receives a copy of the notice of arbitration.
- 8.2.13 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.
- 8.2.14 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the *Consultant* to any sub-consultant.
- 8.2.15 In the event of notice of arbitration given by a *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."

GC9.1 PROTECTION OF WORK AND PROPERTY

1. Delete subparagraph 9.1.1.1 in its entirety and substitute new subparagraph 9.1.1.1:
".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 or reasonably determinable from the *Contract Documents*, or that are reasonably determinable from an inspection of the *Place of the Work* exercising 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, "
4. Add "and the *Consultant*" after the word "*Owner*" in subparagraph 9.2.8.4.

GC 9.5 MOULD

1. Add "and the *Consultant*" after "*Owner*" in subparagraph 9.5.2.4.
2. 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".

GC12.1 INDEMNIFICATION

1. Add "and the *Consultant*" after the words "hold harmless the other" in paragraph 12.1.1.

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 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 1.
- 1.2 SECTION INCLUDES
 - .1 Provide for all requirements related to setting out, co-ordination, administration, general construction, safety and protection of the work, workmen, Owner's personnel and the public, the ongoing and final cleaning, and any other work specified or indicated on the drawings.
- 1.3 NOTICE OF PROJECT
 - .1 Submit to the Ministry of Labour a Notice of Project indicating the Project's start date.
- 1.4 BUILDING LAYOUT AND COMPLIANCE SURVEYS
 - .1 Arrange and pay for services of an Ontario Land Surveyor to establish property lines, erect a benchmark relating to nearest geodetic bench mark and stake principal corners of the new building.
 - .2 Foundation Verification: Arrange and pay for services of an Ontario Land Surveyor to certify that building foundations are located in accordance with the Contract Documents. File certification with the Building Department and the Consultant immediately after the foundations are completed.
 - .3 Site Compliance Survey: Arrange and pay for the services of an Ontario Land Surveyor to verify all final site elevations of all graded areas, landscaped areas and asphalt areas. The results of this survey must be submitted to the Consultant for review before any topsoil or asphalt surfaces are applied.
- 1.5 GRADES, LINES & LEVELS
 - .1 Verify grades, lines and levels indicated on the Drawings, particularly with relation to road and sidewalk elevations, with the Consultant at the time of laying out the building.
 - .2 Make spot checks of grades shown and report any variation from the Contract Documents.
- 1.6 BATTER BOARDS
 - .1 Erect, maintain and protect against damage strongly constructed batter boards, with adequate and uniform off-set, to determine precisely all main walls of the building.
 - .2 Construct batter boards of new lumber with rigid supports.
 - .3 Erect and maintain additional lines and elevation stakes at correct locations for the guidance of various trades.
- 1.7 PROJECT MEETINGS
 - .1 Schedule and hold pre-construction, progress and pre-installation meetings throughout construction of work.
 - .2 Pre-Construction Meeting
 - .1 Attend pre-construction meeting, to be held prior to commencement of work at place and time to be announced by Consultant.
 - .2 Agenda: Project co-ordination, administrative procedures, scheduling and other related subjects.

.3 Progress Meetings

- .1 Schedule and administer [weekly] [bi-weekly] [monthly] progress meetings until Substantial Performance of the Work.
- .2 Make physical arrangements, prepare agenda, and distribute notice of each meeting to participants, and to Consultant three days in advance of meeting date.
- .3 The Contractor shall preside at meetings, record minutes, and distribute copies to participants and to entities affected by decisions at meetings within 5 working days.
- .4 Locations of meetings: Project site office or other acceptable location.
- .5 Minimum Agenda:
 - (1) Approval of minutes of previous meetings.
 - (2) Review of work progress.
 - (3) Field observations, problems and decisions.
 - (4) Identification of problems which impede planned progress.
 - (5) Review of Submittal Schedule and status of submittals.
 - (6) Review of off-site fabrication and delivery schedules.
 - (7) Maintenance of Progress Schedule.
 - (8) Corrective measures to regain projected schedules.
 - (9) Planned progress during succeeding work period.
 - (10) Co-ordination of projected progress.
 - (11) Maintenance of quality and work standards.
 - (12) Effect of proposed changes on Progress Schedule and co-ordination.
 - (13) Other business relating to the work.

.4 Pre-installation Meetings

- .1 Where required by the specifications or when deemed appropriate by the Contractor, hold pre-installation meetings with members of relevant trades involved to discuss installation of specific building products or elements.

.5 Coordination Meetings with Other Contractors

- .1 From time to time, and as directed by Owner, attend and participate in coordination meetings dealing with interfacing between other contractors and Contractor.

.6 Attendance at Meetings

- .1 Contractor, job superintendent, Subcontractors, and Suppliers as appropriate to agenda, and authorized to act on behalf of the entity each represents; Owner, Consultant, professional consultants and others may attend as appropriate.

1.8 PARKING

- .1 Comply with local parking regulations.
- .2 No parking will be allowed at the Place of the Work unless approved by Owner.

1.9 SITE ACCESS AND TRAFFIC CONTROL

- .1 Reference Section 01 55 26.
- .2 Consult with authority having jurisdiction in establishing public thoroughfares to be used for site access haul routes.

- .3 Coordinate and comply with local authorities regarding necessary diversion of roads or sidewalks (if applicable).
- .4 Do not stack materials or supplies on existing roads or sidewalks.
- .5 Maintain access roads in good condition.
- .6 Protect permanent site improvements to remain such as curbs, pavement and utilities.
- .7 Maintain access for fire-fighting equipment and access to fire hydrants.

1.10 SECURITY

- .1 Protect and secure site, building, materials and equipment from theft, vandalism and unauthorized entry.

1.11 PROTECTION OF INSTALLED WORK

- .1 Refer to various sections of Specifications for specific requirements regarding protection of installed materials.
- .2 Provide protective coverings at walls, projections, corners and jambs, sills and soffits of openings in and adjacent to traffic areas.
- .3 Protect finished floors and stairs from dirt, wear and damage.
- .4 Waterproofed and Roofed Surfaces
 - .1 Restrict traffic to waterproofed and roofed surfaces and restrict material storage on these surfaces.
 - .2 When traffic or material storage is unavoidable, follow recommendations for protection of surfaces from manufacturer of roofing or waterproofing material.
 - .3 Keep waterproofed and roofed surfaces free of debris at all times.
 - .4 Protect pre-finished work, including windows, louvers, finish hardware and doors from damage by mortar, paint, wallboard compounds and other construction materials and operations.
 - .5 Replace or make good, to the satisfaction of the Consultant, any building surface or installed material damaged prior to acceptance by the Owner and/or due to failure to provide suitable protection.

1.12 FIRE PROTECTION

- .1 Provide and maintain, in good operating condition, adequate fire protection equipment suitable for fire hazards involved at convenient accessible locations during construction.
- .2 Avoid accumulations of combustible forms, form lumber and debris within building and vicinity.
- .3 Flammable Liquids
 - .1 Store flammable or volatile liquids in open air or in small detached structures or trailers.
 - .2 Closely supervise storage of paint materials and other combustible finishing and cleaning products.
 - .3 Do not store oily rags in closets or other tight spaces.

- .4 Comply with recommendations regarding fire protection made by representatives of insurance company carrying insurance on the work or by local fire chief or fire marshal.
- .5 Prohibit smoking in vicinity of hazardous operations.

1.13 SALVAGED MATERIAL

- .1 Remove salvaged materials from site unless otherwise specified.

1.14 ALTERATIONS TO EXISTING WORK

- .1 Where materials are to be removed for re-use or where existing finishes are to be cut out and later made good, employ qualified tradesmen skilled in the handling of each particular material. Make good to match existing adjoining construction.
- .2 Make good damage to the existing building or contents due to construction work.
- .3 New work in existing building shall conform to requirements of applicable trade sections.
- .4 Make certain that all services affected by work are cut off and are properly capped or diverted.
- .5 Do not interrupt services to or within the existing building without prior consultation with Owner.
- .6 Remove and dispose of:

- .7 Remove, turn over to Owner:

- .8 Remove, temporarily store, clean, alter to suit location and install at new location:

- .9 Remove, temporarily store and turn over to other sections for building in:

1.15 CONSTRUCTION SAFETY

- .1 The Contractor shall be liable for any costs, fines, penalties, etc., levied against the Owner or Consultant due to violations of the Construction Safety Act by construction personnel.
- .2 Pursuant to the latest amendments to Ontario's Occupational Health and Safety Act, include the cost of management and non-management representatives to attend Safety Committee meetings as often as required by legislation.

1.16 SAFETY STATEMENT AND PROGRAM

- .1 Post a Safety Policy Statement at the Place of the Work and submit a copy of the safety program to the Consultant.

1.17 WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

- .1 Ensure all workers are trained in WHMIS. Submit proof of training if requested by the Consultant.
- .2 Arrange for a complete set of material safety data sheets (MSDS) to be available at the Place of the Work for all Products being used in the Work.

1.18 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Refer to GC 5.4 - Substantial Performance of the Work.
- .2 Substantial Performance of the Work is required for Owner occupancy before [_____].
- .3 Should delays occur, neither the Owner nor Consultant shall be held responsible for Contractor claims. It is the intent that the Contractor will expeditiously complete the Work, providing whatever temporary facilities, utilities and controls are necessary to keep the Work on schedule.
- .4 Should the issuance of the Building Permit by the local authority having jurisdiction, for whatever reason delay the commencement of the Work, no delay claim will be entertained by the Consultant.

END OF SECTION

- 1 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 1.
- 1.2 SECTION INCLUDES
 - .1 Contractor's use of the Place of the Work.
- 1.3 INTENT
 - .1 The Owner has arranged for easements for construction, storage and access as shown in the Contract Documents.
 - .2 Make arrangements with property owners if additional areas are required. Obtain written agreements and submit copies to the Owner.
- 1.4 WORK AREAS
 - .1 Confine operations within easements for construction, storage and access as shown in the Contract Documents.
 - .2 Install and maintain snow fencing along working and storage areas and access routes.
 - .3 Do not enter upon or occupy with men, tools or materials any lands other than public streets, roadways, rights-of-way or easements indicated in the Contract Documents except after written consent has been received from property owner and a copy submitted to the Owner. Any rentals or damages paid for occupying private lands shall be at the Contractor's expense.
 - .4 Provide the Owner with letters from owners of adjacent property stating that the reinstatement work carried out by the Contractor was satisfactory, in any case where damage has been caused to private property or work carried out on it. A similar letter is required from the owner of utilities damaged during construction.
- 1.5 COORDINATION WITH OWNER
 - .1 Coordinate performance and sequencing of the Work with the Owner, notify the Owner two (2) weeks in advance of any interruption of building services. Do not interrupt building services without Owner's written permission
- 1.6 NOISE GENERATING OPERATIONS
 - .1 Notify Owner in advance of all noise-generating activities which may disrupt normal building operations.
 - .2 Noise generating operations are strictly prohibited during student exam times. No such operations will be allowed without the express permission of the Owner during these times. Coordinate with Owner to avoid conflicts.

