



**THE REGIONAL MUNICIPALITY OF HALTON**

**REQUEST FOR TENDERS**

**FOR**

**NEW FIRE ALARM SYSTEM FOR STORAGE & LAND  
FILL GAS COLLECTION BUILDING AT HALTON WASTE  
MANAGEMENT SITE, 5400 REGIONAL ROAD 25,  
MILTON, ON, L9E 0L2**

**TENDER # Q-881-24**

**BIDS SHALL BE SUBMITTED VIA THE BIDDING SYSTEM AT**  
*<https://haltonregion.bidsandtenders.ca>*

**\*\*\*\*\* ELECTRONIC SUBMISSIONS ONLY \*\*\*\*\***



## Supplementary Instructions to Bidders

**Contract No. Q-881-24**

### **NEW FIRE ALARM SYSTEM FOR STORAGE & LAND FILL GAS COLLECTION BUILDING AT HALTON WASTE MANAGEMENT SITE, 5400 REGIONAL ROAD 25, MILTON, ON, L9E 0L2**

**1. Key Bid Dates:**

**a. Bid Issue Date: Wednesday, August 7, 2024**

**b. Pre-Bid Meeting and Site Visit:**

**Non-Mandatory Site Meeting: Tuesday, August 13, 2024 at 10:00 am**

The non-mandatory site meeting will be held at 5400 Regional Road 25, Milton, ON.

Attendees will be met at the main entrance of Administrative Building. The site meeting will begin promptly at the designated time. Bidders are encouraged to arrive prior to the time indicated above in order to sign in. Refer to section 7 “Pre-Bid Meeting, Site Visit and Site Conditions” of the Instructions to Bidders for further information.

*Special notice: Personal Protective Equipment including hard hats, safety boots, safety vest and safety glasses will be required to enter the site.*

**c. Question Deadline Date: Wednesday, August 14, 2024 at 4:00 pm**

Any questions regarding this bid document are to be submitted in writing through Halton Region’s Public Procurement Website (<https://haltonregion.bidsandtenders.ca>) by using the “Submit a Question” feature. Refer to section 2 “Any Communications” of the Instructions to Bidders for further information.

**d. Bid Closing Date and Closing Time:**

<b>Thursday, August 22, 2024 at 4:00 pm local time</b>
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**e. Irrevocability Period: 90 days from the Closing Date**

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*Please note, should the Bidder complete any obligations, including in submitting completed documentation, after the Irrevocability Period, the Irrevocability Period shall be extended by the number of days of the delay and the Bidder shall not be entitled to an extension of Contract Time or delay claims as a result of said delay.*

### 2. Bid Security

- a. Bidders shall upload to the Bidding System the following: Bid Security in the amount of no less than **5 (five) percent of the Total Bid Price plus HST** in the following form:
  - i. A **digital bid bond** in an electronically verifiable and enforceable (e-Bond) format, in the form CCDC 220 – 2002 naming “The Regional Municipality of Halton” as obligee and issued by a surety licensed to conduct surety and insurance business in Canada or in Ontario, in the amount set out in Section 2.a **The digital bid bond form is included in Appendix “A” to this Supplementary Instructions to Bidders.**
  - ii. The version submitted by the Bidder must be verifiable by the Region with respect to the totality and wholeness of the bond form, including: the content; all digital signatures; all digital seals; with the surety, or an approved verification service provider of the surety.
- b. The version submitted must be viewable, printable and storable in standard electronic file formats compatible with the Region, and in a single file. Allowable formats include pdf.
- c. The verification may be conducted by the Region immediately or at any time during the life of the bond and at the discretion of the Region with no requirement for passwords or fees.
- d. The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding Item 2.a.ii.
- e. A scanned PDF copy of bonds, original certified cheque, bank draft, money order or any other format other than a digital bid bond is not acceptable and shall be rejected.
- f. A digital bid bond failing the verification process will NOT be considered to be valid.
- g. A digital bid bond passing the verification process will be treated as original and authentic.
- h. Bidders shall upload their Bid Security to the Bidding System, labelled as “**Digital Bid Bond**”. All instructions and details for assessing authentication shall be included with the digital bid bond uploaded in the Bidding System.

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- i. The digital bid bond will not be returned to the Bidder.
- j. The Bid Security shall be valid and not expire for at least the duration of the Irrevocability Period. In the event the Irrevocability Period is extended in accordance with section 16 of the Instructions to Bidders, the Bidder shall secure from its surety an extension of the Bid Security and provide evidence of same, which may be in the form of a rider to the Bid Security or some other form of written communication from the surety.

**3. Key Construction Milestones**

- a. **Commence Work:** The successful Bidder shall commence the Work within five (5) days from the date of the Notice of Award
- b. **Ready-for-Takeover:** The successful Bidder shall achieve Ready-for-Takeover by November 30, 2024
- c. **Completion:** The successful Bidder shall achieve Completion by December 15, 2024  
*Please note, in the event of any conflicting or inconsistent provisions between the Agreement Term Sheet and these terms and conditions, the Agreement Term Sheet shall always prevail and take precedence with respect to any such conflicting or inconsistent provisions.*

**4. Key Construction Milestones**

- a. The Vendor Performance Management Policy shall not apply to the successful Bidder’s Contract.

**5. List of Bid Documents**

Below is a list of Bid Documents included with this Request for Quotation:

<b>Bid Documents</b>	<b>No. of Pages</b>
Cover Page	1
Supplementary Instructions to Bidders	5
Instructions to Bidders	42
CCDC 2 – 2020 Stipulated Price Contract	30
CCDC 2 2020 Supplementary Conditions	64
Appendix 1 to the Supplementary Conditions – Agreement Term Sheet	1
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Appendix 3 to the Supplementary Conditions – Insurance	3

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Specifications – Table of Content	1
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Specification Division 26 - Electrical	45
Specification Division 27 - Communication	23
Drawings (Issued for Tender) E0 – E2	3
Appendix A – Asbestos Assessment	78
All other documents issued with this Request for Quotation that are not listed above	

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Appendix A – Digital Bid Bond

BID BOND

Standard Construction Document

CCDC 220 - 2002

No. \_\_\_\_\_ Bond Amount \$ \_\_\_\_\_
\_\_\_\_\_ as Principal, hereinafter called the Principal, and
\_\_\_\_\_ a corporation created and existing under the laws
of \_\_\_\_\_ and duly authorized to transact the business of Suretyship in \_\_\_\_\_ as Surety, hereinafter
called the Surety, are held and firmly bound unto \_\_\_\_\_ as
Obligee, hereinafter called the Obligee, in the amount of \_\_\_\_\_
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) lawful money of Canada, for the payment
of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has submitted a written bid to the Obligee, dated \_\_\_\_\_ day of \_\_\_\_\_, in the year \_\_\_\_\_
for \_\_\_\_\_

The condition of this obligation is such that if the Principal shall have the bid accepted within the time period prescribed in the Obligee's bid
documents, or, if no time period is specified in the Obligee's bid documents, within \_\_\_\_\_ ( ) days from the closing
date as specified in the Obligee's bid documents, and the Principal enters into a formal contract and gives the specified security, then this obligation
shall be void; otherwise, provided the Obligee takes all reasonable steps to mitigate the amount of such excess costs, the Principal and the Surety will
pay to the Obligee the difference in money between the amount of the bid of the Principal and the amount for which the Obligee legally contracts
with another party to perform the work if the latter amount be in excess of the former.

The Principal and Surety shall not be liable for a greater sum than the Bond Amount.

It is a condition of this bond that any suit or action must be commenced within seven (7) months of the date of this Bond.

No right of action shall accrue hereunder to or for the use of any person or corporation other than the Obligee named herein, or the heirs,
executors, administrators or successors of the Obligee.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated \_\_\_\_\_ day of \_\_\_\_\_,
in the year \_\_\_\_\_.

SIGNED and SEALED \_\_\_\_\_ Principal
in the presence of \_\_\_\_\_

ATTORNEY IN FACT \_\_\_\_\_
Signature
Name of person signing
Surety



(CCDC 220 - 2002 has been approved by the Surety Association of Canada)



## **INSTRUCTIONS TO BIDDERS**

February 2024

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## 1. DEFINITIONS

“Act” means the Construction Act, R.S.O. 1990, CHAPTER C.30;

“Addendum” or “Addenda” means a change, addition or to respond to questions in relation to the Request for Quotation;

“Agreement” means the Agreement between the Region and the Contractor for the performance of the Work, included in Appendix “A” of the Instructions to Bidders;

“Award” means the award of a Contract by the Region to one (1) or more Bidders;

“Bid” means a Bidder submission offered in response to a procurement solicitation;

“Bidder” means a Vendor that submits a Bid;

“Bid Documents” means the documents included in this Request for Quotation as listed in the Supplementary Instructions to Bidders, and any Addenda issued;

“Bid Security” means the security submitted by the Bidder with its Bid, which provides financial protection to the Region should the successful Bidder not enter into the Contract;

“Bidding System” or “Public Procurement Website” means the Region’s publicly accessible procurement website for issuing procurement solicitations and/or receiving Bids;

“Closing Date” and “Closing Time” means the deadline for submission of Bids as indicated in the Supplementary Instructions to Bidders;

“Construction” means any construction, reconstruction, demolition, repair or renovation of a building, structure, road or other engineering or architectural work;

“Contract” means the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the Contract Documents and represents the entire agreement between the Region and one (1) or more Contractors for the supply of Goods, Services and/or Construction, or a combination thereof;

“Contract Documents” consist of those documents listed in Article A-3 of the Agreement –  
CONTRACT DOCUMENTS;

“Contract Price” means the amount stipulated in Article A-4 of the Agreement –  
CONTRACT PRICE;

“Contractor” means the successful Bidder in respect of whose Bid an Award is made;

“Designated Sourcing Representative” means the Regional staff in Supply Chain Management responsible for the entire process until a Contract is Awarded by the Region; “Goods” means material, furniture, merchandise, equipment, stationery and other supplies and goods, including any incidental services;

“HST” means taxes payable under the *Excise Tax Act*, R.S.C. 1985, c.E-15, or any tax that replaces HST;

“Irrevocability Period” means the duration in which the Bid shall remain irrevocable and open to Award by the Owner and is the duration indicated in the Supplementary Instructions to Bidders;

“Letter of Intent” means the letter sent by the Region to a Bidder following the Bid review period, indicating the Region’s intent to Award subject to Senior Management and/or Regional Council approval, the Bidder’s fulfilment of the requirements of the Request for Quotation;

“Notice of Award” means the letter sent by the Region to the successful Bidder confirming the Award of the Contract and directing them to commence performance of the Work, that the Bidder must execute and send back to the Region;

“Owner”, “Region”, “Halton” and “Halton Region” means The Regional Municipality of Halton;

“Plan Taker” means one who downloads documents associated with the bid opportunity via the Bidding System;

“Product” or “Products” means material, machinery, equipment, and fixtures forming part of the Work, but does not include Construction Equipment;

“Proper Invoice” means an application for payment as defined in section 6.1 of the Act and the Region’s Contract Documents;

“Ready-for-Takeover” shall have been attained when the conditions set out in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER have been met, as verified by the Consultant pursuant to paragraph 12.1.4.2 of GC 12.1 – READY-FOR-TAKEOVER;

“Request for Quotations” or “RFQ” means a procurement solicitation that includes commercial terms and is typically lower value than a request for tender, with clearly defined scope of Goods, Services and/or Construction where cost is the primary evaluation criterion when making an Award;

“Schedule of Prices” means the schedule supplied as part of the Request for Quotation for the purposes of inputting pricing for the Work, which shall be completed by the Bidder and submitted back to the Region in its entirety through the Bidding System. Any reference in the Contract Documents to Bid Form shall be deemed to refer to Schedule of Prices;

“Services” means a non-physical, intangible Product resulting from a Vendor’s performance that cannot be stored or transported and that comes into existence at the time it is bought or consumed;

“Specifications” means that portion of the Contract Documents, wherever located and whenever issued, consisting of the written requirements and standards for Products, systems, workmanship, quality, and the services necessary for the performance of the Work;

“Supplementary Instructions to Bidders” means amendments to the Instructions to Bidders, issued as a separate document, which describe instructions unique to the Region and/or a particular Project;

“Suspension” means that, for the specified duration of the Suspension, the Suspended Vendor will not be permitted to participate in any procurement solicitations, as a Vendor or subcontractor, including prequalification processes, issued by the Region and “Suspend” and “Suspended” have corresponding meaning;

“Total Bid Price” means the price stipulated in the Schedule of Prices in the Bidding System;

“Vendor” means any legal person or entity providing or interested in providing Goods, Services and/or Construction, including suppliers, contractors, consultants and other service providers;

“Vendor Code of Conduct” means the Region’s Vendor Code of Conduct as available on the Region’s website at [www.halton.ca](http://www.halton.ca);

“Vendor Performance Management Policy” means the policy outlining the Region’s process for evaluating Vendor performance of Contracts and the consequences resulting from “Unacceptable” performance, as may be amended from time to time;

“Work” has the meaning indicated in the Contract Documents.

## **2. ANY COMMUNICATIONS**

2.1 Any questions regarding this Request for Quotation are to be submitted in writing through Halton Region’s Public Procurement Website (<https://haltonregion.bidsandtenders.ca>) by using the “Submit a Question” link associated with this bid request. Questions or clarification requests received by telephone or e-mail will not be accepted. Questions are to be submitted no later than the date indicated in the Supplementary Instructions to Bidders.

2.2 The Region reserves the right to neither accept nor consider any questions received after 4:00 P.M on the date indicated on the Supplementary Instructions to Bidders. The Region will review all questions received and prepare a response that is made available as an Addendum, if necessary, to all Plan Takers.

- 2.3 It will be the Bidder's responsibility to clarify with the Region any questions arising from this Request for Quotation or any matter they consider unclear in accordance with this section before submitting their Bid. Under no circumstances shall Bidders rely upon any information or instructions from the Region, its employees, or its agents, unless the information or instructions are provided in writing in the form of an Addendum.
- 2.4 A Bidder or its representative(s) will only communicate with the Designated Sourcing Representative for the Bid. A Bidder or its representative(s) shall not communicate with any other Regional staff or elected officials from the time of issuance of this Request for Quotations until the final Award. The Region reserves the right to disqualify any Bidder who contravenes this prohibition.
- 2.5 A Bidder or its representative(s) shall not threaten, harass nor intimidate staff, elected officials or any other supplier from bidding on a Regional solicitation or performing a Regional Contract. The Region reserves the right to disqualify any Bidder who contravenes this prohibition.

### **3. REGISTERED PLAN TAKER**

- 3.1 Bid documents are available online via the Bidding System at <https://haltonregion.bidsandtenders.ca>. A Vendor that subscribes to the Bidding System can login to their account to purchase and download the bid document(s) without the preview watermark. A Vendor that does not subscribe to the Bidding System may choose to purchase a one-time only download of this bid opportunity. Bid documents are only available via the Bidding System and will not be provided in any other format.
- 3.2 All Bidders shall have a Bidding System account and be registered as a Plan Taker for this bid opportunity, which will enable the Bidder to download the bid document without the watermark preview, to receive Addenda/Addendum email notifications, download Addenda and to submit their Bid electronically through the Bidding System. To ensure receipt of the latest information and updates via email regarding this bid, the onus is on the Bidder to create a Bidding System account and register as a Plan Taker for the bid opportunity.
- 3.3 Bidders must be registered as a Plan Taker for this bid opportunity on the Bidding System in order to submit a Bid. Should the Region receive a Bid that is subsequently found to be from a Bidder that is not a registered Plan Taker, the Region reserves the right to remove the Bid from further consideration.

### **4. ELECTRONIC BID SUBMISSION ONLY**

- 4.1 Bids shall be submitted via the Bidding System no later than the Closing Date and Closing Time specified in the Supplementary Instructions to Bidders.
- 4.2 **Only Bids submitted via the Bidding System will be accepted.** Bids submitted by any other method or format will be automatically rejected. It is the sole

responsibility of each Bidder to make sure that their Bid is delivered and received by the Bidding System by the Closing Date and Closing Time. Bids received after the specified Closing Date and Closing Time will not be accepted by the Bidding System.

- 4.3 There will not be a public Bid opening. When the Bids are opened, the unofficial bid results will be posted on the Bidding System at <https://haltonregion.bidsandtenders.ca>.
- 4.4 Bidders are cautioned that the timing of their Bid submission is based on when the Bid is successfully received by the Bidding System, not when a Bid is submitted by a Bidder, as Bid transmission can be delayed for a number of reasons, including the file transfer size, transmission speed, etc.
- 4.5 The Region shall not be liable for any costs, expenses, loss or damage resulting from any technical difficulty with the Bidding System, including, without limitation, computer system failures of either the Bidder or the Region's Bidding System service provider, a power failure, delays caused by internet/network traffic and/or failure of any computer system element.
- 4.6 For the above reasons, the Region recommends that Bidders allow sufficient time to upload their Bid and attachment(s) (if applicable). The Closing Date and Closing Time shall be determined by the clock used by the Bidding System.
- 4.7 The Region also encourages Bidders to take advantage of the Bidding System feature that allows Bidders to view their uploaded documents prior to submission of their Bid. Bidders are solely responsible for ensuring that they can access the Bidding System and submit their Bid before the Closing Date and Closing Time.
- 4.8 The Bidding System will send a confirmation email to the Bidder advising that their Bid was submitted successfully. If you do not receive a confirmation email, contact technical support at Bids & Tenders via telephone at 1-800-594-4798 or email: [support@bidsandtenders.ca](mailto:support@bidsandtenders.ca).

## **5. OMISSIONS, DISCREPANCIES AND INTERPRETATIONS IN REGION'S DOCUMENT (ADDENDUM)**

- 5.1 Should a Bidder find omissions from or discrepancies in any Contract Documents or be in doubt as to the meaning or any part of the Contract Documents, the Bidder shall immediately notify the Region in writing.
- 5.2 Through Addendum, the Manager, Strategic Sourcing may:
  - a) revise, delete, add to or substitute any part of the Bid Documents;
  - b) extend the Closing Date; or
  - c) provide a written explanation or interpretation of this Request for Quotations.

- 5.3 No oral explanation or interpretation by the Region shall modify any of the requirements or provisions of the Bid Documents.
- 5.4 Bidders are advised that Addenda will be posted at <https://haltonregion.bidsandtenders.ca> under the applicable bid call.
- 5.5 The Bidding System will attempt to notify each Plan Taker by email, of the issuance of an Addendum to the Bid Documents. The Bidding System will use the email address supplied by the Plan Taker at the time of purchase of the Bid Documents. The Region will not be responsible for missing or invalid email addresses.
- 5.6 It is the Bidder's responsibility to view and/or download all applicable Addenda prior to submitting a Bid. Addenda form part of the Bid Documents and must be taken into consideration when submitting a Bid.
- 5.7 Bidders shall acknowledge receipt of any Addenda when submitting their Bid through the Bidding System. Bidders shall check a box for each Addendum/Addenda and any applicable attachments that have been issued before a Bidder can submit their Bid.
- 5.8 It is the responsibility of the Bidder to ensure they have received all Addendum/Addenda that have been issued. Bidders should check online at <https://haltonregion.bidsandtenders.ca> prior to submitting their Bid to confirm all Addendum/Addenda have been received.
- 5.9 If a Bidder submits their Bid at any time prior to the Closing Date and Closing Time and an Addendum/Addenda is subsequently issued by the Region after the submission of the Bid, the Bidding System will automatically **WITHDRAW** the Bid submission and change the Bid submission to an **INCOMPLETE STATUS**. A Bid with an incomplete status will **NOT be accepted by the Region**. The withdrawn Bid can be viewed by the Bidder in the **"MY BIDS"** section of the Bidding System. The Bidder is solely responsible to:
- a. Make any required adjustments to their Bid;
  - b. Acknowledge the Addendum/Addenda; and
  - c. Ensure that the re-submitted Bid is successfully received by the Bidding System no later than the Closing Date and Closing Time.

## 6. WITHDRAWAL OR REVISION OF BIDS

- 6.1 Bidders may edit or withdraw their Bid submission through the Bidding System prior to the Closing Date and Closing Time. If the Bidder wishes to re-submit a Bid, the Bidder is solely responsible to:
- a. Make any required adjustments to their Bid;
  - b. Acknowledge the Addendum/Addenda; and

- c. Ensure the re-submitted Bid is successfully received by the Bidding System no later than the Closing Date and Closing Time.
- 6.2 Requests to withdraw Bids received by the Bidding System will not be considered after the Closing Date and Closing Time.

## **7. PRE-BID MEETING, SITE VISIT AND SITE CONDITIONS**

- 7.1 Bidders are responsible to conduct any site examinations deemed necessary by the Bidder for the proper preparation of a Bid and/or to make themselves aware of all conditions that may affect the work. Nothing in this Request for Quotations shall relieve the Bidders from undertaking all investigation and clarification on all matters related to this Request for Quotations. No allowance will be made for additional costs nor will any claim be considered in connection with conditions or circumstances that could have been reasonably ascertained by the Bidders had reasonable efforts been made prior to the Closing Date and Closing Time.
- 7.2 If a pre-bid meeting and site visit is required, details will be provided in the Supplementary Instructions to Bidders.
- 7.3 General Instructions for pre-bid meetings and site visits:
- 7.3.1 The site meeting will begin promptly at the designated time. Bidders are encouraged to arrive prior to the time indicated in order to sign in.
  - 7.3.2 Attendees will be provided with an overview of the project. It is the responsibility of each Bidder to conduct a sufficient investigation of the site(s) and of the Work and obtain all required information about local conditions to be met with during the Work prior to submitting their Bid. The Bidders shall make their own estimates and measurements of the facilities and difficulties that may be encountered. Bidders may not claim at any time after submission of the Bid that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions evident or apparent during the Bid period.
  - 7.3.3 The Region will not be held responsible for a Bidder's failure to obtain such information in section 7.3.2. The Region assumes no responsibility and will not pay additional costs for any omissions in the bid submission as a result of site-specific conditions that Bidders could have seen if they visited the site(s).
  - 7.3.4 It is the responsibility of the Bidder to verify actual site conditions and measurements. The price submitted is for the completed Work, including all items which may not have been mentioned but are required to complete the scope of Work.
- 7.4 Mandatory Site Meeting Instructions (where applicable):

7.4.1 Where there is a mandatory site meeting(s), Bidders who fail to attend and register their attendance at the mandatory site meeting(s) will be disqualified from submitting a Bid.

7.4.2 At the Region's discretion, a Bidder that arrives late to the mandatory site meeting(s) may be disqualified from submitting a Bid.

7.5 Non-Mandatory Site Meeting Instructions (where applicable):

7.5.1 Where there is a non-mandatory site meeting(s), Bidders are not required to attend the site meeting(s) in order to submit a Bid. However, the Region strongly recommends that Bidders attend the site meeting(s) in order to familiarize themselves with the existing conditions prior to submitting their Bid.

## **8. SCHEDULE OF PRICES & TOTAL BID PRICE**

8.1 Bidders shall complete and submit the Schedule of Prices through the Bidding System.

8.2 The Total Bid Price shall be in Canadian Dollars and shall include the furnishing of all materials, supplies and equipment and the provision of all labour, construction tools and equipment, utility and transportation services necessary to perform and complete all the Work required under the Contract, including all miscellaneous Work, whether specifically included in the Contract Documents or not. Goods and Services rendered will be billed to actual expenses, in accordance with the rates as Bid.

8.3 The Total Bid Price does not include HST.

8.4 It is the intention of the Contract Documents to provide finished Work. Any items omitted therefrom which are clearly necessary for the completion of the Work or its appurtenances shall be considered a portion of the Work though not directly specified and/or shown or called for in the Contract Documents and shall be included in the Total Bid Price.

8.5 Failure to complete any part of the Schedule of Prices or to provide all requested information may result in a Bid being declared non-compliant.

## **9. KEY CONSTRUCTION MILESTONES**

9.1 Refer to the Supplementary Instructions to Bidders for key construction milestones including the commence work date, the Ready-for-Takeover date, and the completion date.

## **10. ONTARIO HARMONIZED SALES TAX (HST)**



- 10.1 The Contractor will be required to provide the Region with its HST registration number and indicate the applicable HST on each progress payment certificate.
- 10.2 Where a change in Canadian Federal or Provincial taxes occurs after a Bid Closing Date, the Region shall adjust progress payment certificates to account for the exact amount of the tax change.

## **11. VENDOR CODE OF CONDUCT**

- 11.1 The Vendor Code of Conduct, as included in the Bid Documents, sets out the principles applicable to Vendors that wish to establish and maintain a business relationship with the Region.
- 11.2 The Region intends to do business with Bidders that demonstrate solid business integrity that aligns with the Region's core values and high standards of ethical behaviour expected by the Region. The Vendor Code is not to be read in lieu of, but in addition to obligations as set out in any agreements with the Region. Bidders are responsible to familiarize themselves with the Vendor Code of Conduct and comply with it. Bidders are to complete, sign and return the Vendor Code of Conduct Acknowledgement Form with their Bid submission.

## **12. BID IRREGULARITIES**

- 12.1 Irregularities in connection with any Bid shall be resolved in accordance with Regional policies and procedures governing bid irregularities.

## **13. PRIVILEGE CLAUSE**

- 13.1 The Region shall have the right to reject any or all Bids. The Bid with the lowest Total Bid Price will not necessarily be accepted. The Region reserves the right to accept all or part of any Bid.
- 13.2 The Manager, Strategic Sourcing may cancel the Request for Quotations at their sole discretion.
- 13.3 In addition to any other right expressed or implied, the Region reserves the right to:
  - a) make public the names of any or all Bidders and members of a Bidder's team;
  - b) check references other than those provided by any Bidder;
  - c) disqualify or invalidate any Bid that contains material misrepresentations or any other materially inaccurate or misleading information;
  - d) make changes, including substantial changes, to this Request for Quotations provided that those changes are issued by way of Addenda;
  - e) if a single Bid is received, reject the Bid of the sole Bidder and cancel this Request for Quotations process or enter into direct negotiations with the sole Bidder.

- 13.4 The Region shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any Bidder by reason of the acceptance or the non-acceptance of the Bid, delay in Awarding the Contract, or cancellation of the Request for Quotations.
- 13.5 The Region, in its sole discretion, may reject a Bid from a Suspended Vendor and/or a Bid that includes a Suspended Vendor as a sub-contractor, in accordance with the Vendor Performance Management Policy.

#### **14. TIED BIDS**

- 14.1 In the event that two or more Bidders have exactly the same Total Bid Price, the Region shall have the sole right to select the successful Bid. The Region may, at its sole option, conduct a coin toss in the presence of the two (2) Bidders to select the successful Bid. The Region shall determine the manner and rules that shall govern the coin toss.

#### **15. CLAIMS OR LITIGATION**

- 15.1 The Region reserves the right, and in its absolute discretion after considering the criteria outlined in subsection 16.2, to reject a Bid submitted by a Bidder if the Region is engaged in legal action dispute including but not limited to a contractual claim and/or legal action against the Bidder, or, if the Bidder or any officer or director of the Bidder is engaged, either directly or indirectly through a corporation or personally, in a legal action dispute, including but not limited to a contractual claim and/or legal action against the Region, its elected representatives, appointed officers, or employees, in relation to:
- a. any other Contract, Goods or Services;
  - b. any matter arising from the Region's exercise of its powers, duties, or functions.
- 15.2 In determining whether or not to reject a Bid the Region will consider;
- a. whether the litigation is likely to adversely affect the Bidder's ability to work with the Region, its consultants and representatives; or,
  - b. whether the Region's experience with the Bidder indicates that the Region is likely to incur increased staff and legal costs in the administration of the Contract if it is Awarded to the Bidder; or,
  - c. whether the Bidder has been convicted of a criminal act against the Region or one of its local boards or corporations; or,
  - d. whether the Bidder has failed to satisfy an outstanding debt to the Region, including Provincial Offences Act fines, or one of its local boards or corporations; or,
  - e. there are reasonable grounds to believe it would not be in the best interests of the Region to enter into a Contract with the Bidder.

## **16. EXTENSION OF IRREVOCABILITY PERIOD**

- 16.1 In the event the Region is unable to Award the Bid within the Irrevocability Period as set out in the Supplementary Instructions to Bidders, the Region shall request a formal extension in writing from one or more Bidders.
- 16.2 Subject to agreement by the Bidder(s) in writing, the Irrevocability Period shall be extended and the Bid Documents shall be considered automatically amended to reflect the revised Irrevocability Period.

## **17. CONTRACT EXECUTION**

- 17.1 Where the Contract Price is equal to or less than \$250,000 (excluding HST) the selected Bidder shall execute the Notice of Award, agreeing to be bound by the Region's Contract Documents. A Letter of Intent and the Contract Documents will be sent to the selected Bidder. The Bidder shall provide the Certificates of Liability Insurance, Workplace Safety and Insurance, New/Change Vendor & Electronic Funds Transfer Application (if required), and any other required documents to the Region within ten (10) calendar days of the date of receipt of the Letter of Intent, failing which the Region reserves the right to retain the Bidder's Bid Security (if required), and not Award to the Bidder. The aforementioned documents shall be completed to the satisfaction of the Region with no errors and omissions. Upon receipt of the required documents the Region intends to issue the Notice of Award.
- 17.2 The Letter of Intent does not constitute Award of the Contract. Award is subject to Senior Management and/or Regional Council approval, the Bidder's fulfilment of the requirements of the Request for Quotation, such as the submission of the required documentation as set out in the Letter of Intent, which may include but is not limited to those items referenced in section 17.1, and formal execution of the Notice of Award by the Bidder.
- 17.3 In the event the Region, in its sole discretion, allows an extension of time for the Bidder to submit the required documentation referenced in section 17.1, the Bidder shall not be entitled to an extension of Contract time or delay claims as a result of the Bidder's delay in submitting completed documentation.

## **18. VENDOR PERFORMANCE MANAGEMENT POLICY**

- 18.1 Bidders shall refer to the Supplementary Instructions to Bidders to confirm the applicability of the Vendor Performance Management Policy (the "Policy") to the Contract upon Award.
- 18.2 If the Policy applies to the Awarded Contract:
  - a) The Region will evaluate the Contractor's performance in accordance with the Policy and provide a written evaluation and record of the Contractor's

performance of this Contract. The Contractor will be provided with regular feedback of its performance of a Contract, to confirm satisfactory or unacceptable performance as applicable, and the consequences of unacceptable performance as outlined in the Policy.

- b) The Policy may be amended from time to time, and the latest version of the Policy shall form part of this Contract.
- c) The Policy and the applicable evaluation form can be accessed on the Region's website at [www.halton.ca](http://www.halton.ca).

## **19. SUBCONTRACTORS**

- 19.1 Bidders must ensure they and any subcontractors they retain are in good standing with the Region, in accordance with the Policy. It is the responsibility of Bidders to review the Suspended Vendor List on [www.halton.ca](http://www.halton.ca) prior to submitting a Bid or retaining any subcontractors.

## **20. ELECTRONIC PAYMENT DEPOSIT**

- 20.1 The Region strongly encourages payment to the Contractor through electronic payment deposit. The successful Bidder(s) is to provide the New/Change Vendor & Electronic Funds Transfer Application Form as part of the documentation required prior to Award. Bidders are not to include the form with their Bid submission.
- 20.2 If during the Contract term, there is any change to the direct deposit information, the Contractor shall submit a new form, which must be authorized by a signing officer, and a person with the ability to bind the corporation. The Region will verify any and all changes to the banking information with the Contractor prior to making any changes.

## **21. PROPER INVOICE REQUIREMENTS**

- 21.1 The Contractor will be required to comply with the prompt payment provisions pursuant to Part I.1 of the Act and the Proper Invoice requirements set out in the Region's Contract Documents.

## **22. INTERIM ADJUDICATION**

- 22.1 The Contractor will be required to comply with the construction dispute interim adjudication provisions pursuant to Part II.1 of the Act and the Region's Contract Documents.

### **23. INTELLECTUAL PROPERTY**

- 23.1 All reports, plans, designs, and other documents to be produced by the Contractor to this Request for Quotations shall, on submission to the Region, become the property of the Region.

### **24. DIGITAL DRAWINGS**

- 24.1 Should a Bidder choose to print any of the drawings supplied by the Region in a PDF format, to preserve the scale of the prints, the Bidder must disable all page scaling options during printing. The Region assumes no responsibility whatsoever for the Bidder's failure to properly print, including the failure to print to the proper scale, any drawings supplied by the Region.
- 24.2 It is the Bidder's sole responsibility to verify that all PDF drawings are printed without PDF scaling enabled by verifying the final PDF prints with the associated drawing scale references in the applicable drawings title block.

### **25. GREEN PROCUREMENT**

Not Applicable

### **26. ONTARIANS REGULATION 191/11 – INTEGRATED ACCESSIBILITY STANDARDS**

- 26.1 Pursuant to Ontario Regulation 191/11 under the Accessibility for Ontarians with Disabilities Act, 2005, the Region is required to incorporate accessibility design, criteria and features when procuring or acquiring goods, services or facilities, except where it is not practicable to do so.
- 26.2 When determining which bid will result in an Award the Region may, in its sole discretion and without limiting any of its other express or implied rights regarding the discretion to make an Award, consider whether the Goods, Services or facilities to be provided incorporate accessibility design, criteria and features.

### **27. NON-RESIDENT WITHHOLDING TAX**

- 27.1 Should the Region make an Award to a non-resident Vendor, the Region shall under the *Income Tax Act*, R.S.C., 1985, c. 1 (5<sup>th</sup> Supp.), and the *Income Tax Regulations*, C.R.C., c.945, all as amended from time to time, withhold 15% (fifteen percent) from payments of fees, commissions, or other amounts paid to non-resident Vendors, in respect of Services rendered in Canada, in accordance with the above, for Services rendered in Canada. The Region is not required to withhold this amount under subsection 105(1) of the Regulations, if the non-resident Vendor obtains a waiver certificate from the Canada Revenue Agency prior to the commencement of the Contract.

## **28. FREEDOM OF INFORMATION**

- 28.1 The information provided in response to this Request for Quotations is collected in accordance with the Region's Purchasing By-law No. 63-23, or as amended, and will be used for all purposes related to awarding the Bid and administering By-law No. 63-23. The Bidder acknowledges that the Region is subject to the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O 1990, c.M.25, as amended ("MFIPPA") and as a result the contents of any Bid submitted by the Bidder are public and that with the exception of personal information the Bid will be disclosed if the Region receives a request for it under MFIPPA.

APPENDIX "A"

AGREEMENT BETWEEN OWNER AND CONTRACTOR

AGREEMENT BETWEEN OWNER AND CONTRACTOR

For use when a stipulated price is the basis of payment.

This Agreement made on [redacted] day of [redacted] in the year [redacted] by and between the parties

[redacted]

hereinafter called the "Owner"

and

[redacted]

hereinafter called the "Contractor"

The Owner and the Contractor agree as follows:

ARTICLE A-1 THE WORK

The Contractor shall:

1.1 perform the Work required by the Contract Documents for (insert below the description or title of the Work)

[redacted]

located at (insert below the Place of the Work)

[redacted]

for which the Agreement has been signed by the parties, and for which (insert below the name of the Consultant)

[redacted]

is acting as and is hereinafter called the "Consultant" and

1.2 do and fulfill everything indicated by the Contract Documents, and

1.3 commence the Work by the [redacted] day of [redacted] in the year [redacted] and, subject to adjustment in Contract Time as provided for in the Contract Documents, attain Ready-for-Takeover, by the [redacted] day of [redacted] in the year [redacted].

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

2.1 The Contract supersedes all prior negotiations, representations or agreements, either written or oral, relating in any manner to the Work, including the bid documents that are not expressly listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS.