1.7 HOURS OF WORK

- .1 Regular business hours of 8:00 a.m. to 4:30 p.m. Monday to Friday
- .2 Where required by sequencing of the work or where building service shutdowns require, portions of the work may be required to be performed outside of normal business hours, or on weekends at no additional cost to the Owner.

1.8 CRANING OPERATIONS

- .1 Notify Owner in advance of all craning operations. Submit detailed crane plan and proposed schedule a minimum of four (4) weeks in advance of work.
- .2 Crane plan should include:
 - .1 Setup location of crane and access route
 - .2 Which buildings (if any) will be under the path of the crane
 - .3 Make and model of the crane with associated weights
- .3 All craning operations are to be scheduled on weekends or holidays with no additional cost to the Owner.
- .4 Flagmen and barriers around the direct lifting area will be provided at no additional cost to the Owner.

1.9 CONTRACTOR PARKING

- .1 Comply with local parking regulations
- .2 No parking will be permitted in fire routes.
- .3 No parking will be allowed at the Place of the Work unless approved by Owner.
- .4 Contractors will be required to pay for parking. Costs to be included within General Conditions.
- .5 Vehicles parked within Contractor's designated hoarding area will not be required to pay.
- .6 Hoarding and temporary storage that are located within revenue generating parking spaces will also be charged at the regular daily rate.
- .7 Contractors will be assigned additional parking space in the gravel lots (ECH and CIF)
- .8 Any damage as the result of Contractor vehicles or hoarding will be the responsibility of the Contractor to repair at no cost to the Owner.
- .9 Contractor will be responsible for any fines issued by Parking Services or external agencies
- .1 Refer to website for parking rates and more details: <https://uwaterloo.ca/parking/> and <https://uwaterloo.ca/sustainable-transportation/about/rates-parking>

END OF SECTION

- 1 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 01.
- 1.2 SECTION INCLUDES
 - .1 Substitution procedures.
- 1.3 GENERAL
 - .1 Submit specified documentation for substitution requests.
 - .2 Substitution requests must be approved by Consultant and Owner before making submittals.
- 1.4 SUBSTITUTION PROPOSALS
 - .1 Substitution proposals will only be considered by the Consultant if it is shown that the substitution is proposed for one of the following reasons:
 - .1 Directly related to an "equivalent to" clause or similar language in Contract Documents.
 - .2 Specified product or method cannot be provided within Contract Time.
 - .3 Specified materials cannot receive approval of local governing authority.
 - .4 Substitute material will offer Owner substantial advantages in terms of cost, time, energy conservation or other consideration.
 - .5 Specified materials cannot be properly coordinated with other materials in Work.
 - .6 Specified product or material cannot provide warranty required by Contract Documents.
 - .7 Specified product or material cannot meet performance requirements specified.
 - .2 Substitution proposals will not be considered if proposed for one of the following reasons:
 - .1 Contractor or Subcontractor has neglected to place an order for materials and labour early enough to conform to construction schedule.
 - (1) Such failure or neglect is not grounds for extension of Contract Time under this Contract; nor will arbitrary substitutions be considered solely to expedite completion.
 - .2 Revision of Contract Documents is required to accommodate substitute product.
 - .3 Substitutions are indicated on Shop Drawing, Product Data or Sample submittals without separate formal request.
 - .4 Substitutions are requested directly by Subcontractor or supplier, without formal request from Contractor.
 - .3 Substitute proposals submitted for consideration on any one Contract element shall be limited to maximum of two with not more than one substitute proposal submittal from any one manufacturer. If two separate substitution proposals are made for a single material and are rejected, provide specified item without further delay.

- .4 Substitutions for major building elements must be submitted for consideration within 90 days of Contract execution. Proposals for substitutions of major building elements after that time will not be considered.
- .5 Consultant will be the judge of equality or superiority for proposed substitutions. Do not purchase or install proposed substitute products without written acceptance of Consultant. Allow minimum of 15 Working Days for Consultant's review of substitution proposals.

1.5 SUBSTITUTION REQUEST SUBMITTALS

- .1 Submit separate request for each substitute proposal, supported by complete data, with drawings and samples as appropriate, including:
 - .1 Itemized comparison of qualities of proposed substitution with product specified, showing proof of equality or superiority, substantiating compliance with Contract Documents, and including product identification and description, performance and test data, references and samples, where requested or applicable.
 - .2 Changes required in other elements of Work due to substitution.
 - .3 Effect on construction schedule and Contract Time.
 - .4 Change in cost, if any, and amount of net change to Contract Price.
 - .5 Availability of maintenance service, and source of replacement materials, where applicable.
 - .6 Reason for substitution request.
- .2 Furnish additional information for substitute proposals upon request. If decision on use of substitute cannot be made or obtained within a reasonable time, use product specified.

1.6 INSTALLATION OF SUBSTITUTE PRODUCTS OR MATERIALS

- .1 When an accepted substitute, or "equivalent to" item of equipment or material, requires changes or additions to Project, make adjustments and changes required to coordinate Work for installation without additional cost to Owner.

1.7 CHANGES DUE TO SUBSTITUTIONS

- .1 Any additional cost, loss or damage arising from substitutions are Contractor's responsibility, notwithstanding approval or acceptance of such substitution by Owner or Consultant, unless such substitution was made at written request or direction by the Owner or Consultant.
- .2 Modifications to Contract Price Due to Substitutions:
 - .1 Owner will receive full credit for cost differential between specified item and proposed substitution.
 - .2 Substitution proposals that increase Contract Price will be rejected, unless proposed substitution was made at written request or direction by the Owner or Consultant.

END OF SECTION

- 1 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 1.
- 1.2 SECTION INCLUDES
 - .1 Procedures for progress payments and final payments under the Contract.
 - .2 Proper Invoice definition
 - .3 Allowable mark-ups on changes.
- 1.3 APPLICATIONS FOR PAYMENT
 - .1 Refer to GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENTS
- 1.4 SUBMISSION REQUIREMENTS
 - .1 The contractor is required to enroll in the University of Waterloo electronic fund transfer (EFT) system for all payment. **Refer to Appendices for enrollment forms.**
 - .2 Proper invoice submissions will be submitted electronically (via email) to the Owner's designated representative (ODR).
 - .3 Proper invoice submission is to be completed on a monthly basis at the beginning of each month.
 - .4 Submissions of proper invoices cannot fall on or within one calendar day of recognized statutory holidays including the University of Waterloo winter holiday break shutdown period.
- 1.5 PROPER INVOICE DEFINITION
 - .1 Proper Invoice means an application for payment containing the information that is required for the application for payment to constitute a "proper invoice" under the Construction Act and this Contract, including the following:
 - 1. all of the information specified to be included in a proper invoice as set out in the Construction Act, namely:
 - 1. the Contractor's name and address;
 - 2. the date of the application for payment and the period during which the Work was performed;
 - 3. information identifying the authority, whether in the Contract or otherwise, under which the Work was performed;
 - 4. a description, including quantity where appropriate, of the Work performed and Products supplied;
 - 5. the amount payable for the Work performed, and the payment terms; and
 - 6. the name, title, telephone number and mailing address of the person to whom payment is to be sent;
 - 2. the Contractor's HST Registration Number;
 - 3. an original statutory declaration [in the form of CCDC 9A (most current version)], for all second and subsequent progress payments and holdback release (applies on all projects greater than \$100,000.00);
 - 4. a completed Schedule of Values, formatted in accordance with the Owner's required template;

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5. an up to date construction schedule (applies for the first draw)
6. satisfactory evidence of good standing under the Workplace Safety and Insurance Act, 1997, as evidenced by a Certificate of Clearance issued by the Workplace Safety and Insurance Board prior to the release of any monthly progress payment;
7. any certificates, inspection reports, or data resulting from commissioning and testing required under the Contract Documents confirming the satisfactory completion of such commissioning and testing for completed portions of the Work; and

1.6 HOLDBACK RELEASE

- .1 In addition to the requirements in Section 1.5, proof of publication is required for application of holdback release.

1.7 ALLOWABLE MARKUPS ON CHANGES

- .1 For extra work added to the Contract, the Contractor and Subcontractors are entitled to a total markup for overhead and profit of 10% on work carried out by their own forces and 5% on work carried out by their Subcontractors.
- .2 The proper interpretation of application of this markup shall be at the discretion of the Consultant.
- .3 Contractors and Subcontractors who subcontract work out to separate companies who are considered by the Consultant to be under the same "corporate umbrella" will be eligible for only a single markup on extra work.

END OF SECTION

- 1 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 01.
- 1.2 SECTION INCLUDES
 - .1 Owner safety requirements.
- 1.3 GENERAL
 - .1 Reserved
- 1.4 SUMMARY
 - .1 The control of Project Safety by the Contractor is an essential element in completing the Work at the University of Waterloo. The Contractor shall, at all times, provide adequate resources, equipment, training, and documentation to assure a safe work environment at the Project site and to instill a culture for safety in the behavior of all supervisors and workers. Every worker shall understand that safety and health issues always take precedence over all other considerations, and that identifying, reporting, and correcting unsafe acts and conditions are the responsibility of everyone at the Project site.
 - .2 The details of this document should be considered as supplemental requirements. The Contractor shall develop, implement, maintain, and submit to the Owner a written Project Safety Program that meets or exceeds all Federal, Provincial, and Local standards and regulations pertaining to construction activities. The Contractor/Subcontractor shall comply with the rules and guidelines outlined in this Section. In any circumstances where this Section differs with or conflicts with any standard or statutory requirement, the more stringent requirement shall apply. With expressed written permission from the Owner's Designated Representative, Contractors may use procedures set forth in their own company-wide safety program in lieu of the Owner's Safety Requirements provided it meets or exceeds the requirements described herein.
 - .3 The Owner reserves the right to have any manager, supervisor or worker employed by the Contractor or Subcontractor removed from the Project for disregard of Owner Safety Requirements.
 - .4 The Owner reserves the right to evaluate the Contractors performance and remove Contractors and/or Subcontractors from the approved or qualified bidder's list for future work at the University as a result of the Contractor's, or any Subcontractor's, disregard for Owner Safety Requirements.
 - .5 The Contractor shall subscribe to the Owner's preferred Contractor Compliance software "ISN".
 - .1 The Owner's preferred Contractor Compliance software is a dual-subscription model requiring both the Owner and the Contractor(s) to pay fees. It is the Contractor's responsibility to review and understand the subscription terms and conditions prior to submitting bids.
 - .2 All contractors are required to have a Company Grade of "B" or better on ISN.

.3 <https://www.isnetworld.com/en/>

1.5 DEFINITIONS

- .1 The term “Owner’s Designated Representative” (“ODR”) as used throughout this Section, shall refer to any of the University of Waterloo Plant Operations representative(s), or campus representative(s).
 - .1 The assigned personnel performing the duties of ODR will be confirmed at or prior to the Project start-up meeting.
 - .2 The term “Contractor” for the purposes of this Section shall refer to any Contractor providing services to complete the Work and shall include Prime Contractor, General Contractor, SubContractor, Construction Manager, or Design/Build Contractor. The term “Contractor” shall be considered synonymous with “Constructor” for the purposes of Ministry of Labour regulations and construction contract obligations.
 - .3 The term “Subcontractor” shall refer to any on-site Subcontractor, regardless of tier or contractual relationship to the Project.
 - .4 The abbreviation MOL shall be understood as “Ministry of Labour”, in the Province of Ontario.
 - .5 The abbreviation OHSA shall be understood as “Occupational Health and Safety Act”.
 - .6 The abbreviation PPE shall be understood as “Personal Protective Equipment”.

1.6 EMERGENCY / IMPORTANT CONTACT INFORMATION

- .1 Consult with the ODR regarding the correct emergency contact information for the facility in which you are working. Each facility may have a different emergency call procedure.
- .2 All Work shall occur within normal operating hours of the University unless expressly permitted by the ODR on the specific project. For Work occurring outside of normal hours, verify the after-hours emergency contact information.

PART 2 - PRODUCTS

2.1 RESERVED

PART 3 - EXECUTION

3.1 DESIGNATED SUBSTANCES

1. Designated substances as defined under Ontario Regulation 490/09, include: Acrylonitrile, Arsenic, Asbestos, Benzene, Coke oven emissions, Ethylene oxide, Isocyanates, Lead, Mercury, Silica, Vinyl chloride.
2. The Owner will provide all available Designated Substance (dSub) Reports including annual Assessments, Reassessments and Project Specific dSub Reports where available. Contractors must review all Designated Substance Assessments, Reassessments and Asbestos Management documents prior to the start of the Work to understand the areas where designated substances are confirmed, suspected and where further project specific testing may be required to safely manage designated substances, including Asbestos Containing Materials (ACM) during construction.
3. All suspect materials shall be considered asbestos-containing material until confirmed otherwise by an Owner approved Environmental Consultant. Testing shall be coordinated

by the ODR prior to active demolition.

4. Any Contractor needing to disturb suspected designated substances including asbestos containing building materials shall first contact their ODR. It is then the responsibility of the ODR to coordinate review with the University Safety Office, project specific Environmental Consultant and project specific Abatement Subcontractors to confirm the presence of Asbestos Containing Materials and designated substances.
 1. Where Contract documents do not specifically identify Type 1, Type 2, or Type 3 operations for project specific abatement, the ODR shall coordinate with the University Safety Office and project specific Environmental Consultant to issue a site instruction to define the type of operation.
5. Contractors shall complete Owner provided orientation for working with and managing designated substances within University of Waterloo buildings and property.
6. Silica: As noted above, silica is a designated substance. Construction activities that generate airborne silica-containing dust shall be conducted taking all reasonable precautions to protect the health and safety of the Contractor(s) and persons including University staff, students outside the limits of the Project site.
 1. The Owner is required to determine if silica is present on a Project. Contractors shall understand that all projects that mechanically disturb concrete or masonry in any way including; demolition, grinding, coring, cutting or chipping will generate airborne silica-containing dust.
 2. Reasonable precautions for controlling the silica hazard shall include: engineering controls, work practices, hygiene practices, and use of PPE.
 3. The Contractor is responsible for ensuring all Contractors and Workers have the appropriate training in accordance with recommendations available through the Ontario Ministry of Labour.
 4. Refer also to <http://govdocs.ourontario.ca/node/8250> to review the latest edition of:
 - a. Guideline – Silica on Construction Projects

3.2 CONDUCT

1. The use or consumption of alcoholic beverages or controlled substances is strictly prohibited on any University owned or controlled property.
2. Contractor shall not permit any person to operate a motor vehicle or heavy equipment while taking prescription or non-prescription medication that may impair their ability to operate safely.
3. The University prohibits smoking:
 1. In any building, bus shelter for other enclosed area;
 2. In University owned or operated vehicles;
 3. Within campus property;
 4. On or within 20 meters of sports playing fields, surfaces and spectator areas;
 5. On or within 20 meters of children's playgrounds;
 6. On restaurant and bar patios.

7. Refer to the University's latest published policy for clarifications:
<https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-29>
4. Contractor personnel shall be courteous to all students, faculty, staff, visitors and any other persons part of the University campus community.
5. Unacceptable behavior on the part of the workers anywhere on campus, including parking lots, the project site, routes through the site or through the campus, may lead to the identifiable Contractors being removed from the Project.
6. Language by Contractors must be constructed in a professional manner at all times. Use of foul and/or inappropriate language will not be tolerated and can result in Contractor removal from jobsite.
7. No clothing, accessories, or hardhat stickers that display offensive, derogatory or inflammatory wording or graphics shall be worn on the worksite.
8. Radios that require the use of headphones shall not be permitted on the Project. Personnel must be able to hear alarms and warnings in the immediate area. (This does not pertain to the use of two-way hand held communication equipment or phones).
9. No tools or equipment will be loaned by Owner to Contractors to assist them in completing Projects.

3.3 CONFINED SPACES

1. Contractors shall notify the Owner (ODR) if they determine the Work to be within confined spaces as defined within the applicable regulations.
2. Contractors are responsible for ensuring all of their workers are trained in accordance with Ontario Ministry of Labour confined space entry procedures.
3. It will be the responsibility of the Contractor performing the work inside the confined space to provide the necessary equipment to assess the hazards within the space and prepare the space for entry and to meet the precautions of the entry permit.
4. Contractor shall provide all emergency rescue equipment and personnel as required by the applicable regulations.

3.4 CONSTRUCTION SAFETY SITE INSPECTIONS

1. All construction sites will be subject to periodic inspections by the ODR including the University Safety Office representative(s). The inspector(s) will be looking for life safety, environmental, construction safety, and indoor air quality deficiencies. Once noted, the inspector will notify the Contractor Representative on site.
2. All noted deficiencies shall be immediately corrected.
3. A job or activity will be suspended if an imminent danger to University staff, students, animals, visitors, Contractor personnel or facilities is observed.

3.5 CONTRACTOR INJURIES AND INCIDENTS

1. Contractors shall make prior provisions for the treatment of minor injuries.
2. Workers requiring immediate medical treatment should be taken to the nearest hospital.
3. The Contractor shall immediately notify the ODR of any incident. All "near miss" incidents,

First Aid injuries, High Severity Safety Inspection Observations, and other such incidents as directed by the Owner shall be documented. All incidents shall be investigated. Contractor and involved Subcontractors shall discover all obtainable and measurable information and reach conclusions that cite both the contributing factors and the root cause(s). Contractor shall lead the efforts and follow a structured incident investigation program (Root Cause Analyst or equivalent). Contractor and involved Subcontractors shall tailor the magnitude and depth of the investigation effort to correspond to the potential, rather than the actual, outcome of the incident

4. A copy of the incident / accident report must be provided in a timely manner to your ODR and the University Safety Office.
5. All incidents that result in property damage must be reported to your ODR.

3.6 CONTRACTOR SAFETY ORIENTATION

1. All Contractors are required to complete University of Waterloo Orientation Training given by the Safety Office before beginning work at the University. This training may be in the form of videos or an in- class presentation. Videos may be available within the aforementioned Contractor Compliance software application.
2. Upon completion of orientation the Contractor is required to obtain a University hardhat sticker.
3. The Contractor may be required to attend orientation again for refresher, and review any changes if deemed necessary by the Owner.
4. It is the responsibility of the Contractor to ensure that the information given in the orientation session is understood by all workers.
5. Refer to Designated Substances under this Section for additional references to Training.

3.7 ELECTRICAL SAFETY

1. Refer to this Section for Lock Out / Tag Out requirements.
2. Contractors shall follow the latest edition of CSA-Z462 Workplace Electrical Safety standard as a minimum.
 1. Consult ODR/ESA for any temporary/construction power service connection and obtain approval prior to energization.
 2. PPE shall be required for all persons interacting with equipment in a manner that could cause an electrical arc. Report to ODR if Arc Flash/Shock Hazard warning label is not present.
3. All electrical power tools, equipment and extension cords shall be inspected daily before use. Defective items shall be immediately removed from service for repair or replacement.
4. Power provided by any Emergency Generator System shall not be used by Contractor personnel unless expressly permitted by ODR.
5. Temporary power panels shall have GFI protected circuits built into the panel.
6. The GFI shall be tested for function before plugging in any Contractor equipment.
7. Electrical power tools shall be grounded, or double insulated, or battery powered. The cord on the tool must be free of defects.

8. Battery powered portable hand tool battery charging stations are not to be plugged into hallway or exit stair outlets or other areas that may create a trip hazard.
9. Extension cord sets shall be the “heavy duty” three-wire grounded type (14 gauge or larger), and must be rated for the particular application in which it is to be used.
10. Damage to the cord jacket shall not be taped over and must be repaired per manufacturer’s recommendations.
11. Extension cords shall be routed overhead whenever possible or otherwise protected against damage or tripping hazard by being securely taped to the floor or secured by other acceptable means and approved by the ODR.
12. Running/hanging extension cords through ceiling spaces is not permitted. Special permission from the ODR and University Safety Office is required for any variation from this requirement.
13. All electrical shutdowns must be coordinated through the ODR for the specific Project with support from the University Plant Operations Maintenance department. Any such request shall be made a minimum of 2 weeks in advance of preferred shutdown date(s).
14. Contractors are not permitted to turn on/off any electrical source breakers or switches without permission from the ODR. This will be accomplished through a Utility Shutdown Memorandum coordinated by the ODR.
15. Existing and new electrical equipment must be protected at all times from humidity, liquid material splashes, activities inducing to vapor formation and condensation.
16. No liquid materials shall be handled in electrical rooms, electrical equipment areas or areas adjacent to electrical equipment locations.
17. In the event that the Contractor must handle liquid materials in the vicinity of electrical equipment locations, the Contractor must inform the Owner and seek written approval, prior to bringing those liquid materials to the above-mentioned locations.