2.2 The Contract may be amended only as provided in the Contract Documents.

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**ARTICLE A-3 CONTRACT DOCUMENTS**

3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement – THE WORK:

- Agreement between *Owner* and *Contractor*
- Definitions
- General Conditions
- \*



\* *(Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; Division 01 of the Specifications – GENERAL REQUIREMENTS; Project information that the Contractor may rely upon; technical Specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; Drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date; time schedule)*

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**ARTICLE A-4 CONTRACT PRICE**

- 4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:  
[redacted] /100 dollars \$ [redacted]
- 4.2 *Value Added Taxes* (of [redacted] %) payable by the *Owner* to the *Contractor* are:  
[redacted] /100 dollars \$ [redacted]
- 4.3 Total amount payable by the *Owner* to the *Contractor* for the *Work* is:  
[redacted] /100 dollars \$ [redacted]
- 4.4 These amounts shall be subject to adjustments as provided in the *Contract Documents*.
- 4.5 All amounts are in Canadian funds.

**ARTICLE A-5 PAYMENT**

- 5.1 Subject to the provisions of the *Contract Documents* and *Payment Legislation*, and in accordance with legislation and statutory regulations respecting holdback percentages, the *Owner* shall:
  - 1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* unless otherwise prescribed by *Payment Legislation* together with such *Value Added Taxes* as may be applicable to such payments,
  - 2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and
  - 3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.
- 5.2 Interest
  - 1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by adjudication, arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:
    - (1) 2% per annum above the prime rate for the first 60 days.
    - (2) 4% per annum above the prime rate after the first 60 days.Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by [redacted] (*Insert name of chartered lending institution whose prime rate is to be used*) for prime business loans as it may change from time to time.
  - 2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.2.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the *General Conditions – DISPUTE RESOLUTION* or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

**ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING**

- 6.1 *Notices in Writing* will be addressed to the recipient at the address set out below.
- 6.2 The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.
- 6.3 A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it will be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* will be deemed to have been received on the *Working Day* next following such day.
- 6.4 A *Notice in Writing* sent by any form of electronic communication will be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it will be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission thereof.
- 6.5 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.

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**APPENDIX “B”**

**VENDOR CODE OF CONDUCT**



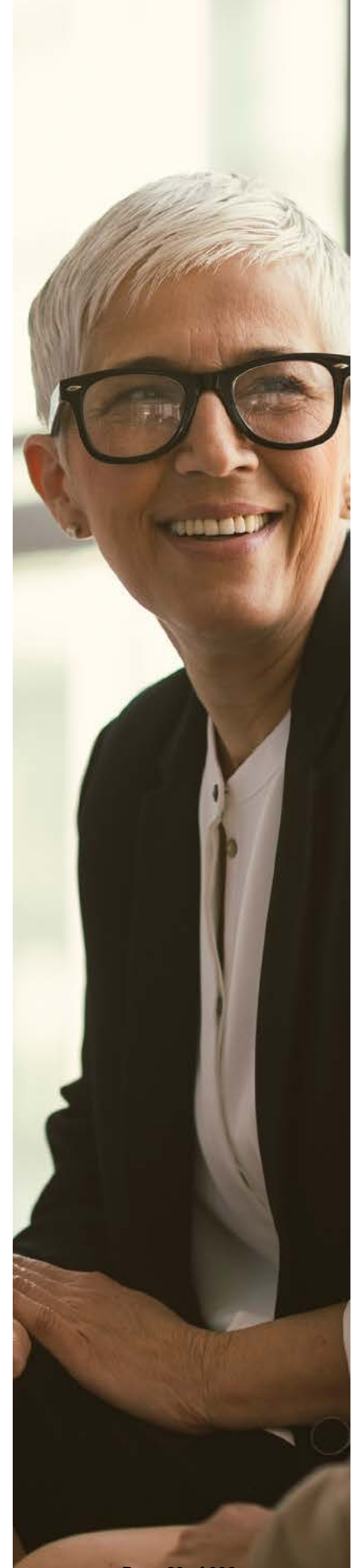
# HALTON REGION Vendor Code of Conduct

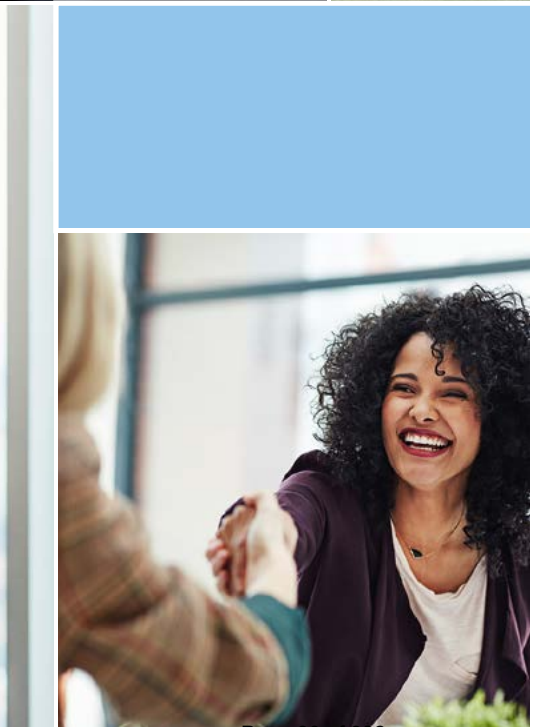




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# Introduction and Purpose

The Regional Municipality of Halton (herein after referred to as “The Region”) is committed to purchasing goods and services from responsible Vendors that provide quality goods and services at competitive prices. Vendors, subcontractors, employees, agents, bidders and potential bidders that provide goods and services to the Region (herein after referred to as “Vendors”) are expected to support the Region’s goals and objectives of encouraging competitive bidding, ensuring fairness, accountability and transparency in the procurement process, and obtaining the best possible value in the procurement of goods and services for the Region.

The Region expects Vendors to perform all duties in a competent and impartial manner that can withstand the closest public scrutiny. Vendors are expected to exercise good judgement when doing business with the Region. This Vendor Code of Conduct (herein after referred to as “Vendor Code”) sets out the principles applicable to Vendors that wish to establish and maintain a business relationship with the Region. The Region is confirming its intention to do business with Vendors that demonstrate solid business integrity that aligns with the Region’s core values and high standards of ethical behaviour. Vendors must also inform their employees and any sub-contractors or sub-vendors about this Vendor Code.

The Vendor Code is consistent with Halton Region’s Code of Conduct, which sets out the expectations for Regional staff. The Region’s Code of Conduct is available on the Region’s website.

The Vendor Code should not be read in lieu of, but in addition, to Vendors obligations as set out in any agreements between the Region and a Vendor. In the event of a conflict between this Code and an applicable agreement, the agreement shall govern.





# Vendor Responsibilities

Vendors are required to familiarize themselves with this Vendor Code and comply with it as a condition of doing business with the Region. Vendors are expected to adhere to the following core principles of business integrity:

- a) uphold the laws of the Region, Ontario and Canada, and not be a party to their breach, evasion or subversion;
- b) treat all persons honestly and fairly, with proper regard for rights, entitlements, duties and obligations, and at all times act responsibly and diligently in the performance of their duties;
- c) be professional and courteous, and resolve any work-related disagreements in a responsible and expeditious manner;
- d) be accountable and responsible for their decisions and actions, take ownership of problems and initiate corrective actions;
- e) promote the health and safety of others and prevent workplace illness, injury, harassment and violence;
- f) carry out their duties in a fair, impartial and transparent manner;
- g) complete the Acknowledgment Form as set out in Appendix A; and
- h) report on non-compliance or suspected non-compliance of the Vendor Code.

These principles are also consistent with the Halton Region Code of Conduct.



## **i. Compliance with Laws**

Vendors that wish to do business with the Region shall abide by all applicable laws and regulations including Federal, Provincial and Local laws regarding environmental matters, occupational health and safety, labour and employment practices, human rights, accessibility, immigration, product safety, shipping and product labelling. If Vendors become aware of any activities that are not in compliance with all applicable laws and regulations, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.

Vendors shall disclose:

- 1) any previous convictions of collusion, bribery, fraud or other similar practices prohibited under law for which they have not received a pardon; and
- 2) breach of the Region's Vendor Code or those of any other related Agencies or Corporation(s) of the Region.

Vendors are prohibited from misrepresenting their relevant past experiences and qualifications in relation to any solicitation process and acknowledge that the Region's process of evaluation may include information provided by the Vendor's references as well as records of past performance on previous contracts and services with the Region. The Region reserves its rights if the Vendor fails to make the appropriate disclosures and representations.





## ii. Confidentiality and Privacy

Vendors may have access to confidential and/or personal information by reason of their duties and responsibilities with the Region. Confidential information is defined as any information that is proprietary, strategic, technical, business or personal and not available to the public. All Vendors must respect such information and ensure it is safeguarded from unauthorized disclosure or access. Confidential information must be protected in accordance with the Vendor Code of Conduct. Such information must only be used or disclosed in accordance with this Vendor Code of Conduct and the provisions of the *Municipal Freedom of Information and Protection of Privacy Act, 1990* and the *Personal Health Information Protection Act, 2004*.

Disclosure of information means making the information available to others, and should only occur where disclosure is necessary and proper in the discharge of the Region's functions or where the disclosure is required by law. This includes and protects any information that is, and should be considered as, internal information relating to Regional business.

Vendors must not disclose confidential and/or personal information unless specifically and explicitly permitted in the terms of their contract. The duty of a Vendor to maintain the integrity and confidentiality of Regional information continues once that Vendor ceases to be in a contract with the Region.

When discussing business matters, Vendors must consider their surroundings. Conversations in public places should be limited to information that is non-confidential and does not include references that could identify a person or situation.

## iii. Information Security

Vendors must use information obtained through their relationship with the Region only for the purposes of the supply relationship. Vendors must store information securely and have in place appropriate information security policies and procedures. Vendors must notify the Region promptly of actual or suspected privacy breaches, security breaches or loss of Regional information.

#### iv. Social Media

The Region supports the use of online communications to enhance customer service and leverage the Region's brand. Vendors should not communicate on social media platforms on behalf of the Region unless the Vendor is expressly authorized in writing to do so by the Region. When such communication is authorized, it is to be conducted in a manner that is consistent and respectful of Canadian libel laws, *Municipal Freedom of Information and Protection of Privacy Act, 1990* and the Region's practices in regards to confidential information and intellectual property.

All Regional data or information obtained by the Vendor through the delivery of services or goods is to be considered proprietary and confidential. Without the Region's prior consent, Vendors should not communicate to social media platforms identifying the Region as a client and the associated services and goods provided to the Region. Regional consent must be obtained prior to identifying the Region as a client.





# Integrity and Public Confidence

## i. Conflict of Interest

Public confidence in the Region is put at risk when the conduct of a Vendor involves or appears to involve a conflict between public duty and private interests. Vendors are required to support and advance the interests of the Region and avoid placing themselves in situations where their personal interests actually or potentially conflict with the interests of the Region. Vendors shall disclose to the Region any situation that could result in an actual, apparent or perceived conflict of interest and the Regional employee that has an interest in the Vendor's business (or any other economic or family ties with the Vendor).

Vendors are expected, at minimum, to:

- a) base business decisions strictly on merit and the best interests of the Region in a manner consistent with their contractual obligations with the Region;
- b) avoid any situation that may create a real or perceived conflict of interest;
- c) not take part in, or in any way influence, any Regional decision that might result in a financial or other advantage, whether direct or indirect, as a result of the contractual association with the Region;
- d) not attempt to gain an improper advantage or preferential treatment from Regional employees; and
- e) provide no personal benefit to employees of the Region.

If Vendors become aware of any activities that may be considered a conflict of interest involving the Region, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.

## ii. Business and Personal Relationships

Vendors shall not use or seek to use their association with the Region to receive direct or indirect benefit for themselves or their family members, friends and any other businesses or consultants that they or the Region do business with.

## iii. Avoidance of Preferential Treatment

Vendors shall not grant preferential treatment to any Regional staff, their family and friends, or any businesses. Vendors must avoid creating or appear to create an obligation for the purpose of gaining any special consideration.

## iv. Gifts and Hospitality

Accepting a gift, hospitality or other benefit from a Vendor could influence an employee's judgment and performance of official duties, or give the appearance of doing so, even if the employee believes the benefit will not affect their objectivity or impartiality. Vendors must not offer, directly or indirectly, any gift, hospitality or other benefits to the Region's staff. Gifts having a monetary value such as cash, gift certificates, loans, services, discounts and ticket(s) to an entertainment event including sporting events, concerts or other such related activities must not be offered. These requirements do not change during traditional gift-giving seasons.

Under no circumstances should a Vendor solicit gifts, hospitality and/or other benefits or transfers of economic value to Region staff. The same is expected of the Region staff—not to solicit gifts or other benefits from Vendors.

All Regional staff are subject to the rules governing the acceptance of gifts outlined in the Purchasing By-law, Section 29, Prohibitions, and the Halton Region Code of Conduct.

Employees may accept common expressions of courtesy that do not cause suspicion about the objectivity and impartiality of the employee, would not compromise the integrity of the Region and:

- a) are of a nominal value not to exceed fifty (\$50);
- b) occur on infrequent and exceptional basis; and
- c) are not ticket(s) to an entertainment event including sporting events, concerts, or other such related activities.

Vendors must not place Regional employees in the difficult position of having to refuse gifts that would place them in conflict with the rules governing the acceptance of gifts outlined in this Vendor Code.





**v. Political Activity**

No Vendor shall engage in political activity on Regional property while carrying out the requirements of their contract for the Region. If Vendors become aware of any political activities, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.

**vi. Fraud**

The Region is committed to the highest standards of corporate accountability, transparency, responsibility and integrity. The Region will protect funds, property, information and other assets owned by or in the care of the Region through the prompt investigation of any alleged fraudulent conduct.

Vendors must not engage in any fraudulent activity. Examples of activities which may be considered fraudulent include, but are not limited to:

- a. forgery or alteration of documents (cheques, purchase orders, time sheets, etc.);
- b. misappropriation of funds, securities, supplies or assets;
- c. authorization or receipt of payment for goods not received, services not performed or hours not worked;
- d. any claim for reimbursement of expenses that were not incurred for the exclusive benefit of the Region;
- e. authorization of unjustified or inflated change order requests to increase profits;
- f. knowingly delivering works, goods or services that do not meet contract specification; and
- g. subcontracting to business entities that are not arm's length without prior consent of the Region.

If Regional Vendors, their employees, associates or other third parties become aware of any activities that may be considered fraudulent, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.

**vii. Theft and Vandalism**

The Region's assets must be protected from theft, destruction, vandalism and neglect, and used properly and strictly for the Region's purposes. Vendors' personal use, misuse, misappropriation of/or theft or vandalism of Regional property, resources, equipment, materials and supplies is prohibited.

## viii. Anti-Bribery and Anti-Corruption

Vendors are expected to comply with applicable anti-corruption laws, whether domestic or foreign, including but not limited to the *Corruption of Foreign Public Officials Act, 1998* and the Criminal Code, and not engage in any form of corrupt practices including, but not limited to, extortion, fraud, bribery or other unlawful payment or benefit to secure any concession, contract or other favourable treatment.

Vendors should not engage in any conduct that would put the Region at risk of violating anti-bribery laws or regulations. Bribery is the giving or receiving of a “thing” of value to influence the actions of another person or organization.

Types of bribery can include, but are not limited to:

- a) kickback payments that could be received before, during or at the end of a project/contract; and
- b) any financial benefits given with the intent of influencing the recipient which includes such things as gifts (for example, travel or entertainment), loans, credit cards, purchase overpayments, cash, fees and commissions.

## ix. Collusive Bidding

Vendors are not to participate in collusive bidding. Groups of bidders might secretly agree to submit complementary high bids to allow pre-selected Vendors to win contracts on a rotating basis, divide contracts by territory or take steps to defeat the competitive process and divide work. Vendors are not to contract with separate business entities that are not arm’s length, submit a bid through non arm’s length entity or reveal confidential information to an arm’s-length or non-arm’s length entity.

If Vendors, their employees, associates or other third parties become aware of any activities that may be considered bribery or collusive bidding, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.



A photograph of a man with short dark hair and a light beard, wearing a blue button-down shirt with a small white pattern. He is looking down at a white tablet computer he is holding in his hands. The background is a soft, out-of-focus light color.

# Workplace Well-being

## **i. Respectful Workplace**

The Region is committed to protecting the health and safety of all Regional employees and Vendors against illness, injury and incidents of violence and harassment. Every Vendor will make every effort to provide and maintain a safe and healthy work environment, as well as maintain a diverse and respectful workplace in which the dignity and self-respect of every person is valued.

Vendors must ensure that their personal conduct within the workplace and elsewhere does not adversely affect:

- a) their ability to perform their official duties;
- b) the ability of other Vendors to perform their duties; or
- c) public confidence in the Region or in the public sector.

## **ii. Accessibility for People with Disabilities**

Vendors are required to have met compliance obligations in the *Accessibility for Ontarians with Disabilities Act, 2005* and Ontario Regulation 191/11-Integrated Accessibility Standards, as applicable.

## **iii. Employment Practices**

Vendors must abide by applicable employment standards, labour, non-discrimination and human rights legislation. Where laws do not prohibit discrimination or where they allow for differential treatment, Vendors are expected to be committed to non-discrimination principles and operate in a way that does not differentiate unfairly.



#### iv. Impairment at Work

In order to minimize the risk of impaired performance due to substance use, the following are strictly prohibited for all Regional Vendors:

- use, possession, distribution, offering or sale of illegal drugs, illegal drug paraphernalia or un-prescribed drugs (for which a prescription is legally required in Canada) while on Regional business or premises;
- use, possession, distribution, offering or sale of alcoholic beverages or cannabis on Regional premises;
- intentional misuse of prescribed medications, over-the-counter medications or other substances while on Regional business or premises; and
- being unfit for work due to the effects or after-effects of alcohol, illicit or illegal drugs, un-prescribed drugs (for which a prescription is legally required in Canada) or the intentional misuse of medications or other substances.

Vendors are required to report to their Regional supervisor or project authority the use of any medication that may affect their ability to perform their job in a safe manner. Vendors have a responsibility to manage potential impairments during working hours due to the legitimate use of medications in consultation with their personal physician.

If Vendors, their employees, associates or other third parties become aware of any activities that may be considered impaired performance due to substance use, they must report it immediately as specified in the non-compliance reporting section of this Vendor Code.





# Non-Compliance Reporting

Vendors must report any practices, behaviours, activities or actions believed to be in contravention or in conflict with this Vendor Code, Halton Region Code of Conduct or any other Regional policy.

The Region will resolve all complaints regarding violations of this Vendor Code to the greatest extent possible in a timely, respectful and confidential manner, and ensure all Vendors are held accountable for their actions.

All Vendors shall be free from reprisal, discipline, harassment or discrimination as a result of reporting, in good faith, a breach or suspected breach of this Vendor Code. If it is determined, however, that a complaint is frivolous, vexatious or malicious in nature, the complainant may be subject to action as outlined in the Penalty for Non-Compliance section of this Vendor Code.

During the investigation and resolution of complaints, all information, including the identity of the complainant and any other Vendors or Vendor staff involved, will remain confidential except where sharing information is otherwise required by law or required to further the investigation.

## i. Complaint Resolution Procedure

### EARLY RESOLUTION

Vendors who become aware of or have directly experienced an action which is in contravention of this Vendor Code should:

- a) keep a written record of the incidents, dates, time, locations, possible witnesses, any attempted resolutions and behaviours of the Vendor(s) involved; and
- b) report the breach to the Director of Supply Chain Management, who must investigate and attempt to resolve the complaint as expeditiously as possible, except in the case of suspected fraud, which is to be immediately reported to the Chief Internal Auditor as specified in the Formal Complaint Investigation section of this Vendor Code.

#### **The Regional Municipality of Halton**

Director of Supply Chain Management  
1151 Bronte Road  
Oakville ON L6M 3L1  
905-825-6000 ext. 7231  
Sam.Pringle@halton.ca

If the Director of Supply Chain Management is not able to resolve the complaint to the reporting Vendor's satisfaction, and/or the complaint involves the Director of Supply Chain Management, a complaint shall be filed directly to the Region's Chief Internal Auditor or to the Code of Conduct Help Line.

### FORMAL COMPLAINT INVESTIGATION

- a) Complaints must be made in writing and signed by the complainant using a designated form. The form is available on the Region's website.
- b) Complaints must be forwarded to the Chief Internal Auditor, who will initiate an investigation into the complaint within five (5) business days of receipt.

#### **The Regional Municipality of Halton**

Chief Internal Auditor  
1151 Bronte Road  
Oakville ON L6M 3L1  
905-825-6000 ext. 7532  
Karen.Cinq-Mars@halton.ca

- c) Once the investigation is complete, the investigation findings and recommendations will be reported to the complainant and respondent, as appropriate and as determined by the Chief Internal Auditor.





## ii. **Alternative Reporting – Confidential Code of Conduct Help Line**

A Vendor who does not feel comfortable reporting a complaint as outlined above may contact the Region's confidential and anonymous Vendor Code of Conduct Help Line (available 24/7) at:

- Toll-free telephone: 1-833-210-0001
  - Website: [www.lighthouse-services.com/haltonvendor](http://www.lighthouse-services.com/haltonvendor)
  - Email: [reports@lighthouse-services.com](mailto:reports@lighthouse-services.com) (must include Halton Region in the subject line)
- a) All complaints submitted to the Vendor Code of Conduct Help Line will be received by a third party who will relay the complaint, without revealing the caller's identity (if requested), to the Chief Administrative Officer.
  - b) The confidential complaint will be reviewed by the Chief Administrative Officer and the Director of Human Resources within five (5) business days of the initial review.
  - c) Once the investigation is complete, the investigation findings and recommendations will be reported to the complainant and respondent, as appropriate, if their identities are made known.

The Region does not guarantee that an investigation will be conducted for every complaint.

# Penalty for Non-Compliance

Any vendor who contravenes the Vendor Code, including any provision of this Vendor Code, may be subject to:

- a) verbal or written warning;
- b) cancellation of business relationship and/or contract;
- c) disqualification from participating in future business opportunities; and/or
- d) such other action or penalty as may be appropriate and permitted by law in the circumstances of the particular contravention.

This Vendor Code may be modified from time to time by the Region at its discretion.



# Acknowledgement Form

The attached Vendor Code of Conduct sets forth the principles required by the Regional Municipality of Halton (“the Region”) of all Vendors who supply goods and services to the Region when conducting business with the Region.

By signing this Acknowledgement, the undersigned Vendor agrees to abide by the Vendor Code of Conduct and also agree to ensure its employees, officers, agents, representatives, and subcontractors are also made aware of and comply with it.

**ACKNOWLEDGEMENT**

I, \_\_\_\_\_ an authorized representative of \_\_\_\_\_, hereby acknowledge and agree to abide by the attached Vendor Code of Conduct, and will ensure that the employees, officers, agents, representatives and subcontractors of \_\_\_\_\_ are aware of and abide by such policies and principles in the process of preparing and submitting bids and proposals for Regional work, provisions of goods and services to the Region, and during the performance of all agreements entered into with the Region for such purposes.

Submitted by:  
(Please type/print)

\_\_\_\_\_  
Business Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/Town

\_\_\_\_\_  
Postal Code

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Fax Number

\_\_\_\_\_  
Contact Email Address

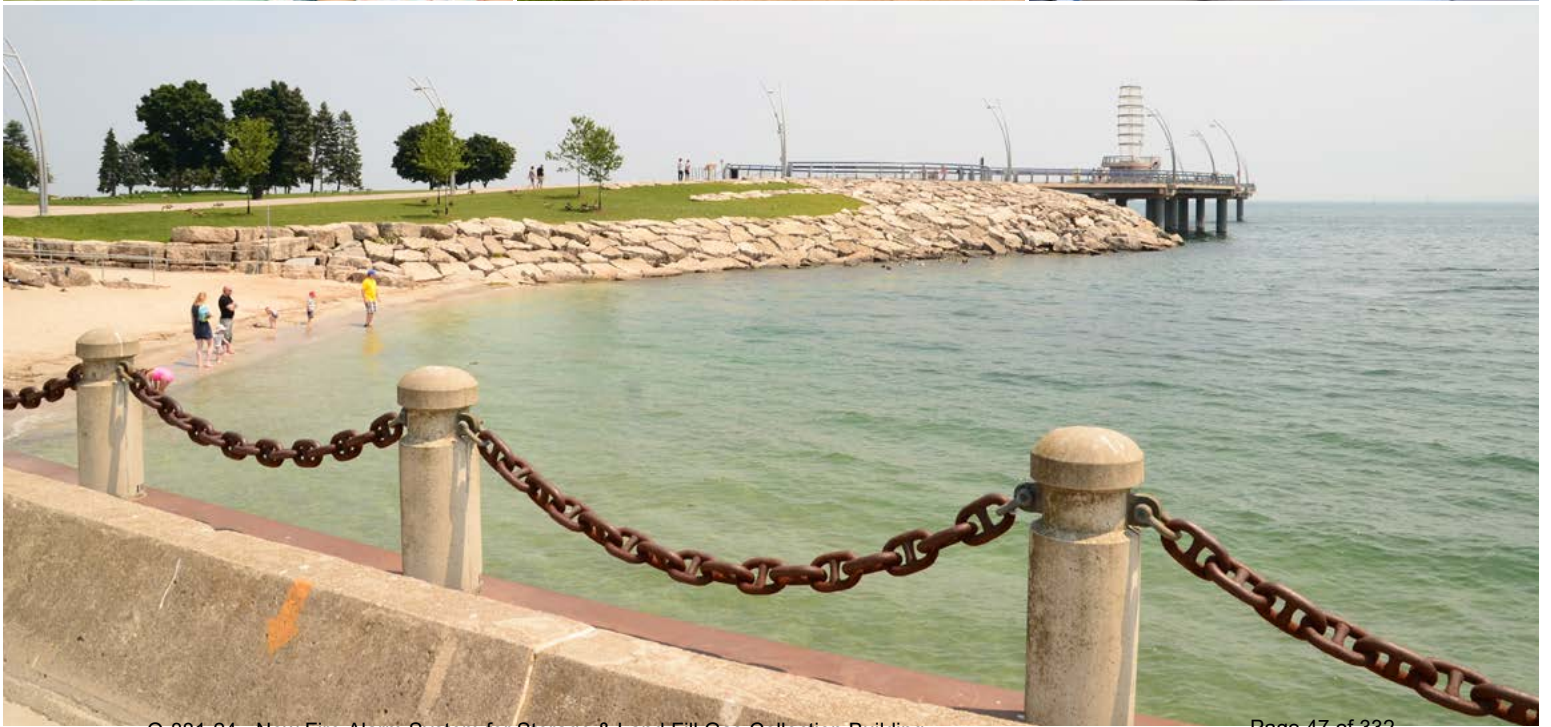
\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Signing Officer

\_\_\_\_\_  
Name and Title (please print)

\_\_\_\_\_  
Signature of Contact Person

\_\_\_\_\_  
Name and Title (please print)







CCDC 2

# Stipulated Price Contract

# 2020

Name of Project

Apply a CCDC 2 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE  
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE  
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE

# CCDC 2 STIPULATED PRICE CONTRACT

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CCDC 2 is the product of a consensus-building process aimed at balancing the interests of all parties on the construction project. It reflects recommended industry practices. The CCDC and its constituent member organizations do not accept any responsibility or liability for loss or damage which may be suffered as a result of the use or interpretation of CCDC 2.

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**AGREEMENT BETWEEN OWNER AND CONTRACTOR**

For use when a stipulated price is the basis of payment.

**This Agreement** made on \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.  
**by and between the parties**

hereinafter called the "Owner"

**and**

hereinafter called the "Contractor"

The *Owner* and the *Contractor* agree as follows:

**ARTICLE A-1 THE WORK**

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for *(insert below the description or title of the Work)*

located at *(insert below the Place of the Work)*

for which the Agreement has been signed by the parties, and for which *(insert below the name of the Consultant)*

is acting as and is hereinafter called the "*Consultant*" and

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Ready-for-Takeover*, by the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.

**ARTICLE A-2 AGREEMENTS AND AMENDMENTS**

2.1 The *Contract* supersedes all prior negotiations, representations or agreements, either written or oral, relating in any manner to the *Work*, including the bid documents that are not expressly listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS.

2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

**ARTICLE A-3 CONTRACT DOCUMENTS**

3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement – THE WORK:

- Agreement between *Owner* and *Contractor*
- Definitions
- General Conditions

\*

*\* (Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; Division 01 of the Specifications – GENERAL REQUIREMENTS; Project information that the Contractor may rely upon; technical Specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; Drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date; time schedule)*

**ARTICLE A-4 CONTRACT PRICE**

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

/100 dollars \$

4.2 *Value Added Taxes* (of \_\_\_\_\_ %) payable by the *Owner* to the *Contractor* are:

/100 dollars \$

4.3 Total amount payable by the *Owner* to the *Contractor* for the *Work* is:

/100 dollars \$

4.4 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

4.5 All amounts are in Canadian funds.

**ARTICLE A-5 PAYMENT**

5.1 Subject to the provisions of the *Contract Documents* and *Payment Legislation*, and in accordance with legislation and statutory regulations respecting holdback percentages, the *Owner* shall:

- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* unless otherwise prescribed by *Payment Legislation* together with such *Value Added Taxes* as may be applicable to such payments,
- .2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and
- .3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 Interest

- .1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by adjudication, arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:
  - (1) 2% per annum above the prime rate for the first 60 days.
  - (2) 4% per annum above the prime rate after the first 60 days.
 Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by *(Insert name of chartered lending institution whose prime rate is to be used)*

for prime business loans as it may change from time to time.

- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.2.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions – DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

**ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING**

6.1 *Notices in Writing* will be addressed to the recipient at the address set out below.

6.2 The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.

6.3 A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it will be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* will be deemed to have been received on the *Working Day* next following such day.

6.4 A *Notice in Writing* sent by any form of electronic communication will be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it will be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission thereof.

6.5 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.

**Owner**

*name of Owner\**

*address*

*email address*

**Contractor**

*name of Contractor\**

*address*

*email address*

**Consultant**

*name of Consultant\**

*address*

*email address*

*\* If it is intended that a specific individual must receive the notice, that individual's name shall be indicated.*

**ARTICLE A-7 LANGUAGE OF THE CONTRACT**

- 7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / French # language shall prevail.  
*# Complete this statement by striking out inapplicable term.*
- 7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

**ARTICLE A-8 SUCCESSION**

- 8.1 The *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

**In witness whereof** the parties hereto have executed this Agreement by the hands of their duly authorized representatives.

SIGNED AND DELIVERED  
in the presence of:

**WITNESS**

**OWNER**

\_\_\_\_\_  
*name of Owner*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name of person signing*

\_\_\_\_\_  
*name and title of person signing*

**WITNESS**

**CONTRACTOR**

\_\_\_\_\_  
*name of Contractor*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name of person signing*

\_\_\_\_\_  
*name and title of person signing*

- N.B. Where legal jurisdiction, local practice or Owner or Contractor requirement calls for:*
- (a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or*
  - (b) the affixing of a corporate seal, this Agreement should be properly sealed.*

## DEFINITIONS

The following Definitions shall apply to all *Contract Documents*.

### Change Directive

A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon adjustments in the *Contract Price* and the *Contract Time*.

### Change Order

A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:

- a change in the *Work*;
- the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
- the extent of the adjustment in the *Contract Time*, if any.

### Construction Equipment

*Construction Equipment* means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.

### Consultant

The *Consultant* is the person or entity engaged by the *Owner* and identified as such in the Agreement. The *Consultant* is the Architect, the Engineer or entity licensed to practise in the province or territory of the *Place of the Work*.

### Contract

The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.

### Contract Documents

The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS and amendments agreed upon between the parties.

### Contract Price

The *Contract Price* is the amount stipulated in Article A-4 of the Agreement – CONTRACT PRICE.

### Contract Time

The *Contract Time* is the time from commencement of the *Work* to the date of *Ready-for-Takeover* as stipulated in paragraph 1.3 of Article A-1 of the Agreement – THE WORK.

### Contractor

The *Contractor* is the person or entity identified as such in the Agreement.

### Drawings

The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location and dimensions of the *Work*, generally including plans, elevations, sections, details, and diagrams.

### Notice in Writing

A *Notice in Writing*, where identified in the *Contract Documents*, is a written communication between the parties or between them and the *Consultant* that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

### Owner

The *Owner* is the person or entity identified as such in the Agreement.

### Other Contractor

*Other Contractor* means a contractor, other than the *Contractor* or a *Subcontractor*, engaged by the *Owner* for the *Project*.

### Payment Legislation

*Payment Legislation* means such legislation in effect at the *Place of the Work* which governs payment under construction contracts.

### Place of the Work

The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

### Product

*Product or Products* means material, machinery, equipment, and fixtures forming part of the *Work*, but does not include *Construction Equipment*.



**Project**

The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.

**Ready-for-Takeover**

*Ready-for-Takeover* shall have been attained when the conditions set out in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER have been met, as verified by the *Consultant* pursuant to paragraph 12.1.4.2 of GC 12.1 – READY-FOR-TAKEOVER.

**Shop Drawings**

*Shop Drawings* are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.

**Specifications**

The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, quality, and the services necessary for the performance of the *Work*.

**Subcontractor**

A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work* at the *Place of the Work*.

**Substantial Performance of the Work**

*Substantial Performance of the Work* is as defined in the lien legislation applicable to the *Place of the Work*.

**Supplemental Instruction**

A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models, or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.

**Supplier**

A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products*.

**Temporary Work**

*Temporary Work* means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.

**Value Added Taxes**

*Value Added Taxes* means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the *Contractor* by tax legislation.

**Work**

The *Work* means the total construction and related services required by the *Contract Documents*.

**Working Day**

*Working Day* means a day other than a Saturday, Sunday, statutory holiday, or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

## GENERAL CONDITIONS

### PART 1 GENERAL PROVISIONS

#### GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the labour, *Products* and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 The *Contract Documents* are complementary, and what is required by one shall be as binding as if required by all. Performance by the *Contractor* shall be required only to the extent consistent with the *Contract Documents*.
- 1.1.3 The *Contractor* shall review the *Contract Documents* for the purpose of facilitating co-ordination and execution of the *Work* by the *Contractor*.
- 1.1.4 The *Contractor* is not responsible for errors, omissions or inconsistencies in the *Contract Documents*. If there are perceived errors, omissions or inconsistencies discovered by or made known to the *Contractor*, the *Contractor* shall promptly report to the *Consultant* and shall not proceed with the work affected until the *Contractor* has received corrected or additional information from the *Consultant*.
- 1.1.5 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
    - the Agreement between *Owner* and *Contractor*,
    - the Definitions,
    - Supplementary Conditions,
    - the General Conditions,
    - Division 01 of the *Specifications*,
    - technical *Specifications*,
    - material and finishing schedules,
    - the *Drawings*.
  - .2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
  - .3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
  - .4 amended or later dated documents shall govern over earlier documents of the same type.
  - .5 noted materials and annotations shall govern over graphic indications.
- 1.1.6 Nothing contained in the *Contract Documents* shall create any contractual relationship between:
- .1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.
  - .2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.
- 1.1.7 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.8 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.9 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.
- 1.1.10 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant's* property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings* and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings* and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.
- 1.1.11 Physical models furnished by the *Contractor* at the *Owner's* expense are the property of the *Owner*.

#### GC 1.2 LAW OF THE CONTRACT

- 1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

#### GC 1.3 RIGHTS AND REMEDIES

- 1.3.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

- 1.3.2 No action or failure to act by the *Owner*, the *Consultant* or the *Contractor* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

#### **GC 1.4 ASSIGNMENT**

- 1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

### **PART 2 ADMINISTRATION OF THE CONTRACT**

#### **GC 2.1 AUTHORITY OF THE CONSULTANT**

- 2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.
- 2.1.2 The duties, responsibilities and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Consultant* and the *Contractor*.