3.8 EXCAVATIONS

1. All excavation shall have the following prerequisites:
 1. Discussion with the appropriate ODR and University personnel to review as-built locations of all underground utilities in the vicinity;
 2. Contractor is responsible to arrange for and coordinate utility “locates” in accordance with the Project schedule requirements.
 3. All excavations must follow the applicable Canadian Occupational Health and Safety Standards and guidelines as related to design and protection of excavations. Where required, Contractor will be responsible to obtain engineered drawings stamped by Specialty Engineer licensed at place of Work.
 4. Contractor shall formally issue a “Notice of Trench” where required by OHSA.
 5. All trench excavations should be backfilled or plated at the end of each shift.
 6. When an excavation cannot be backfilled or plated in the same day it is created, a highly visible engineered barricade / guard shall be erected. Excavation protections in areas of traffic must comply with local, provincial, or federal safety standards.

7. Work near the edge of an excavation is considered “Working at Heights” and the applicable best practices shall be followed under the applicable regulations. Refer to this Section for additional references to Working at Heights.
8. Means of access into excavations shall be removed or physically barricaded at the end of each workday.
9. Excavations and protection plans must be approved by the ODR and University Safety Office.
10. Where applicable, all required engineer stamped excavation plans must be readily available at all excavations for review by the ODR. Certificates of soil testing shall also be made available.

3.9 FALL PROTECTION AND PREVENTION (Working at Heights)

1. Work in areas that presents a fall hazard defined under the relevant Working at Heights legislation shall be protected by an engineered guardrail system or otherwise be managed by substitution, administration or engineering controls.
2. The Contractor shall ensure that all workers Working at Heights have been properly equipped with personal protective equipment by their employer and trained by a Ministry of Labour approved training provider.
3. No worker or equipment shall be allowed to perform work directly above another worker unless adequate overhead protection is provided.
4. Covers or guardrails of sufficient design shall be placed over holes, roof and floor openings or drop-offs to eliminate fall hazards wherever possible.
5. Covers or guardrails shall be physically secured and clearly marked with warning message, such as “Danger”, “Hole”, or “Cover! Do Not Remove”.
6. If a cover is too small for a warning message, it shall be painted bright orange or red.
7. All puncture and impalement exposures shall be covered or eliminated as soon as they are created. Exposed ends of rebar are to be covered with material that is designed to prevent impalement from a fall of four (4) feet.
8. Where tower cranes are employed in performing the Work, a physical barrier shall be provided around the base of the crane to prevent unauthorized access to the crane itself.

3.10 FIRE PREVENTION

1. All combustible materials shall only be stored in approved areas as designated by the ODR.
2. University of Waterloo is subject to fines by the Fire Department in the cities of Waterloo, Kitchener, Cambridge, and Stratford if they are found to negligently activate fire alarm devices. Contractors shall be back-charged for such fines.
3. For large or high dust generating work, the Contractor shall coordinate with their ODR to arrange for the replacement of smoke detectors with heat detectors. Plant Operations Design and Construction Services, and Maintenance Department must approve all changes to any fire alarm or suppression systems. Refer otherwise throughout this Section for fire alarm bypass and fire watch procedures.

4. Combustible scrap, trash, and debris shall be removed from the Project site on a daily basis, or, more frequently as required. Refer to the Construction Waste Management specification section(s).
5. Contractor shall not tape back door lock/latch mechanisms or prop open any exterior door, security door, stairwell door, or fire / smoke door. Lock cores shall not be removed. Any project requirement to do so shall be coordinated through the ODR. Coordinate changing lock cores to the designated construction core lock with your ODR.
6. Flammable products shall be limited to one day supply inside the building. Flammable products shall be stored outside the building or in approved ULC rated flammable storage cabinets. Flammable liquids shall be in approved safety cans or cans designed for their use.
7. No internal combustion engines or portable propane heating devices are allowed in any University buildings unless approved by the Owner. Coordination of how gasoline will be transported through buildings and stairwells must be coordinated with your ODR.
8. Absolutely no gasoline will be allowed inside University buildings. For temporary use outdoors, only approved metal safety cans will be permitted.
9. Compressed flammable gas cylinders (i.e acetylene) shall not remain inside the building overnight and must be removed from the premises at the conclusion of each workday.
10. The Contractor shall also have the WHMIS 2015 Safety Data Sheets (SDS) for materials and products used in the Work, available upon request.
11. Compressed flammable gas cylinders, while on the project site, shall be secured by chain or other suitable method to prevent tipping or falling over. All safety caps shall be securely installed when tanks are not in use.
12. When working in the ceiling space or on rated fire/smoke rated walls and structures, all holes and penetrations for wires, conduits, piping, etc. shall be sleeved and sealed with a ULC approved fire caulking / sealing compound at the end of each workday. Any holes that must remain overnight must be sealed with an equivalent temporary fire proofing material as approved by the ODR.
13. Work on fire sprinkler and detection systems shall continue until the system operation is fully restored. No impairments will be allowed to extend beyond approved periods of time or during times when the site is unattended.
14. Shutdown of any fire suppression or detection systems/devices shall be coordinated through the ODR. Unauthorized shutdown or disabling of life safety systems is not permitted.
15. All Contractors are required to supply and maintain a minimum of one currently tagged ABC fire extinguisher, 10 pound (Class 2-A) or greater. The use of University owned fire extinguishers will not be permitted.
16. All workers shall be trained on the proper use and handling of fire extinguishers.
17. If a Project involves multiple locations on a single floor or on multiple floors, additional multi-purpose fire extinguishers are required.
18. The Owner may require additional extinguishers as dictated by the risk of each project or project area.
19. All temporary hoarding to secure the Project site within buildings shall be of non-combustible construction unless otherwise approved by the ODR.

3.11 FIRE REPORTING AND EVACUATION PLAN

1. Contractor shall establish a designated emergency evacuation assembly area for all Projects prior to starting work. Contractor shall train all workers on assembly area locations and how to get to each area.
2. For areas that do not provide a readily identifiable egress route, the Contractor must post easy to understand maps, that are clearly visible to all workers, of the proper egress routes and access to exits in accordance with the Ontario Building Code and Ontario Fire Code.
3. Where construction hoarding impacts access to exit and means of egress for building occupants, the Contractor must coordinate and obtain approval from the ODR for the location of site hoarding.
4. In the event of a fire alarm, all work is to stop, all sources of ignition or hazardous work shall be immediately halted.
5. All workers shall report to their designated assembly area immediately. Contractor must coordinate the Designated Assembly Area with their ODR prior to the beginning of the project.
6. In the event of a fire, the University Central Plant shall be notified:
 1. The caller should provide their name, the location of the fire, and a brief description of the incident. The caller should not hang up until emergency services personnel instruct them to do so.
 2. The caller should be prepared to guide the University Central Plant personnel and Emergency Responders to the fire location.

3.12 FIRE WATCH

1. Overview: Throughout all construction activities, Fire Alarm and Life Safety Systems shall remain operational. If any portion of a Fire Alarm System including zones or devices needs to be deactivated to complete the Work, the contractor shall implement a fire watch. Fire Watch procedures are to be conducted in accordance with latest edition of the Ontario Fire Code. Where interpretations are required, coordinate with the ODR and Authorities Having Jurisdiction (AHJ). Refer to the Ontario Fire Code, including but not limited to, Div B Section 5.11.2.5 & 8.1.2.2.
2. Initiate fire alarm bypass/fire watch: To facilitate the procedures required by the Ontario Fire Code the University of Waterloo has developed the following outline procedure:
 1. Contact the ODR, 1 week prior to initiation of fire watch. University Construction Coordinator will reserve a radio from University Central Plant for the Contractor performing the Work.
 2. Contractor shall subcontract an Owner approved fire alarm contractor to put the device(s) or zone(s) affected on bypass. If the building fire alarm devices are addressable, the devices can be bypassed individually. If a building has a “conventional” fire alarm system, the entire zone affected must be bypassed. Under no circumstances is an entire panel to be bypassed.
 3. If devices are covered during the Work the contractor shall follow the manufacturer’s recommended procedures. Covers shall be removed at the end of each working day. Refer also to “responsibilities” under Hot Work Permits in this Section.

4. Note: Other activities that generate dust or airborne particulate including spray painting may disturb or actuate fire alarm devices. Such activities may warrant fire alarm bypass and fire watch procedures.
5. Prior to the start of fire watch, post Fire Watch Notices:
 - a. In dorms / apartments, post notices on exterior doors
 - b. In academic / staff halls, post notices in lobby, elevators, on bulletin boards, and on bathroom doors throughout the building
6. During fire watch, fire watch personnel shall obtain an air horn and cell phone (2-way radio) from building supervisor.
7. During fire watch, fire watch personnel shall conduct a continuous patrol of the entire building, including corridors, hallways, laundry rooms, basement, lobby, stairwells, recreation rooms, lounges and any other common areas. Remain alert to signs of smoke and/or fire.
8. The Fire Watch Log must be updated every thirty (30) minutes by Fire Watch personnel.
9. Fire watch procedures
 - a. Patrol designated area at least every thirty (30) minutes
 - b. Listen for in-room smoke detectors sounding (within residence buildings)
 - c. Look for observable signs of smoke and/or fire
 - d. Enter all stairwells – open door and look into each stairwell.
 - e. Enter all common areas including basement, lounges, laundry room and dining areas.
10. At first sign of smoke or fire, fire watch personnel must:
 - a. Call 911
 - b. Use the supplied air horn to notify as many of the occupants as possible
 - c. Exit the building, calling UW Special Constables at (519) 888-4911
 - d. Do not put yourself in jeopardy – if you suspect smoke and/or fire, exit the building
3. Once the fire watch has ended;
 1. Owner approved fire alarm contractor to verify the fire alarm system including all devices affected are back online and ensure all “trouble signals” at the fire alarm panel are cleared.
 2. Return the radio(s) to Central Plant.
 3. Once the Work is completed, all devices that were covered are to be re-verified.
 4. Notify Central Plant and the ODR the fire watch is over.

3.13 HOT WORK

1. A valid and signed Hot Work Permit must be obtained 1 week prior to commencing hot work;

1. In accordance with the latest edition of the Ontario Fire Code, Hot Work is defined as: activities that use open flames or produce heat or sparks, including cutting, welding, soldering, brazing, grinding, adhesive bonding, thermal spraying or thawing of pipes.
2. Review of the current version of the Owner's Hot Work Permit Application shall be completed prior to submitting bids and shall be reviewed at the Project Start-up meeting with ODR prior to commencing the Work.
3. Fees or fines levied by the local Fire Department in response to false alarms caused by the Hot Work shall be paid by the Contractor.
4. Permits are valid for day of work only. Contractors are encouraged to plan work to minimize number of hot work permits.
5. The signed permit shall be posted at the Work site.
6. Responsibilities:
 1. It is the responsibility of the Contractor to read, understand, and acknowledge the requirements of the Hot Work Permit.
 2. Contractor is responsible for the covering and uncovering of smoke/heat detectors to the satisfaction of the ODR and University Maintenance Representatives/Supervisor, prior to starting work or upon discovery of such devices as work progresses. Covering smoke detectors with tape, rubber gloves, or any other method that may damage a detector is prohibited.
 3. Fire watch personnel shall be posted at every operation that is defined as "Hot Work". Upon request by the ODR fire watch personnel shall provide verification of competency in performing Fire watch duties.
 4. Heaters for welding electrodes shall have a manufacturer's label that certifies the purpose of the unit. Job-built heaters shall be prohibited.
 5. The remains of welding electrodes shall be picked up and disposed of as soon as each electrode is expended. No welding electrode shall be permitted to fall and remain in the work area.
 6. All temporary fabrication areas shall be approved by the ODR prior to starting work.

3.14 HAZARDOUS WASTE AND WORK IN HAZARDOUS LOCATIONS

1. Chemical, biological or radioactive materials (hazardous substances and equipment) must be moved or secured prior to beginning work in any area. Contractor shall coordinate the removal of these items with their ODR.
 1. Safe disposal and tracking of PCB containing ballasts shall be coordinated with ODR and University Safety Office/ChemStores representative.
2. Where applicable, the Contractor and ODR shall convene a pre-Work assessment with the University Safety Office, the laboratory principal investigator, or laboratory manager to prevent disturbing experiments and /or animals during the Work.
3. Absolutely no chemicals, trash, paint, paint brush rinse, shop vacuum contents, excess materials, sand, dirt, etc. may be disposed of in storm sewers/drains or sanitary drains.
4. Contractor must prevent dirt from entering exterior storm drains by adding appropriate silt protection screen material to all exterior drains that may be impacted by the project.

5. All hazardous waste, fuel, oils, and chemicals stored outdoors must have adequate secondary containment to prevent discharge onto the ground or in storm or sanitary sewer drains. All containers must be stored to prevent theft or unauthorized access. All containers outdoors must also be protected from weather elements and secured from public access.
6. Contractor shall ensure that adequate spill protection equipment and supplies are readily available during all equipment refueling activities.

3.15 LADDER SAFETY

1. Ladders must be inspected prior to each use. Defective ladders shall be immediately removed from service and removed from the job site.
2. Ladders shall be used only in accordance with the manufacturer's labeled instructions.
3. Ladders should only be used where the worker is able to maintain three-point contact at all times.
4. Stepladders shall be used only in the fully open position with spreaders locked in place. Using a folded stepladder leaned against a support is prohibited.
5. Workers shall not stand on the top platform, the step below the top platform or the back stretchers.
6. Do not sit on, or straddle the top platform.
7. Extension ladders must be properly positioned and locked in place.
8. Extension ladders used for access to elevated areas shall extend at least three feet beyond the supporting structure.
9. Job built ladders shall conform to applicable Ministry of Labour regulations and ANSI Standards' best practices where available and shall be limited to use in excavations or concrete form work only. These types of ladders must be inspected daily.
10. At the end of each workday, remove and store, or secure from use all portable and job-built ladders that provide ground access to any elevated platform or structure so as to prevent unauthorized access.
11. Chaining ladders to equipment or mechanical, electrical, or plumbing fixtures or piping is prohibited. Ladders must be stored in a manner to prevent blocked fire exits or means of egress routes. Ladders must not block access to equipment or facilities.
12. Use of ladders shall conform at a minimum to the Ontario Ministry of Labour, Ladder Safety in Construction recommendations.

3.16 LOCK OUT / TAG OUT

1. It is the policy of University of Waterloo that its employees and Contractors are protected from all energy sources during maintenance and repair activities.
2. Contractors whose work will involve the Lock Out/Tag Out process shall comply with the provisions of the University procedures at a minimum. If there are discrepancies between the Contractor's program and the University's program, the more stringent procedure shall prevail.
3. Lock Out/Tag Out procedures may be specific to each type of equipment or device. Consult with the ODR for specific procedures.

4. Contractors are responsible for ensuring all of their authorized and affected workers are trained on the significance of Lock Out/Tag Out procedures and must follow these requirements.
5. Only the authorized employee or Contractor who applied a device is allowed to remove his/her lock out or tag out device from each energy-isolating device so energy can be restored to the equipment. University personnel may add locks or tags to tagged-out devices – Contractors are not permitted to remove these locks or tags.
6. Never remove another person's tag/lock. Unauthorized removal of tags/locks will be grounds for immediate and permanent removal from the jobsite.
7. If tags/locks remain on equipment, contact the appropriate personnel or department for resolution to the removal process.

3.17 MAINTAINING INDOOR AIR QUALITY (IAQ) DURING CONSTRUCTION AND RENOVATION ACTIVITIES

1. Contractor to ensure that proper controls are in place to maintain indoor air quality during construction and renovation activities.
2. The guideline covers all Contractors involved in building maintenance, construction, renovation and/or repair and applies to all areas of the University.
3. The ODR and University Safety Office will perform periodic inspections, verify that the proper controls are in place and will periodically monitor sites with instruments used to measure applicable indoor air quality (IAQ) parameters.
4. Project hoarding shall employ dust barriers to suit the nature of the Work.

3.18 PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Personal Protective Equipment (PPE) shall be required for all persons on the Project site. Each Contractor shall provide their workers with all required PPE. The Contractor is responsible to ensure that PPE is inspected and maintained in proper condition.
2. Safety Hard Hats: When required, every person in the Project shall wear a hard hat that meets the minimum OSHA requirements.
3. When required, hardhats are to be worn and maintained in accordance with the manufacturer's recommendations. Hard hats that display noticeable wear or damage shall be replaced or repaired per manufacturer's specifications.
4. Eye Protection: When required, every person on the Project shall wear eye protection. Additional face protection may be required when work operations create airborne particles, chips, or sparks. Eye protection and face protection shall meet the minimum OSHA requirements.
5. Foot protection: Every worker on the Project shall wear shoes/footwear that have soles resistant to punctures, leather or leather equivalent uppers that cover the entire foot and ankle and offer resistance to scrapes and cuts. All footwear at a minimum shall bear the Canadian Standards Association (CSA) "green triangle" tag. Contractors shall ensure Workers are equipped with additional safety features where required by the Work. (e.g. electrical shock resistance, anti-static resistance, protection against chain saws etc.)
6. When required, exterior toe and metatarsal protection shall be used when activities involve impact exposures to the feet (ie; jackhammering, water blasting, concrete demolition etc),

unless the shoe has this protection built into the footwear.

7. Clothing: When required, sleeve length shall cover the ball of the shoulder. Shirts shall not have noticeable holes, be long enough to be tucked into pants and be free of political messages, profanity, objectionable, or obscene messages. Pants shall be full length and without excessive holes.
8. Hearing Protection: When required, employees shall be provided with hearing protection against the effects of noise exposures from machines, equipment or surrounding operations generating sound levels that exceed MOL regulations and OSHA hearing protection recommendations. Workers required to use hearing protection shall be tested and trained in the use and limitations of such protection.
9. Hand Protection: When required, workers handling materials or equipment with potential hand injury hazards shall be provided with appropriate hand protection.
10. Harnesses, Lifelines, and Lanyards: When required, follow the requirements set forth under the MOL with respect to Working at Heights. Refer to Working at Heights references throughout this Section.
11. Respiratory Protection: When required, workers shall be provided with respirators when it is necessary to protect them from inhalation of toxic or harmful gases, vapors, mists, fumes, and dust.
 1. Workers required to use respiratory protective equipment shall be qualified and adequately trained in the use and limitations of such equipment.
12. Other PPE: Where exposure to risk is identified, additional PPE not listed above shall be employed to suit the nature of the Work.

3.19 ROOF WORK

1. All roof work including patch and repair around minor roof openings for building services must be approved by the ODR and applicable Plant Operations Maintenance Department representative at the campus prior to project start.
2. Contractor is responsible for ensuring that they are able to immediately contact emergency forces during an emergency event by providing cell phones, radios, or access to working phones within University buildings or property. Contractor shall ensure workers on the jobsite know the address of the building.
3. Some areas of roofs may be restricted due to potentially hazardous exhaust from laboratories or processes. Contractor must obtain approval from the ODR before entering any roof areas.
4. Contractors are required to comply with all applicable Working at Heights requirements. Refer to this Section for further details.
5. Review with the ODR and applicable Plant Operations Maintenance Department representative regarding proper davit use and tie-off areas.
6. All roof work involving heated materials or open flames must have a valid Hot Work Permit.
7. All fire extinguishers must have current annual certification tags and in working order.
8. All open flames must be continuously supervised.
9. Refer to this Section for Fire Watch operating procedures.

10. All roofing materials shall be secured at the end of each workday to prevent disruption by wind and rain.

3.20 SANITATION AND HOUSEKEEPING

1. Contractors are responsible for ensuring that Project sites are effectively cleaned.
2. “Effectively Cleaned” shall address all of the following issues:
 1. Place all construction waste, trash, and debris in a designated receptacle. Glass bottles shall not be permitted in the Project site. Trash must be removed on a daily basis as to prevent accumulation and attraction for pests. Contractor must have an approved method for removing trash from the jobsite (i.e., dumpsters, trucks, etc.) before starting work.
 2. Eating is not allowed on the jobsite. Limited amounts of soft drinks and water will be allowed but must be removed on a daily basis as to prevent attraction of insects or rodents.
 3. Project service water: non-potable water including water storage containers, hose bibs, and faucets shall be labelled “Danger – Non-potable water, Do not drink”.
 4. Contractor may only use public restroom facilities assigned by the ODR. Contractors may not use staff restrooms.
 5. Any waste, trash, and/or debris created by the Contractor shall be cleaned (ie; sweeping, vacuuming, dust mopping, large debris removal etc.) at the end of the day to prevent accumulation of dirt and combustibles on the jobsite.
 6. Contractors are not allowed to use sinks or drains to clean materials or paint brushes.
 7. All holes and penetrations to the outside of the building must be sealed with an appropriate material as to prevent water, insects and rodents from entering the building.
 8. All windows must remain closed unless permission is granted by the ODR. All windows or penetrations used for ventilation purposes shall be protected from water, insect/rodent, and dust intrusion by use of protective covers and screen wire materials.
 9. Pedestrian pathways including corridors and means of egress within buildings and all exterior pathways, sidewalks and the like shall not be obstructed by any construction activity including storage or stockpiling of materials or waste. Review site staging plan with ODR prior to start of the Work.
 10. Place all hoses, cords, cables, and wires in locations that prevent them from damage and do not create tripping hazards.
 11. Restore all signs, barricades, fire extinguishers, guardrails, gates, etc. to proper locations and condition.
 12. Properly store and secure all flammable and combustible liquids and gases in proper containment or flammable storage cabinets.
 13. Collect and place all cut-off or waste pieces of rolling stock, as they are created, into waste or scrap containers. No rolling stock shall be permitted to fall and remain in the work area.
 14. Used shot strips from powder-actuated tools shall be properly maintained and disposed of in accordance with manufacturer’s recommendations.