#### **GC 2.2 ROLE OF THE CONSULTANT**

- 2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents*.
- 2.2.2 The *Consultant* will visit the *Place of the Work* at intervals appropriate to the progress of construction to become familiar with the progress and quality of the work and to determine if the *Work* is proceeding in general conformity with the *Contract Documents*.
- 2.2.3 If the *Owner* and the *Consultant* agree, the *Consultant* will provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant's* responsibilities. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.
- 2.2.4 Based on the *Consultant's* observations and evaluation of the *Contractor's* applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement – PAYMENT, GC 5.3 – PAYMENT and GC 5.5 – FINAL PAYMENT.
- 2.2.5 The *Consultant* will not be responsible for and will not have control, charge or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations or general construction practice. The *Consultant* will not be responsible for the *Contractor's* failure to perform the *Work* in accordance with the *Contract Documents*.
- 2.2.6 Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, the *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents*.
- 2.2.7 Matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents* shall be initially referred in writing to the *Consultant* by the party raising the question for interpretations and findings and copied to the other party.
- 2.2.8 Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. In making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.
- 2.2.9 The *Consultant's* interpretations and findings will be given in writing to the parties within a reasonable time.
- 2.2.10 With respect to claims for a change in *Contract Price*, the *Consultant* will make findings as set out in GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.
- 2.2.11 The *Consultant* will have authority to reject work which in the *Consultant's* opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.
- 2.2.12 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.
- 2.2.13 The *Consultant* will review and take appropriate action upon *Shop Drawings*, samples and other submittals by the *Contractor*, in accordance with the *Contract Documents*.

- 2.2.14 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.
- 2.2.15 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* and verify that *Ready-for-Takeover* has been attained.
- 2.2.16 All certificates issued by the *Consultant* will be to the best of the *Consultant's* knowledge, information and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
- 2.2.17 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner's* acceptance.
- 2.2.18 If the *Consultant's* engagement is terminated, the *Owner* shall immediately engage a *Consultant* against whom the *Contractor* makes no reasonable objection and whose duties and responsibilities under the *Contract Documents* will be that of the former *Consultant*.

### **GC 2.3 REVIEW AND INSPECTION OF THE WORK**

- 2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.
- 2.3.2 If work is designated for tests, inspections or approvals in the *Contract Documents*, by the *Consultant's* instructions, or by the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notification of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notification of the date and time of inspections by other authorities.
- 2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.
- 2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections or approvals before such special tests, inspections or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor's* expense.
- 2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.
- 2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is required by the laws or ordinances applicable to the *Place of the Work*.
- 2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by others if such test or inspection is designated in the *Contract Documents*.

### **GC 2.4 DEFECTIVE WORK**

- 2.4.1 The *Contractor* shall promptly correct defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work was incorporated in the *Work* or the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the *Contractor*.
- 2.4.2 The *Contractor* shall make good promptly *Other Contractors' work* destroyed or damaged by such corrections at the *Contractor's* expense.
- 2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a finding.

## **PART 3 EXECUTION OF THE WORK**

### **GC 3.1 CONTROL OF THE WORK**

- 3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.

3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

### **GC 3.2 CONSTRUCTION BY THE OWNER OR OTHER CONTRACTORS**

3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to *Other Contractors* and to perform work with own forces.

3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:

- .1 provide for the co-ordination of the activities and work of *Other Contractors* and the *Owner's* own forces with the *Work* of the *Contract*;
- .2 enter into separate contracts with *Other Contractors* under conditions of contract which are compatible with the conditions of the *Contract*;
- .3 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 – INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and
- .4 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of *Other Contractors* or the *Owner's* own forces.

3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Contractor* shall:

- .1 afford the *Owner* and *Other Contractors* reasonable opportunity to store their products and execute their work;
- .2 co-ordinate and schedule the *Work* with the work of *Other Contractors* or the *Owner's* own forces that are identified in the *Contract Documents*;
- .3 participate with *Other Contractors* and the *Owner* in reviewing their construction schedules when directed to do so; and
- .4 report promptly to the *Consultant* in writing any apparent deficiencies in the work of *Other Contractors* or of the *Owner's* own forces, where such work affects the proper execution of any portion of the *Work*, prior to proceeding with that portion of the *Work*.

3.2.4 Where a change in the *Work* is required as a result of the co-ordination and integration of the work of *Other Contractors* or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

3.2.5 Disputes and other matters in question between the *Contractor* and *Other Contractors* shall be dealt with as provided in Part 8 of the General Conditions – DISPUTE RESOLUTION provided the *Other Contractors* have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any *Other Contractor* whose contract with the *Owner* contains a similar agreement to arbitrate. In the absence of *Other Contractors* having reciprocal obligations, disputes and other matters in question initiated by the *Contractor* against *Other Contractors* will be considered disputes and other matters in question between the *Contractor* and the *Owner*.

3.2.6 Should the *Owner*, the *Consultant*, *Other Contractors*, or anyone employed by them directly or indirectly be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

### **GC 3.3 TEMPORARY WORK**

3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work* unless otherwise specified in the *Contract Documents*.

3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.

3.3.3 Notwithstanding the provisions of GC 3.1 – CONTROL OF THE WORK, paragraphs 3.3.1 and 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the design of the *Work* and the *Contractor* shall not be held responsible for that part of the design or the specified method of construction. The *Contractor* shall, however, be responsible for the execution of such design or specified method of construction in the same manner as for the execution of the *Work*.

### **GC 3.4 CONSTRUCTION SCHEDULE**

3.4.1 The *Contractor* shall:

- .1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
- .2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
- .3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions – CHANGES IN THE WORK.

### **GC 3.5 SUPERVISION**

3.5.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while the *Work* is being performed. The appointed representative shall not be changed except for valid reason.

3.5.2 The appointed representative shall represent the *Contractor* at the *Place of the Work*. Information and instructions provided by the *Consultant* to the *Contractor*'s appointed representative shall be deemed to have been received by the *Contractor*, except with respect to Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

### **GC 3.6 SUBCONTRACTORS AND SUPPLIERS**

3.6.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:

- .1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;
- .2 incorporate the applicable terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and
- .3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers* and any persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.

3.6.2 The *Contractor* shall indicate in writing, if requested by the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.

3.6.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.

3.6.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the difference occasioned by such required change.

3.6.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.

3.6.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor*'s or *Supplier*'s work which has been certified for payment.

### **GC 3.7 LABOUR AND PRODUCTS**

3.7.1 The *Contractor* shall maintain good order and discipline among the *Contractor*'s employees engaged on the *Work* and employ only workers that are skilled in the tasks assigned.

3.7.2 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.

3.7.3 Unless otherwise specified in the *Contract Documents*, *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.

### **GC 3.8 SHOP DRAWINGS**

3.8.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.

3.8.2 The *Contractor* shall provide *Shop Drawings* to the *Consultant* to review in accordance with an agreed schedule, or in the absence of an agreed schedule, in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of *Other Contractors* or the *Owner*'s own forces.

- 3.8.3 The *Contractor* shall review all *Shop Drawings* before providing them to the *Consultant*. The *Contractor* represents by this review that:
- .1 the *Contractor* has determined and verified all applicable field measurements, field construction conditions, *Product* requirements, catalogue numbers and similar data, or will do so, and
  - .2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Work* and of the *Contract Documents*.
- 3.8.4 The *Consultant's* review is for conformity to the design concept and for general arrangement only.
- 3.8.5 At the time of providing *Shop Drawings*, the *Contractor* shall expressly advise the *Consultant* in writing of any deviations in a *Shop Drawing* from the requirements of the *Contract Documents*. The *Consultant* shall indicate the acceptance or rejection of such deviation expressly in writing.
- 3.8.6 The *Consultant's* review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents*.
- 3.8.7 The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or, in the absence of such schedule, with reasonable promptness so as to cause no delay in the performance of the *Work*.

## **PART 4 ALLOWANCES**

### **GC 4.1 CASH ALLOWANCES**

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of the *Work* or costs included in such cash allowances shall be as described in the *Contract Documents*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.
- 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*.
- 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.
- 4.1.6 The value of the *Work* performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule that shows when the items called for under cash allowances must be ordered to avoid delaying the progress of the *Work*.

### **GC 4.2 CONTINGENCY ALLOWANCE**

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 The contingency allowance includes the *Contractor's* overhead and profit in connection with such contingency allowance.
- 4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.
- 4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.3 and the contingency allowance.

## **PART 5 PAYMENT**

### **GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

- 5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall give the *Contractor Notice in Writing* of any material change in the *Owner's* financial arrangements to fulfill the *Owner's* obligations under the *Contract* during the performance of the *Contract*.

## **GC 5.2 APPLICATIONS FOR PAYMENT**

- 5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement – PAYMENT shall be submitted monthly to the *Owner* and the *Consultant* simultaneously as the *Work* progresses.
- 5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties.
- 5.2.3 The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of *Work* performed and *Products* delivered to the *Place of the Work* as of the last day of the payment period.
- 5.2.4 The *Contractor* shall submit to the *Consultant*, at least 15 calendar days before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment.
- 5.2.5 The schedule of values shall be made out in such form as specified in the *Contract* and supported by such evidence as the *Consultant* may reasonably require.
- 5.2.6 Applications for payment shall be based on the schedule of values accepted by the *Consultant* and shall comply with the provisions of *Payment Legislation*.
- 5.2.7 Each application for payment shall include evidence of compliance with workers' compensation legislation at the *Place of the Work* and after the first payment, a declaration by the *Contractor* as to the distribution made of the amounts previously received using document CCDC 9A 'Statutory Declaration'.
- 5.2.8 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

## **GC 5.3 PAYMENT**

- 5.3.1 After receipt by the *Consultant* and the *Owner* of an application for payment submitted by the *Contractor* in accordance with GC 5.2 – APPLICATIONS FOR PAYMENT:
  - .1 The *Consultant* will issue to the *Owner* and copy to the *Contractor*, no later than 10 calendar days after the receipt of the application for payment, a certificate for payment in the amount applied for, or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* certifies a different amount, or rejects the application or part thereof, the *Owner* shall promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.
  - .2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – PAYMENT on or before 28 calendar days after the receipt by the *Owner* and the *Consultant* of the application for payment, and in any event, in compliance with *Payment Legislation*.

## **GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK**

- 5.4.1 The *Consultant* will review the *Work* to certify or verify the validity of the application for *Substantial Performance of the Work* and will promptly, and in any event, no later than 20 calendar days after receipt of the *Contractors* application:
  - .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
  - .2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.
- 5.4.2 Where the holdback amount required by the applicable lien legislation has not been placed in a separate lien holdback account, the *Owner* shall, no later than 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 5.4.3 Subject to the requirements of any *Payment Legislation*, all holdback amount prescribed by the applicable lien legislation for the *Work* shall become due and payable to the *Contractor* no later than 10 *Working Days* following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*.
- 5.4.4 The *Contractor* shall submit an application for payment of the lien holdback amount in accordance with GC 5.3 – PAYMENT.
- 5.4.5 Where legislation permits progressive release of the holdback for a portion of the *Work* and the *Consultant* has certified or verified that the part of the *Work* has been performed prior to *Substantial Performance of the Work*, the *Owner* hereby agrees to release, and shall release, such portion to the *Contractor* in accordance with such legislation.



5.4.6 Notwithstanding any progressive release of the holdback, the *Contractor* shall ensure that such parts of the *Work* are protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when the holdback was released.

#### **GC 5.5 FINAL PAYMENT**

- 5.5.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.
- 5.5.2 The *Consultant* will, no later than 10 calendar days after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and when the *Consultant* finds the *Contractor*'s application for final payment valid, the *Consultant* will promptly issue a final certificate for payment to the *Owner*, with a copy to the *Contractor*.
- 5.5.3 If the *Consultant* rejects the application or part thereof, the *Owner* will promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.
- 5.5.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 – WORKERS' COMPENSATION, and any legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 calendar days after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement – PAYMENT and in any event, in compliance with *Payment Legislation*.

#### **GC 5.6 DEFERRED WORK**

5.6.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, or if the *Owner* and the *Contractor* agree that, there are items of work that must be deferred, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such deferred *Work*.

#### **GC 5.7 NON-CONFORMING WORK**

5.7.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

### **PART 6 CHANGES IN THE WORK**

#### **GC 6.1 OWNER'S RIGHT TO MAKE CHANGES**

- 6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:
- .1 changes in the *Work* consisting of additions, deletions or other revisions to the *Work* by *Change Order* or *Change Directive*, and
  - .2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.
- 6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

#### **GC 6.2 CHANGE ORDER**

- 6.2.1 When a change in the *Work* is proposed or required, the *Consultant* will provide the *Contractor* with a written description of the proposed change in the *Work*. The *Contractor* shall promptly present to the *Consultant*, in a form that can be reasonably evaluated, a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.
- 6.2.2 When the *Owner* and the *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*. The value of the work performed as the result of a *Change Order* shall be included in the applications for progress payment.

#### **GC 6.3 CHANGE DIRECTIVE**

- 6.3.1 If the *Owner* requires the *Contractor* to proceed with a change in the *Work* prior to the *Owner* and the *Contractor* agreeing upon the corresponding adjustment in *Contract Price* and *Contract Time*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used to direct a change in the *Work* which is within the general scope of the *Contract Documents*.
- 6.3.3 A *Change Directive* shall not be used to direct a change in the *Contract Time* only.

- 6.3.4 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.
- 6.3.5 For the purpose of valuing *Change Directives*, changes in the *Work* that are not substitutions or otherwise related to each other shall not be grouped together in the same *Change Directive*.
- 6.3.6 The adjustment in the *Contract Price* for a change carried out by way of a *Change Directive* shall be determined on the basis of the cost of the *Contractor's* actual expenditures and savings attributable to the *Change Directive*, valued in accordance with paragraph 6.3.7 and as follows:
- 1 If the change results in a net increase in the *Contractor's* cost, the *Contract Price* shall be increased by the amount of the net increase in the *Contractor's* cost, plus the *Contractor's* percentage fee on such net increase.
  - 2 If the change results in a net decrease in the *Contractor's* cost, the *Contract Price* shall be decreased by the amount of the net decrease in the *Contractor's* cost, without adjustment for the *Contractor's* percentage fee.
  - 3 The *Contractor's* fee shall be as specified in the *Contract Documents* or as otherwise agreed by the parties.
- 6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following in as much as it contributes directly to the implementation of the *Change Directive*:

#### **Labour**

- 1 rates that are listed in the schedule or as agreed by the *Owner* and the *Contractor* including wages, benefits, compensation, contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan for:
  - (1) trade labour in the direct employ of the *Contractor*;
  - (2) the *Contractor's* personnel when stationed at the field office;
  - (3) the *Contractor's* personnel engaged at shops or on the road, in expediting the production or transportation of materials or equipment; and
  - (4) the *Contractor's* office personnel engaged in a technical capacity, or other personnel identified in Article A-3 of the Agreement – CONTRACT DOCUMENTS for the time spent in the performance of the *Work*;

#### **Products, Construction Equipment and Temporary Work**

- 2 cost of all *Products* including cost of transportation thereof;
- 3 in the absence of agreed rates, cost less salvage value of *Construction Equipment, Temporary Work* and tools, exclusive of hand tools under \$1,000 owned by the *Contractor*;
- 4 rental cost of *Construction Equipment, Temporary Work* and tools, exclusive of hand tools under \$1,000;
- 5 cost of all equipment and services required for the *Contractor's* field office;

#### **Subcontract**

- 6 subcontract amounts of Subcontractor with pricing mechanism approved by the *Owner*;

#### **Others**

- 7 travel and subsistence expenses of the *Contractor's* personnel described in paragraph 6.3.7.1;
- 8 deposits lost provided that they are not caused by negligent acts or omissions of the *Contractor*;
- 9 cost of quality assurance such as independent inspection and testing services;
- 10 charges levied by authorities having jurisdiction at the *Place of the Work*;
- 11 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 – PATENT FEES;
- 12 premium for all contract securities and insurance for which the *Contractor* is required, by the *Contract Documents*, to provide, maintain and pay in relation to the performance of the *Work*;
- 13 losses and expenses sustained by the *Contractor* for matters which are the subject of insurance under the policies prescribed in GC 11.1 – INSURANCE when such losses and expenses are not recoverable because the amounts are in excess of collectible amounts or within the deductible amounts;
- 14 taxes and duties, other than *Value Added Taxes*, income, capital, or property taxes, relating to the *Work* for which the *Contractor* is liable;
- 15 charges for voice and data communications, courier services, expressage, transmittal and reproduction of documents, and petty cash items;
- 16 cost for removal and disposal of waste products and debris;
- 17 legal costs, incurred by the *Contractor*, in relation to the performance of the *Work* provided that they are not:
  - (1) relating to a dispute between the *Owner* and the *Contractor* unless such costs are part of a settlement or awarded by arbitration or court,
  - (2) the result of the negligent acts or omissions of the *Contractor*, or
  - (3) the result of a breach of this *Contract* by the *Contractor*;
- 18 cost of auditing when requested by the *Owner*; and
- 19 cost of *Project* specific information technology in accordance with the method determined by the parties.

- 6.3.8 Notwithstanding any other provisions contained in the General Conditions of the *Contract*, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the *Change Directive* other than those which are the result of or occasioned by any failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor's* attention to the *Work*. Any cost due to failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor's* performance of the *Work* attributable to the *Change Directive* shall be borne by the *Contractor*.
- 6.3.9 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the *Work* attributable to the *Change Directive* and shall provide the *Consultant* with copies thereof.
- 6.3.10 For the purpose of valuing *Change Directives*, the *Owner* shall be afforded reasonable access to all of the *Contractor's* pertinent documents related to the cost of performing the *Work* attributable to the *Change Directive*.
- 6.3.11 Pending determination of the final amount of a *Change Directive*, the undisputed value of the *Work* performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.12 If the *Owner* and the *Contractor* do not agree on the proposed adjustment in the *Contract Time* attributable to the change in the *Work*, or the method of determining it, the adjustment shall be referred to the *Consultant* for a finding.
- 6.3.13 When the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order*.

#### **GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

- 6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:
- .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* and differ materially from those indicated in the *Contract Documents*; or
  - .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*,
- then the observing party shall give *Notice in Writing* to the other party of such conditions before they are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Owner*, through the *Consultant*, shall issue appropriate instructions for a change in the *Work* as provided in GC 6.2 – CHANGE ORDER or GC 6.3 – CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* will promptly inform the *Owner* and the *Contractor* in writing.
- 6.4.4 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 – ARTIFACTS AND FOSSILS and GC 9.5 – MOULD.

#### **GC 6.5 DELAYS**

- 6.5.1 If the *Contractor* is delayed in the performance of the *Work* by the *Owner*, the *Consultant*, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, resulting in the failure of the *Contractor* to attain *Ready-for-Takeover* by the date stipulated in Article A-1 of the Agreement – THE WORK, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.3 If the *Contractor* is delayed in the performance of the *Work* by:
- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
  - .2 fire, unusual delay by common carriers or unavoidable casualties,
  - .3 abnormally adverse weather conditions, or

- 4 any cause beyond the *Contractor's* control other than one resulting from a default or breach of *Contract* by the *Contractor*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*, the *Consultant* or anyone employed or engaged by them directly or indirectly.
- 6.5.4 No extension shall be made for delay unless *Notice in Writing* of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.
- 6.5.5 If no schedule is made under paragraph 2.2.12 of GC 2.2 – ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made.

## **GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE**

- 6.6.1 If the *Contractor* intends to make a claim for an increase to the *Contract Price*, or if the *Owner* intends to make a claim against the *Contractor* for a credit to the *Contract Price*, the party that intends to make the claim shall give timely *Notice in Writing* of intent to claim to the other party and to the *Consultant*.
- 6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:
- .1 take all reasonable measures to mitigate any loss or expense which may be incurred as a result of such event or series of events, and
  - .2 keep such records as may be necessary to support the claim.
- 6.6.3 The party making the claim shall submit within a reasonable time to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based and the *Consultant* will make a finding upon such claim.
- 6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.
- 6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by *Notice in Writing* to both parties within 30 *Working Days* after receipt of the claim by the *Consultant*, or within such other time period as may be agreed by the parties.
- 6.6.6 If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION.

## **PART 7 DEFAULT NOTICE**

### **GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

- 7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor's* insolvency, or if a receiver is appointed because of the *Contractor's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, terminate the *Contractor's* right to continue with the *Work*, by giving the *Contractor* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.1.2 If the *Contractor* neglects to perform the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* which provides the detail of such neglect to perform the *Work* properly or such failure to comply with the requirements of the *Contract* to a substantial degree, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing*, containing particulars of the default including references to applicable provisions of the *Contract*, that the *Contractor* is in default of the *Contractor's* contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.
- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified or in such other time period as may be subsequently agreed in writing by the parties, the *Contractor* shall be in compliance with the *Owner's* instructions if the *Contractor*:
- .1 commences the correction of the default within the specified time,
  - .2 provides the *Owner* with an acceptable schedule for such correction, and
  - .3 corrects the default in accordance with the *Contract* terms and with such schedule.

- 7.1.4 If the *Contractor* fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may by giving *Notice in Writing*:
- .1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* for the *Work* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or
  - .2 terminate the *Contractor*'s right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Contractor*'s right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
- .1 take possession of the *Work* and *Products* at the *Place of the Work*; subject to the rights of third parties, utilize the *Construction Equipment* at the *Place of the Work*; finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense,
  - .2 withhold further payment to the *Contractor* until a final certificate for payment is issued,
  - .3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant*'s additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 – WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and
  - .4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor*'s work under GC 12.3 – WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Contractor* the difference.
- 7.1.6 The *Contractor*'s obligation under the *Contract* as to quality, correction and warranty of the work performed by the *Contractor* up to the time of termination shall continue in force after such termination of the *Contract*.

## **GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

- 7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner*'s insolvency, or if a receiver is appointed because of the *Owner*'s insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.2.2 If the *Work* is suspended or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner* *Notice in Writing* to that effect.
- 7.2.3 The *Contractor* may give *Notice in Writing* to the *Owner*, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner*'s contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner*'s obligations under the *Contract*,
  - .2 the *Consultant* fails to issue a certificate as provided in Part 5 of the General Conditions – PAYMENT,
  - .3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by adjudication, arbitration or court, or
  - .4 the *Owner* fails to comply with the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, gives a written statement to the *Owner* and the *Contractor* that provides detail of such failure to comply with the requirements of the *Contract* to a substantial degree.
- 7.2.4 The *Contractor*'s *Notice in Writing* to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the *Notice in Writing*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, suspend the *Work* or terminate the *Contract*.
- 7.2.5 If the *Contractor* terminates the *Contract* by giving a *Notice in Writing* to the *Owner* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

## **PART 8 DISPUTE RESOLUTION**

### **GC 8.1 AUTHORITY OF THE CONSULTANT**

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved

in the first instance by findings of the *Consultant* as provided in GC 2.2 – ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions – DISPUTE RESOLUTION.

- 8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.3.3 to 8.3.8 of GC 8.3 – NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.4 – RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.
- 8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant*'s opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

## GC 8.2 ADJUDICATION

- 8.2.1 Nothing in this *Contract* shall be deemed to affect the rights of the parties to resolve any dispute by adjudication as may be prescribed by applicable legislation.

## GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

- 8.3.1 In accordance with the rules for mediation as provided in CCDC 40 'Rules for Mediation and Arbitration of Construction Industry Disputes' in effect at the time of bid closing, the parties shall appoint a Project Mediator
- .1 within 20 *Working Days* after the *Contract* was awarded, or
  - .2 if the parties neglected to make an appointment within the 20 *Working Days*, within 10 *Working Days* after either party by *Notice in Writing* requests that the Project Mediator be appointed.
- 8.3.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 – ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a *Notice in Writing* of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a *Notice in Writing* of reply to the dispute within 10 *Working Days* after receipt of such *Notice in Writing* setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.3.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid, and timely disclosure of relevant facts, information and documents to facilitate these negotiations.
- 8.3.4 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.3.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the rules for mediation as provided in CCDC 40 in effect at the time of bid closing.
- 8.3.5 If the dispute has not been resolved at the mediation or within such further period as is agreed by the parties, the Project Mediator will terminate the mediated negotiations by giving *Notice in Writing* to the *Owner*, the *Contractor* and the *Consultant*.
- 8.3.6 By giving a *Notice in Writing* to the other party and the *Consultant*, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.3.5, either party may refer the dispute to be finally resolved by arbitration under the rules of arbitration as provided in CCDC 40 in effect at the time of bid closing. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.3.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.3.6 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.3.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.
- 8.3.8 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.3.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.3.6 shall be:
- .1 held in abeyance until:
    - (1) *Ready-for-Takeover*,
    - (2) the *Contract* has been terminated, or
    - (3) the *Contractor* has abandoned the *Work*,whichever is earlier; and

.2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.3.6.

#### **GC 8.4 RETENTION OF RIGHTS**

- 8.4.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the *Notice in Writing* required under Part 8 of the General Conditions – DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3 of GC 8.1 – AUTHORITY OF THE CONSULTANT.
- 8.4.2 Nothing in Part 8 of the General Conditions – DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.3.6 of GC 8.3 – NEGOTIATION, MEDIATION AND ARBITRATION to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

### **PART 9 PROTECTION OF PERSONS AND PROPERTY**

#### **GC 9.1 PROTECTION OF WORK AND PROPERTY**

- 9.1.1 The *Contractor* shall protect the *Work*, the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors or omissions in the *Contract Documents*; or
  - .2 acts or omissions by the *Owner*, the *Consultant*, *Other Contractors*, or their agents and employees.
- 9.1.2 Before commencing any work, the *Contractor* shall determine the location of all underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.
- 9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner's* property or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for making good such damage at the *Contractor's* expense.
- 9.1.4 Should damage occur to the *Work* or the *Owner's* property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

#### **GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

- 9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.2.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall,
- .1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and
  - .2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.
- 9.2.3 The *Owner* shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substance exceeds the time weighted levels prescribed by applicable legislation at the *Place of the Work* and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.2.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to dispose of, store or otherwise render harmless any toxic or hazardous substance which was present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.2.5 If the *Contractor*
- .1 encounters toxic or hazardous substances at the *Place of the Work*, or
  - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not brought to the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible and which were not disclosed by the *Owner* or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the *Contractor* shall
  - .3 take all reasonable steps, including stopping the *Work*, to ensure that no person's exposure to any toxic or hazardous substance exceeds any applicable time weighted levels prescribed by applicable legislation at the *Place of the Work*, and
  - .4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.

- 9.2.6 If the *Owner* and the *Contractor* do not agree on the existence, significance of, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.
- 9.2.7 If the *Owner* and the *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were not brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall promptly at the *Owner's* own expense:
- .1 take all steps as required under paragraph 9.2.4;
  - .2 reimburse the *Contractor* for the costs of all steps taken pursuant to paragraph 9.2.5;
  - .3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in 9.2.6 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay; and
  - .4 indemnify the *Contractor* as required by GC 13.1 – INDEMNIFICATION.
- 9.2.8 If the *Owner* and the *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Contractor* shall promptly at the *Contractor's* own expense:
- .1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;
  - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the place of the *Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;
  - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and
  - .4 indemnify the *Owner* as required by GC 13.1 – INDEMNIFICATION.
- 9.2.9 If either party does not accept the expert's findings under paragraph 9.2.6, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided by GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

### **GC 9.3 ARTIFACTS AND FOSSILS**

- 9.3.1 Fossils, coins, articles of value or antiquity, structures and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.
- 9.3.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.3.1, and shall advise the *Consultant* upon discovery of such items.
- 9.3.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.3.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Owner*, through the *Consultant*, shall issue appropriate instructions for a change in the *Work* as provided in GC 6.2 – CHANGE ORDER or GC 6.3 – CHANGE DIRECTIVE.

### **GC 9.4 CONSTRUCTION SAFETY**

- 9.4.1 The *Contractor* shall be responsible for establishing, initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance of the *Work* in accordance with the applicable health and safety legislation.
- 9.4.2 The *Owner* and the *Contractor* shall comply with all health and safety precautions and programs established at the *Place of the Work*.
- 9.4.3 The *Owner* and the *Contractor* shall comply with the rules, regulations and practices required by the applicable health and safety legislation.
- 9.4.4 The *Owner* shall cause the *Consultant*, *Other Contractors* and the *Owner's* own forces to comply with all health and safety precautions and programs established by the *Contractor* at the *Place of the Work*.
- 9.4.5 Nothing in this *Contract* shall affect the determination of liability under the applicable health and safety legislation.

### **GC 9.5 MOULD**

- 9.5.1 If the *Contractor* or the *Owner* observes or reasonably suspects the presence of mould at the *Place of the Work*, the remediation of which is not expressly part of the *Work*,
- .1 the observing party shall promptly report the circumstances to the other party in writing,
  - .2 the *Contractor* shall promptly take all reasonable steps, including stopping the *Work* if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould, and



- .3 if the *Owner* and the *Contractor* do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.
- 9.5.2 If the *Owner* and the *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was caused by the *Contractor's* operations under the *Contract*, the *Contractor* shall promptly, at the *Contractor's* own expense:
- .1 take all reasonable and necessary steps to safely remediate or dispose of the mould,
  - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY,
  - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.5.1.3, and
  - .4 indemnify the *Owner* as required by GC 13.1 – INDEMNIFICATION.
- 9.5.3 If the *Owner* and the *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was not caused by the *Contractor's* operations under the *Contract*, the *Owner* shall promptly, at the *Owner's* own expense:
- .1 take all reasonable and necessary steps to safely remediate or dispose of the mould,
  - .2 reimburse the *Contractor* for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the *Work* as provided in paragraph 9.1.4 of GC 9.1 – PROTECTION OF WORK AND PROPERTY,
  - .3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in paragraph 9.5.1.3 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay, and
  - .4 indemnify the *Contractor* as required by GC 13.1 – INDEMNIFICATION.
- 9.5.4 If either party does not accept the expert's finding under paragraph 9.5.1.3, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraphs 9.5.2 or 9.5.3, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided by GC 9.5 – MOULD.

## PART 10 GOVERNING REGULATIONS

### GC 10.1 TAXES AND DUTIES

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement – CONTRACT PRICE.
- 10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in taxes and duties after the time of the bid closing shall increase or decrease the *Contract Price* accordingly.

### GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- 10.2.1 The laws of the *Place of the Work* shall govern the *Work*.
- 10.2.2 The *Owner* shall obtain and pay for development approvals, building permit, permanent easements, rights of servitude, and all other necessary approvals and permits, except for the permits and fees referred to in paragraph 10.2.3 or for which the *Contract Documents* specify as the responsibility of the *Contractor*.
- 10.2.3 The *Contractor* shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the *Work* and customarily obtained by contractors in the jurisdiction of the *Place of the Work* after the issuance of the building permit. The *Contract Price* includes the cost of these permits, licences, inspections, and certificates, and their procurement.
- 10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.
- 10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are at variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall advise the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will issue the changes required to the *Contract Documents* as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

- 10.2.6 If the *Contractor* fails to advise the *Consultant* in writing; fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.
- 10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

### GC 10.3 PATENT FEES

- 10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor*'s performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.
- 10.3.2 The *Owner* shall hold the *Contractor* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor*'s performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the physical model, plan or design of which was supplied to the *Contractor* as part of the *Contract*.

### GC 10.4 WORKERS' COMPENSATION

- 10.4.1 Prior to commencing the *Work*, and again with the *Contractor*'s applications for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*.

## PART 11 INSURANCE

### GC 11.1 INSURANCE

- 11.1.1 Without restricting the generality of GC 13.1 – INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the requirements of which are specified in CCDC 41 'CCDC Insurance Requirements' in effect at the time of bid closing except as hereinafter provided:
1. General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant* as insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover* on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.
  2. Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
  3. Unmanned aerial vehicle aircraft, manned aircraft or watercraft Liability Insurance when owned or non-owned manned or unmanned aircraft or watercraft are used directly or indirectly in the performance of the *Work*.
  4. "Broad form" property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The "Broad form" property insurance shall be provided from the date of commencement of the *Work* until the earliest of:
    - (1) 10 calendar days after the date of *Ready-for-Takeover*;
    - (2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*; and
    - (3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.
  5. Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Ready-for-Takeover*.
  6. The "Broad form" property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. In the event of loss or damage:
    - (1) the *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except

that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*;

- (2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds in accordance with the progress payment provisions. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*; and
- (3) to the *Work* arising from the work of the *Owner*, the *Owner's* own forces or *Other Contractors*, the *Owner* shall, in accordance with the *Owner's* obligations under the provisions relating to construction by the *Owner* or *Other Contractors*, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.

- .7 *Contractors' Equipment Insurance* from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
- .8 *Contractors' Pollution Liability Insurance* from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

11.1.2 Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the *Work*.

11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regards to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the *Contract*.

11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the cost from the amount which is due or may become due to the *Contractor*.

11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

11.1.6 If a revised version of CCDC 41 is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the *Contractor's* insurance policy becoming due for renewal, and record any agreement in a *Change Order*.

11.1.7 If a revised version of CCDC 41 is published, which specifies increased insurance requirements, the *Owner* may request the increased coverage from the *Contractor* by way of a *Change Order*.

11.1.8 A *Change Directive* shall not be used to direct a change in the insurance requirements in response to the revision of CCDC 41.

## **PART 12 OWNER TAKEOVER**

### **GC 12.1 READY-FOR-TAKEOVER**

12.1.1 The prerequisites to attaining *Ready-for-Takeover* of the *Work* are limited to the following:

- .1 The *Consultant* has certified or verified the *Substantial Performance of the Work*.
- .2 Evidence of compliance with the requirements for occupancy or occupancy permit as prescribed by the authorities having jurisdiction.
- .3 Final cleaning and waste removal at the time of applying for *Ready-for-Takeover*, as required by the *Contract Documents*.
- .4 The delivery to the *Owner* of such operations and maintenance documents reasonably necessary for immediate operation and maintenance, as required by the *Contract Documents*.
- .5 Make available a copy of the as-built drawings completed to date on site.
- .6 Startup, testing required for immediate occupancy, as required by the *Contract Documents*.
- .7 Ability to secure access to the *Work* has been provided to the *Owner*, if required by the *Contract Documents*.
- .8 Demonstration and training, as required by the *Contract Documents*, is scheduled by the *Contractor* acting reasonably.

12.1.2 If any prerequisites set forth in paragraphs 12.1.1.3 to 12.1.1.6 must be deferred because of conditions reasonably beyond the control of the *Contractor*, or by agreement between the *Owner* and the *Contractor* to do so, *Ready-for-Takeover* shall not be delayed.

12.1.3 When the *Contractor* considers that the *Work* is *Ready-for-Takeover*, the *Contractor* shall deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for *Ready-for-Takeover* for review. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

12.1.4 The *Consultant* will review the *Work* to verify the validity of the application and will promptly, and in any event, no later than 10 calendar days after receipt of the *Contractor's* list and application:

- .1 advise the *Contractor* in writing that the *Work* is not *Ready-for-Takeover* and give reasons why, or
- .2 confirm the date of *Ready-for-Takeover* in writing to each of the *Owner* and the *Contractor*.

12.1.5 Immediately following the confirmation of the date of *Ready-for-Takeover*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

12.1.6 The provision of GC 12.1 – READY-FOR-TAKEOVER shall be subject to GC 12.2 – EARLY OCCUPANCY BY THE OWNER.

## **GC 12.2 EARLY OCCUPANCY BY THE OWNER**

12.2.1 The *Owner* may take occupancy of a part or the entirety of the *Work* before *Ready-for-Takeover* has been attained only as agreed by the *Contractor* which agreement shall not be unreasonably withheld.

12.2.2 The *Owner* shall not occupy a part or the entirety of the *Work* without prior approval by authorities having jurisdiction.

12.2.3 If the *Owner* takes occupancy of a part of the *Work* before *Ready-for-Takeover* has been attained:

- .1 The part of the *Work* which is occupied shall be deemed to have been taken over by the *Owner* as from the date on which it is occupied.
- .2 The *Contractor* shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the *Owner*.
- .3 The warranty period specified in paragraph 12.3.1 of GC 12.3 – WARRANTY for that part of the *Work* shall start from the date on which it is occupied.

12.2.4 If the *Owner* takes occupancy of the entirety of the *Work* before all the prerequisites are met as described in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER, the *Work* shall, subject to the requirements of the applicable lien legislation, be deemed to achieve *Ready-for-Takeover*. This shall not relieve the *Contractor*'s responsibility to complete the *Work* in a timely manner.