15. All work surfaces shall be maintained in level and smooth condition as to prevent rolling carts from catching and possibly falling over while in transit. Appropriate temporary fill materials shall be installed as warranted.
16. All wheeled equipment shall have non-marking wheels or tape shall be used over wheels when moving through non-project areas to prevent marking and damage to floor surfaces. Tape should be removed if adequate traction is required to perform a task. Tape can be removed once in job-site area.
17. Contractors shall only use their trash dumpsters or dumpsters designated by the ODR Representative.
18. Cleaning of concrete trucks shall be done off University premises unless expressed written permission provided by ODR.

3.21 SCAFFOLDING, ELEVATING WORK PLATFORMS AND SUSPENDED ACCESS EQUIPMENT

1. All scaffold systems, including temporary elevated platforms (supported or suspended) and its supporting structure (including points of anchorage), as well as powered elevating work platforms (scissor lifts, skyjacks etc.) used for supporting employees or materials or both - shall follow the manufacturer instructions and adhere to all applicable Ministry of Labour regulations and OHS/A recommendations for each type of scaffolding or elevating device.
2. Contractor shall be required to receive permission from ODR and Plant Operations Maintenance Department representative before erecting any suspension or stationary scaffolding system on roofs or attaching lines to roof davits.
3. Contractor shall be required to obtain an up-to-date anchor testing certificate from ODR prior to mobilizing a swing stage or boatswain's (bosun's) chair connected to any existing anchor.
4. Contractor is responsible to retain the services of a specialty engineer to design scaffolding where project site conditions dictate.
5. Training and documentation shall be required for all workers on the Project who will erect, maintain, dismantle, or use the scaffolding. A designated competent person must ensure scaffold use requirements are maintained and inspected at the beginning of each work shift. Contractor shall maintain documentation to support this requirement.
6. Contractor to ensure training is provided for employees in accordance with Ministry of Labour regulations and OHS/A recommendations when using scaffolding and elevating work platforms as defined in the Ontario Ministry of Labour regulations. Refer to Fall Protection and Prevention, described elsewhere in this Section.
7. Mudsills and surrounding areas at the base of ground-supported scaffolds shall be maintained in a well-dressed and level condition. Scaffold feet shall be installed on all legs and the maximum number of diagonal braces shall be included in every scaffold section.
8. Every work level shall be fully planked and toe board shall be included along open sides. Overhead protection shall be constructed where walk-through passages are allowed.
9. Brakes shall be secure at all times on rolling scaffolds, except when being moved. Workers shall not be allowed on the platform when the scaffold is being moved.
10. Rolling scaffolds shall not be used on uneven or unstable surfaces. Wheels shall be non-marking or temporarily covered with tape to prevent damage to floor surfaces when being moved through non-project areas.

3.22 SERVICE TUNNELS

1. The University campus has a network of underground tunnels. For all deliveries of heavy equipment, or materials travelling on internal campus roadways, review with the ODR to ensure route will not structurally compromise underground tunnels.
2. The ODR will coordinate and arrange for Owner approved structural engineer to review temporary shoring of tunnel(s).
3. Cost of tunnel repair due to damage caused by unauthorized traffic will be back-charged to the Contractor.
4. Refer to Confined Spaces, this Section where applicable.

3.23 SEVERE WEATHER PLANS FOR CONSTRUCTION SITES

1. Construction sites for large capital projects may be required to have a Severe Weather Plan specific to that site. Consult with your ODR and University Safety Office for applicability.
2. Where required, a copy of the Severe Weather Plan must be submitted to your ODR prior to starting work.

3.24 SITE POSTINGS

1. Contractor shall securely post the required warning signs for the Project area(s).
2. All signs must be approved by your ODR. Consult your ODR regarding facility specific informational signs.
 1. Signs that warn of potential hazards (i.e., CONSTRUCTION AREA – DO NOT ENTER)
 2. Signs that communicate the level of personal protective equipment that is required (i.e., HARD HATS AND SAFETY GLASSES REQUIRED)
 3. All necessary permits (i.e., Hot Work Permits, and/or other Provincial/Local Regulatory Agency Permits as required by law).
3. Signs must be made from a sturdy material that resists tearing and fading. Laminated signs are acceptable for indoor postings.
4. All exterior Projects must contain the above noted required postings in all locations that warrant these warning signs and postings.
5. A single location such as a plywood Project board is acceptable for posting required permits and project information signage. Any required permits should be protected from the elements by covering them in a laminate or waterproof material.
6. Contractor shall install and maintain any additional signs, barricades, warning devices, and traffic warnings.

3.25 TRAFFIC MANAGEMENT

1. Conduct construction activities and operations along roads and in a manner that minimizes inconvenience and hazards to vehicular traffic and pedestrians.
2. Provide flag persons trained in accordance with and properly equipped as specified in the

Manual of Uniform Traffic Control Devices for Canada (MUTCDC) in the following situations:

1. When traffic is required to pass construction vehicles or equipment blocking all or part of a pedestrian or vehicular thoroughfare.
 2. Where construction vehicles including delivery trucks, concrete trucks etc. are travelling in reverse to maneuver within the site.
 3. Where is it necessary to institute one-way traffic through the construction area or where existing travel patterns or conditions are modified from the usual. Coordinate with the ODR and University Campus Police if assistance is required in establishing and maintaining detours.
 4. When workers or equipment are employed on travelled way over crest of hills, around sharp corners or at other locations where oncoming traffic may not have adequate warning.
 5. In situations where complete protection for workers is not provided by other traffic control devices.
3. Where requirement for traffic control is outside of University owned or controlled property, Contractor is required to obtain all necessary permits from the local Authority Having Jurisdiction.

END OF SECTION

- 1 General
- 1.1 RELATED SECTIONS
 - .1 Reserved
 - .2 Any others
- 1.2 REFERENCES
 - .1 Ontario. Environmental Protection Act. Ontario Regulation 102/94: Waste Audits and Waste Reduction Workplans.
 - .2 Ontario. Ministry of the Environment (MOE). A Guide to Waste Audits and Reduction Workplans for Construction and Demolition Projects as Required Under Ontario Regulation 102/94.
 - .3 Ontario. Environmental Protection Act. Ontario Regulation 103/94: Industrial, Commercial and Institutional Source Separation Programs.
 - .4 Ontario. Ministry of the Environment (MOE). A Guide to Source Separation of Recyclable Materials for Industrial, Commercial and Institutional Sectors and Multi-Unit Residential Buildings as Required Under Ontario Regulation 103/94.
 - .5 Canadian Construction Association. Standard Construction Document CCA 27-1997: A Guide on Construction ENVIRONMENTAL Management Planning.
 - .6 Canadian Construction Association. Standard Construction Document CCA 81-2001: A Best Practices Guide to Solid Waste Reduction.
 - .7 Canada. Public Works and Government Services Canada. 2002 National Construction Renovation and Demolition Non-Hazardous Solid Waste Management Protocol.
 - .8 Ontario Environmental Protection Act and Applicable Regulations
- 1.3 QUALITY ASSURANCE
 - .1 The Contractor shall minimize the amount of solid waste (including land-clearing debris) generated by construction, renovation and demolition (CRD) activities.

<SPEC NOTE: REVISED AUGUST 2015>
 - .2 The Contractor shall divert at least 40% of solid waste (include land-clearing debris) from landfill (through reuse and recycling) to ensure Construction Waste Management requirements are met.
 - .3 The Contractor shall comply with all applicable provincial and municipal regulations related to construction waste management, including the Ontario Environmental Protection Act Regulation 102/94 and Regulation 103/94.
- 1.4 DEFINITIONS
 - .1 Comingled Waste: a mix of various types of recyclable materials such as wood, metals and cardboard.

- .2 Mixed Waste: constitutes a mix of recyclable materials and waste materials for landfill.

1.5 DESCRIPTION OF WORK

- .1 The Contractor shall be responsible for all aspects of Construction Waste Management.
- .2 The Contractor shall identify, implement and document measures to achieve the waste management objectives listed in this Section.
- .3 Waste Management and Disposal activities shall include:
 - .1 Arrangement of waste management service agreements with waste haulers and receiving facilities.
 - .2 Supervision of on-site waste management activities on a daily basis.
 - .3 Coordination of waste management tasks with subcontractors and trades to ensure timely and orderly progress of the work.
 - .4 Preparation of waste management documentation and submittals for all shipments of waste materials from the project site.
 - .5 Reporting of waste management progress to the Owner and/or consultant

1.6 SUBMITTALS

- .1 Within 14 calendar days after receipt of Notice of Awards of Contract, and prior to any waste removal, whichever occurs sooner, the Contractor shall submit a Construction Waste Management Plan to the Owner and/or Consultant containing the following information:
 - .1 An analysis of job site waste to be generated, including the types and estimated quantities of recyclable and waste materials that will be generated.
 - .2 A list of the proposed receiving facilities for waste materials indicating the type of materials that will be disposed of at each facility and whether the material will be reused, recycled, or sent to landfill.
- .2 The Contractor shall complete the Construction Waste Reporting Form attached in Schedule 1 for each waste shipment as follows:
 - .1 Attach copies of associated waybills, invoices, and other supporting documentation to the Construction Waste Reporting Form, indicating the date of disposal, quantity of material by weight, name of waste hauler, and name of receiving facility for each waste shipment generated on site.
 - .2 Following mobilization, submit completed Construction Waste Reporting Forms and supporting documentation to the Owner and/or Consultant on a monthly basis and a final summary of construction waste disposal upon project completion.

1.7 PRE-CONSTRUCTION MEETING

- .1 The Contractor shall schedule and conduct a pre-construction meeting with the Owner and/or Consultant and construction team to review the Construction Waste Management Plan, waste management procedures, and documentation and submittal requirements.
- 2 Products [Not Applicable]
- 3 Execution
- 3.1 GENERAL
 - .1 The Contractor shall distribute copies of the Construction Waste Management Plan to the Site Superintendent and each Subcontractor.
 - .2 The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling procedures to be used by all parties at the appropriate stages of the Project.
- 3.2 WASTE DIVERSION
 - .1 The Contractor shall make arrangements with local salvaging/recycling facilities and arrange for disposal and recycling/reuse services. The sorting of recyclables may be done on or off site depending on site area constraints, at the discretion of the Contractor. As a minimum, the proposed facilities must recycle/reuse the following waste materials generated by construction activities:
 - .1 Land clearing debris
 - .2 Asphalt
 - .3 Concrete / masonry / stone
 - .4 Steel and other metals
 - .5 Wood (see note below)
 - .6 Gypsum
 - .7 Cardboard & Paper
 - .8 Plastic
 - .9 Glass
 - .2 The Contractor shall provide recycling bins near the construction site for recycling waste generated by site workers. As a minimum, bins shall be provided for the following materials:
 - .1 Metal food and beverage cans
 - .2 Glass bottles and jars for food and beverage
 - .3 Plastic/PET bottles for food and beverage

- .4 Cardboard and Paper products

3.3 ON-SITE WASTE SORTING

- .1 The Contractor shall designate and label a specific area to facilitate separation of materials for recycling and salvage. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. Containers shall be sized to accommodate the separation and storage of expected waste types and quantities and shall clearly indicate the material type being stored in each container using appropriate signage.

3.4 OFF-SITE WASTE SORTING

- .1 The Contractor may arrange for off-site sorting of mixed waste and comingled materials if the following requirements are met:

The sorting facility must provide actual weights and volumes of mixed/comingled construction waste loads but can estimate the load's material composition (amount of each type of waste) by weight or volume. Average waste densities can then be applied to estimated volumes to determine weight of each type of material in mixed/comingled waste loads.

- .1 The sorting facility must confirm the destination and end use for each material diverted from landfill. Signed attestations from the waste hauler are acceptable. Separate reports from end-use facilities are not required.

3.5 WASTE TRACKING

- .1 The Contractor shall coordinate delivery of separated materials to approved facilities for recycling, reuse or disposal.
- .2 The Contractor shall retain all waybills, invoices, and other documentation for submission to the Owner and record all waste shipments using the Construction Waste Reporting Form as per this Section.

SCHEDULE 1: CONSTRUCTION WASTE REPORTING FORM

CONSTRUCTION WASTE REPORTING FORM

Date: _____

Project Name: _____

Type of Material: _____

Work Request: _____

**Total Weight
(metric tonnes):** _____

**Weight Recycled/
Reused/ Diverted:** _____

Weight to Landfill: _____

Receiving Facility: _____

Waybill/ Invoice #: _____

Contact Name: _____

Contact Signature: _____

Company Name: _____

END OF SECTION

- 1 General
- 1.1 INSTRUCTIONS
 - .1 Comply with Instructions to Bidders, the General Conditions of the Contract, Supplementary Conditions and the General Requirements of Division 1.
- 1.2 SECTION INCLUDES
 - .1 Submittals and procedures required for closeout.
- 1.3 TAKE OVER PROCEDURES
 - .1 For the purpose of closing out this construction project and the takeover of the project by the Owner from the Contractor, the "OAA/OGCA Take-Over Procedures" document will be used with the following additions, clarifications and modifications.
 - .2 Provided below, for the Contractor and his Subcontractors benefit, is a list of minimum requirements for this Contract closeout.
 - .1 Contractor to notify Consultant, in writing, when he feels he meets the requirements of Substantial Performance as set out in the "Take-Over Procedures".
 - .2 The Consultant, the Contractor and his required Subcontractors shall prepare a list of incomplete and unsatisfactory work.
 - .3 Contractor shall make written application to the Consultant for Substantial Performance which must include all of the following:
 - (1) Statement that the contract is substantially performed in compliance with the Contract Documents.
 - (2) An invoice showing the amount of holdback owing accompanied by a Statutory Declaration and WSIB Certificate of Clearance.
 - (3) Submission of closeout requirements.
 - (4) A statement of completion with cost values as described in the "Take-Over Procedures - 3.2 (d)."
 - .4 If the Consultant finds the Contractor's application complete, he will visit the Place of the Work and verify the validity of the application.
 - .5 If the application is approved by the Consultant, he will issue a Certificate of Substantial Performance of the Work to the Owner and the Contractor.
 - .6 The Contractor shall publish a copy of the Certificate of Substantial Performance of the Work in the "Daily Commercial News" and provide a copy to the Consultant.
 - .7 The 60 day lien period begins on the date of publication with the holdback monies due, if no liens exist, on the sixtieth (60th) day.
 - (1) In addition to the lien holdback a lump sum amount of the Contract Price will be left uncertified, and referred to as the "Deficiency Holdback". The Deficiency Holdback will be retained by the Owner until all applicable certificates, warranties (including extended warranties), tax rebates, balancing report, demonstrations of systems, final cleaning and deficiencies have been received or completed to the satisfaction of the Consultant. The lump sum amount retained for such purpose shall be the greater of the following:
 - The summation of:
 - o 3 percent of the first \$1,000,000 of the Contract Price,

- 2 percent of the next \$1,000,000 of the Contract Price, and,
- 1 percent of the balance of the Contract Price.

- \$7,000.00

- .8 When all deficiencies have been completed and verified by the Contractor, he must notify the Consultant for further review. Upon becoming satisfied that all deficiencies have been corrected and upon receiving all certificates, warranties, balancing reports and tax rebates and upon verifying completeness of all final cleaning and demonstrations and upon receiving the Contractor's final invoice, a Final Payment Certificate" will be issued by the Consultant.
- .9 If the Contractor notifies the Consultant to re-review deficiencies, and upon visiting the project, the Consultant finds less than 75% completion of the outstanding listed deficiency items, it will be judged that the Contractor has not verified the deficiencies prior to notifying the Consultant. If this occurs, all future re-review hours will be charged to the Contractor on an hourly basis. The hourly rate charged will be \$110.00/hour plus Value Added Taxes and plus travel costs.
- .10 If all deficiencies are not completed within a reasonable period of time, the Consultant will invoke the requirements of GC 7.1 - OWNERS RIGHT TO PERFORM WORK OR STOP THE WORK OR TERMINATE CONTRACT.
- .11 The warranty period(s) commences on the date of Substantial Performance of the Work.
 - (1) Assemble warranties, affidavits and certificates required by Contract Documents for various materials, systems and equipment.
 - (2) Include copies of permits and certificates of inspection obtained by Contractor.
 - (3) Place documents in order and list each document on transmittal letter or form.

1.4 CLOSEOUT REQUIREMENTS

- .1 Project Record Documents: as specified in Section 01 78 39.
- .2 Information Manuals: as specified in Section 01 78 39.
- .3 Foundation Verification Survey: as specified in Section 01 78 39.
- .4 Site Compliance Survey: as specified in Section 01 78 39.
- .5 Keys and keying schedule including statement that construction lock cylinders have been converted.

1.5 EXTRA STOCK AND PARTS

- .1 Deliver to Owner extra stock of materials, spare parts and loose accessories required by Contract Documents.
- .2 Include special tools for items such as thermostats and adjustable dampers and give instructions for use.
- .3 Provide protective wrapping or packaging labelled with full identification of item. Materials are to be provided in unbroken cartons, or if not supplied in cartons, they shall be strongly packaged.
- .4 Store neatly in the storage locations as predetermined by Owner.

1.6 CERTIFICATES

- .1 Provide to the Consultant any certificates required by all local authorities and all certificates of compliance or verification required throughout the specification. Any certificates obtained prior to the maintenance manual submission should be included in the manual. Any certificates obtained after the maintenance manual submission shall be sent to the Consultant prior to Final Payment Certification.

1.7 WARRANTIES

- .1 Provide to the Consultant, all specified warranties, extended warranties and free manufacturer extended warranties as applies to each individual section.
- .2 The warranty period(s) commence on the date of Substantial Performance of the Work, and shall be valid for the full duration specified.
- .3 Submit warranties to the Consultant prior to Final Payment Certification.

1.8 DEMONSTRATION OF SYSTEMS

- .1 Provide instruction to the Owner's operating and maintenance personnel, during regular work hours, on the care, operation and maintenance of all equipment and systems as specified in the applicable sections. Refer to the various sections of the specifications for the specific instructional requirements.
- .2 All instructional periods shall be prior to the acceptance and handover of systems to the Owner for operation responsibility and also prior to Final Payment Certification.
- .3 For equipment requiring seasonal operation, perform instructions for other seasons within six months.
- .4 Use Information Manual for basis of instruction. Review contents of Manual with personnel in detail to explain operation and maintenance.
- .5 Prepare and insert additional data in the Information Manual when need for such data becomes apparent during instruction.
- .6 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance and shutdown of each item of equipment at equipment location.
- .7 Refer to mechanical and electrical documents for additional requirements.

1.9 TESTING AND BALANCING OF MECHANICAL SYSTEMS

- .1 The Mechanical Subcontractor is to include all costs to employ an independent testing company to test and balance all mechanical systems. Section [22 05 00] [23 05 00] [23 08 00] describes the required scope of work and execution details.
- .2 The Mechanical Subcontractor must list on his Bid Form the balancing Sub-subcontractor to be used. If no Subcontractor is selected, the first name listed in Section 00 43 33.20 shall be provided.
- .3 The Consultant reserves the right to have the air and water balancing verified by an independent agency.

END OF SECTION

Electronic Funds Transfer (EFT) Authorization Agreement



Transaction Type <input type="checkbox"/> Add EFT Information for New Supplier or <input type="checkbox"/> Add or Change EFT Information for Existing Supplier or <input type="checkbox"/> Cancellation	Request Date _____ mm/dd/yy
---	--

Supplier Information

Supplier Name: _____ Supplier #: _____
(can be found on your remittance)

Alternate Name*: _____ **If different from the supplier name*

Supplier Address: _____

Street Address _____ City _____ Province _____ Postal Code _____ Phone Number _____

Contact Name: _____ Phone Number: _____

Remittance Email Address: _____

Direct Deposit Information - You MUST provide a void cheque or a letter from your bank on bank letterhead confirming the information provided below. As an additional security measure, prior to updating your banking information, University of Waterloo Accounts Payable staff will be calling your organization to validate that you did submit this request to add/update your banking information.