## **GC 12.3 WARRANTY**

12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date when *Ready-for-Takeover* has been attained.

12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.

12.3.3 The *Owner*, through the *Consultant*, shall promptly give the *Contractor Notice in Writing* of observed defects and deficiencies which occur during the one year warranty period.

12.3.4 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor*'s expense, defects or deficiencies in the *Work* which appear prior to and during the one year warranty period.

12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.4.

12.3.6 Any extended warranties required beyond the one year warranty period as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor*'s responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibilities of the warrantor.

## **PART 13 INDEMNIFICATION AND WAIVER**

### **GC 13.1 INDEMNIFICATION**

13.1.1 Without restricting the parties' obligation to indemnify respecting toxic and hazardous substances, patent fees and defect in title claims all as described in paragraphs 13.1.4 and 13.1.5, the *Owner* and the *Contractor* shall each indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this *Contract*, provided such claims are:

- .1 caused by:
  - (1) the negligent acts or omissions of the party from whom indemnification is sought or anyone for whose negligent acts or omissions that party is liable, or
  - (2) a failure of the party to the *Contract* from whom indemnification is sought to fulfill its terms or conditions; and
- .2 made by *Notice in Writing* within a period of 6 years from the *Ready-for-Takeover* date or within such shorter period as may be prescribed by any limitation statute of the Province or Territory of the *Place of the Work*.

The parties expressly waive the right to indemnity for claims other than those provided for in this *Contract*.

- 13.1.2 The obligation of either party to indemnify as set forth in paragraph 13.1.1 shall be limited as follows:
- .1 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is to be provided by either party pursuant to GC 11.1 – INSURANCE, the minimum liability insurance limit for one occurrence, of the applicable insurance policy, as referred to in CCDC 41 in effect at the time of bid closing.
  - .2 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is not required to be provided by either party in accordance with GC 11.1 – INSURANCE, the greater of the *Contract Price* as recorded in Article A-4 – CONTRACT PRICE or \$2,000,000, but in no event shall the sum be greater than \$20,000,000.
  - .3 In respect to indemnification by a party against the other with respect to losses suffered by them, such obligation shall be restricted to direct loss and damage, and neither party shall have any liability to the other for indirect, consequential, punitive or exemplary damages.
  - .4 In respect to indemnification respecting claims by third parties, the obligation to indemnify is without limit.
- 13.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 13.1.1 and 13.1.2 shall be inclusive of interest and all legal costs.
- 13.1.4 The *Owner* and the *Contractor* shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.
- 13.1.5 The *Owner* shall indemnify and hold harmless the *Contractor* from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings:
- .1 as described in paragraph 10.3.2 of GC 10.3 – PATENT FEES, and
  - .2 arising out of the *Contractor*'s performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.
- 13.1.6 In respect to any claim for indemnity or to be held harmless by the *Owner* or the *Contractor*:
- .1 *Notice in Writing* of such claim shall be given within a reasonable time after the facts upon which such claim is based become known; and
  - .2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this contract to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.

## GC 13.2 WAIVER OF CLAIMS

- 13.2.1 Subject to any lien legislation applicable to the *Place of the Work*, the *Contractor* waives and releases the *Owner* from all claims which the *Contractor* has or reasonably ought to have knowledge of that could be advanced by the *Contractor* against the *Owner* under the *Contract*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the *Ready-for-Takeover* date, except as follows:
- .1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* no later than 5 calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work* or 20 calendar days following the *Ready-for-Takeover* date, whichever is later;
  - .2 indemnification for claims advanced against the *Contractor* by third parties for which a right of indemnification may be asserted by the *Contractor* against the *Owner* pursuant to the provisions of this *Contract*;
  - .3 claims respecting toxic and hazardous substances, patent fees and defect in title matters for which a right of indemnity could be asserted by the *Contractor* pursuant to the provisions of paragraphs 13.1.4 or 13.1.5 of GC 13.1 – INDEMNIFICATION; and
  - .4 claims resulting from acts or omissions which occur after the *Ready-for-Takeover* date.
- 13.2.2 The *Contractor* waives and releases the *Owner* from all claims resulting from acts or omissions which occurred after the *Ready-for-Takeover* date except for:
- .1 indemnification respecting third party claims, and claims respecting toxic and hazardous substances, patent fees and defect in title matters, all as referred in paragraphs 13.2.1.2 and 13.2.1.3; and
  - .2 claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* within 395 calendar days following the *Ready-for-Takeover* date.
- 13.2.3 Subject to any lien legislation applicable to the *Place of the Work*, the *Owner* waives and releases the *Contractor* from all claims which the *Owner* has or reasonably ought to have knowledge of that could be advanced by the *Owner* against the *Contractor* under the *Contract*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the *Ready-for-Takeover* date, except as follows:
- .1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* no later than 20 calendar days following the *Ready-for-Takeover* date;

- .2 indemnification for claims advanced against the *Owner* by third parties for which a right of indemnification may be asserted by the *Owner* against the *Contractor* pursuant to the provisions of this *Contract*;
  - .3 claims respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 13.1.4 of GC 13.1 – INDEMNIFICATION;
  - .4 damages arising from the *Contractor*'s actions which result in substantial defects or deficiencies in the *Work*. “Substantial defects or deficiencies” mean those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*;
  - .5 claims arising pursuant to GC 12.3 – WARRANTY; and
  - .6 claims arising from acts or omissions which occur after the *Ready-for-Takeover* date.
- 13.2.4 Respecting claims arising upon substantial defects and deficiencies in the *Work*, as referenced in paragraph 13.2.3.4, and notwithstanding paragraph 13.2.3.5, the *Owner* waives and releases the *Contractor* from all claims except claims for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* within a period of six years from the *Ready-for-Takeover* date, provided that any limitation statute of the Province or Territory of the *Place of the Work* permit such agreement. If the applicable limitation statute does not permit such agreement, the time within which any such claim may be brought shall be such shorter period as may be prescribed by any limitation statute of the Province or Territory of the *Place of the Work*.
- 13.2.5 The *Owner* waives and releases the *Contractor* from all claims arising from acts or omissions which occur after the *Ready-for-Takeover* date, except for:
- .1 indemnification for claims advanced against the *Owner* by third parties, as referenced in paragraph 13.2.3.2;
  - .2 claims respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor*, as referenced in paragraph 13.2.3.3;
  - .3 claims arising under GC 12.3 – WARRANTY; and
  - .4 claims for which *Notice in Writing* has been received by the *Contractor* from the *Owner* within 395 calendar days following the *Ready-for-Takeover* date.
- 13.2.6 “*Notice in Writing* of claim” as provided for in GC 13.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 13.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
- .1 a clear and unequivocal statement of an intention to claim;
  - .2 a statement as to the nature of the claim and the grounds upon which the claim is based; and
  - .3 a statement of the estimated quantum of the claim.
- 13.2.7 A claim for lien asserted under the lien legislation prevailing at the *Place of the Work* shall qualify as notice of claim for the purposes of this *Contract*.
- 13.2.8 The party giving the *Notice in Writing* of claim as provided for in GC 13.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.
- 13.2.9 Where the event or series of events giving rise to a claim made under paragraphs 13.2.1 or 13.2.3 has a continuing effect, the detailed account submitted under paragraph 13.2.8 shall be considered to be an interim account and the party making the claim shall submit further interim accounts, at reasonable intervals, giving the accumulated amount of the claim and any further grounds upon which such claim is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.
- 13.2.10 Nothing in GC 13.2 – WAIVER OF CLAIMS shall be deemed to affect the rights of the parties under any lien legislation or limitations legislation prevailing at the *Place of the Work*.

**SUPPLEMENTARY CONDITIONS**  
STANDARD CONSTRUCTION DOCUMENT – CCDC 2 – 2020

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## AGREEMENT BETWEEN OWNER AND CONTRACTOR

### ARTICLE A-1 THE WORK

SC-1 Delete paragraph 1.3 of Article A-1 and replace it with the following:

“commence the *Work* by the date stipulated by the *Owner* in the *Notice of Award* and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Ready-for-Takeover* and *Completion* in accordance with the *Agreement Term Sheet*.”

SC-2 Add the following new paragraphs 1.4 and 1.5 to Article A-1:

“1.4 The *Contractor* shall diligently perform and complete the *Work* in accordance with the *Standard of Care*, all *Applicable Laws* and all terms and conditions of the *Contract Documents*, including the *Construction Schedule*.

1.5 The *Contractor* represents that in entering into the *Contract* with the *Owner* for the performance of the *Work*, it has either in accordance with the *Standard of Care* inspected the *Place of the Work* and reviewed for itself all information provided by the *Owner*, the character of the *Work* to be done, and all local conditions, including the position of all registered easements, pole lines, conduits, watermains, sewers and other underground and overground utilities and structures, or that, not having so inspected and reviewed, the *Contractor* has assumed and does hereby assume all risk of conditions now existing or arising in the course of the *Work* that might or could make the *Work*, or any items thereof, more expensive in character, or more onerous to fulfil than was contemplated or known as of the *Effective Date*. For certainty, the *Contractor* shall not be liable for conditions which would not have been ascertainable by a diligent review of the *Place of the Work*, all information provided by the *Owner*, the character of the *Work* to be done, and all local conditions in accordance with the *Standard of Care* prior to the *Effective Date*.”

### ARTICLE A-4 CONTRACT PRICE

SC-3 Add new paragraphs 4.6 and 4.7 to Article A-4 as follows:

“4.6 To secure performance of the *Contractor*’s warranty obligations the *Owner* shall retain from each *Proper Invoice* an amount equal to the percentage of the total amount claimed for payment in such *Proper Invoice* (exclusive of *Value Added Taxes*) as stipulated in the *Agreement Term Sheet* (the “*Warranty Security*”).

4.7 For the purposes of paragraph 6.5.7, if the *Contractor* fails to achieve *Ready-for-Takeover* by the *Ready-for-Takeover Date* then the *Contractor* shall be liable to the *Owner* for liquidated damages in the amount per day stipulated in the *Agreement Term Sheet* for each day or part day of delay until *Ready-for-Takeover* is achieved.”

**ARTICLE A-5 PAYMENT**

SC-4 Delete paragraphs 5.1 and 5.2 of Article A-5 in its entirety and replace it with the following:

“5.1 Subject to the provisions of the *Contract Documents* and *Payment Legislation*, including in accordance with statutory regulations respecting holdback percentages, the *Owner* shall:

- .1 make progress payments to the *Contractor* on account of the *Contract Price* (excluding the *Warranty Security*) when due together with such *Value Added Taxes* as may be applicable to such payments,
- .2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment,
- .3 upon *Completion*, pay to the *Contractor* the unpaid balance of the *Contract Price* (excluding the *Warranty Security* and any unauthorized cash allowances, contingencies and provisional items) when due together with such *Value Added Taxes* as may be applicable to such payment, and
- .4 upon the issuance of the *Proper Invoice* for payment of the *Warranty Security* (less any deductions to such security applied in accordance with this *Contract*) following satisfaction of all requirements set out in paragraph 12.3.8, pay the *Warranty Security* when due together with such *Value Added Taxes* as may be applicable to such payment.

For certainty, all payments made by the *Owner* pursuant to subparagraphs 5.1.1, 5.1.2 and 5.1.3 shall be exclusive of the *Warranty Security*, which amount shall be paid as a milestone payment in accordance with subparagraph 5.1.4.

5.2 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by adjudication, arbitration or court, interest shall also become due and payable at the rates stipulated in the *Payment Legislation*.”

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

SC-5 Delete paragraph 6.5 of Article A-6 in its entirety and replace it with the following:

“6.5 Contact information for a party may be changed by *Notice in Writing* to the other party setting out the new contact information in accordance with this Article A-6.”

**ARTICLE A-9 RELATIONSHIP OF THE PARTIES**

**ARTICLE A-10 PANDEMIC**

**ARTICLE A-11 INTERPRETATION AND OTHER MATTERS**

**ARTICLE A-12 CONTRACT EXECUTION**

SC-6 Add new Articles A-9, A-10, A-11 and A-12 as follows:

**“ARTICLE A-9 RELATIONSHIP OF THE PARTIES**

- 9.1 The *Contractor* shall be an independent contractor in performing its obligations under the *Contract*. The *Contract* does not create any agency, partnership, joint venture, fiduciary or other relationship of the *Contractor* with the *Owner* other than the relationship of independent contractor.
- 9.2 No inspection, review, comment, approval, verification, confirmation, certification, acknowledgement or audit pursuant to the provisions of the *Contract* by any *Owner Personnel*, nor any failure of any of them to do so, shall relieve the *Contractor* from performing or fulfilling any of its obligations under the *Contract* or be construed as an acceptance of the *Work* or any part thereof.”

**ARTICLE A-10 PANDEMIC**

- 10.1 The parties acknowledge and agree that as of the *Effective Date*:
- .1 the *Pandemic* is on-going and, as a result, *Governmental Authorities*, including the Government of Canada, the Province of Ontario, The Regional Municipality of Halton and the *Municipality*, have implemented *Governmental Responses*; and
  - .2 it is uncertain how long the *Pandemic* and the related *Governmental Responses* will continue and whether there may be a resurgence of *COVID-19* resulting in a *Pandemic Change in Law*.
- 10.2 Except as expressly provided in this *Contract*, each party shall be solely responsible for costs and expenses incurred in performance of its obligations under the *Contract* related to or arising from the *Pandemic* and compliance with *Governmental Responses*, including in respect of the contraction by or infection of *Contractor Personnel* and *Owner Personnel*, as applicable, with *COVID-19* and neither party assumes responsibility whatsoever with respect to any such loss suffered by the other.
- 10.3 In addition to any *Governmental Responses*, the *Contractor* shall comply with any other *Pandemic*-related protocols and guidelines pertaining to the *Work* or *Place of the Work* that may be communicated to the *Contractor* by the *Owner* in writing.

- 10.4 Notwithstanding any other term of this Contract, the *Owner* and *Contractor* acknowledge and agree that under no circumstance shall any *Contractor Personnel* be obligated to provide or disclose the personal information of any *Contractor Personnel* to the *Owner* or any other third party.
- 10.5 The *Contractor* expressly acknowledges and agrees that the *Contract Price* and *Contract Time* account for and are inclusive of all costs and impacts to the *Work* resultant or arising from *COVID-19*, any *Governmental Response* and the *Pandemic* to the extent such costs and impacts were known as of the *Effective Date*. For certainty, the *Contractor* acknowledges and agrees that the following impacts of *COVID-19*, the *Pandemic* and *Governmental Responses* to performance of the *Work* were known as of the *Effective Date* and, accordingly, are fully accounted for in the *Contract Price* and *Contract Time*:
- .1 the best practices recommended by the Ontario Ministry of Labour for construction site health and safety during the *Pandemic* in effect at the date of the *Contract*;
  - .2 the need to implement physical distancing;
  - .3 the obligation to monitor workers, personnel and visitors to the *Place of the Work* for illness or *COVID-19* symptoms;
  - .4 the potential for loss of *Contractor Personnel* due to illness, *COVID-19* symptoms or exposure to Persons with same;
  - .5 the need to implement procedures for timely reporting (including to the *Owner*) of any illness or *COVID-19* symptoms experienced by workers, personnel or visitors to the *Place of the Work*;
  - .6 the provision of necessary tools, equipment or personal protective equipment to all persons at the *Place of the Work*, including all *Contractor Personnel* and authorized visitors to the *Place of the Work*;
  - .7 the need to install any temporary facilities or structures (such as wash stations); and
  - .8 the need to implement appropriate sanitation and cleaning at the *Place of the Work* and in performance of the *Work*.

- 10.6 The *Owner* reserves the right, in its sole discretion and by *Notice in Writing*, to delay commencement or suspend performance of the *Work*, as applicable, for such time as is reasonably necessary to mitigate or prevent risks to public health and safety resultant from *COVID-19* and the *Pandemic*. Performance of the *Work* by the *Contractor* shall be resumed upon the *Owner*'s provision of fifteen (15) days' written notice to the *Contractor*. The *Contract Time* shall be extended for such reasonable time as agreed by the *Owner* and *Contractor* and any reasonable costs related to the *Work* and directly incurred by the *Contractor* during any such period of delay shall be reimbursed by the *Owner*, except to the extent required or caused by the negligence or breach of this *Contract* by any *Contractor Personnel*. The extension of time shall not be less than the time lost as a result of such delay, unless the *Contractor* agrees to a shorter extension. The parties' agreement regarding such adjustment to the *Contract Time* and reimbursement of reasonable costs shall be set out in a *Change Order*. Otherwise, any dispute in this regard shall be resolved in accordance with PART 8 – DISPUTE RESOLUTION.
- 10.7 Notwithstanding any other provision in the *Contract*, if the *Contractor* is delayed in performing or unable to perform the *Work* as a result of a *Pandemic Change in Law*, then, except to the extent caused by the negligence or breach of this *Contract* by any *Contractor Personnel*, the *Contract Time* shall be extended for such reasonable time as agreed by the *Owner* and *Contractor*. The extension of time shall not be less than the time lost as a result of the *Pandemic Change in Law*, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for any costs incurred as a result of such delays, save and except as expressly provided for in paragraph 10.8 of this Article A-10.
- 10.8 The *Contractor* shall be entitled to payment for the following direct costs it reasonably incurs as a direct result of a *Pandemic Change in Law* provided that such costs have been approved in advance and in writing by the *Owner* and were not required or caused by the negligence or breach of this *Contract* by any *Contractor Personnel*:
- .1 the *Contractor* being required to purchase, use or provide additional safety-related supplies, including personal protective equipment, in connection with its performance of the *Work*;
  - .2 the *Contractor* being required to install additional temporary facilities or structures, including hand washing stations; and
  - .3 the costs incurred by the *Contractor* to reasonably mitigate the effect of any delay to performance of the *Work* resultant from a *Pandemic Change in Law*.
- 10.9 Notwithstanding any other term of this *Contract*:

- .1 the *Contractor* shall not be entitled to any extension of *Contract Time* or to any compensation in respect of any *Pandemic Change in Law* or delay referred to in this Article A-10 to the extent such delay or costs resulted from the *Contractor's* failure to take reasonable steps to mitigate the effect of the delay or *Pandemic Change in Law*, as applicable;
  - .2 in no event shall the *Owner* be liable for any costs or damages incurred by the *Contractor* as a result of any *Pandemic Change in Law* or delay referred to in this Article A-10 except as expressly stipulated in this *Contract*, including no liability for: (i) any costs associated with increased labour or material costs; (ii) any costs associated with supply chain impacts or delays; or (iii) any *Consequential Damages*;
  - .3 there will be no unjust enrichment from a *Pandemic Change in Law*.
- 10.10 In all cases where the *Contractor* considers itself entitled to an extension of the *Contract Time* or compensation as a result of *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*, the *Contractor* shall provide the *Owner* with *Notice in Writing* within five (5) *Working Days* of the date on which the *Contractor* knew that it was so impacted. The *Contractor* shall keep detailed records of all resultant additional costs and schedule impacts and shall provide such records to the *Owner*, including with such *Notice in Writing* to the extent available at such time. Additionally, the *Contractor* shall seek the *Owner's* approval in writing in advance of taking any measures to mitigate the impact of *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*.”

#### **ARTICLE A-11 - INTERPRETATION AND OTHER MATTERS**

- 11.1 In the *Contract Documents* the word “including” means “including without limitation”, and the word “includes” means “includes without limitation”.
- 11.2 If any provision of the *Contract* is determined to be invalid, illegal or unenforceable in whole or in part, such invalidity, illegality or unenforceability will only apply to such provision or part, as the case may be, and any other part and all other provisions of the *Contract* shall remain in full force and effect. Furthermore, the parties shall endeavour to agree on a provision which reflects insofar as reasonably possible the commercial intentions of the invalid, illegal or unenforceable provision or part.
- 11.3 Each party shall from time to time execute and deliver all such further documents and instruments and do all acts and things as the other party may reasonably require to effectively carry out, better evidence or perfect the full intent and meaning of the *Contract*.
- 11.4 The provisions of the *Contract* which by their nature are continuing shall survive termination of the *Contract*.

#### **ARTICLE A-12 – CONTRACT EXECUTION**

12.1 Should the *Contractor* commence performance of the *Work* prior to its execution of the *Contract*, such commencement shall be deemed to be the *Contractor's* acceptance of all terms and conditions of the *Contract* and provision of the executed *Contract* shall be required as part of the *Contractor's* first *Proper Invoice*.

12.2 The parties acknowledge and agree that the *Contractor's* execution of the *Notice of Award* and provision of same to the *Owner* shall constitute the *Contractor's* execution of the *Contract*.”

SC-7 Delete the signature page (page 5) of the Agreement between *Owner* and *Contacto*r in its entirety.

## DEFINITIONS

SC-8 Amend the definition of *Consultant* by adding the following to the end:

“Notwithstanding the foregoing, where the *Owner* has not engaged a person or entity to act as the “*Consultant*” such that no person or entity is so identified in the Agreement, the *Owner* shall be deemed to be the *Consultant* under the *Contract*.”

SC-9 Amend the definition of *Contract Price* by adding the following to the end:

“For certainty, the *Contract Price* is inclusive of the *Warranty Security*.”

SC-10 Delete the definition of *Contract Time* and replace it with the following:

**“*Contract Time***

The *Contract Time* is the time from commencement of the *Work* to the date of *Completion*, including the *Ready-for-Takeover Date* and *Completion Date*.”

SC-11 Amend the definition of *Other Contractor* by adding the following to the end after the word “*Project*”:

“or for other work at the *Place of the Work*”

SC-12 Amend the definition of *Payment Legislation* by adding the following to the end:

“For certainty, where the *Place of the Work* is in Ontario *Payment Legislation* means the *Construction Act*.”

SC-13 Add the following new definitions:

***“Abnormally Adverse Weather Condition***

*Abnormally Adverse Weather Condition* means an extreme and unusual climatic condition characterized by wind speed, air temperature, precipitation, or snow fall that is less than or greater than (as applicable) one and a half (1.5) standard deviations from the mean condition determined from the official weather records of Environment and Climate Change Canada (or its successor) for the 10-year period immediately preceding the date of the abnormally adverse weather event.

***Addenda***

*Addenda* means any additions or changes to the tender documents issued by the Owner for the Work prior to the time of bid closing, if any.

***Agreement Term Sheet***

*Agreement Term Sheet* means the terms, such as dates and values that form part of the Contract as stipulated in Appendix 1 to the Supplementary Conditions – Agreement Term Sheet.

***Affiliate***

*Affiliate* means, with respect to a *Person*, or *Person* who directly or indirectly controls, is controlled by, or is under direct or indirect common control with, such *Person*, and includes any *Person* in like relation to an *Affiliate*. A *Person* shall be deemed to “control” another *Person* if such *Person* possesses, directly or indirectly, the power to direct or cause the direction of the management and policies of such other *Person*, whether through the ownership of voting securities, by contract or otherwise; and the term “controlled” shall have a similar meaning. Without limiting the foregoing, any reference to an *Affiliate* of the *Owner* shall include any *Owner Entity*.

***Applicable Law***

*Applicable Law* means: (a) all laws, constitutions, treaties, statutes, codes, ordinances, orders, decrees, rules, regulations and by-laws which are or become in force during the performance of the *Work* and which relate to the *Project* or the *Work*, including the *Construction Act*, the *Environmental Protection Act*, the *OHSA* and the *WSIA*; (b) all judgments, orders, writs, injunctions, decisions, awards and directives of any *Governmental Authority* applicable to the *Project* or the *Work*; and (c) all policies, standards, guidelines, notices and protocols of any *Governmental Authority* applicable to the *Project* or the *Work*. For greater certainty, *Applicable Law* includes any restrictive covenants registered on title to the *Place of the Work*, the terms and conditions of any permit, authorization, certificate or approval issued by a *Governmental Authority* for the *Project* or the *Work*, and the terms and conditions of any official plan, zoning by-law, development agreement or site plan agreement related to the *Project* or the *Work*.



***Arbitration Act***

*Arbitration Act* means the Arbitration Act, 1991, SO 1991, c. 17, as amended from time to time, or its successor legislation, and includes all regulations enacted thereunder.

***Background Reports***

*Background Reports* means all reports, information and other documentation prepared by *Owner*, *Consultant*, and third parties referenced in the *Contract Documents* and made available to the Contractor regarding conditions at the *Place of the Work* and/or for performance of the *Work*.

***Claims***

*Claims* means any and all claims, liabilities, expenses, demands, losses, damages, actions, costs (including legal costs), interest, fines, suits, or proceedings of every nature and kind whatsoever.

***Completion***

*Completion* means when the price of completion of the *Work*, including correction of any known defects, is not more than the lesser of (i) one (1%) percent of the *Contract Price*; and (ii) \$5,000, as certified by the *Consultant* in accordance with this *Contract* and the *Payment Legislation*.

***Completion Date***

*Completion Date* means the date set out for achievement of *Completion* in the *Agreement Term Sheet*, as such date may be adjusted in accordance with the *Contract*.

***Confidential Information***

*Confidential Information* means this *Contract* and all information or material of the *Owner Entities* that is of a proprietary or confidential nature, whether it is identified as proprietary or confidential or not and whether in written, documentary, graphic, oral, electronic, computer readable and/or any other form whatsoever. *Confidential Information* includes:

- .1 any information concerning or related to this *Contract* or the business or affairs of any *Owner Entities*;
- .2 the prior and future discussions between *Contractor Personnel* and *Owner Entities* regarding any business transactions between them;
- .3 information concerning intellectual property, financial information, budgets, engineering and technical reports and information, environmental reports, *Project* design information, marketing plans and sales information, know-how, cost, *Deliverables*, architectural information, contractual arrangements including, terms of agreements with *Owner Entities*, all proprietary business information or personal information; and

- .4 information in any way derived by or generated by or which comes to the knowledge of the *Contractor Personnel* from such *Confidential Information*.

The following shall not be considered to be *Confidential Information*:

- .5 information that is or becomes publicly known through no wrongful act of the *Contractor* or *Contractor Personnel*;
- .6 information that the *Contractor* obtains from a third party that has the right to disclose it;
- .7 information that the *Contractor* can establish, by documentary evidence, was already known by the *Contractor* at the time of the initial disclosure of the *Confidential Information* by the *Owner* or *Consultant*; and
- .8 information that the *Contractor* can establish, by documentary evidence, was independently developed by or on behalf of the *Contractor* without reference to the *Confidential Information*.

***Consequential Damages***

*Consequential Damages* means (i) any consequential, incidental, special, punitive, exemplary or indirect damages, and (ii) damages of any kind, however caused or characterized, for loss of actual or anticipated revenue or profits, business interruption, loss of reputation, loss of use, loss of business opportunity, increased capital or operating costs, or increased financing costs.

***Construction Act***

*Construction Act* means the *Construction Act*, RSO 1990, c. C.30, as amended from time to time, or its successor legislation, and includes all regulations enacted thereunder.

***Contractor IP***

*Contractor IP* means all designs, processes, ideas, concepts, products, recommendations, suggestions, know-how, technical expertise, methods and all *Intellectual Property Rights* owned or developed by the *Contractor Personnel*.

***Construction Schedule***

The *Construction Schedule* means the schedule provided by the *Contractor* and approved by the *Consultant* pursuant to subparagraph 3.4.1.1.

***Contractor Personnel***

*Contractor Personnel* means the *Contractor* and all *Subcontractors* and *Suppliers* and any other *Persons* engaged by them to perform or supply any part of the *Work* or the *Contractor's* obligations under this *Contract*, including any employees, partners, officers, directors, agents, subcontractors, subconsultants, and other *Persons* for whom they are responsible at law.

**COVID-19**

*COVID-19* means the SARS-CoV-2 novel coronavirus that causes the disease known as COVID-19 and includes any mutation or variant of such coronavirus.

**Deliverables**

*Deliverables* means all plans, sketches, designs, drawings, graphic representations, *Submittals*, specifications, notes, data, samples, materials, studies, reports, computer models, scale models, mock-ups, samples, reproducible and other documents and electronic data collected, developed or produced by the *Contractor Personnel* in performance of the *Work*, including all *Intellectual Property Rights* relating thereto, if any.

**Effective Date**

*Effective Date* means the date of this *Contract* as identified on the first page of the *Agreement*.

**Environmental Consultant**

*Environmental Consultant* means the professional consultant retained by the *Owner* that meets the qualifications of a “qualified person” as defined under the *Soil Regulations*.

**Environmental Protection Act**

*Environmental Protection Act* means the *Environmental Protection Act*, RSO 1990, c. E.19, as may be amended from time to time, or its successor legislation, and includes all regulations enacted thereunder.

**Excess Soil**

*Excess Soil* shall have the meaning given in the *Soils Regulations*.

**Force Majeure Event**

*Force Majeure Event* means any cause or event (other than bankruptcy, insolvency or lack of funds) which prevents performance by the *Contractor* of any of its obligations under the *Contract* in whole or in part and which further meets each of the following criteria: (a) the cause or event and its effects are beyond the *Contractor*'s reasonable control; (b) the *Contractor* could not reasonably have prevented, overcome, mitigated or removed the cause or event and its effects by commercially reasonable efforts and due diligence; and (c) the cause or event and its effects do not result from (i) the *Contractor*'s bankruptcy, insolvency, lack of funds or impecuniosity, (ii) act, omission or negligence of any *Contractor Personnel*, or (iii) breach of the *Contractor*'s obligations under this *Contract*. For certainty, a *Force Majeure Event* shall in no circumstance include (i) *COVID-19*, the *Pandemic* or a *Pandemic Change in Law* (including a *Governmental Response*), (ii) climatic or weather conditions other than *Abnormally Adverse Weather Conditions*, (iii) economic, financial or market conditions or events, or (iv) death, illness, injury or other incapacitation of any individual worker, employee or independent contractor of any *Contractor Personnel*.

***Governmental Authority***

*Governmental Authority* means (a) any federal, provincial, county, municipal, local or other governmental or public department, court, minister, governor-in-council, cabinet, commission, board, bureau, agency, commissioner, tribunal or instrumentality, (b) any subdivision or authority of any of the foregoing, and (c) any quasi-governmental or private body exercising any regulatory authority under or for the account of any of the foregoing. For certainty, *Governmental Authority* includes The Regional Municipality of Halton and the Municipality.

***Governmental Response***

*Governmental Response* means legislative amendments, controls, orders, requests and requirements imposed by *Governmental Authorities* in respect of or in response to *COVID-19* or the *Pandemic*. For certainty, *Governmental Response* includes a *Pandemic Change in Law* and the best practices recommended by the Ontario Ministry of Labour for construction site health and safety during the *Pandemic*.

***Intellectual Property Rights***

*Intellectual Property Rights* means all intellectual property rights (including rights in the nature of any copyright, trade mark, trade secret, service mark, design, drawing, patent, know-how, secret process and other similar proprietary rights, whether or not registered) and the rights to the registration of those rights and all rights or forms of protection of a similar nature or having equivalent or similar effect to any of these rights (and every renewal or extension of those rights) conferred under statute or common law or equity in any country.

***MFIPPA***

*MFIPPA* means the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. M.56, as amended from time to time, or its successor legislation, and includes all regulations enacted thereunder.

***Municipality***

*Municipality* means the lower-tier municipality of the *Place of the Work*.

***Net Actual Cost***

*Net Actual Cost* means the total cost of all labour and materials identified in paragraph 6.3.7, excluding *Value Added Taxes*, but including all other eligible taxes, and is the amount prior to the application of any mark-up or additional payment rate when determining the cost of the subject work.

***Notice of Award***

*Notice of Award* means *Notice in Writing* issued by the *Owner* to the *Contractor* directing them to commence performance of the *Work*.

***OHSA***

*OHSA* means the *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1, as amended from time to time, or its successor legislation, and includes all regulations enacted thereunder.

**Overhead**

*Overhead* includes: (i) costs for all items in Division 01 of the *Specifications*; (ii) all site and head office overheads of all *Contractor Personnel*; (iii) financing costs; (iv) the salaries of superintendents, engineers, timekeepers, accountants, clerks, watch persons and all other site supervision staff above foreperson employed directly for the subject *Work*; (v) coordination with other trades affected; (vi) use of temporary offices, sheds and other general temporary site support facilities and all utilities used therein; and (vii) licences and permits other than those specific to a particular item of the *Work*. For certainty, *Overhead* includes all costs not expressly included in valuation of a change in paragraph 6.3.7.

**Owner's Agent**

*Owner's Agent* means the person or entity identified as such in the *Agreement Term Sheet*, if any.

**Owner Entities**

*Owner Entities* means the *Owner*, the *Owner's Agent* and the *Municipality*, including any employees, partners, officers, directors, agents, Members of Regional Council, and other Persons for whom they are responsible at law.

**Owner Personnel**

*Owner Personnel* means the *Owner*, the *Owner's Agent*, the *Consultant*, all *Other Contractors* and any other *Persons* engaged by them in respect of the *Work*, the *Project* or the *Owner's* obligations under this *Contract*, including any employees, partners, officers, directors, agents, subcontractors, subconsultants, and other *Persons* for whom they are responsible at law.

**Pandemic**

*Pandemic* means the *COVID-19* pandemic declared by the World Health Organization to be a pandemic on March 11, 2020, and shall include such continuing or resurgent effects of *COVID-19* upon public health as may persist notwithstanding that it may no longer constitute a declared pandemic or other public health emergency as of the *Effective Date*.

**Pandemic Change in Law**

*Pandemic Change in Law* means any change, amendment, modification, repeal or replacement in *Applicable Law* or a *Governmental Response* that: (i) came into effect after the *Effective Date*; (ii) is directly resultant from or related to the *Pandemic* or the occurrence, control or spread of *COVID-19*; and (iii) directly affects performance of the *Work*, including the *Contract Time* or the *Contract Price*. For certainty, a *Pandemic Change in Law* includes any obligation to delay commencement or suspend performance of the *Work* due to a *Governmental Response* coming into effect after the *Effective Date*.

***Person***

*Person* includes an individual, a corporation, a partnership, a trust, an unincorporated organization, a *Governmental Authority*, and the executors, administrators or other legal representatives of an individual in such capacity.

***Phase of the Work***

*Phase of the Work* has the meaning given in paragraph 5.4.7.

***Proper Invoice***

*Proper Invoice* means an application for payment that includes each of the elements listed in Appendix 2 to the Supplementary Conditions – Proper Invoice Requirements.

***Ready-for-Takeover Date***

*Ready-for-Takeover Date* means the date set out for achievement of *Ready-for-Takeover* in the *Agreement Term Sheet*, as such date may be adjusted in accordance with the *Contract*.

***Soil Regulations***

*Soil Regulations* means Ontario Regulation 406/19 – On-Site and Excess Soil Management as made under the *Environmental Protection Act*, as may be amended from time to time, or its successor regulation.

***Submittals***

*Submittals* are documents or items required by the *Contract Documents* to be provided by the *Contractor*, including *Shop Drawings*, samples, models, mock-ups, as-built drawings and operation and maintenance manuals.

***Standard of Care***

*Standard of Care* means the standard of care, competence, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar work and services for a project of similar size, scope, complexity, quality and prestige as the Project and in the same or similar locality as the Project.

***Warranty Period***

*Warranty Period* has the meaning given in paragraph 12.3.1.

***Warranty Security***

*Warranty Security* has the meaning given in paragraph 4.6 of Article A-4.

***WSIA***

*WSIA* means the *Workplace Safety and Insurance Act, 1997*, S.O. 1997, c. 16, Sched. A, as amended from time to time, or its successor legislation, and shall include all regulations enacted thereunder.

***WSIB***

*WSIB* means the Workplace Safety & Insurance Board of Ontario, which operates under the authority of the *WSIA*.”

## GENERAL CONDITIONS

### GC 1.1 CONTRACT DOCUMENTS

SC-14 Delete paragraphs 1.1.3 and 1.1.4 in their entirety and replace them with the following:

“1.1.3 The *Contractor* shall in accordance with the *Standard of Care* review the *Contract Documents* for the purpose of facilitating co-ordination and execution of the *Work* by the *Contractor*. The *Contractor* shall report promptly to the *Consultant* any ambiguities, design issues or other matters requiring clarification made known to the *Contractor* or that the *Contractor* may discover from such a review.

1.1.4 Except for its obligation to review the *Contract Documents* and report the result pursuant to paragraph 1.1.3, the *Contractor* is not responsible for ambiguities, design issues or other matters requiring clarification in the *Contract Documents* and does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. Without limiting the foregoing, the *Contractor* shall not be liable for any damages or costs resulting from any ambiguities, design issues or other matters requiring clarification in the *Contract Documents* which the *Contractor* could not reasonably have discovered from such a review in accordance with the *Standard of Care*. If the *Contractor* does discover any ambiguities, design issues or other matters requiring clarification in the *Contract Documents*, the *Contractor* shall notify the *Owner* and *Consultant* in writing and not proceed with the work affected until the *Contractor* has received modified or additional information from the *Consultant* or *Owner* in writing. The impacts of any ambiguities, design issues or other matters requiring clarification in the *Contract Documents*, including to the *Contract Price* and *Contract Time*, shall be addressed by the parties in accordance with Part 6 – CHANGES.”

SC-15 Delete subparagraph 1.1.5.1 in its entirety and replace it with the following:

“.1 the order of priority of documents, from highest to lowest, shall be:

- Appendix 1 to the Supplementary Conditions – *Agreement Term Sheet*
- *Addenda*
- the Agreement between *Owner* and *Contractor*, as amended by the Supplementary Conditions
- the Definitions, as amended by the Supplementary Conditions
- the General Conditions, as amended by the Supplementary Conditions
- Appendix 2 to the Supplementary Conditions – Proper Invoice Requirements

- Appendix 3 to the Supplementary Conditions – Insurance
- Division 01 of the *Specifications*
- technical *Specifications*
- material and finishing schedules
- the *Drawings*
- *Background Reports*
- *Notice of Award*”

SC-16 Add the following to the end of subparagraph 1.1.6.2 after the words “the *Work*”:  
“, except to the extent the *Consultant* is indemnified as a third party beneficiary as provided in subparagraphs 9.2.7.4 and 9.5.3.4 and in paragraph 13.1.1.”

SC-17 Add new paragraph 1.1.12 as follows:

“1.1.2 The parties acknowledge and agree that this *Contract* represents the entire agreement between the parties in respect of the *Work* and the *Project* and no document shall form part of the *Contract Document* unless expressly identified in Article A-3. For certainty, no letter of intent, purchase order or work order issued by the *Owner* in respect of any of the *Contract*, the *Work* or the *Project* shall form part of the *Contract Documents* and no terms or conditions therein, if any, shall be of any force and effect.”

#### **GC 1.4 ASSIGNMENT**

SC-18 Delete paragraph 1.4.1 in its entirety and replace it with the following:

“1.4.1 The *Contractor* shall not assign, transfer or novate all or any part of the *Contract* without the written consent of the *Owner*, which consent may be withheld in the *Owner*’s sole and absolute discretion. The *Owner* may assign, transfer or novate all or a portion of this *Contract* or any right, benefit or interest in all or any portion of this *Contract*, to any *Affiliate* or to any purchaser of all or part of the *Place of the Work* or *Project* in its sole discretion. The *Owner* shall otherwise not assign, transfer or novate all or any portion of the *Contract* without the written consent of the *Contractor*, which consent shall not be unreasonably withheld.”

#### **GC 2.2 ROLE OF THE CONSULTANT**

SC-19 Delete the second sentence in paragraph 2.2.3 in its entirety and replace it with the following:

“The duties, responsibilities and limitations of authority of such project representatives shall be those of the *Consultant* as described in the *Contract Documents*.”



SC-20 In the first line of paragraph 2.2.6, delete the words “Except with respect to GC 5.1 – Financing Information Required by the *Owner*,”.

SC-21 In paragraph 2.2.8:

(1) in both the first and second sentences add the words “, written statements” after the word “interpretations”; and

(2) add the following to the end:

“The *Owner* and the *Contractor* shall waive any claims against the *Consultant* arising out of its making of any interpretations, written statements or findings in accordance with paragraphs 2.2.6, 2.2.7, 2.2.8, and 7.1.2, but only to the extent that any such interpretations, written statements, and findings are made by the *Consultant* in an unbiased manner and in accordance with the *Consultant*’s professional standard of care at law.”

SC-22 In paragraph 2.2.18 delete the word “immediately” and add the following to the end “Notwithstanding the foregoing, while the *Owner* will consider any reasonable objections of the *Contractor*, the *Owner* shall have absolute discretion in its appointment of a new *Consultant*.”

### **GC 2.3 REVIEW AND INSPECTION OF THE WORK**

SC-23 In the second sentence of paragraph 2.3.1 add the words “and the *Owner*” immediately following the words “the *Consultant*”.

### **GC 2.4 DEFECTIVE WORK**

SC-24 Delete paragraph 2.4.1 in its entirety and replace it with the following:

“2.4.1 The *Contractor* shall promptly correct at its expense and in a manner acceptable to the *Owner* and *Consultant* defective work that has been rejected by the *Consultant* or *Owner* as failing to conform to the *Contract Documents* whether or not specifically identified by the *Consultant* or *Owner* and whether or not the defective work was incorporated in the *Work* or the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the *Contractor*. The *Contractor* shall prioritize the correction of any defective work which, in the sole discretion of the *Owner*, adversely affects the day-to-day operations of the *Owner*, including as required by paragraph 12.3.4, and shall otherwise prioritize the correction of defective work as required so as not to interfere with, or derogate from, the *Construction Schedule*. Subject to paragraph 2.4.3 and without prejudice to any other right or remedy under this *Contract* or at law and without affecting the warranty period, if the *Contractor* fails to correct such defective work within a reasonable amount of time as determined by the *Consultant*, the *Owner* may have such defective work corrected by its own forces or *Other Contractors* at the *Contractor*’s

expense. Any testing (including retesting by the *Owner*) to ensure that the defective work has been corrected and complies with the *Contract Documents* shall also be carried out at the *Contractor's* expense. The *Contractor* shall not be entitled to any adjustment of the *Contract Time* for correction of defective work and the *Owner* may deduct any expenses incurred pursuant to this paragraph 2.4.1 from any amounts due and owing to the *Contractor* under this *Contract*.”

## **GC 2.5 OWNER’S AGENT**

SC-25 Add new GC 2.5 – OWNER’S AGENT as follows:

### “GC 2.5 OWNER’S AGENT

- 2.5.1 The *Owner’s Agent* shall have the authority to exercise all rights and obligations of the *Owner* under this *Contract*.
- 2.5.2 Subject to any notified limitations in authority, the *Contractor* may rely upon any written instructions or directions provided by the *Owner’s Agent*. Neither the authority of the *Owner’s Agent* to act, nor any decision to exercise or not exercise such authority, shall give rise to any duty or responsibility of the *Owner’s Agent* to any *Contractor Personnel*.”

## **GC 3.1 CONTROL OF THE WORK**

SC-26 Add new paragraphs 3.1.3 to 3.1.6 as follows:

- “3.1.3 Prior to commencing individual 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 such verification is not possible prior to fabrication or construction within the *Contract Time*, or dimensions are not included or contradictions exist, or exact locations are not apparent, the *Contractor* shall immediately notify the *Consultant* in writing and obtain written instructions from the *Consultant* before proceeding with any part of the affected work.
- 3.1.4 To the extent applicable, the *Contractor* shall in consultation with the *Owner* schedule, coordinate and perform the *Work* as required to prevent or, where prevention is not possible, to minimize, any impacts to the *Owner’s* continuing business operations.
- 3.1.5 The *Contractor* and its *Subcontractors* shall attend meetings with respect to the *Work* as may be directed by the *Consultant* or *Owner*. The *Contractor* shall not claim any extra compensation for attendance at these meetings. The *Contractor* and its *Subcontractors* shall provide competent representatives to

attend such meetings who are authorized to make undertakings on their behalfs.

- 3.1.6 Prior to commencement of the *Work* the *Contractor* shall provide to the *Owner* certificates of insurance evidencing coverage as required by this *Contract*, a clearance certificate from the *WSIB* stating that all amounts owed to date have been paid in full.”

### **GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

SC-27 In paragraph 3.2.1 add the words “or for other work at the *Place of the Work*” after the words “the *Project*”.

SC-28 Delete subparagraph 3.2.2.1 in its entirety and replace it with the following:

- “.1 cause such *Other Contractors* and *Owner’s* own forces to comply with the instructions of the *Contractor* relating to coordination and scheduling of the activities and work of such *Other Contractors* and the *Owner’s* own forces at the *Place of the Work* with the *Work* of the *Contract*.”

### **GC 3.4 CONSTRUCTION SCHEDULE**

SC-29 Delete paragraph 3.4.1 in its entirety and replace it with the following:

“3.4.1 The *Contractor* shall:

- .1 prepare and submit to the *Owner* and the *Consultant* ten (10) *Working Days* after receipt of the *Notice of Award* a construction schedule that meets all requirements of the *Contract Documents* and that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their interrelationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*. Upon the *Consultant’s* acceptance of such schedule in writing, in consultation with the *Owner*, it shall become the *Construction Schedule*;
- .2 make the native form of the *Construction Schedule* available to the *Owner* and *Consultant* upon request;
- .3 complete the *Work* in accordance with the *Construction Schedule* and provide the expertise and resources, including manpower and *Construction Equipment*, as necessary to maintain progress under the *Construction Schedule*;
- .4 monitor the progress of the *Work* on a bi-weekly basis relative to the *Construction Schedule* and advise the *Consultant* and the *Owner* bi-weekly in writing of any variation from or slippage in performance of the *Work* in accordance with the *Construction Schedule*, together with a detailed explanation of any delays and a plan to mitigate the delay;

- .5 advise the *Consultant* of any revisions required to the *Construction Schedule* as the result of extensions of the *Contract Time* as provided in Article A-10 and Part 6 – CHANGES IN THE WORK;
- .6 update and submit to the *Consultant* and *Owner* an electronic copy of an updated *Construction Schedule* on a monthly basis and upon request by the *Consultant* or *Owner*, which submission shall include a comparison of the updated *Construction Schedule* to the accepted *Construction Schedule*, a summary of actual and forecast progress of the *Work* relative to the *Construction Schedule*, and a description of the basis of and logic for any changes made to the *Construction Schedule* in conformance to requirements of the *Contract Documents*; and
- .7 subject to Article A-10 and Part 6 – CHANGES IN THE WORK, provide overtime work without adjustment to the *Contract Price* if such work is deemed necessary to mitigate delay and/or recoup lost time in order to meet the *Construction Schedule*.”

SC-30 Add new paragraph 3.4.2 as follows:

“3.4.2 At the time of commencement of the *Work*, the *Contractor* shall prepare for the review and acceptance of the *Owner* and the *Consultant* a schedule indicating the times within the *Construction Schedule* that *Products* specified to be purchased by the *Owner* and installed or connected by the *Contractor* are required to be delivered to the *Place of the Work* to allow for performance of the *Work* within the *Contract Time* and avoid delaying the progress of the *Work*.”

### **GC 3.6 SUBCONTRACTORS AND SUPPLIERS**

SC-31 Add the following to paragraph 3.6.2:

“The *Contractor* agrees not to change any such *Subcontractors* without the prior written consent of the *Owner*, such consent not to be unreasonably withheld.”

SC-32 Add the following new paragraph 3.6.7 to 3.6.8:

“3.6.7 Ten (10) *Working Days* after receipt of the *Notice of Award* the *Contractor* shall submit to the *Owner* a list of all *Subcontractors* proposed to perform the *Work* and the names of all senior staff of the *Contractor* that will perform, supervise and coordinate the *Work*.

3.6.8 Notwithstanding any other term in this *Contract*, under no circumstance shall the *Contractor* employ as a *Subcontractor* or *Supplier* any *Person* identified on the *Owner’s* list of suspended subcontractors and suppliers which list is available online here: [<https://www.halton.ca/The-Region/Finance-and-Transparency/Doing-Business-with-the-Region>]. The *Contractor* shall not be entitled to adjustment of the *Contract Price* or *Contract Time* where it is

required to change a proposed *Subcontractor* or *Supplier* due to their inclusion on such list. The *Contractor* shall also prohibit its *Subcontractors* and *Suppliers* from employing for the *Project* any such *Persons*.”

### GC 3.7 LABOUR AND PRODUCTS

SC-33 Add the following to the end of paragraph 3.7.1:

“The *Contractor* represents that it has sufficient skilled employees to replace, subject to the *Owner*’s approval, acting reasonably, its designated supervisor and project manager in the event of death, incapacity, removal or resignation.”

SC-34 Add paragraphs 3.7.4 to 3.7.9 as follows:

“3.7.4 Ten (10) *Working Days* after receipt of the *Notice of Award* the *Contractor* shall submit to the *Owner* and *Consultant* an itemized list of *Suppliers* and manufacturers for *Products* that are to be supplied for the *Work* as specified in the *Contract Documents*. The *Contractor* shall provide the specification section reference, description of the *Product*, manufacturer, *Supplier* and any other information requested by the *Owner* or *Consultant*. Upon acceptance of such list by the *Owner* the *Contractor* agrees to use the *Products* specified in such approved itemized list.

3.7.5 All products and materials existing at the *Place of the Work* as of the *Effective Date* shall remain the property of the *Owner*. All *Products* to be incorporated in the *Work* shall become the property of the *Owner* at the earlier of: (i) incorporation of the *Product* into the *Work*; and (ii) payment in whole or in part for the *Product* by the *Owner*. Notwithstanding transfer of title and ownership to the *Owner*, the *Contractor* shall remain responsible for any loss or damage to *Products* until *Ready-for-Takeover* has been achieved.

3.7.6 All *Products* which are specified in the *Contract Documents* by their proprietary names or by part or catalogue numbers, are to form the basis for the specifications of such *Products*. No substitute for any such *Products* may be used without the *Consultant*’s written approval, acting reasonably. Substitutes for *Products* specified in the *Contract Documents* or approved by the *Owner* pursuant to paragraph 3.7.4 will be permitted only when: (i) request for the substitution is submitted in sufficient time to permit proper investigation and written approval by the *Consultant*, acting reasonably; and (ii) the specified *Product* has been discontinued, is unavailable or, due to such *Product*’s delivery being on the critical path it cannot be delivered within the time required for performance of the *Work* within the *Contract Time*. When requesting approval for the use of substitutes, the *Contractor* shall include in its submission sufficient details regarding the subject *Product*’s discontinuance, availability or impact on the critical path, as applicable, together with a description of any effect (increase or decrease) that the substitution may have on the *Contract Price* and, if applicable,

written approval from all *Governmental Authorities*. No adjustment to the *Contract Time* shall result from the use of substitutes by the *Contractor*.

- 3.7.7 Where the *Contractor* is of the reasonable opinion that advanced payment for a *Product* is required to secure such *Product's* timely supply and delivery to the *Place of the Work* in compliance with the *Construction Schedule* and *Contract Time*, the *Contractor* may seek consent from the *Owner* to include application for payment for such *Product* in a *Proper Invoice* prior to its incorporation into the *Work* by *Notice in Writing* to the *Owner* and *Consultant*, which *Notice in Writing* shall include a description of the circumstances giving rise to the need for such advanced payment and identifying whether the stockpiling or storage of such *Products* at the *Place of the Work* will be required pursuant to paragraph 3.7.8. With any *Proper Invoice* seeking advanced payment (as approved by the *Owner* pursuant to this paragraph 3.7.7), the *Contractor* shall include a receipt with proof of payment for the *Product* or such other documentation as reasonably required by the *Owner* to confirm payment by the *Contractor* for such *Product*. The *Owner* may approve or refuse any request for advanced payment for *Products* in its sole and absolute discretion.
- 3.7.8 No *Products* shall be stockpiled or stored at the *Place of the Work* before their anticipated incorporation into the *Work* unless, in the reasonable opinion of the *Consultant* and the *Owner*, the stockpiling or storage of such *Products* at the *Place of the Work* is feasible and necessary or desirable, including because of advanced payment for such *Products* as approved by the *Owner* pursuant to paragraph 3.7.6, then the *Contractor* shall obtain the prior written approval of the *Owner* for stock piling or storage of *Products* at the *Place of the Work*. The *Contractor* acknowledges and accepts that the *Owner* may not have space for storage of *Products* at the *Place of the Work* and, as such, the *Contractor* agrees that the *Owner* shall not have any obligation to permit the stockpiling or storage of *Products* at the *Place of the Work*. Where the *Owner* does not approve storage of *Products* at the *Place of the Work*, the *Contractor* may elect at its sole cost to store such *Products* at an alternate location. The *Contractor* shall remove all surplus or rejected *Products* from the *Place of the Work*.
- 3.7.9 Where the *Owner* has made payment to the *Contractor* for *Products* prior to their delivery to the *Place of the Work*, at no additional cost to the *Owner*, the *Contractor* shall:
- .1 provide the *Owner* with an executed receipt clearly identifying the *Owner* as the owner of the subject *Products* together with any available identifying information for such *Products*, such as serial numbers;
  - .2 ensure that the *Products* are clearly marked, identified or labelled as being the property of the *Owner* during any storage or transport of such *Products*;

- .3 ensure that when such *Products* are stored at a location other than the *Place of the Work* they are kept in a segregated location and not intermingled or co-mingled with the property of the *Contractor* or any other person;
- .4 ensure that the *Owner* and *Consultant* have the right to access, examine and inspect such *Products*; and
- .5 ensure that such *Products* are not subject to any landlord distress rights, security interest or other encumbrance by any person.”

### **GC 3.8 SHOP DRAWINGS**

- SC-35 Add the words “AND OTHER SUBMITTALS” to the title of GC 3.8 after the words “SHOP DRAWINGS”.
- SC-36 Add the words “and other *Submittals*” after the words “*Shop Drawings*” in paragraphs 3.8.1, 3.8.2, 3.8.3, 3.8.3.2, 3.8.5, 3.8.6, and 3.8.7.

### **GC 3.9 CLEAN-UP**

### **GC 3.10 DOCUMENTS AT THE SITE**

### **GC 3.11 USE OF THE WORK**

### **GC 3.12 CUTTING AND REMEDIAL WORK**

### **GC 3.13 EXCESS SOILS**

- SC-37 Add the following new GC 3.9 CLEAN-UP, GC 3.10 DOCUMENTS AT THE SITE; GC 3.11 USE OF THE WORK, GC 3.12 CUTTING AND REMEDIAL WORK and GC 3.13 EXCESS SOILS:

#### **“GC 3.9 CLEAN-UP**

- 3.9.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner Personnel*, *Other Contractors* or their employees.”
- 3.9.2 Before applying for *Substantial Performance* as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of *Owner Personnel*, *Other Contractors* or their employees and shall leave the *Place of the Work* clean and suitable for use and occupancy by the *Owner*. The *Contractor* shall remove materials,

tools, *Construction Equipment*, and *Temporary Work* not required for the performance of the remaining work.

- 3.9.3 Prior to submitting its *Proper Invoice* for final payment, the *Contractor* shall remove any remaining materials, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of *Owner Personnel*, *Other Contractors* or their employees.
- 3.9.4 All debris and waste resulting from the *Work* shall be removed from the *Place of the Work* expeditiously and shall be disposed of in accordance with the *Contract Documents* and *Applicable Law*. Salvage or materials from the *Work* shall not be sold at or near the *Place of the Work*.
- 3.9.5 In the event that the *Owner* or any *Governmental Authority* orders, instructs or requests that the *Owner* or *Contractor* clean-up the *Place of the Work* or any property adjacent to or in proximity to the *Place of the Work*, the *Contractor* shall be responsible for the prompt completion of such clean-up activities at its sole cost, provided that the requirement for such clean-up is related to or arises from the *Work* and except to the extent such clean-up is required due to the work of *Owner Personnel*, *Other Contractors* or their employees.
- 3.9.6 The *Owner* shall have the right to back charge the costs of cleaning required to be performed by the *Contractor* pursuant to this GC 3.9 if not done by the *Contractor* within forty eight (48) hours of receipt of written notice from the *Owner* or *Consultant*.”

### **GC 3.10 DOCUMENTS AT THE SITE**

- 3.10.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

### **GC 3.11 USE OF THE WORK**

- 3.11.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of *Contractor Personnel* to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of the Work*.

### **GC 3.12 CUTTING AND REMEDIAL WORK**

- 3.12.1 The *Contractor* shall perform the cutting and remedial work required to make the affected parts of the *Work* come together properly.
- 3.12.2 The *Contractor* shall co-ordinate the *Work* to ensure that the cutting and remedial work is kept to a minimum.



- 3.12.3 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

### **GC 3.13 EXCESS SOILS**

- 3.13 The *Contractor* expressly acknowledges that, where the *Project* involves *Excess Soil*, *Applicable Law* shall include the *Soil Regulations*. In such case, notwithstanding that the *Owner* may be a “Project Leader” as defined under the *Soil Regulations*, the *Contractor* expressly agrees and acknowledges that the *Work* includes assumption, performance, and fulfillment of all liabilities, responsibilities and obligations of the Project Leader applicable to *Excess Soil* as set out in the *Contract Documents*. Without limiting the foregoing, in performance of the *Work* and its obligations under this *Contract* the *Contractor* shall coordinate and consult with the *Owner*, *Consultant* and *Environmental Consultant* as required to ensure compliance of the *Project* with the *Soil Regulations*.”

### **GC 4.1 CASH ALLOWANCES PAYMENT**

- SC-38 Delete paragraph 4.1.7 in its entirety and replace it with the following:

“4.1.7 At the commencement of the *Work*, the *Contractor* shall prepare for the review and acceptance of the *Owner* and the *Consultant* a schedule indicating the times within the *Construction Schedule* that items called for under cash allowances are required to be delivered to the *Place of the Work* to avoid delaying the progress of the *Work*.”

- SC-39 Add new paragraph 4.1.8 in as follows:

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

### **GC 4.2 CONTINGENCY ALLOWANCE**

- SC-40 Add the following to the end of paragraph 4.2.4:

“For certainty, prior to *Contractor*’s submission of its *Proper Invoice* for final payment the *Contract Price* shall be reduced by the amount of any contingency allowance not authorized for expenditure under paragraph 4.2.3.”

- SC-41 Add new GC 4.3 PROVISIONAL ITEMS ALLOWANCE as follows:

#### **“GC 4.3 PROVISIONAL ITEMS ALLOWANCE**

- 4.3.1 The *Contract Price* includes the amount of the provisional items allowance, if any, stated in the *Contract Documents*.

- 4.3.2 The provisional item allowance includes the *Contractor's* overhead and profit in connection with such provisional items.
- 4.3.3 Expenditures under the provisional items allowance shall be authorized and valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.
- 4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.3.3 and the amount of the provisional items allowance. For certainty, prior to *Contractor's* submission of its *Proper Invoice* for final payment the *Contract Price* shall be reduced by the amount of any provisional items allowance not authorized for expenditure under paragraph 4.3.3.”

**GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

SC-42 Delete GC 5.1 in its entirety and replace it with the following:

**“GC 5.1 – DRAFT APPLICATIONS FOR PAYMENT**

- 5.1.1 Except as stipulated in paragraph 5.1.2, on a monthly basis and no earlier than five (5) *Working Days* after the end of the applicable monthly payment period, the *Contractor* shall submit to the *Consultant* and the *Owner* a draft application for payment for the value of the *Work* performed up to the end of the subject monthly payment period. The draft application for payment shall be in the form of the *Proper Invoice Template*. The draft application for payment must contain all information and documentation required for a *Proper Invoice* as stipulated in Appendix 2 – Proper Invoice Requirements.
- 5.1.2 The *Contractor* shall not submit a draft application for payment between December 24 and January 2 inclusive or on any day that is not a *Working Day*.
- 5.1.3 The *Contractor* shall be available upon request of the *Owner* or *Consultant* to meet and review the draft application for payment prior to *Contractor's* submission of the corresponding *Proper Invoice*.
- 5.1.4 All draft applications for payment and *Proper Invoices* shall be submitted by email to the *Owner* and *Consultant* at the email addresses stipulated in the *Agreement Term Sheet* and all such email messages shall include:
  - .1 the sender’s name, address, telephone number, fax number, if any, and e-mail address;
  - .2 the date and time of transmission; and
  - .3 the name and telephone number of a person to contact in the event of a transmission problem.

- 5.1.5 Where a draft application for payment or *Proper Invoice* is given by email between 4:00 p.m. and midnight, it shall be deemed to have been given on the following day.”

## **GC 5.2 APPLICATIONS FOR PAYMENT**

- SC-43 Delete paragraph 5.2.1 in its entirety and replace it with the following:

“5.2.1 A minimum of five (5) Working Days following the Contractor’s submission of a draft application for payment pursuant to GC 5.1 the Contractor shall submit a Proper Invoice to the Consultant and the Owner on account as provided in Article A-5 of the Agreement which Proper Invoice shall be for Work for the value of the Work performed up to the end of the subject monthly payment period. All Proper Invoices shall be submitted in accordance with paragraphs 5.1.4 and 5.1.5. Notwithstanding any other term of the Contract, including paragraph 5.1.2, the Contractor shall not submit a Proper Invoice between November 22 and January 2 inclusive or on any day that is not a *Working Day*. For certainty, application for payment in respect of the *Warranty Security* shall only be made upon satisfaction of all stipulated requirements for this milestone as set out in paragraph 12.3.8.”

- SC-44 Delete paragraph 5.2.2 in its entirety.

- SC-45 In paragraph 5.2.3 add the words “in a *Proper Invoice*” after the words “The amount claimed” and add the following to the end:

“The amount applied for in the *Proper Invoice* for payment of the *Warranty Security* upon satisfaction of all requirements set out in paragraph 12.3.8 shall be comprised of the amount of the *Warranty Security* less any deductions to such security applied in accordance with this *Contract*.”

- SC-46 Delete paragraph 5.2.4 in its entirety and replace it with the following:

“5.2.4 At least 15 calendar days before submission of its first *Proper Invoice* the *Contractor* shall submit to the *Consultant*, in a form acceptable to the *Owner* and *Consultant*, acting reasonably, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of *Proper Invoices*.”

- SC-47 Amend paragraph 5.2.6 by replacing the words “Applications for payment” with the words “*Proper Invoices*”.

- SC-48 Delete paragraph 5.2.7 in its entirety.

## **GC 5.3 PAYMENT**

- SC-49 In paragraph 5.3.1 replace the words “an application for payment” with “a *Proper Invoice*”.

SC-50 Delete subparagraph 5.3.1.1 in its entirety and replace it with the following:

“1.1 If the *Consultant*, in consultation with the *Owner*, determines that an amount different than that applied for is properly due, the *Owner* or *Consultant* shall issue a “Notice of Non-Payment” pursuant to the *Construction Act* on behalf of the *Owner*.”

SC-51 Delete subparagraph 5.3.1.2 in its entirety and replace it with the following:

“1.2 Subject to any “Notice of Non-Payment” issued pursuant to the *Construction Act* on behalf of the *Owner*, the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – PAYMENT no later than twenty-eight (28) calendar days from the date of receipt of such *Proper Invoice* and, in any event, in compliance with the *Payment Legislation*.”

SC-52 Add new paragraphs 5.3.2 to 5.3.5 as follows:

“5.3.2 If the *Contractor* fails to provide any element of a *Proper Invoice*, including a statutory declaration or the workers’ compensation clearance certificate, the application for payment will not constitute a *Proper Invoice* and the *Owner* shall not be required to make payment to the *Contractor* until a complete *Proper Invoice* is submitted.

5.3.3 The *Contractor* shall have no entitlement to payment and no *Proper Invoice* may be submitted for changes in the *Work* without a written *Change Order* issued by the *Owner*.

5.3.4 The *Owner* may withhold from payment amounts as determined by the *Owner* or *Consultant*, acting reasonably, to ensure correction of defective work and may also provide for the retention of amounts in addition to the statutory holdback provided for in the *Contract* sufficient to protect the *Owner* against all liens of which the *Owner* has notice.

5.3.5 Following receipt by the *Contractor* of statutory declarations from *Suppliers* or *Subcontractors* of any tier, the *Contractor* shall promptly provide the *Owner* and *Consultant* with copies of such statutory declarations.”

#### **GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK**

SC-53 Delete all paragraphs of GC 5.4 in their entirety and replace them with the following:

“5.4.1 When the *Contractor* considers that *Substantial Performance of the Work* has been achieved, or if permitted by the *Payment Legislation* a designated portion of the *Work* which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within five (5) *Working Days*, deliver to the *Consultant* and to the *Owner* a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or

substantial performance of the designated portion of the *Work*, which application shall include the following:

- a. A comprehensive list of work to be completed or corrected including all deficient or defective work identified by the *Owner* and *Consultant* and the cost for completion and correction of such work,
- b. A list of work which cannot be performed for reasons beyond the control of the *Contractor* including the proposed date for completion of such work and the cost for completion of such work,
- c. A declaration to the effect that:
  - i. the *Contract* is substantially performed,
  - ii. the performance of the balance of the *Contract* is in progress, and
  - iii. where the balance of the *Contract*, or a part or parts thereof cannot be performed forthwith, but must be deferred for reasons beyond the control of the *Contractor*, the balance of the *Contract* shall be completed by a fixed date,
- d. All documentation required pursuant to GC 10.4 – WORKERS’ COMPENSATION, including a clearance certificate from the *WSIB* stating that all amounts owed to the date of *Substantial Performance of the Work* have been paid in full,
- e. A statutory declaration using the latest CCDC 9A form of “Statutory Declaration of Progress Payment Distribution by Contractor”,
- f. A list of all outstanding or potential *Claims* of the *Contractor* under the *Contract* as of the date of its application for *Substantial Performance of the Work*. For certainty, the provision of this list shall in no way relieve the *Contractor* of its notice obligations under the *Contract* for any *Claim*,
- g. A statement identifying the value of *Work* done to the proposed date of *Substantial Performance of the Work* together with all documentation reasonably required by the *Owner* and *Consultant* to determine the value of same, and
- h. A statement showing the amount of holdback monies due for release and payment when all liens that may be claimed against such holdback have expired or been satisfied, discharged or otherwise provided for under the *Payment Legislation*.

Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

5.4.2 The *Consultant* will review the *Work* to certify or verify the validity of the application and shall promptly, and in any event, no later than 15 *Working Days* after receipt of the *Contractor's* application:

- .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
- .2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.

For certainty, the *Contract Price* to be used in determining achievement of *Substantial Performance of the Work* shall be the *Contract Price* as amended by any *Change Orders* issued as of the date such determination is being made and shall not include any anticipated changes to the *Contract Price* not yet confirmed by *Change Order*, including in respect of any cash allowances or contingencies.

5.4.3 Within no more than 7 calendar days following receipt of the certificate from the *Consultant* pursuant to paragraph 5.4.2, the *Contractor* shall cause such certificate to be published in accordance with the requirements of the *Payment Legislation* and the *Contractor* shall issue to the *Owner* and *Consultant* an application for release of the holdback. The *Contractor's* application for release of the holdback application shall include:

- .1 a copy of the advertisement containing the certificate of *Substantial Performance of the Work* placed by the *Contractor* in the appropriate construction trade newspaper;
- .2 a declaration that no written notices of lien have been received by the *Contractor*;
- .3 all documentation required pursuant to GC 10.4 – WORKERS' COMPENSATION, including a clearance certificate from the *WSIB* stating that all amounts owed to the date of *Substantial Performance of the Work* have been paid in full; and
- .4 a statutory declaration using the latest CCDC 9A form of "Statutory Declaration of Progress Payment Distribution by Contractor".

Except to the extent required by *Payment Legislation*, such application for release of the holdback shall not constitute an application for payment that is subject to *Proper Invoice* requirements. All holdback amounts prescribed by the *Payment Legislation* shall become due and payable to the *Contractor* following expiration of the holdback period stipulated in the *Payment Legislation* provided that all liens that may be claimed against the holdback have expired or been satisfied, discharged or otherwise provided for as required by the *Payment Legislation*.

5.4.4 There shall be no progressive release of holdback for a portion of the *Work* pursuant to any applicable *Payment Legislation*.

5.4.5 The *Owner* may refuse to pay some or all of the lien holdback amount provided that the *Owner* complies with any applicable requirements of the *Payment Legislation*.

**5.4.6 Annual Release of Holdback**

.1 Accrued lien holdback the *Owner* is required to retain under the *Payment Legislation* shall be released on an annual basis in relation to *Work* performed during the applicable annual period provided that:

- i. the *Construction Schedule* is longer than one year in duration;
- ii. the *Contract Price* exceeds ten million dollars (\$10,000,000);
- iii. the *Owner* has elected in the *Agreement Term Sheet* to release holdback on an annual basis;
- iv. the *Contractor* submits to the *Owner* and *Consultant* an application for release of such holdback on an annual basis for the applicable annual period that includes a copy of the notice proposed to be given under subparagraph 5.4.6.1(v) and a statutory declaration using the latest CCDC 9A form of “Statutory Declaration of Progress Payment Distribution by Contractor”; and
- v. 60 calendar days after the date of the *Contractor*’s application for release of the holdback on an annual basis and the giving of written notice in a form acceptable to the *Owner*, acting reasonably, by the *Contractor* to all *Contractor Personnel* of such application (including by posting of such notice in a visible location at the *Place of the Work*), there are no preserved or perfected liens in respect of the *Contract*, or all liens in respect of the *Contract* have been satisfied, discharged or otherwise provided for under the *Payment Legislation*.

.2 For the purposes of this paragraph 5.4.6 the applicable annual period shall be each calendar year occurring during the term of the *Contract*.

**5.4.7 Phased Release of Holdback**

.1 Accrued lien holdback the *Owner* is required to retain under the *Payment Legislation* shall be released on upon completion of each of phase of the *Work* expressly identified and described in the *Contract Documents* (each a “*Phase of the Work*”) provided that:

- i. the *Consultant* has certified that the subject *Phase of the Work* has been completed as required by the *Contract Documents*;
- ii. the *Contract Price* exceeds ten million dollars (\$10,000,000);
- iii. the *Owner* has elected in the *Agreement Term Sheet* to release holdback on a phased basis;
- iv. the *Contractor* submits to the *Owner* and *Consultant* an application for release of such holdback on a phased basis for the completed *Phase of the Work* that includes a copy of the notice proposed to be given under subparagraph 5.4.7.1(v) and a statutory declaration using the latest CCDC 9A form of “Statutory Declaration of Progress Payment Distribution by Contractor”; and
- v. 60 calendar days after the date of the *Contractor’s* application for release of the holdback on a phased basis and the giving of written notice in a form acceptable to the *Owner*, acting reasonably, by the *Contractor* to all *Contractor Personnel* of such application (including by posting of such notice in a visible location at the *Place of the Work*), there are no preserved or perfected liens in respect of the *Contract*, or all liens in respect of the *Contract* have been satisfied, discharged or otherwise provided for under the *Payment Legislation*.

5.4.8 Subject to paragraph 5.4.5, when releasing holdback pursuant to paragraph 5.4.6 or paragraph 5.4.7 the *Owner* may retain out of such accrued lien holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the *Payment Legislation*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

5.4.9 The *Owner’s* payment of the accrued lien holdback on an annual basis or phased basis shall not limit, waive or diminish the *Contractor’s* obligations, responsibilities, duties or liabilities under the *Contract* nor shall it constitute the *Owner’s* acceptance of the *Work*. Further, no payment of holdback shall be made unless and until any liens have been satisfied, discharged or otherwise provided for under the *Payment Legislation*. Notwithstanding any such payment, the *Contractor* shall ensure that all *Work* and *Products* are protected pending *Completion* and be responsible for the correction of defects or *Work* not performed regardless of whether or not such was apparent when such payment was made. The *Contractor* shall indemnify and hold harmless the *Owner Entities* from all *Claims* resultant from the *Owner’s* release of holdback pursuant to paragraphs 5.4.6 and 5.4.7 or *Contractor’s* breach of its obligations under paragraphs 5.4.6 and 5.4.7.

5.4.10 For certainty, notwithstanding any provision of the *Agreement Term Sheet* or other *Contract Documents*, neither paragraph 5.4.6 nor paragraph 5.4.7 shall



apply where the *Contract Price* as of the *Effective Date* does not meet or exceed the minimum contract price for release of holdback on an annual or phased basis established under the *Construction Act*.”