Banking Information

Please attach a void cheque or bank letter

Type of Account: Business Personal

Name and Address of Account holder _____ Cheque Number: 000102

Pay to the order of _____ Date _____

"VOID"

_____ \$ _____ Dollars

Signature _____

"485" "00646" 842 :0164"0234-5800
 Transit No. Institution No. Account No.

Bank Name: _____

Bank Address: _____

Street Address _____ City _____

Province _____ Postal Code _____ Phone Number _____

Transit No.: _____ Institution No.: _____

Account No.: _____

Please use this form to notify us immediately if your banking arrangements change.

Authorization

I (we) hereby authorize University of Waterloo to direct payments electronically to the bank account specified here. I (we) acknowledge that the origination of the EFT transactions to my (our) account must comply with the provisions of Canadian law. This authorization agreement is effective as of the effective date above and is to remain in full force and effect until University of Waterloo has received notification of its termination. I (we) agree to submit an updated EFT Authorization Agreement to University of Waterloo for the cancellation of this agreement or to make any changes to the information provided within this agreement.

Authorized Signature: _____

Printed Name: _____

Title: _____

Phone Number _____ Date (mm/dd/yy) _____

Scan and email the completed form and void cheque or bank letter to:
appayments@uwaterloo.ca

Questions?
 Email appayments@uwaterloo.ca

The University of Waterloo gathers and maintains information used on this form for the purpose of electronic fund transfers. Information is collected under the authority of the University of Waterloo Act, 1972. Information will be protected, used, and released in compliance with Ontario's Freedom of Information and Protection of Privacy Act (R.S.O. 1990, c. F.31) and University of Waterloo policies. Questions about the collection, use, and disclosure of personal information by the University, should be directed to the Privacy Officer, Secretariat, University of Waterloo, 200 University Avenue West, Waterloo, Ontario, Canada N2L 3G1. The email address of the Privacy Officer is fippa@uwaterloo.ca.

Submission Instructions for Suppliers

Please follow these instructions to submit via our Public Portal.

1. Prepare your submission materials:

Requested Information

Name	Type	# Files	Requirement
Proposal	File Type: PDF (.pdf)	1	Required

Requested Documents:

Please note the type and number of files allowed. The maximum upload file size is 100 MB.

Please do not embed any documents within your uploaded files, as they will not be accessible or evaluated.

2. Upload your submission at:

<https://uwaterloo.bonfirehub.ca/opportunities/private/b65c1f48ed34a01661a4f25960839094>

The Question period for this opportunity starts Oct 16, 2024 3:00 PM EDT. The Question period for this opportunity ends Nov 05, 2024 3:00 PM EST. You will not be able to send messages after this time.

Your submission must be uploaded, submitted, and finalized prior to the Closing Time of **Nov 12, 2024 3:00 PM EST**. We strongly recommend that you give yourself sufficient time and **at least ONE (1) day** before Closing Time to begin the uploading process and to finalize your submission.

Important Notes:

Each item of Requested Information will only be visible after the Closing Time.

Uploading large documents may take significant time, depending on the size of the file(s) and your Internet connection speed.

You will receive an email confirmation receipt with a unique confirmation number once you finalize your submission.

Minimum system requirements: Microsoft Edge, Google Chrome, or Mozilla Firefox. Javascript must be enabled. Browser cookies must be enabled.

Need Help?

University of Waterloo uses a Bonfire portal for accepting and evaluating proposals digitally. Please contact Bonfire at Support@GoBonfire.com for technical questions related to your submission. You can also visit their help forum at <https://vendorsupport.gobonfire.com/hc/en-us>

UWaterloo Firewatch

Overview: During construction Fire Alarm and Life Safety Systems shall be kept in operation. If any portion of a Fire Alarm System not limited to zones or devices needs to be deactivated for demolition or construction, then the contractor shall conduct a firewatch. The firewatch is to be conducted in accordance with Ontario Fire Code and Authorities having Jurisdiction. Refer to Ontario Fire Code, including but not limited to, Div B Section 8.1.2.2. & 5.11.2.5.

Operation: To facilitate the procedures required by the Ontario Fire Code the University of Waterloo has developed the following outline procedure:

- (1) Contact the University of Waterloo Construction Coordinator 72 hours prior to initiation of firewatch. Construction Coordinator will reserve a radio at central plant for the contractor performing the work.
- (2) Hire a qualified fire alarm contractor to put the device or zone if required on bypass. If the building is addressable then the devices can be bypassed but if a building is conventional then the zone must be bypassed. **Under no circumstance is an entire panel to be bypassed.**
- (3) If devices are covered during work then the contractor is to use the manufacturer's recommended cover and remove it at the end of each working day. Once work is completed all devices that were covered are to be re-verified.
- (4) During firewatch, personnel conducting watch are to carry the radio, remain onsite for the duration of the fire watch, and tour the entire area affected once every hour.
- (5) Once the firewatch has ended;
 - Hire a qualified fire alarm contractor to ensure the system and all devices are back on line and all troubles are clear,
 - Return the radio to central plant.
 - Notify Central Plant and the Construction Coordinator the firewatch is over.



BLDG	BLDG NAME	PANEL TYPE	LOCATION	ADDRESS	HYBRID	CONVEN
1	ENGINEERING 1 (DWE)	EST-3	FA RM 1902	√		
2 + 3	ENGINEERING 2 + 3	CCAM EST-3	SUBSTATION ENG 2		√	
4	PHYSICS	EST-3	SUBSTATION			√
5	MOD LANGUAGES	EST-3	SUBSTATION			√
6	CHEM 1 (ESC)	EST-3	1ST FLR EXIT TO EIT NEAR BUNKER IN MINE DISPLAY		√	
7, 13	BIOL 1 + 2	EST-3	SMALL SUBSTATION			√
8	ARTS LIBRARY	EST-3	LOADING DOCK + SUBSTATION	√		
9	ARTS LECTURE	EST-3	BSMT RM 4	√		
10 + 34 + 57	ENV. STUDIES 1, 2 +3	EST-3	SUBSTATION EV2 RM 183	√		
11	ENG LECT. HALL	EST-3	SUBSTATION		√	
12	CENTRAL PLANT	FIRE SHIELD	SUBSTATION			√
12	CENTRAL PLANT	EST-3	CONTROL ROOM			√
14	GENERAL SERVICE	EST-3	BY CARPENTER SHOP	√		



**UNIVERSITY OF
WATERLOO**

V1.2

Date: 7/10/2019

15	COMMISSARY	FIRE SHIELD	EL RM 02 BSMT			√
16	SOUTH CAMP HALL	ESA 2000	SUBSTATION	√	VER 2.16	
17	MATH AND COMP	EST-3	SUBSTATION		√	
18	PAC	EST-3	BLUE NORTH RM 2016	√		
19	STUD. LIFE CENTER	EST-3	OUTSIDE BSMT ME RM NEAR THE BANK		√	
20	VILLAGE 1	EST-3	SUBSTATION		√	
22	HEALTH SERVICES	EST-3	UPPER MECH RM 2908	√		
23	MIN. HAGEY RES	EST-3	STORAGE RM BY SUBSTATION	√		
24	HUMANITIES AND SCHOOL OF ACCOUNTANCY	EST-3	ME RM 140 NODE 1 EL RM 0901 - NODE 3		√	TWO BUILDINGS ON ONE SYSTEM
25	VILLAGE 2 S/E (RON EYDT)	EST-3	ME RM EAST 101	√		
25	VILLAGE 2 N/W (RON EYDT)	EST-3	ME RM WEST 101	√		
25	VILLAGE 2 ADMIN (RON EYDT)	EST-3	SUBSTATION	√		
26 UWP NC	WELLESLEY COURT 157 UNIV AVENUE	EST-3	IT RM 133	√		
26 UWP NC	WELLESLEY COURT 155 UNIV AVENUE	EST-3	IT RM 140	√		



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V1.2

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26 UWP WC	WILMOT COURT 161 UNIV AVENUE	EST-3	IT RM 133	√		
26 UWP WC	WILMOT COURT 163 UNIV AVENUE	EST-3	IT RM 140	√		
26 UWP SC	WATERLOO COURT 106 SEAGR. DRIVE	EST-3	IT RM 133	√		
26 UWP SC	WATERLOO COURT 104 SEAGR. DRIVE	EST-3	IT RM 140	√		
26 UWP EC	WOOLWICH COURT 102 SEAGR. DRIVE	EST-3	IT RM 133	√		
26 UWP EC	WOOLWICH COURT 100 SEAGR. DRIVE	EST-3	IT RM 140	√		
26 UWP ET	BECK HALL 108 SEAGR. DRIVE	EST-3	MAIN LOBBY	√		
26 UWP WT	EBY HALL 159 UNIV AVENUE	EST-3	MAIN LOBBY	√		
26 UWP WT	EBY HALL 159 UNIV AVENUE	FCC MAIN PANEL	SUBSTATION	√		
27	UNIVERSITY CLUB	FIRE SHIELD	LOWER ME RM			√
28	CHEMISTRY 2	EST-3	REAR ENTRANCE TOWARD CEIT	√		
29	ENGINEERING 4	ZNC	SUBSTATION ENG 1 ROOF			√
29	ENGINEERING 4	EST-3	EL RM 2379 BY LOADING DOCK		√	
30	PSYCHOLOGY	EST-3	SUBSTATION		√	



31	NEEDLES HALL	6500	IT RM 1916		√	
32	BC MATHEWS HALL	EST-3	SUBSTATION ALSO LOADING DOCK CLOSET 1909			√
33	OPTOMETRY	EST-3	SUBSTATION 2011		√	
35	FEDERATION HALL	EST-3	SUBSTATION 2902	√		
36	EAST CAMPUS HALL	EST-3	ME RM 118	√		
37	DAVIS CENTER	EST-3	LOADING DOCK	√		
39	EIT	EST-3	BSMT RM 0905	√		
40	GROUNDS MAINT.	FIRE SHIELD	BEHIND LUNCH ROOM BY ROLL GATE			√
42	COLUMB. ICE FIELD	EST-3A	LOBBY BY GYM		√	
44	MC KENZIE KING	EST-3	SUBSTATION WEST AND ME RM 0108 E	√		
45	CO-OP / TATHAM CENTER	EST 3	BSMT RM 0903	√		
47	SCHOOL OF ARCHITECTURE	EST-3	SUBSTATION OUTSIDE	√		
48	ERC	EST-3	RM 1009	√		
49	SCHOOL OF PHARMACY	EST-3	MAIN ENTRANCE	√		