## **GC 5.5 FINAL PAYMENT**

SC-54 Delete paragraphs 5.5.1 to 5.5.4 in their entirety and replace them with the following:

- “5.5.1 When the *Contractor* considers that *Completion* has been achieved, the *Contractor* shall submit a draft application for final payment within no more than five (5) *Working Days* of the claimed *Completion* date and shall submit a *Proper Invoice* to the *Owner* and *Consultant* for final payment no earlier than five (5) *Working Days* after submission of such draft application for final payment.
- 5.5.2 The *Consultant* will review the *Work* to certify or verify achievement of *Completion* and shall promptly, and in any event, no later than ten (10) calendar days after receipt of the *Contractor*’s *Proper Invoice* for final payment:
- .1 advise the *Contractor* in writing that *Completion* has not been achieved and give reasons why, or
  - .2 state the date of *Completion* (as determined by the *Consultant*) in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.
- 5.5.3 Payment of a *Proper Invoice* for final payment shall be made by the *Owner* in accordance with paragraph 5.3.1.2. All holdback amounts for finishing work prescribed by the *Payment Legislation* shall become due and payable to the *Contractor* following expiration of the holdback period stipulated in the *Payment Legislation* provided that all liens that may be claimed against such holdback have expired or been satisfied, discharged or otherwise provided for as required by the *Payment Legislation*.
- 5.5.4 For certainty, all references in the *Contract Documents* to final payment or a *Proper Invoice* for final payment shall refer to the *Proper Invoice* submitted by the *Contractor* and payment to be made by the *Owner* under the *Contract* following achievement of *Completion* or following the date of termination of the *Contract* or the *Contractor*’s right to continue with the *Work* notwithstanding that payment of the *Warranty Security* (less any deductions to such security applied in accordance with this *Contract*) will not be made until satisfaction of all requirements set out in paragraph 12.3.8.”

## **GC 5.8 SET-OFF**

SC-55 Add new GC 5.8 SET-OFF as follows:

**“GC 5.8 SET-OFF**

5.8.1 Notwithstanding any other provision in the *Contract* and subject to the provisions of the *Payment Legislation*, if the *Owner* has made an overpayment on any previous *Proper Invoice*, if the *Contractor* is in default under the *Contract* (including any failure to correct deficiencies as required by the *Contract*), if any amount is due and owing by the *Contractor* to the *Owner* under this *Contract*, or if the *Contractor* has not paid undisputed amounts due to *Contractor Personnel*, then without prejudice to any other right or remedy, the *Owner* may withhold or set-off payment from the *Contractor* of the amount reasonably necessary to protect the *Owner* from loss or damage arising from such event.”

**GC 6.2 CHANGE ORDER**

SC-56 Add new paragraph 6.2.1A as follows:

“6.2.1A If the *Contractor* is of the opinion that any direction or instruction received from the *Consultant* or the *Owner*, including any *Supplemental Instruction*, constitutes a proposed change in the *Work*, it shall give the *Consultant* and *Owner Notice in Writing* of such change within 5 *Working Days*, which notice shall include a written description of the alleged change in the *Work*, including a description of the anticipated impact to the *Contract Price* and *Contract Time* and all available supporting documentation. The *Consultant* will promptly investigate such alleged change in the *Work* and make a finding. If the finding is that such direction or instruction does constitute a change for which adjustment of the *Contract Price* and *Contract Time* is justified under the *Contract*, then, if the *Owner* does not dispute such finding within the time stipulated in Part 8 – DISPUTE RESOLUTION, the *Consultant* will issue appropriate instructions for a change in the *Work* as provided in paragraph 6.2.1. If the finding is that the direction or instruction does not constitute a change for which adjustment of the *Contract Price* or *Contract Time* is justified under the *Contract*, the *Consultant* shall provide its reasons for such finding in writing to the *Owner* and *Contractor* and the *Contractor* shall proceed with the affected *Work*, including implementation of the subject direction or instruction, and may dispute the finding of the *Consultant* under this paragraph 6.2.1A in accordance with PART 8 – DISPUTE RESOLUTION. For certainty, the *Contractor* shall not delay in its implementation of the subject direction or instruction or performance of any affected *Work* while the *Consultant* investigates the alleged change and makes a finding pursuant to this paragraph 6.2.1A.”

SC-57 Add new paragraphs 6.2.3 to 6.2.6 as follows:

“6.2.3 The *Contractor* shall prepare and submit to the *Consultant* and the *Owner* all details and supporting documentation regarding impacts of a proposed change to the *Contract Price* and *Contract Time* within ten (10) *Working*

*Days* after notice of the proposed change is given to the *Contractor* under paragraph 6.2.1 and otherwise within five (5) *Working Days* of such details and supporting documentation becoming known or available, as applicable.

- 6.2.4 Unless otherwise agreed by the parties, the adjustment in the *Contract Price* for any change shall be determined in accordance with paragraphs 6.3.6 and 6.3.7.
- 6.2.5 For valuation of changes to the *Work*, including in respect of any contemplated *Change Order* or request for a *Change Order* by the *Contractor*, the *Contractor* shall provide the *Owner* and *Consultant* with a detailed breakdown of all expenditures itemized in paragraph 6.3.7 anticipated to be incurred in respect of the change and such other documentation as reasonably required by the *Owner* and *Consultant* to determine the anticipated expenditures to be incurred by the *Contractor* attributable to the change. The foregoing detailed breakdown shall include a breakdown of the price quotation that includes the following to the extent applicable, with appropriate supporting documentation: (i) estimated labour costs, including hours and applicable hourly rates; (ii) estimated *Product* costs, including *Supplier* quotations, estimated quantities and unit prices; (iii) estimated *Construction Equipment* costs; (iv) enumeration of all other estimated costs included in the price quotation; (v) estimated credit amounts for labour and *Products* not required on account of the proposed change; (vi) *Subcontractor* quotations, including a detailed breakdown of all of the foregoing and (vii) estimated *Contractor's* percentage fee for profit and *Overhead* as per paragraph 6.3.6. For certainty, for all changes the *Contractor's* percentage fee shall be as stipulated in paragraph 6.3.6.
- 6.2.6 A *Change Order* shall be a final determination and adjustment to the *Contract Time*, and *Contract Price* in respect of the subject change and there shall be no further adjustments to the *Contract Time* or *Contract Price* or compensation or payment of any kind whatsoever based on the aggregate number, scope or value of changes in the *Work* whether resulting from *Change Orders* or *Change Directives*.

### **GC 6.3 CHANGE DIRECTIVE**

SC-58 Delete subparagraph 6.3.6.3 in its entirety and replace it with the following:

- “3 Subject to subparagraph 6.3.6.4, in respect of the *Contractor's* percentage fee, the *Contractor* shall be entitled to apply mark-ups as follows to the actual costs of performing the work attributable to the change as determined in accordance with paragraph 6.3.7 (exclusive of *Value Added Taxes*), which mark-ups include the *Contractor's* fee for profit and *Overhead* (including profit and *Overhead* of all *Contractor Personnel*):

- i. for *Contractor's* own work: a mark-up in an amount of no more than 15% of the *Net Actual Cost* of the *Contractor's* own work
- ii. for *Subcontractor's* own work: a mark-up in an amount of no more than 15% of the *Net Actual Cost* of the *Subcontractor's* own work; and
- iii. *Contractor's* mark-up on *Subcontractor's* own work: a mark-up in an amount of not more than 10% of the *Net Actual Cost* of the *Subcontractor's* own work.

For certainty, no further mark-up shall be applied to any costs attributable to the change, including in respect of profit and *Overhead* for *Contractor Personnel*, and regardless of the extent to which the subject work is assigned or sublet to others. If *Work* is assigned or sublet to an associate, as defined by the *Securities Act*, RSO 1990, c. S.5, as amended, no mark-up whatsoever shall be applied.”

SC-59 Add new subparagraphs 6.3.6.4 and 6.3.6.5 as follows:

- “.4 In no event shall the maximum aggregate mark-up applied by all levels of contract for overhead and profit pursuant to subparagraph 6.3.6.3 exceed 30% of the total *Net Actual Cost* of approved change.
- .5 Where the *Owner* and *Contractor* agree in writing to a rate and pricing schedule, to the extent applicable such rate and pricing schedule will be used to determine the cost of the *Contractor's* actual expenditures and savings under paragraph 6.3.7.”

SC-60 Delete subparagraph 6.3.7.1(2) in its entirety.

SC-61 In subparagraph 6.3.7.6 add the following to the end:

“For certainty, in determining the cost of performing the work attributable to the change no mark-up shall be applied to the actual expenditures incurred by a *Subcontractor* attributable to the change, which expenditures shall be itemized as required pursuant to paragraph 6.3.15. All profit and *Overhead* of the *Subcontractor* is included in the *Contractor's* percentage fee to be applied pursuant to subparagraph 6.3.6.3.”

SC-62 Delete paragraph 6.3.11 in its entirety and replace it with the following:

“Subject to paragraph 6.3.14, any undisputed value of *Work* performed as the result of a *Change Directive* shall be confirmed by way of one or more *Change Orders* and upon issuance of any such *Change Order* these amounts may be included in progress payments.”

SC-63 Add new paragraphs 6.3.14 and 6.3.15 as follows:

“6.3.14 Where a *Change Directive* stipulates a maximum amount that may be incurred in respect of such *Change Directive*, the *Contractor* shall give the *Owner* written notice at least 2 *Working Days* prior to incurring any costs in excess of such stipulated maximum and may not include in any *Proper Invoice* any amount in excess of such stipulated maximum without the prior written approval of the *Owner* in the form of a further or amended *Change Directive*. For certainty, stipulation of a maximum amount that may be incurred in respect of a *Change Directive* does not constitute the *Owner*’s agreement to the quantum of costs that may be attributable to the *Change Directive* and shall not obligate the *Owner* to issue a *Change Order* in respect of any claimed amount for the value of the *Work* performed as the result of the *Change Directive* that remains under dispute.

6.3.15 Without limiting the *Contractor*’s obligations under this GC 6.3, for valuation of any *Change Directive* the *Contractor* shall provide the *Owner* and *Consultant* with detailed itemized breakdowns of all actual expenditures itemized in 6.3.7 and incurred in respect of the change, including detailed, substantiated time sheets, purchase orders, receipts or cost vouchers from *Subcontractors* and *Suppliers* and such other documentation as reasonably required by the *Owner* and *Consultant* to determine the actual expenditures incurred by the *Contractor* attributable to the change.”

#### **GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

SC-64 Amend subparagraphs 6.4.1.1 and 6.4.1.2 by adding the following after the words “*Contract Documents*” in each subparagraph:

“and which would not have been readily apparent prior to the *Contractor*’s commencement of the performance of the *Work* from review of the *Contract Documents* and *Place of the Work* by the *Contractor* as required by the *Contract Documents*, including pursuant to paragraph 1.5 of Article A-5 and paragraph 1.1.3 of GC 1.1”

#### **GC 6.5 DELAYS**

SC-65 Add the following to the end of paragraph 6.5.2:

“Notwithstanding the foregoing, (i) where the stop work order was issued as a result of or due to a *Force Majeure Event* this paragraph 6.5.2 shall not apply and the *Contractor*’s entitlement to adjustment of the *Contract Time* or *Contract Price* shall be governed by paragraph 6.5.3, and (ii) where the stop work order was issued as a result of or due to *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*, including a *Governmental Response*, and was not the result of an act or fault of any *Contractor Personnel*, directly or indirectly, this paragraph 6.5.2 shall not apply and the *Contractor*’s entitlement to adjustment of the *Contract Time* or *Contract Price* shall be governed by the provisions of Article A-10 hereof.”

SC-66 Delete paragraph 6.5.3 in its entirety and replace it with the following:

“6.5.3 If the *Contractor* is delayed in the performance of the *Work* by a *Force Majeure Event*, including:

- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors’ association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
- .2 fire, unusual delay by common carriers or unavoidable casualties, or
- .3 *Abnormally Adverse Weather Conditions*,

then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. Except to the extent such delays result from actions by *Owner Personnel*, the *Contractor* shall only be entitled to payment for costs directly incurred with the *Owner*’s written approval to protect the *Work* and secure the *Place of the Work* during the period of such delay and to mitigate the impacts of such delay to performance of the *Work* within the *Contract Time*. For certainty, in the event of delay caused by or resultant from *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*, including a *Governmental Response*, this paragraph 6.5.3 shall not apply and the *Contractor*’s entitlement to adjustment of the *Contract Time* or *Contract Price* shall be governed by the provisions of Article A-10 hereof.”

SC-67 Delete paragraph 6.5.4 in its entirety and replace it with the following:

“6.5.4 Upon the occurrence of any event that may cause delay to performance of the *Work* the *Contractor* shall promptly give the *Owner* verbal notice of such delay event. No extension shall be made for delay unless *Notice in Writing* of the cause of delay is given to the *Consultant* and *Owner* not later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.”

SC-68 Delete paragraph 6.5.5 in its entirety and replace it with the following:

“6.5.5 No adjustment to the *Contract Time* shall be made because of failure of the *Consultant* to furnish instructions unless the *Consultant* has failed to furnish such instructions within the time stipulated in any schedule agreed-to by the parties for submission and return of *Shop Drawings* and *Submittals* and the *Contractor* has given at least two (2) *Working Days*’ *Notice in Writing* to the *Consultant* and *Owner* of the date for upon which such instructions are required.”

SC-69 Add new paragraphs 6.5.6 and 6.5.7 as follows:

“6.5.6 Any adjustment to the *Contract Time* under this *Contract* shall be determined based on the direct impacts of the subject change or delay to the critical path for performance of the *Work* as of the date of the change or delay.

6.5.7 The *Contractor* acknowledges that the *Owner* will suffer real and significant losses if the *Contractor* fails to attain *Ready-for-Takeover* by the *Ready-for-Takeover Date*.

.1 Where the *Owner* has stipulated an amount for liquidated damages in the *Agreement Term Sheet*, then if the *Contractor* fails to achieve *Ready-for-Takeover* by the *Ready-for-Takeover Date* then the *Contractor* shall be liable to the *Owner* for liquidated damages in accordance with paragraph 4.7 of Article A-4 for each day or part day of delay until *Ready-for-Takeover* is achieved as confirmed by the *Consultant* in accordance with GC 12.1. The parties agree that such liquidated damages are not a penalty and represent a reasonable, fair and genuine pre-estimate of losses to the *Owner* anticipated to result from the *Contractor*'s delay in achieving *Ready-for-Takeover* by the *Ready-for-Takeover Date*.

.2 Where the *Owner* has not stipulated an amount for liquidated damages in the *Agreement Term Sheet*, then subparagraph 6.5.7.1 shall not apply and the *Contractor* shall be liable for and shall indemnify and hold harmless the *Owner* from all *Claims* resultant from or caused by failure to achieve *Ready-for-Takeover* by the *Ready-for-Takeover Date* and/or *Completion* by the *Completion Date*, including costs incurred for the *Consultant*, any *Claims* arising under any lease agreements for the *Project* (if applicable), and any *Claims* relating to financing of the *Project*.”

## **GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE**

SC-70 Delete paragraph 6.6.1 in its entirety and replace it with the following:

“6.6.1 If the *Contractor* intends to make a claim for an increase to the *Contract Price* the *Contractor* shall give *Notice in Writing* of intent to claim to the *Owner* and to the *Consultant* within five (5) *Working Days* of commencement of the event or series of events giving rise to such claim. Notwithstanding the foregoing, any claim for adjustment to the *Contract Price* resultant from *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*, including a *Governmental Response*, shall be governed by the provisions of Article A-10 and this GC 6.6 shall not apply.”

SC-71 Delete paragraphs 6.6.3 and 6.6.4 in their entirety and replace them with the following:

“6.6.3 The party making a claim pursuant to this GC 6.6 shall prepare and submit to the *Consultant* and other party in writing all available details and supporting documentation regarding the claim not later than ten (10) *Working Days* after commencement of the event or series of events giving rise to such claim and shall thereafter submit all such details and supporting documentation within five (5) *Working Days* of such details and supporting documentation becoming known or available, as applicable. For certainty, the supporting documentation to be submitted shall include all evidence reasonably required by the *Consultant* to make a finding and all such supporting documentation shall be prepared at the applicable party’s own cost.

6.6.4 Without limiting paragraph 6.6.3, where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, weekly or bi-weekly as the *Consultant* may reasonably require, submit further written interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account within five (5) *Working Days* of the end of the effects resulting from the event or series of events.”

SC-72 Add new paragraph 6.6.7 as follows:

“6.6.7 Where the party making a claim fails to provide notice or details and supporting documentation within the time stipulated in this GC 6.6 and such failure prevents the *Consultant* or other party from mitigating or minimizing *Claims* resultant from the event or series of events giving rise to such claim or otherwise causes the other party loss or damage, then the party making the claim shall be barred from bringing the subject claim.”

**GC 7.1 OWNER’S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR’S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT**

SC-73 Delete subparagraph 7.1.5.1 in its entirety and replace it with the following:

“.1 take possession of the *Work* and *Products* at the *Place of the Work*; subject to the rights of third parties, utilize the *Construction Equipment* and *Temporary Work* at the *Place of the Work*; require the *Contractor* to transfer, novate or assign all agreements with *Subcontractors* and *Suppliers* in respect of the *Work* to the *Owner* or other contractors designated by the *Owner*; finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense,”



SC-74 In subparagraph 7.1.5.4 delete the words “warranty period” and replace them with the words “*Warranty Period*”.

SC-75 Add a new subparagraph 7.1.5.5 as follows:

“5 set-off against any amount payable to the *Contractor* under the *Contract* all amounts payable by the *Contractor* to the *Owner*.”

SC-76 Add a new paragraphs 7.1.7 and 7.1.8 as follows:

“7.1.7 The *Owner* shall not be liable to the *Contractor* for any *Consequential Damages* arising from termination pursuant to this GC 7.1.

7.1.8 The *Contractor* shall submit to the *Owner* and *Consultant* a *Proper Invoice* for final payment no later than 45 calendar days after the date of termination.”

## **GC 7.2 CONTRACTOR’S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

SC-77 Delete paragraph 7.2.2 in its entirety.

SC-78 Delete subparagraphs 7.2.3.1 and 7.2.3.2 in their entirety.

SC-79 In subparagraph 7.2.3.4 delete the words “except for GC 5.1 FINANCIAL INFORMATION REQUIRED OF THE OWNER.”

SC-80 In paragraph 7.2.4, delete “5 *Working Days*” from the second line and replace with “fifteen (15) *Working Days*”, and add the following to the end of the paragraph:

“The *Owner* shall be deemed not to be in default of its obligations under the *Contract* if it is taking active steps to remedy the default but cannot reasonably do so within the said fifteen (15) *Working Day* period.”

SC-81 In paragraph 7.2.5, delete the words “including reasonable profit” and replace them with the words “to the date of termination” and add the words “, but shall not be entitled to compensation for any *Consequential Damages*” after the words “termination of the *Contract*”.

SC-82 Add new paragraph 7.2.6 as follows:

“7.2.6 The *Contractor*’s claim for compensation under this GC 7.2 shall be submitted to the *Owner* and *Consultant* in the form of a *Proper Invoice* for final payment no later than 45 calendar days after the date of termination.”

### **GC 7.3 TERMINATION FOR CONVENIENCE**

SC-83 Add new GC 7.3 TERMINATION FOR CONVENIENCE as follows:

#### **“GC 7.3 TERMINATION FOR CONVENIENCE**

7.3.1 The *Owner* may in its sole discretion terminate the *Contractor*'s right to continue with the *Work* in whole or in part or this *Contract* for any reason, including without cause or for convenience, at any time by giving at least 30 calendar days' *Notice in Writing* of such termination to the *Contractor* specifying the date of termination.

7.3.2 In the event of termination pursuant to paragraph 7.3.1, the *Contractor* shall be entitled to be paid for all work performed to the date of termination, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a direct result of such termination, but shall not be entitled to compensation for any *Consequential Damages*. The *Contractor*'s claim for such compensation shall be submitted to the *Owner* and *Consultant* in the form of a *Proper Invoice* for final payment no later than 45 calendar days after the date of termination.”

### **GC 8.1 AUTHORITY OF THE CONSULTANT**

SC-84 In paragraph 8.1.2 delete the words “paragraph 8.1.3 and paragraphs 8.3.3 to 8.3.8 of”.

SC-85 In paragraph 8.1.3, add the following after the first sentence:

“The *Contractor* shall continue performance of the *Work* notwithstanding any such dispute and shall ensure all other *Contractor Personnel* also do so.”

### **GC 8.2 ADJUDICATION**

SC-86 Delete paragraph 8.2.1 in its entirety and replace it with the following:

“8.2.1 Nothing in this *Contract* shall be deemed to affect the rights of the parties to resolve any dispute by adjudication as may be provided for by applicable legislation. Further, in addition to the matters that may be referred to adjudication pursuant to the *Payment Legislation*, the parties agree that any dispute relating to costs resultant from termination of the *Contract* or of the *Contractor*'s right to continue with the *Work* or payments due and owing in the event of or following any such termination may be referred by either party to adjudication. For certainty, no dispute regarding the validity of any such termination may be referred to adjudication and any such dispute shall be resolved in accordance with GC 8.3.”

SC-87 Add new paragraph 8.2.2 as follows:

“8.2.2 To the extent permitted by the *Construction Act* and except as required for performance of the parties’ obligations under this *Contract* or exercise of their rights under the *Construction Act*, any adjudication in respect of the *Contract* and *Project*, including all documentation and materials exchanged and any resultant award or order issued by an adjudicator, shall be confidential as between the parties.”

### **GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION**

SC-88 Delete paragraph 8.3.1 in its entirety.

SC-89 Delete paragraph 8.3.2 in its entirety and replace it with the following:

“8.3.2 For any finding of the *Consultant* under GC 2.2 – ROLE OF THE CONSULTANT that is clearly identified as a finding for the purposes of this paragraph 8.3.2 of the *Contract*, a party shall be conclusively deemed to have accepted such finding and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a *Notice in Writing* of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*.”

SC-90 Delete paragraphs 8.3.4, 8.3.5 and 8.3.6 in their entirety and replace them with the following:

“8.3.4 Following receipt of a responding party’s *Notice in Writing* of reply under paragraph 8.3.2, the parties may elect to engage in mediated negotiations to assist the parties in reaching agreement on any unresolved dispute.

8.3.5 If the dispute is not resolved at a mediation or if the parties do not agree to mediate the dispute, either party may terminate the mediation by giving *Notice in Writing* to other party and the *Consultant*.

8.3.6 Upon termination of the mediation pursuant to paragraph 8.3.5 the dispute shall be finally resolved by arbitration which may be commenced by either party by *Notice in Writing* to the other party. The arbitration shall be conducted in the jurisdiction of the *Place of the Work* and the parties agree that the arbitral award shall be final and binding and may only be appealed to the court on a question of law subject to the leave of such court as may be granted in accordance with subsection 45(1) of the *Arbitration Act*. For certainty, there shall be no appeal of the arbitral award on a question of fact or mixed fact and law.”

SC-91 Delete paragraph 8.3.7 in its entirety.

SC-92 In paragraph 8.3.8 delete the words “*Notice in Writing* requesting arbitration in paragraph 8.3.6” and replace them with the words “termination of the mediation pursuant to paragraph 8.3.5”.

SC-93 Add the following new paragraphs 8.3.9 to 8.3.13:

“8.3.9 Within five *Working Days* of the termination of the mediation pursuant to paragraph 8.3.5, the *Owner* and the *Contractor* shall give the *Consultant* a written notice containing:

- .1 a copy of supplementary conditions 8.3.9 to 8.3.14 of this *Contract*, and;
- .2 a description of 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.

8.3.10 The *Owner* and the *Contractor* agree that the *Consultant* may elect to become a full party to the arbitration under paragraph 8.3.6 if the *Consultant*:

- .1 has a vested or contingent financial interest in the outcome of the arbitration;
- .2 gives the notice of election to the *Owner* and the *Contractor* within ten (10) *Working Days* of receipt of the notice under paragraph 8.3.9;
- .3 agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.3.6, and,
- .4 agrees to be bound by the arbitral award made in the arbitration.

8.3.11 Without limiting and subject to the *Owner* and *Contractor*’s rights under paragraph 8.3.12 to challenge whether the *Consultant* has satisfied the requirements of paragraph 8.3.10, if an election is made under paragraph 8.3.10:

- .1 the *Owner* or *Contractor* may request particulars and evidence of the *Consultant*’s vested or contingent financial interest in the outcome of the arbitration;
- .2 the *Consultant* shall participate in the appointment of the arbitrator; and,
- .3 notwithstanding the rules referred to in paragraph 8.3.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the notice of arbitration.

8.3.12 The arbitrator in the arbitration in which the *Consultant* has elected under paragraph 8.3.10 to become a full party may:

- .1 on application of the *Owner* or the *Contractor*, determine whether the *Consultant* has satisfied the requirements of paragraph 8.3.10, and;
- .2 make any procedural order considered necessary to facilitate the addition of the *Consultant* as a party to the arbitration.

8.3.13 The provisions of paragraph 8.3.9 shall apply (with all appropriate changes being made) to written notice to be given by the *Consultant* to any sub-consultant.”

## **GC 9.1 PROTECTION OF WORK AND PROPERTY**

SC-94 Amend subparagraph 9.1.1.1 by adding the following to the end:

“which the *Contractor* could not have discovered from review as required by the *Contract Documents*, including paragraph 1.1.3 of GC 1.1”

SC-95 Delete paragraph 9.1.1.2 in its entirety and replace it with the following:

“.2 negligent acts or omissions of any *Owner Personnel*.”

SC-96 Delete paragraph 9.1.2 in its entirety and replace it with the following:

“9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground utilities and structures indicated in the *Contract Documents*, or that are reasonably discoverable from inspection of the *Place of the Work* as required by the *Contract Documents*, including paragraph 1.5 of Article A-1.”

SC-97 Add new paragraphs 9.1.5 and 9.1.6 as follows:

“9.1.5 The *Contractor* shall cooperate in all respects, at no cost to the *Owner*, to provide accommodation and safe access to the *Place of the Work* or portions thereof as the *Owner Personnel* may require from time to time and as may be required by utility providers with equipment or operations located at the *Place of the Work*.

9.1.6 No *Owner Personnel* or *Owner Entities* shall have any liability for the safeguarding or protection of, or for the loss, theft, damage, destruction, or disappearance of, any *Construction Equipment, Products, Temporary Work* or other tangible property or materials located at the *Place of the Work*, except to the extent caused by their own negligence.”

## **GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

SC-98 In paragraph 9.2.3 delete the first word “The” and replace it with the following:

“Without limiting any of the *Contractor’s* obligations under this *Contract*, including for overall health and safety at the *Place of the Work*, the”

SC-99 Add the following words to paragraph 9.2.6 after the word “responsible”:

“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 *Applicable Laws*) 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,”

SC-100 Add the words “and the *Consultant*” after the word “*Contractor*” in subparagraph 9.2.7.4.

SC-101 Add the following words to paragraph 9.2.8 after the word “responsible”:

“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 *Applicable Laws*) were dealt with by the *Contractor* or anyone for whom the *Contractor* is responsible in a manner which does not comply with legal and regulatory requirements, or which threatens human health and safety or the environment or material damage to the property of the *Owner* or others,”

## **GC 9.4 CONSTRUCTION SAFETY**

SC-102 Delete paragraph 9.4.1 in its entirety and replace it with the following:

“9.4.1 The *Contractor* shall be solely responsible for: (i) construction health and safety at the *Place of the Work*, including all responsibilities of the “constructor” under the *OHSA*; (ii) compliance with the rules, regulations, and practices required by *Applicable Laws*, including the *OHSA*; and (iii) initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*. The *Contractor* shall file the requisite “notice of project” and list itself as the “constructor” with respect to the *Project*.”

SC-103 Delete paragraph 9.4.4 in its entirety and replace it with the following:

“9.4.4 The *Owner* shall cause the *Owner Personnel* to comply with all health and safety precautions and programs established by the *Contractor* at the *Place of the Work*, including by requiring such compliance in any contracts with *Owner Personnel*.”

SC-104 Add the following new paragraphs 9.4.6 to 9.4.11:

- “9.4.6 The *Contractor* shall provide appropriate health and safety instruction and training to all *Contractor Personnel* (to the extent same have access to the *Place of the Work*) before the *Work* is commenced.
- 9.4.7 The *Contractor* and each *Subcontractor* having an accident or incident at the *Place of the Work*, as prescribed under the *OHSA*, shall promptly notify the *Owner* and the *Consultant*.
- 9.4.8 Prior to commencement of the *Work*, and again at any time upon request by the *Owner*, the *Contractor* shall provide the *Owner* with information and evidence regarding compliance with its obligations relating to health and safety under this *Contract* (including compliance with paragraph 3.1.6, GC 9.4 and paragraph 10.2.4), which evidence shall include: (i) a copy of the *Contractor*’s “notice of project” identifying the *Contractor* as the “constructor” with respect to the *Project* under the *OHSA*; (ii) a copy of all “Form 1000s” obtained by the *Contractor* from *Contractor Personnel* as required by the *OHSA*; (iii) a copy of all health and safety plans and programs prepared by the *Contractor* in respect of the *Place of the Work* and/or performance of the *Work*; (iv) a copy of the *Contractor*’s subcontracts with *Contractor Personnel*; (v) copies of training logs and meeting minutes relating to health and safety at the *Place of the Work* and/or in performance of the *Work*; (vi) copies of any and all documentation filed by or submitted to any *Governmental Authority* by any *Contractor Personnel* in respect of the *Project*, the *Work* or the *Place of the Work*, including any accident or incident reports; and (vii) any other documentation relating to the *Contractor*’s health and safety obligations under this *Contract* as may be reasonably requested by the *Owner*.
- 9.4.9 The *Contractor* represents that it has the experience, knowledge and expertise in respect of construction health and safety necessary for performance of the *Work* and all obligations under this *Contract* in accordance with all *Applicable Laws*, including as necessary to undertake all obligations of the “constructor” under the *OHSA* and to provide for compliance with all requirements of the *OHSA* applicable to the *Place of the Work* and performance of the *Work*. The *Contractor* further acknowledges that the *Owner Entities* do not have such knowledge, experience and expertise and are accordingly relying upon the *Contractor* in this respect.
- 9.4.10 The *Contractor* shall indemnify and save harmless all *Owner Personnel* and *Owner Entities* from and against any and all *Claims* arising out of any safety infractions committed by any *Contractor Personnel* or resulting from any failure by the *Contractor* to fulfill its obligations under paragraph 3.1.6, paragraph 10.2.4 and/or this PART 9 – PROTECTION OF PERSONS AND PROPERTY.

9.4.11 The provisions of this GC 9.4 shall survive the completion of the *Work* or the termination of the *Contract* for any reason whatsoever.”

## **GC 9.5 MOULD**

SC-105 Add the words “and the *Consultant*” after the word “*Contractor*” in subparagraph 9.5.3.4.

## **GC 10.2 LAWS, NOTICES, PERMITS, AND FEES**

SC-106 Replace all reference to “laws” and “applicable laws” in GC 10.2 with “*Applicable Laws*”.

SC-107 Delete paragraph 10.2.5 in its entirety and replace it with the following:

“10.2.5 Subject to compliance with its obligations under paragraph 1.5 of Article A-5 and paragraph 1.1.3 of GC 1.1, the *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with *Applicable Laws*. If the *Contract Documents* are at variance therewith, or if, subsequent to the *Effective Date*, changes are made to *Applicable Laws* which require modification to the *Contract Documents*, the *Contractor* shall advise the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will issue the changes required to the *Contract Documents* as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.”

SC-108 Delete paragraph 10.2.7 in its entirety and replace it with the following:

“10.2.7 If, subsequent to the *Effective Date*, changes are made to *Applicable Laws* which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE. Notwithstanding the foregoing, any claim for adjustment to the *Contract Price* resultant from *COVID-19*, the *Pandemic* or a *Pandemic Change in Law*, including a *Governmental Response*, shall be governed by the provisions of Article A-10 and this paragraph 10.2.7 and GC 6.6 shall not apply.”

## **GC 10.4 WORKERS’ COMPENSATION**

SC-109 In paragraph 10.4.1, replace the word “applications for payment” with the words “*Proper Invoices*”.

SC-110 Add new paragraphs 10.4.2 and 10.4.3 as follows:

“10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.



10.4.3 The *Contractor* shall indemnify and hold harmless the *Owner* and its directors, officers and employees from and against all *Claims* by any *Contractor Personnel* with respect to workers' compensation insurance claims. This indemnity shall survive the completion of the *Work* or the termination of the *Contract* for any reason whatsoever."

## GC 11.1 INSURANCE

SC-111 Revise paragraph 11.1.1 as follows:

- (1) **Where the original *Contract Price* stipulated in the Agreement is equal to or less than \$5,000,000:** Delete paragraph 11.1.1 and replace it with the following:

"11.1.1 Without restricting the generality of GC 13.1 – INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the requirements of which are specified in Appendix 3 to the Supplementary Conditions – Insurance in effect at the time of bid closing except as hereinafter provided:

- .1 Commercial General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant* as additional insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. Commercial General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover*, as set out in the certificate of *Ready-for-Takeover*, on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.
- .2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
- .3 Unmanned aerial vehicle aircraft, manned aircraft or watercraft Liability Insurance when owned or non-owned manned or unmanned aircraft or watercraft are used directly or indirectly in the performance of the *Work*.

- .4 “Broad form Builders Risk” property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The “Broad form” property insurance shall be provided from the date of commencement of the *Work* until the earliest of:
- (1) 10 calendar days after the date of *Ready-for-Takeover*;
  - (2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*; and
  - (3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.
- .5 Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. Such coverage can be included as part of the Broad Form Builders Risk policy. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Ready-for-Takeover*.
- .6 The “Broad form Builders Risk” property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. In the event of loss or damage:
- (1) the *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or

damage as the *Consultant* may recommend in consultation with the *Contractor*;

- (2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount which the *Owner*'s interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds in accordance with the progress payment provisions. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor*'s interest in the restoration of the *Work*; and
- (3) to the *Work* arising from the work of the *Owner*, the *Owner*'s own forces or *Other Contractors*, the *Owner* shall, in accordance with the *Owner*'s obligations under the provisions relating to construction by the *Owner* or *Other Contractors*, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.

.7 Contractors' Equipment Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

.8 Contractors' Pollution Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*."

- (2) **Where the original *Contract Price* stipulated in the Agreement is greater than \$5,000,000 and equal to or less than \$25,000,000:** Delete paragraph 11.1.1 and replace it with the following:

"11.1.1 Without restricting the generality of GC 13.1 – INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the requirements of which are specified in Appendix 3 to the Supplementary Conditions – Insurance in effect at the time of bid closing except as hereinafter provided:

- .1 Wrap-up liability insurance in the name of the *Contractor* and including all *Owners*, *Contractors*, *Subcontractors* and the *Consultants engaged in the work* as insureds. Wrap-up liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of

*Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover*, as set out in the certificate of *Ready-for-Takeover*, on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.

- .2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
- .3 Unmanned aerial vehicle aircraft, manned aircraft or watercraft Liability Insurance when owned or non-owned manned or unmanned aircraft or watercraft are used directly or indirectly in the performance of the *Work*.
- .4 “Broad form Builders Risk” property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The “Broad form” property insurance shall be provided from the date of commencement of the *Work* until the earliest of:
  - (1) 10 calendar days after the date of *Ready-for-Takeover*;
  - (2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*; and
  - (3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.
- .5 Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. Such coverage can be included as part of the Broad Form Builders Risk policy. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Ready-for-Takeover*.
- .6 The “Broad form Builders Risk” property and boiler and machinery policies shall provide that, in the case of a loss

or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. In the event of loss or damage:

- (1) the *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*;
  - (2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds in accordance with the progress payment provisions. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*; and
  - (3) to the *Work* arising from the work of the *Owner*, the *Owner's* own forces or *Other Contractors*, the *Owner* shall, in accordance with the *Owner's* obligations under the provisions relating to construction by the *Owner* or *Other Contractors*, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.
- .7 Contractors' Equipment Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
- .8 Project Specific Contractors' Pollution Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.
- .9 Commercial General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant*

as additional insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. Commercial General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover*, as set out in the certificate of *Ready-for-Takeover*, on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.”

- (3) **Where the original *Contract Price* stipulated in the Agreement is greater than \$25,000,000:** Delete paragraph 11.1.1 and replace it with the following:

“11.1.1 The *Contractor* shall provide, maintain and pay for insurance coverages as stipulated by the *Owner* in writing prior to commencement of the *Work*. Where no written direction in respect of insurance coverages is provided by the *Owner* prior to commencement of the *Work* then the insurance requirements for projects with an original *Contract Price* greater than \$5,000,000 and equal to or less than \$25,000,000 shall apply notwithstanding that the *Contact Price* is greater than \$25,000,000.”

SC-112 In all instances and for all *Contract Prices*, delete paragraphs 11.1.6, 11.1.7 and 11.1.8 in their entirety.

## **GC 11.2 CONTRACT SECURITY**

SC-113 Add new GC 11.2 CONTRACT SECURITY as follows:

### **“GC 11.2 CONTRACT SECURITY**

11.2.1 *Contact* shall provide security and bonding if and as stipulated in the *Contract Documents*. Without limiting the foregoing, where the *Contract Price* as of the *Effective Date* is \$500,000 or more, bonds will be provided by the *Contractor* as required by the *Construction Act*, the coverage limit of which shall include *Value Added Taxes* as stipulated in paragraph 4.2 of Article A-4.”

## **GC 12.1 READY-FOR-TAKEOVER**

SC-114 Amend subparagraph 12.1.1.2 by adding the following to the end:

“and, where possible, evidence of certification by all permit-issuing authorities, indicating approval of all permitted installations.”

- SC-115 Amend subparagraph 12.1.1.3 by adding the words “has been completed by the *Contractor*” at the end.
- SC-116 Amend subparagraph 12.1.1.4 by deleting the word “immediate”.
- SC-117 Amend subparagraph 12.1.1.6 by adding the words “and commissioning” after the word “testing”.
- SC-118 In subparagraph 12.1.1.8 delete the word “scheduled” and replace it with the word “completed” and delete the words “, acting reasonably”.
- SC-119 In paragraph 12.1.4 delete the words “10 calendar days” and replace them with the words “10 *Working Days*”.

## **GC 12.2 EARLY OCCUPANCY BY THE OWNER**

- SC-120 Delete subparagraphs 12.2.3.2 and 12.2.3.3 in their entirety and replace them as follows:

- “.2 The *Owner* shall, at any and all times, have the right to enter, occupy and use the *Work* in whole or in part before completion of the *Contract*. Such entry, occupation or use shall not be considered as acceptance of the *Work* nor in any way relieve or limit the responsibilities and liabilities of the *Contractor* under the *Contract* nor affect the warranty period.
- .3 For certainty, and notwithstanding occupancy by the *Owner* of a part or entirety of the *Work* before *Ready-for-Takeover* has been attained:
- .1 the *Contractor* shall continue to be liable for the care of such part or entirety of the *Work* except that the *Owner* shall become responsible for preventative maintenance and shall be liable for any loss or damage caused by its negligence or fault; and
  - .2 the warranty period shall be as set out in paragraph 12.3.1 of GC 12.3 – WARRANTY.”

- SC-121 Delete paragraph 12.2.4 in its entirety and replace it with the following:

- “12.2.4 Without limiting paragraph 12.2.3, the *Contractor* shall not unreasonably interfere with such use or operation of the *Work* and *Project* by the *Owner*. The *Contractor*, in completing its obligations under the *Contract*, shall, at its own cost, take all reasonable measures to minimize the effect thereof on such use or operation.”

## **GC 12.3 WARRANTY**

- SC-122 Delete paragraph 12.3.1 and replace it with the following:

“12.3.1 The warranty period under the *Contract* is:

- .1 one year from the date when *Ready-for-Takeover* has been achieved or the date of termination of the *Contract* or the *Contractor*'s right to continue with the *Work*; or
- .2 such longer warranty period established in the *Contract Documents* for extended warranties,

(the “*Warranty Period*”).”

SC-123 Amend paragraphs 12.3.3 and 12.3.6 by deleting the words “one year warranty period” wherever they appear and replace them with the words “*Warranty Period*”.

SC-124 Delete paragraph 12.3.4 in its entirety and replace with the following:

“12.3.4 Subject to paragraph 12.3.2, within 15 *Working Days* of receipt of *Notice in Writing* pursuant to paragraph 12.3.3 (or within such other reasonable time as determined by the *Consultant*) the *Contractor* shall correct, at the *Contractor*'s expense, any defects or deficiencies in the *Work* which appear prior to and during the *Warranty Period* and shall complete such correction as expeditiously as possible, except that where the deficiency prevents maintaining security at the *Place of the Work* or prevents continued operation or functionality of systems essential to the ongoing business or operations of any *Owner Entities* as determined at the sole discretion of the *Owner*, all necessary corrections and/or installations of temporary replacements shall be carried out immediately as an emergency service. Should the *Contractor* fail to provide this emergency service within 48 hours of a request being made during the normal business hours of the *Contractor*, the *Owner* shall be authorized to carry out all necessary repairs or replacements at the *Contractor*'s expense and deduct all costs of so doing from the *Warranty Security* and, if required, otherwise recover all costs of so doing as a debt due and payable by the *Contractor* upon demand. No such action by the *Owner* shall waive or release the *Contractor* of its obligations under this *Contract*, including any warranty obligations.”

SC-125 Delete paragraph 12.3.5 and replace it with the following:

“12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of this GC 12.3. If the *Contractor* fails to correct defects or deficiencies in the *Work* or other damage resulting from such corrections within 15 *Working Days* after receiving written notification of the defect or deficiency or damage from the *Owner* or the *Consultant*, the *Owner* may (whether itself or through others) make such corrections at the *Contractor*'s expense and deduct all costs of so doing from the *Warranty Security* and, if required, otherwise recover all costs of so doing as a debt due and payable by the *Contractor* upon demand.”



SC-126 Add new paragraphs 12.3.7 to 12.3.9 as follows:

- “12.3.7 Where manufacturers offer, as a general policy, extended warranties on their *Products* or other greater benefits than those called for in the specifications, the *Contractor* shall obtain the benefit of such extended warranties for the *Owner*. The *Contractor* shall ensure that all warranties, guarantees or other obligations for *Work* or *Products* performed or supplied by any *Contractor Personnel* in connection with the *Work* are obtained and available for the direct benefit of the *Owner*. In the alternative, the *Contractor* shall assign to the *Owner* all warranties, guarantees or other obligations for *Work* or *Products* performed or supplied by any *Contractor Personnel* and such assignment shall be with the consent of the assigning party, where required by law, or by the terms of that *Person’s* contract. Such assignment shall be in addition to, and shall in no way limit, the warranty rights of the *Owner* under the *Contract Documents*.
- 12.3.8 To ensure performance of the *Contractor’s* obligations as set out in GC 12.3 – WARRANTY, the *Owner* shall not make payment to the *Contractor* of the *Warranty Security* until the following has occurred, as confirmed by the *Consultant* in writing:
- .1 expiry of the *Warranty Period*; and
  - .2 correction by the *Contractor* of all defects and deficiencies in the *Work* which occurred or arose prior to and during the *Warranty Period*.
- 12.3.9 Specified warranty periods shall not be construed as limiting the provisions of GC 13.1 –INDEMNIFICATION. Payment of holdback amounts and final payment shall not relieve the *Contractor’s* responsibility for correction of any other deficiencies or incomplete items, at no additional cost to the *Owner* pursuant to this GC12.3 – WARRANTY.”

### **GC 13.1 INDEMNIFICATION**

SC-127 Delete paragraph 13.1.1 and replace it with the following :

- “13.1.1 The *Contractor* shall indemnify and save harmless the *Owner Entities* from and against any and all *Claims* arising out of the negligence, errors, omissions, fraud or willful misconduct of the *Contractor Personnel* attributable to or connected with the *Contractor’s* performance or non-performance of its obligations pursuant to this *Contract* except to the extent that such *Claims* are attributable or caused by the negligence of the *Owner Entities* or any of them. This indemnity shall survive the expiration or earlier termination of this *Contract* and continue in full force and effect.”

- SC-128 In paragraph 13.1.2 delete the words “The obligation of either party to indemnify as set forth in paragraph 13.1.1” and replace them with the words “The liability of either party under this *Contract*”.
- SC-129 In subparagraph 13.1.2.1 delete the words “the minimum liability insurance limit for one occurrence, of the applicable insurance policy, as referred to in CCDC 41 in effect at the time of bid closing” and replace them with the words “the amount of the minimum insurance limit for one occurrence, of the applicable insurance policy, as set forth in Appendix 3 to the Supplementary Conditions for each policy of insurance required to be provided by such party”.
- SC-130 Add the following to the end of subparagraph 13.1.2.1:  
  
“For certainty, each party’s liability for losses suffered by the other party for which insurance is to be provided by them pursuant to GC 11.1 – INSURANCE (as modified by the Supplementary Conditions) shall not be less in the aggregate than the total amounts of the minimum insurance limits for one occurrence for each policy of insurance as stipulated in GC 11.1 – INSURANCE (as modified by the Supplementary Conditions) as is applicable to the subject *Claims*.”
- SC-131 In subparagraph 13.1.2.3 delete the words “and neither party shall have any liability to the other for indirect, consequential, punitive or exemplary damages”.
- SC-132 Add new paragraphs 13.1.7 to 13.1.11 as follows:  
  
“13.1.7 The *Owner Entities* shall have no liability under this *Contract* or in respect of the *Work* or the *Project* for any *Consequential Damages*.  
  
13.1.8 Without limiting the foregoing, within 10 calendar days of the *Contractor* receiving notice or otherwise becoming aware of a *Claim* initiated by a third party against an *Owner Entity* and/or the *Contractor* in respect of a matter for which the *Contractor* has indemnified the *Owner Entities* under this *Contract* and where such *Claim* has been referred to a legal proceeding or other dispute resolution proceeding, the *Contractor* shall retain legal representation and confirm in writing to the *Owner* that it shall assume the *Owner Entities*’ defence in accordance with the indemnification provisions outlined in this *Contract*, including this GC 13.1 – INDEMNIFICATION. For certainty, for the purposes of this GC 13.1 – INDEMNIFICATION “third party” shall not include any *Subcontractor*, *Supplier*, *Other Contractor* or other person or entity engaged for the *Project*.

- 13.1.9 Where the *Contractor* receives notice or otherwise becomes aware of a *Claim* initiated by a third party against an *Owner Entity* and/or the *Contractor* in respect of a matter for which the *Contractor* has indemnified the *Owner Entities* under this *Contract* and where such *Claim* has not been referred to a legal proceeding or other dispute resolution proceeding, if the *Contractor* denies liability and does not assume responsibility for payment of such *Claim* the *Contractor* will notify the *Owner* and third party claimant in writing of its decision within 20 calendar days of receiving notice or otherwise becoming aware of the *Claim*, and the *Owner* reserves the right to assign the *Claim* to an independent insurance adjuster for investigation and determination. The *Owner* and *Contractor* shall fully cooperate with the adjuster to achieve timely resolution of such *Claim*. The *Contractor* and the *Owner* shall provide the adjuster with access to any and all records or documentation in relation to the *Work* and obligations performed under the *Contract* as required for the adjuster's determination. The *Owner* and the *Contractor* acknowledge that all *Claims* will be investigated and responded to by the adjuster within 45 calendar days of receipt of the *Claim* or within such other time as may be agreed by the parties.
- 13.1.10 The *Owner* and the *Contractor* shall be bound by the final decision of the independent adjuster who shall notify the claimant in writing of the final decision with respect to the adjustment of the *Claim*. The *Owner* shall reserve the right to communicate to the third party claimant the final decision with respect to the adjustment of the *Claim*. Where liability is found on the part of the *Contractor*, the adjuster shall handle settlement negotiations and all pertaining financial and legal transactions on behalf of the *Owner* and the *Contractor*, including but not limited to securing a full and final release and issuing the settlement funds to the third party claimant.
- 13.1.11 To the extent the adjuster determines the *Contractor* to be liable for the *Claim* under this *Contract* or at law, all costs for adjuster fees, claim administration and settlement costs will be borne by the *Contractor*. To the extent the *Contractor* is found not to be liable for the *Claim* under this *Contract* or at law, the *Owner* will bear all costs for adjuster fees, claim administration and settlement costs.
- 13.1.12 For certainty, where any *Claim* has been referred to a legal proceeding or other dispute resolution proceeding paragraphs 13.1.8 will apply (and paragraphs 13.1.9 to 13.1.11 shall not apply) and the *Contractor* may advance any denial of liability in the normal course of such proceedings.”

## **GC 14.1 CONSTRUCTION LIENS**

## **GC 15.1 OWNERSHIP AND CONFIDENTIALITY**

## **GC 16.1 FREEDOM OF INFORMATION**

SC-133 Add the following new GC 14.1 CONSTRUCTION LIENS, GC 15.1 OWNERSHIP AND CONFIDENTIALITY and GC 16.1 FREEDOM OF INFORMATION:

**“GC 14.1 CONSTRUCTION LIENS**

- 14.1.1 In the event that a lien arising from the performance of the *Work* is registered against the *Place of the Work* or *Project* or the *Owner Entities’* interest in the *Place of the Work* or *Project*, the *Contractor* shall, within seven (7) calendar days, at its sole expense, vacate or discharge the lien from title to the *Place of the Work*. If the lien is merely vacated, the *Contractor* shall, if requested, undertake the *Owner Entities’* defence of any subsequent lawsuit commenced in respect of the lien at the *Contractor’s* sole expense. The *Owner Entities* shall have the right to be represented by advisory counsel and other professionals, at its own expense, and shall be kept fully informed by the *Contractor* of the proceeding at all stages thereof whether or not so represented.
- 14.1.2 If the *Contractor* fails or refuses to vacate or discharge a construction lien within the time prescribed above, the *Owner* shall, at its option, be entitled to take all steps necessary to vacate and/or discharge the lien, and all costs incurred by the *Owner Entities* in so doing (including legal fees on a solicitor and client basis and any payment which may ultimately be made out of or pursuant to security posted to vacate the lien) shall be for the account of the *Contractor*, and the *Owner* may deduct such amounts from any amounts otherwise due or owing to the *Contractor*. If the *Owner* vacates the lien, it shall be entitled to retain all amounts it would be required to retain pursuant to the *Payment Legislation* if the lien had not been vacated.
- 14.1.3 Without limiting the generality of the foregoing, the *Contractor* shall indemnify the *Owner Entities* for all costs (including legal fees on a solicitor and client basis) they may occur in connection with the claim of lien or subsequent lawsuit brought in connection with the lien, or in connection with any other claim or lawsuit brought against the *Owner Entities* by any *Contractor Personnel*.
- 14.1.4 This GC 14.1 – CONSTRUCTION LIENS does not apply to liens filed by *Contractor Personnel* that are claimed as a result of any default by the *Owner* to make payments to the *Contractor* in accordance with the terms of the *Contract*.

**GC 15.1 OWNERSHIP AND CONFIDENTIALITY**

- 15.1.1 Subject to and without limiting paragraph 3.7.5, all *Work*, including all *Products* and all portions thereof, shall be the property of the *Owner*.

- 15.1.2 The *Contractor* grants to the *Owner* an irrevocable, perpetual, worldwide, and exclusive royalty-free license to use the *Deliverables*, including all *Contractor IP* therein, for the *Project*, including: (i) for completion of the *Project* and *Work* in the event of early termination of the *Contract*; and (ii) for the future repair, use, occupancy, expansion, operation, maintenance, and/or modification to the *Project* and *Work*. The licence shall be assignable and transferable by the *Owner* to any *Affiliate* and to any purchaser of all or part of the *Place of the Work* or *Project* provided that such *Person* assumes and agrees in writing to all limitations of use set out herein. The *Owner* may use the *Deliverables* for the purposes provided in this paragraph 15.1.2 whether or not this *Contract* is terminated, provided only that the *Owner* pays the compensation due and owing to the *Contractor* pursuant to this *Contract*. The *Deliverables* may not be reproduced for use for other projects by either party without the express written permission of the other party. The *Contractor* shall ensure that all moral rights to the *Deliverables* have been waived, including by all *Contractor Personnel*. Copies of all *Deliverables* shall be handed over by the *Contractor* to the *Owner* upon the earlier of termination of this *Contract* and submission of the *Contractor's Proper Invoice* for final payment. The *Contractor* agrees to obtain such rights from all *Contractor Personnel* as required so that the *Contractor* can grant the above-noted license.
- 15.1.3 The *Contractor* shall not, without the *Owner's* prior written consent, release or disclose any *Confidential Information* to anyone except as necessary to perform the *Work* and its obligations under this *Contract*, and then, only where the *Person* receiving such information is bound by an obligation of confidentiality consistent with this *Contract*. If any *Contractor Personnel* is required to disclose Confidential Information under a valid order of a *Governmental Authority*, the *Contractor* shall: (i) provide the *Owner* with immediate written notice of any request for disclosure; (ii) cooperate with the *Owner* in its efforts to resist or minimize the *Confidential Information* required to be disclosed; and (iii) take such steps as are reasonably necessary and available to maintain the confidentiality of the information by the *Contractor*.
- 15.1.4 The *Contractor* acknowledges that disclosure or use of the *Confidential Information* in violation of this *Contract* could cause irreparable harm to the *Owner* for which monetary damages may be difficult to ascertain or be an inadequate remedy. The *Contractor* therefore agrees that the *Owner* shall have the right, in addition to its other rights and remedies, to seek injunctive relief for any violation of its confidentiality obligations under this GC 15.1 – OWNERSHIP AND CONFIDENTIALITY.
- 15.1.5 This GC 15.1 – OWNERSHIP AND CONFIDENTIALITY shall survive the completion of the *Work* or the termination of the *Contract* for any reason whatsoever.

## **GC 16.1 FREEDOM OF INFORMATION & DISCLOSURE**

16.1.1 Without limiting the foregoing, the *Owner* represents to *Contractor*, and *Contractor* acknowledges, that the *Owner Entities* are bound by *MFIPPA* and that the law might compel the *Owner Entities* to disclose certain *Confidential Information*. The *Owner Entities* are not required to take steps to oppose or prevent, or assist the *Contractor* in opposing or preventing, any disclosure of information, including *Confidential Information*, which, in the opinion of the *Owner Entities*' counsel, is legally required to be disclosed. *Contractor* shall assist and comply with any notice provided under *MFIPPA* respecting an access request that the *Owner* has received, including providing records and information to the *Owner* that the *Owner* deems to be within its control for the purposes of this *Contract*. If *Contractor* is legally compelled to disclose *Confidential Information*, for example through court order, warrant, or under applicable legislation, *Contractor* shall promptly notify the *Owner* prior to disclosure of any such *Confidential Information* so that the *Owner Entities* have an opportunity, in their sole discretion, to oppose disclosure through any available processes.”

***[END OF SUPPLEMENTARY CONDITIONS. APPENDICES FOLLOW.]***

**APPENDIX 1 TO THE SUPPLEMENTARY CONDITIONS  
AGREEMENT TERM SHEET**

<b>Supplementary Condition</b>	<b>Contract Clause</b>	<b>Description</b>	<b>Term</b>
SC-1	Paragraph 1.3 of Article A-1	<i>Ready-for-Takeover Date</i>	
SC-1	Paragraph 1.3 of Article A-1	<i>Completion Date</i>	
SC-3	Paragraph 4.6 of Article A-4	Percentage of the total amount claimed in each <i>Proper Invoice</i> to be retained by <i>Owner</i> as <i>Warranty Security</i>	
SC-3	Paragraph 4.7 of Article A-4	Amount of liquidated damages per day for each day or part day of delay until <i>Ready-for-Takeover</i> is achieved	
SC-13	Definitions	<i>Owner's Agent</i>	
SC-42	Paragraph 5.1.4 of GC 5.1	Email address(es) for submission of all draft applications for payment and <i>Proper Invoices</i> to <i>Owner</i> and <i>Consultant</i>	
SC-53	Paragraph 5.4.6	Owner election to release holdback on an annual basis	
SC-53	Paragraph 5.4.7	Owner election to release holdback on phased basis	
N/A	N/A	Where <i>Contract Price</i> is less than \$250K, does <i>Owner</i> elect not to take the statutory 10% holdback?	

## **APPENDIX 2 TO THE SUPPLEMENTARY CONDITIONS PROPER INVOICE REQUIREMENTS**

Each *Proper Invoice* submitted by the *Contractor* shall be in the form set out in Exhibit A to this Appendix 2 include the following:

- The *Contractor's* name and address;
- The date of the *Proper Invoice*;
- The period during which the services, products or materials were supplied;
- Identification of the *Contract* and any applicable *Change Order* (being the authority under which the subject work, services, products or materials were supplied);
- A description of the subject work, services, products or materials supplied (including quantity where appropriate);
- The amount payable for the subject work, services, products or materials supplied and the payment terms;
- The name, title, telephone number and mailing address of the person to whom payment is to be sent;
- A statement based on the schedule of values submitted pursuant to paragraph 5.2.4;
- A copy of the current *Construction Schedule* and of any look-ahead schedule required by the *Contract Documents*;
- A copy of the *Contractor's* current and up-to-date certificate of insurance evidencing compliance with GC 11.1.
- Where payment is requested for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work*, evidence as reasonably required by the *Consultant* to establish the value and delivery of such *Products*;
- Where payment for *Products* prior to their delivery to the *Place of the Work* is approved by the Owner pursuant to paragraph 3.7.7, evidence as the *Consultant* and *Owner* may reasonably require to establish (i) the value of such *Products*; (ii) compliance with paragraph 3.7.8; and (iii) that such *Products* have been ordered by the *Contractor* for the *Project* and are being manufactured, transported or stored prior to their delivery to the *Place of the Work*;
- All documentation required pursuant to GC 10.4 – WORKERS' COMPENSATION, including a clearance certificate from the *WSIB* stating that all amounts owed to date have been paid in full;



- For each *Proper Invoice* submitted after the first, a statutory declaration using the latest CCDC 9A form of “Statutory Declaration of Progress Payment Distribution by Contractor”;
- For a *Proper Invoice* submitted in respect of final payment:
  - copies of all *Deliverables*, including as-built drawings, and copies of all warranties, guarantees and operation and maintenance manuals related to the *Work*, in hard copy and electronic format as requested by the *Owner*; and
  - an executed final waiver and release in the form attached as Exhibit B to this Appendix 2.
- Any other supporting documents required by the *Contract Documents*.

**[Exhibits A and B to this Appendix 2 follow]**

**EXHIBIT A TO APPENDIX 2 TO THE SUPPLEMENTARY CONDITIONS  
PROPER INVOICE TEMPLATE**

See attached.

### INVOICE TEMPLATE

**Draft Invoice**  **Date:** *Insert date draft invoice sent to owner*  
**Proper Invoice**  **Date:** *Insert date proper invoice sent to owner*  
**Payment due Date** *Insert date payment due to the contractor*

**Owner** *Insert owner's name*  
**Address** *Insert owner's address*  
**Project Manager** *Insert owner's project manager's name*

**Contract Title** *Insert title*  
**Contract Number** *Insert number*  
**Purchase Order Number** *Insert number*  
**Payment Certificate No.** *Insert number*  
**Work Completed From** *Insert period start date*  
**To** *Insert period end date*

**Contractor** *Insert contractor's legal name*  
**Contractor's Address** *Insert contractor's address*  
**Remit Payment To Address** *Insert remittance address if different from contractor's address*  
**Project Manager** *Insert contractor's project manager's name*  
**Contact Info** *Insert phone number and email*  
**HST Registration No.** *Insert number*

**Consultant** *Insert consultant's name*  
**Contract Administrator** *Insert consultant's contract administrator's name*

**Contract Value (excl. HST) (1)** *Insert current contract value including contingency*  
**Contingency Allowance (2)** *Insert current contingency allowance*  
**Approved Change Orders (3)** *Insert value of total approved change orders*  
**Revised Total Contract Value (4)** *(1) - (2) + (3)*  
**Estimated %age of Work Performed** *(Gross payment to date) / (4)*  
**Contingency Unallocated** *(2) - (3)*

	<u>To Date</u>	<u>Previous</u>	<u>Current</u>
Value of Work Performed (excl. Change Orders)	\$ -	\$ -	\$ -
Value of Change Orders Performed	-	-	-
Gross Payment	\$ -	\$ -	\$ -
Less Statutory Holdback (10%)	-	-	-
Release of Statutory Holdback (10%)	-	-	-
Less Finishing Holdback (10%)	-	-	-
Release of Finishing Holdback (10%)	-	-	-
Less Warranty Security	-	-	-
Release of Warranty Security	-	-	-
Less Other Retainers	-	-	-
Release of Other Retainers	-	-	-
Total Net Payment	\$ -	\$ -	\$ -
HST (13%)			-
Less Liquidated Damages	-	-	-
<b>Total Recommended Payment</b>			<b>\$ -</b>

**Attachments submitted with this invoice**  Statutory Declaration  
 Progress and Look Ahead Work Schedules per Contract  
 WSIB  
 Certificate of Insurance  
 Tender Price Breakdown/Schedule of Values  
 Other \_\_\_\_\_

**Approved by Contractor**

**Print Name** \_\_\_\_\_

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**EXHIBIT B TO APPENDIX 2 TO THE SUPPLEMENTARY CONDITIONS  
FORM OF FINAL WAIVER AND RELEASE**

TO: [OWNER NAME AND ADDRESS] (“*Owner*”)  
FROM: [CONTRACTOR NAME AND ADDRESS] (“*Contractor*”)  
DATE OF APPLICATION  
FOR FINAL PAYMENT: [●]  
RE: CCDC 2 – 2020 Stipulated Price Contract dated [●] (the “**Contract**”)

Except for *Claims* for which *Notice in Writing* has been received by the *Owner* from the *Contractor* prior to the date of the *Contractor*'s application for final payment under the *Contract* (including all such *Claims* listed herein) or *Claims* which the *Contractor* could not reasonably have knowledge of on such date (including the *Contractor*'s claim for any amounts expressly held back by the *Owner* under the *Contract*, including in respect of any unpaid *Warranty Security*), the *Contractor* acknowledges and agrees that:

1. the *Contractor* does not have and will not make any *Claim* for additional compensation under the *Contract*, including without limitation for extras, changes or delays, or any other *Claim* whatsoever against the *Owner Entities* in connection with the *Contract*, the *Project*, or the *Work*;
2. the final payment made by the *Owner* shall be received by the *Contractor* in full and final settlement of the balance due to the *Contractor* under the *Contract* and of any and all *Claims* of the *Contractor* in connection with the *Contract* (except only for the *Contractor*'s claim for any amounts expressly held back by the *Owner* under the *Contract*, including in respect of any unpaid *Warranty Security*); and
3. the *Contractor* gives receipt of full discharge and waives its rights to any and all *Claims* not submitted as of the date of its application for final payment under the *Contract*.

As of the date of this Waiver and Release the *Contractor* has given the *Owner Notice in Writing* of the following *Claims*:

1. [LIST TO BE COMPLETED BY CONTRACTOR]

For certainty, all terms not defined herein shall have the meaning given in the *Contract*.

[CONTRACTOR NAME]

\_\_\_\_\_  
*I/we have authority to bind the company*

\_\_\_\_\_  
*I/we have authority to bind the company*

### APPENDIX 3 TO THE SUPPLEMENTARY CONDITIONS INSURANCE

**Where the original *Contract Price* stipulated in the Agreement is equal to or less than \$5,000,000 the following shall apply:**

1. Commercial General liability insurance shall be with limits of not less than \$5,000,000 per occurrence, an aggregate limit of not less than \$5,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than \$5,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the *Contractor*. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
3. Manned Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.
4. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
5. "Broad form Builders Risk" property insurance shall have limits of not less than the sum of 1.1 times *Contract Price* and the full value, as stated in the *Contract*, of *Products* and design services that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
6. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the *Work*. The insurance coverage shall not be less than the insurance

provided by a comprehensive boiler and machinery policy including hot testing and commissioning.

7. Contractors' equipment insurance coverage written on an "all risks" basis covering *Construction* Equipment used by the *Contractor* for the performance of the *Work*, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.
8. Contractors' Pollution liability insurance shall have limits of not less than \$5,000,000 per occurrence for bodily injury, death and damage to property, with a deductible not exceeding \$25,000.

**Where the original *Contract Price* stipulated in the Agreement is greater than \$5,000,000 and equal to or less than \$25,000,000 the following shall apply:**

1. Commercial General liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
2. Wrap-up liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$100,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
3. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the *Contractor*. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
4. Manned Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of

use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.

5. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
6. “Broad form Builders Risk” property insurance shall have limits of not less than the sum of 1.1 times *Contract Price* and the full value, as stated in the *Contract*, of *Products* and design services that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$100,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
7. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the *Work*. The insurance coverage shall not be less than the insurance provided by a comprehensive boiler and machinery policy including hot testing and commissioning.
8. Contractors’ equipment insurance coverage written on an “all risks” basis covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.
9. Project Specific Contractors’ Pollution liability insurance shall have limits of not less than \$10,000,000 per occurrence for bodily injury, death and damage to property, with a deductible not exceeding \$25,000.

[*End of Appendix 3*]



**SPECIFICATIONS**

**DIVISION 1**

**GENERAL REQUIREMENTS**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Documents and terminology.
- .2 Associated requirements.
- .3 Work expectations.
- .4 Work by other parties.
- .5 Premises usage.

**1.2 RELATED SECTIONS**

- .1 Section 01 78 00 - Closeout Submittals.

**1.3 RELATED DOCUMENTS**

- .1 All other Division 01 Specifications sections.

**1.4 WORDS AND TERMS**

- .1 Refer to and acknowledge other words, terms, and definitions in CCDC 2 Definitions.

**1.5 COMPLEMENTARY DOCUMENTS**

- .1 Drawings, Specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leaves doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Consultant.
- .2 Drawings indicate general location and route of conduit and wire/conductors. Install conduit or wiring/conductors and plumbing piping not shown or indicated diagrammatically in schematic or riser diagrams to provide an operational assembly or system.
- .3 Install components to physically conserve headroom, to minimize furring spaces, or obstructions.
- .4 Locate devices with primary regard for convenience of operation and usage.
- .5 Examine all discipline Drawings, Specifications, and schedules and related Work to ensure that Work can be satisfactorily executed. Conflicts or additional Work beyond Work described to be brought to the attention of Consultant.

**1.6 DESCRIPTION OF THE WORK**

- .1 Work of this Contract comprises adding new fire alarm systems in the Storage building and Landfill Gas Collection building at the Halton Waste Management Site located at 5400 Regional Road 25 in Milton, Ontario; The Storage building is a 1-storey structure around 460 sq.m. of Group F2 occupancy.  
The Landfill Gas Collection building a 1-storey structure around 200 sq.m. with a Blower room of Group F1 major occupancy.
- .2 Division of the Work among other Contractors is solely the Contractor's responsibility. Neither the Region nor Consultant assumes any responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of Work.

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**1.7 WORK SEQUENCE**

- .1 Construct Work in stages during the Construction period, coordinate Construction schedule and operations with the Region:
  - .1 Stage 1: Storage Building Fire Alarm
  - .2 Stage 2: Landfill Gas Collection Building Fire Alarm
- .2 Coordinate Progress Schedule and with the Region use during Construction.
- .3 Maintain fire access and control of fire protection equipment.

**1.8 CONTRACTOR USE OF PREMISES**

- .1 Limit use of site and premises to allow:
  - .1 The Region and public occupancy.
  - .2 Work by Others.
  - .3 Use of site and premises by the public.
- .2 Construction Operations: Limited to areas noted on Drawings.

**1.9 THE REGION OCCUPANCY**

- .1 The Region will occupy premises during entire Construction period for execution of normal operations.
- .2 Cooperate with the Region in scheduling operations to minimize conflict and to facilitate the Region usage.
- .3 Maintain fire and life safety systems and public access to exits during all stages of the Work.

**1.10 THE REGION OCCUPANCY & SUBSTANTIAL PERFORMANCE**

- .1 The Region will occupy designated areas for purpose of storage of furnishings and equipment.
- .2 On occupancy, the Region will provide for occupied areas:
  - .1 Operation of access for the Region personnel.
  - .2 Operation of building systems.
  - .3 Maintenance.
  - .4 Security.
- .3 Execute Certificate of Substantial Performance of the Work for each designated portion of Work.
- .4 Maintain fire and life safety systems and public access to exit to be maintained during all stages of the Work.

**END OF SECTION**

**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Connecting to existing Services.
- .2 Special scheduling requirements.

**1.2 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedure.

**1.3 EXISTING SERVICES**

- .1 Where Work involves breaking into or connecting to existing Services, give the Owner 24 hours of notice for necessary interruption of mechanical or electrical Service throughout course of Work.
  - .1 Keep the duration of interruptions minimum.
  - .2 Perform interruptions after normal working hours of occupants, preferably on weekends.
- .2 Provide for personnel and vehicular traffic.

**END OF SECTION**

## **GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Halton Region – CCDC 2 (2020)

### **1.2 ADMINISTRATIVE**

- .1 Schedule and administer meetings throughout the Project as required.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting 7 days in advance of meeting date to Consultant.
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- .7 Reproduce and distribute copies of minutes within 3 days after meetings and transmit to meeting participants and, affected parties not in attendance Consultant.
- .8 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to Act on behalf of party each represents.

### **1.3 PRECONSTRUCTION MEETING**

- .1 Within 15 days after Award of the Contract, request a meeting of parties in Contract to discuss and resolve administrative procedures and responsibilities.
- .2 Consultant, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 This meeting will include the identification of Project personnel, including roles and responsibilities.
- .4 Agenda to include:
  - .1 Appointment of official representative of participants in the Work.
  - .2 Schedule of submission of Shop Drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .3 Health and Safety
- .5 The following items must be conducted in accordance with Halton Region – General Conditions of Contract:
  - .1 Site Security (Halton Region to provide security guards for Fire Watch.) Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
  - .2 Owner provided Products.
  - .3 Record Drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .4 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
  - .5 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
  - .6 Monthly progress claims, administrative procedures, photographs, hold backs.
  - .7 Appointment of inspection and testing agencies or firms.
  - .8 Insurances, transcript of policies.

#### **1.4 PROGRESS MEETINGS**

- .1 During course of Work and 2 weeks prior to Project completion, schedule progress meetings monthly.
- .2 Contractor, major Subcontractors involved in Work and Consultant are to be in attendance.
- .3 Notify parties minimum 7 days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
- .5 Agenda to include the following:
  - .1 Review, approval of minutes of previous meeting.
  - .2 Review of Work progress since previous meeting.
  - .3 Field observations, problems, conflicts.
  - .4 Problems which impede Construction schedule.
  - .5 Review of off-site fabrication delivery schedules.
  - .6 Corrective measures and procedures to regain projected schedule.
  - .7 Revision to Construction schedule.
  - .8 Progress schedule, during succeeding Work period.
  - .9 Review submittal schedules: expedite as required.
  - .10 Maintenance of quality standards.
  - .11 Review proposed changes for affect on Construction schedule and on completion date.
  - .12 Health and Safety
  - .13 Other business.

**END OF SECTION**

**1 GENERAL**

**1.1 ADMINISTRATIVE**

- .1 Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present Shop Drawings, Product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific Project will be returned without being examined and considered rejected.
- .6 Notify the Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
- .10 Keep one reviewed copy of each submission on site.

**1.2 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "Shop Drawings" means Drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit Drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.
- .3 Indicate materials, methods of Construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design Drawings and Specifications.
- .4 Allow 7 days for Consultant's review of each submission.
- .5 Adjustments made on Shop Drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .6 Make changes in Shop Drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each Shop drawing, Product data and sample.
  - .5 Other pertinent data.

- 
- .8 Submissions include:
    - .1 Date and revision dates.
    - .2 Project title and number.
    - .3 Name and address of:
      - .1 Subcontractor.
      - .2 Supplier.
      - .3 Manufacturer.
    - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
    - .5 Details of appropriate portions of Work as applicable:
      - .1 Fabrication.
      - .2 Layout, showing dimensions, including identified field dimensions, and Clearances.
      - .3 Setting or erection details.
      - .4 Capacities.
      - .5 Performance characteristics.
      - .6 Standards.
      - .7 Operating weight.
      - .8 Wiring diagrams.
      - .9 Single line and schematic diagrams.
      - .10 Relationship to adjacent Work.
  - .9 After Consultant's review, distribute copies.
  - .10 Submit electronic copy of Shop Drawings for each requirement requested in Specification Sections and as Consultant may reasonably request.
  - .11 Submit 1 electronic copy of Product data sheets or brochures for requirements requested in Specification Sections and as requested by Consultant where Shop Drawings will not be prepared due to standardized manufacture of Product.
  - .12 Submit 1 electronic copy of test reports for requirements requested in Specification Sections and as requested by Consultant.
    - .1 Report signed by authorized official of testing laboratory that material, Product, or system identical to material, Product or system to be provided has been tested in accord with specified requirements.
    - .2 Testing must have been within 3 years of date of Contract Award for Project.
  - .13 Submit 1 electronic copy of certificates for requirements requested in Specification Sections and as requested by Consultant.
    - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of Product, system or material attesting that Product, system or material meets Specification requirements.
    - .2 Certificates must be dated after Award of Project Contract complete with Project name.
  - .14 Submit 1 electronic copy of manufacturers instructions for requirements requested in Specification Sections and as requested by Consultant.
    - .1 Pre-printed material describing installation of Product, system, or material, including special notices and Safety Data Sheets concerning impedances, hazards, and safety precautions.
  - .15 Submit 1 electronic copy of Manufacturer's Field Reports for requirements requested in Specification Sections and as requested by Consultant.
  - .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
  - .17 Submit 1 electronic copy of Operation and Maintenance Data for requirements requested in Specification Sections and as requested by Consultant.



- .18 Delete information not applicable to Project.
- .19 Supplement standard information to provide details applicable to Project.
- .20 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, transparency copies will be returned, and fabrication and installation of Work may proceed. If Shop Drawings are rejected, noted copy will be returned and resubmission of corrected Shop Drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 Immediately after Award of Contract, submit [Workers' Compensation Board status].
- .22 Submit transcription of insurance immediately after Award of Contract

**END OF SECTION**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Laws, notices, permits and fees.
- .2 Discovery of hazardous materials.

**1.2 LAWS, NOTICES, PERMITS AND FEES**

- .1 The laws of the Place of the Work shall govern the Work.
- .2 The Owner shall obtain and pay for the building permit, permanent easements and rights of servitude. The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were in force at the date of executing the Agreement.
- .3 Give the required notices and comply with the laws, ordinances, rules, regulations or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health and to Construction safety.
- .4 If the Contractor knowingly performs or allows Work to be performed that is contrary to any laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations or codes.
- .5 Determine detailed requirements of authorities having jurisdiction.
- .6 Pay Construction damage deposits levied by the municipality in connection with the issuance of a building permit.

**1.3 HAZARDOUS MATERIAL DISCOVERY**

- .1 Asbestos: If material resembling asbestos is encountered in the course of demolition Work, immediately stop Work and notify the Consultant.

**1.4 PERSONNEL SMOKING**

- .1 Comply with regulatory and Owner imposed smoking restrictions during execution of the Work within or outside the premises.

**END OF SECTION**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mock-ups.
- .4 Mill tests.
- .5 Written and electronic reports.
- .6 Equipment and system adjust and balance.

**1.2 REFERENCES**

- .1 ISO/IEC 17025:2005 - General Requirements for the Competence of Testing and Calibration Laboratories.
- .2 SCC (Standards Council of Canada).

**1.3 INSPECTION BY AUTHORITY**

- .1 Allow Authorities Having Jurisdiction access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection whenever portions of the Work are designated for special tests, inspections or approvals, either when described in the Contract Documents or when required by law in the Place of the Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

**1.4 REVIEW BY CONSULTANT**

- .1 Consultant may order any part of the Work to be reviewed or inspected if Work is suspected to be not in accordance with Contract Documents.
- .2 If, upon review such Work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

**1.5 INDEPENDENT INSPECTION AGENCIES**

- .1 Independent Inspection and Testing Agencies will be engaged by the Contractor for the purpose of inspecting and testing portions of Work.
- .2 Testing Organizations: Listed by SCC within info.palcan@scc.ca listings.
- .3 Provide equipment required for executing inspection and testing by appointed agencies.
- .4 Employment of inspection and testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .5 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and testing to ascertain the full degree of defect. Correct defects and irregularities as advised by Consultant at no cost to Owner. Pay costs for retesting and re-inspection.

**1.6 ACCESS TO WORK**

- .1 Allow inspection and testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Cooperate to provide reasonable access and facilities for such access.

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## **1.7 PROCEDURES**

- .1 Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and materials required for testing, as specifically requested in Specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labor and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

## **1.8 REJECTED WORK**

- .1 Remove defective Work, whether result of poor workmanship, use of defective Products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good Other Contractor's Work damaged by such removals or replacements promptly.
- .3 If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price the difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

## **1.9 REPORTS**

- .1 Submit one (1) electronic copy of signed inspection and test reports to the Consultant.
- .2 Provide signed electronic copies to the Subcontractor of Work being inspected or tested.

## **1.10 TESTS AND MIX DESIGNS**

- .1 Furnish test results and mix designs as may be requested.
- .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by the Consultant and may be authorized as recoverable.

## **1.11 MOCK-UP**

- .1 Prepare mock-up for Work specifically requested in Specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Construct in all locations acceptable to Consultant.
- .3 Prepare mock-ups for Owner's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
- .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .5 If requested, Consultant will assist in preparing a schedule fixing dates for preparation. Remove mock-up at conclusion of Work or when acceptable to Consultant. Repair any damage and clean-up at place of mock-up  
OR
- .6 Approved mock-up may remain as part of Work.  
OR
- .7 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed.

**1.12 MILL TESTS**

- .1 Submit mill test certificates as requested.

**1.13 EQUIPMENT AND SYSTEMS**

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

**END OF SECTION**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Temporary utilities.
- .2 Salvaging Products for reuse.

**1.2 RELATED SECTIONS**

- .1 Section 01 52 00 - Construction Facilities.

**1.3 INSTALLATION AND REMOVAL**

- .1 Provide temporary utilities controls in order to execute Work expeditiously.
- .2 Salvage and assist in recycling Products for potential reuse.
- .3 Remove from site all such Work after use.

**1.4 DEWATERING**

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

**1.5 WATER SUPPLY**

- .1 Owner will provide continuous supply of "non-potable" water for Construction use.
- .2 Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal.
- .3 Owner will pay for utility charges at prevailing rates.

**1.6 TEMPORARY HEATING AND VENTILATION**

- .1 Provide temporary heating required during Construction period, including attendance, maintenance and fuel.
- .2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- .3 Provide temporary heat and ventilation in enclosed areas as required to:
  - .1 Facilitate progress of Work.
  - .2 Protect Work and Products against dampness and cold.
  - .3 Prevent moisture condensation on surfaces.
  - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
  - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 Maintain temperatures of minimum 10 degrees C in areas where Construction is in progress Ventilating:
  - .1 Prevent accumulations of dust, fumes, mist, vapors, or gases in areas occupied during Construction.
  - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
  - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
  - .4 Ventilate storage spaces containing hazardous or volatile materials.
  - .5 Ventilate temporary sanitary facilities.

- .6 Continue operation of ventilation and exhaust system for time after cessation of Work process to assure removal of harmful contaminants.
- .5 A permanent heating system for the building may be used when available. Be responsible for damage to heating system if use is permitted.
- .6 On completion of Work for which permanent heating system is used, replace filters, Ensure date of Substantial Performance of the Work and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Consultant.
- .7 Pay costs for maintaining temporary heat, when using permanent heating system.
- .8 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - .1 Conform with applicable codes and standards.
  - .2 Enforce safe practices.
  - .3 Prevent abuse of Services.
  - .4 Prevent damage to finishes.
  - .5 Vent direct-fired combustion units to outside.
- .9 Be responsible for damage to Work due to failure in providing adequate heat and protection during Construction.

#### **1.7 TEMPORARY POWER AND LIGHT**

- .1 The Owner will provide a source and pay the costs of temporary power during Construction for temporary lighting and operating of power tools, to a maximum supply of 120 volt 30 amps.  
OR
- .2 Owner will provide a source for temporary power during Construction for temporary lighting and operating of power tools, to a maximum supply of 120 volt 30 amp. Provide a temporary meter and reimburse Owner for costs of temporary power used.  
OR
- .3 Provide and pay for temporary power during Construction for temporary lighting and operating of power tools, to a maximum supply of 120 volt 30 amp.
- .4 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.
- .5 Provide and pay for temporary power for electric cranes and other equipment requiring temporary power in excess of the above noted requirements.
- .6 Provide and maintain temporary lighting throughout Project. Ensure the level of illumination is not less than 162 lx.
- .7 Power is available at each building and will be provided for Construction use at no cost. Connect to existing power supply in accordance with Canadian Electrical Code.
- .8 Electrical power and lighting systems installed under this Contract may be used for Construction requirements only with prior approval of Consultant provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than three (3) months.

#### **1.8 TEMPORARY COMMUNICATION FACILITIES**

- .1 Provide and pay for temporary telephone hookup, lines necessary for own use and use of Consultant.

**END OF SECTION**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Construction aids.
- .2 Office and sheds.
- .3 Parking.
- .4 Project identification.

**1.2 RELATED SECTIONS**

- .1 Section 01 51 00 - Temporary Utilities.

**1.3 REFERENCES**

- .1 CAN/CSA-Z321- 96: Signs and Symbols for the Occupational Environment.

**1.4 INSTALLATION AND REMOVAL**

- .1 Provide Construction facilities in order to execute Work expeditiously.
- .2 Remove from site all such Work after use.

**1.5 SCAFFOLDING**

- .1 Provide and maintain scaffolding.

**1.6 HOISTING**

- .1 Provide, operate and maintain hoists cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
- .2 Hoists cranes shall be operated by qualified operator.

**1.7 ELEVATORS/LIFTS**

- .1 Designated existing elevators/lifts may be used by Construction personnel and transporting materials. Co-ordinate use with Consultant.
- .2 Provide protective coverings for finish surfaces of cars and entrances.

**1.8 USE OF THE WORK**

- .1 Confine Work and operations of employees by Contract Documents. Do not unreasonably encumber premises with Products.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

**1.9 CONSTRUCTION PARKING**

- .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to Project site.
- .3 Build and maintain temporary roads where indicated or directed by Consultant and provide snow removal during period of Work.
- .4 If authorized to use existing roads for access to Project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .5 Clean runways and taxi areas where used by Contractor's equipment.



**1.10 SECURITY**

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

**1.11 OFFICES**

- .1 Provide office within Construction trailer heated to 22 degrees C, lighted 500 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing layout table.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors may provide their own offices as necessary. Direct location of these offices.

**1.12 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with Work activities.

**1.13 SANITARY FACILITIES**

- .1 Provide sanitary facilities for Work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities.
- .3 When permanent water and drain connections are completed, provide temporary water closets and urinals complete with temporary enclosures, inside building.

**END OF SECTION**

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**1 GENERAL**

**1.1 RELATED REQUIREMENTS**

- .1 Include in Contract Price for protective measures necessary to ensure that the existing building will remain free from the entry of dust or water at all times.
- .2 Provide temporary dustproofing to underside of concrete slabs, metal deck, including all shoring, where new Construction will take place in the existing building.
- .3 Provide temporary dustproofing for equipment not protected by dustproofing partitions and where new openings are made in existing walls, floors or ceilings.
- .4 Provide temporary dustproofing partitions as indicated on Drawings prior to demolition. Treat openings, joints and cracks in enclosures to prevent any dust and moisture, from entering existing areas.
- .5 Remove existing walls with care, avoid damage to Owner's equipment. Obtain Consultant's approval before commencing with partition or wall removal. Minimize dust.
- .6 Where dustproof partitions are relocated for tying in of materials, install partition from floor to ceiling and from ceiling to underside of slab without damaging finishes.
- .7 Render doors leading into Construction areas dust tight.
- .8 Damp mop all surfaces in Construction areas continually during demolition and daily during normal Construction.

**1.2 DUSTPROOF PARTITIONS**

- .1 Type 'A'
  - .1 Framing minimum 38mm x 38mm wood studs or steel studs at 600mm o.c. with top and bottom runners and intermediate horizontal supports at 1/3 points.
  - .2 Fasten 0.1 mm polyethylene film to studs on side away from the Work. Lap joints minimum 100mm and seal with double sided adhesive tape.
  - .3 Provide felt gaskets and caulk around perimeter of partition.
  - .4 Fasten 12.5 mm square edge gypsum board over polyethylene film on same side. Fasten to vertical framing at a minimum of 10mm from the edges of each sheet and space at 300mm o.c. Seal joints of board with plastic film tape.
- .2 Type 'B'
  - .1 As per Type 'A'.
  - .2 Install sound attenuation batts between studs after erection of polyethylene.
- .3 New Temporary Doors and Frames for Dustproof Partitions
  - .1 New temporary doors and frames in locations shown.
  - .2 Equip doors with lockset, closer, weather stripping and automatic door bottom.

**END OF SECTION**

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**1 GENERAL**

**1.1 REFERENCE STANDARDS**

- .1 Halton Region – CCDC-2 (2020)
- .2 Within text of each Specifications section, reference may be made to reference standards.
- .3 Conform to these reference standards, in whole or in part as specifically requested in Specifications.
- .4 If there is question as to whether Products or systems are in conformance with applicable standards, Consultant reserves right to have such Products or systems tested to prove or disprove conformance.

**1.2 QUALITY**

- .1 Refer to Halton Region – CCDC-2 (2020)
- .2 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .3 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of Work.
- .4 Defective Products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
- .5 Should disputes arise as to quality or fitness of Products, decision rests strictly with Consultant based upon requirements of Contract Documents.
- .6 Should disputes arise as to quality or fitness of Products, decision rests strictly with Consultant based upon requirements of Contract Documents.
- .7 Unless otherwise indicated in Specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .8 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

**1.3 AVAILABILITY**

- .1 Immediately upon Award of the Contract, review Product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of Products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available Products of similar character, at no increase in Contract Price or Contract Time.

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**1.4 STORAGE, HANDLING AND PROTECTION**

- .1 Handle and store Products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store Products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious Products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged Products at own expense and to satisfaction of Consultant.
- .9 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

**1.5 TRANSPORTATION**

- .1 Pay costs of transportation of Products required in performance of Work.

**1.6 MANUFACTURER'S INSTRUCTIONS**

- .1 Unless otherwise indicated in Specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- .2 Notify Consultant in writing, of conflicts between Specifications and manufacturer's instructions, so that Consultant will establish course of action.
- .3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

**1.7 QUALITY OF WORK**

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

**1.8 CO-ORDINATION**

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

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**1.9 CONCEALMENT**

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation inform Consultant if there is interference. Install as directed by Consultant.

**1.10 REMEDIAL WORK**

- .1 Refer to Halton Region – CCDC-2 (2020)
- .2 Perform remedial Work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .3 Perform remedial Work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

**1.11 LOCATION OF FIXTURES**

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Inform Consultant of conflicting installation. Install as directed.

**1.12 FASTENINGS**

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior Work, unless stainless steel or other material is specifically requested in affected Specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

**1.13 FASTENINGS - EQUIPMENT**

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for Service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

**1.14 PROTECTION OF WORK IN PROGRESS**

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Consultant.

**1.15            EXISTING UTILITIES**

- .1            When breaking into or connecting to existing Services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.
- .2            Protect, relocate or maintain existing active Services. When Services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped Service.

**END OF SECTION**

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**1 GENERAL**

**1.1 SECTION INCLUDES**

- .1 Field engineering survey Services are used to measure and stake the site.
- .2 Recording of subsurface conditions found.
- .3 Survey Services to determine measurement inverts for the Work.
- .4 Requirements and limitations for cutting and patching the Work.

**1.2 REFERENCES**

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

**1.3 SUBMITTALS**

- .1 Submit name and address of surveyor to Consultant.
- .2 On request of Consultant, submit documentation to verify accuracy of field engineering Work.
- .3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.

**1.4 QUALIFICATIONS OF SURVEYOR**

- .1 Qualified registered land surveyor, licensed to practice in the Place of the Work, acceptable to Consultant.

**1.5 SURVEY REFERENCE POINTS**

- .1 Existing base horizontal and vertical control points are designated on Drawings.
- .2 Locate, confirm and protect control points prior to starting site Work. Preserve permanent reference points during Construction.
- .3 Make no changes or relocations without prior written notice to Consultant.
- .4 Report to Consultant when reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.
- .5 Require surveyor to replace control points in accordance with original survey control.

**1.6 SURVEY REQUIREMENTS**

- .1 Establish two (2) permanent benchmarks on site, referenced to established bench marks by survey control points.
- .2 Record locations, with horizontal and vertical data in Project Record Documents.
- .3 Establish lines and levels, locate and lay out, by instrumentation.
- .4 Stake for grading, fill and topsoil placement and landscaping features.
- .5 Stake slopes and berms.
- .6 Establish pipe invert elevations.
- .7 Stake batter boards for foundations.
- .8 Establish foundation column locations and floor elevations.
- .9 Establish lines and levels for mechanical and electrical Work.

**1.7 SUBSURFACE CONDITIONS**

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

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

### **1.8 EXAMINATION**

- .1 Inspect existing conditions, including elements or adjacent Work subject to irregularities, damage, movement, including Work during cutting and patching.
- .2 After uncovering, inspect conditions affecting performance of the Work.
- .3 Beginning of cutting or patching means acceptance of existing conditions.

### **1.9 PREPARATION**

- .1 Provide support to assure structural integrity of surroundings; provide devices and methods to protect other portions of Project from damage.
- .2 Provide protection from elements for areas which may be exposed by uncovering Work; maintain excavations free of water.

### **1.10 EXISTING SERVICES**

- .1 Before commencing Work, establish location and extent of service lines in area of Work and notify Consultant of findings.
- .2 Remove abandoned service lines within 2 meters of structures. Cap or seal lines at cut-off points as directed by Consultant.

### **1.11 LOCATION OF EQUIPMENT AND FIXTURES**

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Consultant of impending installation and obtain approval for actual location.
- .4 Submit Field Drawings to indicate relative position of various Services and equipment when required by Consultant.

### **1.12 SURVEY RECORD**

- .1 Maintain a complete, accurate log of control and survey Work as it progresses.
- .2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.
- .3 Record locations of maintained, re-routed and abandoned service lines.

**END OF SECTION**



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**1 GENERAL**

**1.1 REFERENCE STANDARDS**

- .1 Halton Region – CCDC 2 (2020)

**1.2 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste Products and debris, other than that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Clean interior areas prior to start of finishing Work and maintain areas free of dust and other contaminants during finishing operations.
- .6 Store volatile waste in covered metal containers and remove from premises at end of each Working Day.
- .7 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .8 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .9 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

**1.3 FINAL CLEANING**

- .1 Refer to GC 3.12 from General Conditions of Contract.
- .2 When Work is Substantially Performed remove surplus Products, tools, Construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste Products and debris other than that caused by others and leave Work clean and suitable for occupancy.
- .4 Prior to final review remove surplus Products, tools, Construction machinery and equipment.
- .5 Remove waste Products and debris other than that caused by Owner or other Contractors.
- .6 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 The Contractor is liable for all damages to the building in which he/she may cause during Construction. It is the Contractor's responsibility to report the incident and repair the damage in a timely manner.

**END OF SECTION**

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**1 GENERAL**

**1.1 REQUIREMENTS INCLUDED**

- .1 Systems Demonstration.
- .2 Documents.
- .3 Project Commission.
- .4 Inspection and Takeover Procedures.

**1.2 RELATED REQUIREMENTS**

- .1 Section 01 33 00: Submittals Procedure.

**1.3 SYSTEMS DEMONSTRATION**

- .1 Prior to final inspection, demonstrate operation of each system to Owner and Consultant.

**1.4 DOCUMENTS**

- .1 Collect reviewed submittals, as per (Section 01 33 00) submittals, and assemble documents executed by Subcontractors, suppliers and manufacturers.
- .2 Submit material prior to Final Application for Payment. For equipment put into use with Owner's permission during Construction, submit within ten days after start-up. For items of Work delayed materially beyond date of Substantial Performance, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.
- .3 Provide warranties fully executed.
- .4 Submit a final statement of accounting giving total adjusted Contract Sum, previous payments and monies remaining due.
- .5 Consultant will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made.

**1.5 PROJECT COMMISSIONING**

- .1 Expedite and complete deficiencies and defects identified by the Consultant.
- .2 Review maintenance manual contents (operating, maintenance instructions, record 'as-built' Drawings, spare parts, materials) for completeness.
- .3 Review cash allowances in relation to Contract Price, change orders, holdbacks and other Contract price adjustments.
- .4 Submit required documentation such as statutory declarations, Indemnification Form, Workplace Safety & Insurance Board Clearance Certificates, warranties, certificates of approval or acceptance from regulating authorities.
- .5 Attend 'end-of-Work' testing and break-in or start-up demonstrations.
- .6 Review inspection and testing reports to verify conformance to the intent of the documents and that changes, repairs or replacements have been completed.
- .7 Review condition of equipment which have been used in the course of the Work to ensure turning over at completion in 'as new' condition with warranties, dated and certified from time of Substantial Performance of the Work.
- .8 Arrange and co-ordinate instruction of Owner's staff in care, maintenance and operation of building systems and finishes by suppliers or Subcontractors.
- .9 When partial occupancy of uncompleted Project is required by the Owner, co-ordinate Owner's uses, requirements, access with Contractor's requirements to complete Project.
- .10 Co-ordinate building accessibility, traffic, and Contractor's and Subcontractor's cleaning-up and completion activities with the Owner's moving-in of staff, furnishings, and

- equipment, all to suit Owner's Work schedule and not disrupt Owner's productivity.
- .11 Provide on-going review, inspection, and attendance to building call back, maintenance and repair problems during the Warranty periods.

#### **1.6 INSPECTION/TAKEOVER PROCEDURES**

- .1 Prior to application for certificate of Substantial Performance, carefully inspect the Work and ensure it is complete, that major and minor Construction deficiencies are complete and/or corrected and the building is clean and in condition for occupancy. Notify the Consultant in writing of satisfactory completion of the Work and request an inspection.
- .2 During inspection, a list of deficiencies and defects will be tabulated by the Consultant. Correct same.
- .3 When the Consultant considers deficiencies and defects have been corrected and it appears requirements of the Contract have been performed, make application for certificate of Substantial Performance. Refer to General Conditions, Article GC 5 for specifics to application.
- .4 At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all surfaces exposed to view; leave Project clean and ready for occupancy.

#### **1.7 FINAL CLEANING**

- .1 Be responsible for final cleaning of both new Work areas and existing areas affected by new Work; including but not limited to the following:
- .2 Employ experienced workers, or professional cleaners, for final cleaning.
- .3 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from all sight-exposed interior and exterior finished surfaces; polish resilient and ceramic surfaces so designated to shine finish. Vacuum carpet.
- .4 Clean and polish new and existing glass and mirrors.
- .5 Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- .6 Broom-clean paved surfaces; rake clean other surfaces of grounds.
- .7 Clean filters, exposed ductwork and structure.
- .8 Clean bulbs, lamps and lenses and replace those burned out or damaged.
- .9 Clean new doors and existing doors to remain. Refinish existing wood doors with an oil stain to match existing.
- .10 Clean inside and out of new and existing millwork.
- .11 Cleaning, Sealing and Waxing of Floors
- .1 .1 Clean, scrub and rinse thoroughly.
- .2 Apply total of 5 coats of the specified water based wax.
- .3 Allow each coat to dry prior to next.
- .4 Apply evenly to all areas.
- .1 .1 Use flat brush applicator in small spaces.
- .2 Use new-clean mop for large areas (no paint rollers).
- .12 Cleaning of Vinyl Base
- .1 Scrub and wash streak free.
- .13 Final cleaning will be done to the Owner's satisfaction before substantial performance can be claimed.

**END OF SECTION**

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## **1 GENERAL**

### **1.1 ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-warranty Meeting:
  - .1 Convene meeting one week prior to Contract completion with Contractor's representative in accordance with Section 01 31 19 - Project Meetings to:
    - .1 Verify Project requirements.
    - .2 Review manufacturer's installation instructions and warranty requirements.
  - .2 Consultant to establish communication procedures for:
    - .1 Notifying Construction warranty defects.
    - .2 Determine priorities for type of defects.
    - .3 Determine reasonable response time.
  - .3 Contact information for bonded and licensed company for warranty Work action: provide name, telephone number and address of company authorized for Construction warranty Work action.
  - .4 Ensure contact is located within local service area of warranted Construction, is continuously available, and is responsive to inquiries for warranty Work action.

### **1.2 FORMAT**

- .1 Organize data as instructional manual.
- .2 Provide a minimum of one copy of the information manual in electronic format on a USB flash drive.
- .3 Each manual shall include individual electronic copies of each section of the manual in Adobe Portable Document Format (.pdf) stored and individually indexed to match the specified manual format on a labelled USB flash drive.
- .4 Cover: identify with type or printed title 'Project Record Documents'; list title of Project and identify subject matter of contents.
- .5 Arrange content by systems, under Section numbers and sequence of Table of Contents.
- .6 Provide tabbed fly leaf for each separate Product and system, with typed description of Product and major component parts of equipment.
- .7 Text: manufacturer's printed data, or typewritten data.
- .8 Provide scaled CAD files in dwg format on USB drive.

### **1.3 CONTENTS – PROJECT RECORD DOCUMENTS**

- .1 Table of Contents for Each Volume: provide title of Project;
  - .1 Date of submission; names.
  - .2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
  - .3 Schedule of Products and systems, indexed to content of volume.
- .2 For each Product or system:
  - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to identify specific Products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement Product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

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#### **1.4 CONTENTS – PROJECT RECORD DOCUMENTS**

- .1 Maintain, in addition to requirements in General Conditions, at site for the Owner one record copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to Contract.
  - .5 Reviewed Shop Drawings, Product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for Construction.
  - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
  - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
  - .1 Do not use record documents for Construction purposes.

#### **1.5 CONTENTS – PROJECT RECORD DOCUMENTS**

- .1 Record information on set of blue line opaque Drawings, and in copy of Project Manual, provided by Consultant.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with Construction progress.
  - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and Shop Drawings: mark each item to record actual Construction, including:
  - .1 Measured depths of elements of foundation in relation to finish first floor datum.
  - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of Construction.
  - .4 Field changes of dimension and detail.
  - .5 Changes made by change orders.
  - .6 Details not on original Contract Drawings.
  - .7 Referenced Standards to related Shop Drawings and modifications.
- .5 Specifications: mark each item to record actual Construction, including:
  - .1 Manufacturer, trade name, and catalogue number of each Product actually installed, particularly optional items and substitute items.
  - .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual Specifications sections.
- .7 Provide digital photos, if requested, for site records.

#### **1.6 EQUIPMENT AND SYSTEMS**

- .1 For each item of equipment and each system include description of unit or system, and component parts.
  - .1 Give function, normal operation characteristics and limiting conditions.
  - .2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
  - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
  - .2 Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly Drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- .12 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .13 Additional requirements: as specified in individual specification sections.

#### **1.7 MATERIAL AND FINISHES**

- .1 Building Products, applied materials, and finishes: include Product data, with catalogue number, size, composition, and colour and texture designations.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirements: as specified in individual Specifications sections.

#### **1.8 WARRANTIES AND BONDS**

- .1 Assemble approved information in binder, submit upon acceptance of Work and organize binder as follows:
  - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
  - .2 List Subcontractor, Supplier, and manufacturer, with name, address, and telephone number of responsible principal.
  - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within [ten] days after completion of applicable item of Work.
  - .4 Verify that documents are in proper form, contain full information, and are notarized.
  - .5 Co-execute submittals when required.
  - .6 Retain warranties and bonds until time specified for submittal.
- .2 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .3 Conduct joint 4 month and 9 month warranty inspection, measured from time of acceptance, by Consultant.
- .4 Include information contained in warranty management plan as follows:
  - .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of

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- Contractors, subcontractors, manufacturers or suppliers involved.
- .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include commissioned systems such as alarm systems.
  - .3 Provide list for each warranted equipment, item, feature of Construction or system indicating:
    - .1 Name of item.
    - .2 Model and serial numbers.
    - .3 Location where installed.
    - .4 Name and phone numbers of manufacturers or suppliers.
    - .5 Names, addresses and telephone numbers of sources of spare parts.
    - .6 Warranties and terms of warranty: include one-year overall warranty of Construction.
    - .7 Indicate items that have extended warranties and show separate warranty expiration dates.
    - .8 Cross-reference to warranty certificates as applicable.
    - .9 Starting point and duration of warranty period.
    - .10 Summary of maintenance procedures required to continue warranty in force.
    - .11 Cross-Reference to specific pertinent Operation and Maintenance manuals.
    - .12 Organization, names and phone numbers of persons to call for warranty service.
    - .13 Typical response time and repair time expected for various warranted equipment.
  - .4 Contractor's plans for attendance at 4 and 9 month post-Construction warranty inspections.
  - .5 Procedure and status of tagging of equipment covered by extended warranties.
  - .6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
  - .5 Respond in timely manner to oral or written notification of required Construction warranty repair Work.
  - .6 Written verification to follow oral instructions.
    - .1 Failure to respond will be cause for the Consultant to proceed with action against Contractor.

### **1.9 WARRANTY TAGS**

- .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Consultant.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until Project is accepted for occupancy.
- .4 Indicate following information on tag:
  - .1 Type of Product/material.
  - .2 Model number.
  - .3 Serial number.
  - .4 Contract number.
  - .5 Warranty period.
  - .6 Inspector's signature.
  - .7 Construction Contractor.

**END OF SECTION**

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**1 GENERAL**

**1.1 REFERENCES**

- .1 The General Conditions of the Contract, the Supplementary Conditions, and all Sections of Division 01 apply to and are a part of this Section of the Specification.

**1.2 APPLICATION**

- .1 This Section specifies requirements that are common to electrical Work Sections of the Specification, and it is a supplement to each Section and is to be read accordingly.

**1.3 DEFINITIONS**

- .1 The following are definitions of words found in electrical Work Sections of the Specification and on associated Drawings:
  - .1 "concealed" – means Work hidden from normal sight in furred spaces, shafts, tunnels, ceiling spaces, underground, walls and partitions
  - .2 "exposed" – means Work normally visible, including Work in equipment rooms and similar spaces
  - .3 "provide" (and tenses of provide) – means supply and install complete
  - .4 "install" (and tenses of install) – means install and connect complete
  - .5 "supply" – means supply only
  - .6 "finished area" - means any area or part of an area which receives a finish such as paint, or is factory finished
  - .7 "governing authority" and/or "regulatory authority" and/or "Municipal authority" – means all government departments, agencies, standards, rules and regulations that apply to and govern the electrical Work and to which the Work must adhere
  - .8 "Consultant" – means the Architect or Consulting Engineer who has prepared the Contract Documents on behalf of the Owner
  - .9 "O&M" – means Operating and Maintenance
- .2 Wherever the words "indicated", "shown", "noted", "listed", or similar words or phrases are used in the Specification they are understood, unless otherwise defined, to mean that the Product referred to is "indicated", "shown", "listed", or "noted" on the Drawings.
- .3 Wherever the words "approved", "satisfactory", "as directed", "submit", "permitted", "inspected" or similar words or phrases are used in the Specification or on the Drawings they are understood, unless otherwise defined, to mean that Work or Product referred to is "approved by", "inspected by", etc., the Consultant.
- .4 In the electrical Specification, singular may be read as plural, and vice-versa.
- .5 "Owner": means Building Owner as defined in the Contract or the Owner's Designated representative.
- .6 "Wet": means wet areas requiring special materials. Where indicated on Drawings and/or specified herein. Includes but not limited to pools, whirlpools, showers, etc.

**1.4 METRIC AND IMPERIAL MEASUREMENTS**

- .1 Both Metric and Imperial units of measurement are indicated in the electrical Specification.



**1.5 EXAMINATION OF SITE AND DOCUMENTS**

- .1 When estimating the cost of the Work and prior to submitting a Bid for the Work, carefully examine all of the Bid Documents and visit the site to determine and review all existing site conditions that will or may affect the Work, and include for all such conditions in the Bid Price.
- .2 Report to the Consultant, prior to Bid submittal, any existing site condition that will or may affect performance of the Work as per the Drawings and Specifications. Failure to do so will not be grounds for additional costs.

**1.6 DRAWINGS AND SPECIFICATION**

- .1 Read the electrical Work Drawings in conjunction with all other structural, architectural, sprinkler, mechanical, etc., Drawings and, where applicable, the Code Consultant's report.
- .2 The electrical Drawings are performance Drawings, diagrammatic, and show approximate locations of equipment and connecting Service. Any information regarding accurate measurement of the building are to be taken at the site. Do not scale the Drawings, and do not use the Drawings for prefabrication Work.
- .3 The Drawings are intended to convey the scope of Work and do not show architectural and structural details. Provide, at no extra cost to this Contract, all offsets, fittings, transformations, and similar Products required as a result of obstructions and other architectural and structural details but not shown on the Drawings.
- .4 Adjust the location of materials and/or equipment as directed without adjustment to Contract Price, provided that the changes are requested before installation and do not affect material quantity. Note that outlets and/or equipment may be relocated up to 3 meters (10 feet) in any direction without a change to the Contract.
- .5 Sections of the electrical Specification are not intended to delegate functions nor to delegate Work and supply of materials to any specific trade, but rather to generally designate a basic unit of Work, and the Sections are to be read as a whole.
- .6 The electrical Specification does not generally indicate the specific number of items or extent of material required. The Specification is intended to provide Product data and installation requirements. It is necessary to refer to drawing schedules, layouts, schematic diagrams, riser diagrams, and details to determine correct quantities.
- .7 The electrical Drawings and Specification are intended to be cooperative. Perform all Work that is shown, specified, or reasonably implied on the Drawings but not mentioned in the Specification, or vice-versa, as though fully covered by both.
- .8 In the case of discrepancies or conflicts between the Drawings and Specification, the documents will govern in the following order:
  - .1 The Specification
  - .2 Drawings of larger scale
  - .3 Drawings of smaller scale
  - .4 Drawings of later date when the scale of the Drawings is the same
- .9 When the scale and date of the Drawings are the same, or when the discrepancy exists within the Specification, the most costly arrangement will take precedence.
- .10 In the case of discrepancies between the Drawings and Specifications, the documents will govern in the order specified in the General Conditions, however, when the scale and date of the Drawings are the same, or where the discrepancy exists within the Specification, the most costly arrangement will take precedence.
- .11 Provide all Products and methods mentioned or shown in the Contract documents complete with incidentals necessary for a complete operating installation. Provide all tools, equipment and Service required to do the Work.

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## **1.7 PLANNING AND LAYOUT OF THE WORK, AND ASSOCIATED DRAWINGS**

- .1 Properly plan, coordinate, and establish the locations and routing of Service with all Subcontractors affected prior to installation such that the Service will clear each other as well as any obstructions. Unless otherwise specified, the order of right-of-way for Service is to be as follows:
  - .1 Piping requiring uniform pitch
  - .2 Piping 100 mm (4") dia. and larger
  - .3 Large air ducts (main runs)
  - .4 Electrical cable tray and bus duct
  - .5 Conduit 100 mm (4") dia. and larger
  - .6 Piping less than 100 mm (4") dia.
  - .7 Smaller branch ductwork
  - .8 Conduit less than 100 mm (4") dia.
- .2 Unless otherwise shown or specified, conceal all Work in finished areas, and conceal Work in partially finished or unfinished areas to the extent made possible by the area Construction. Install conduit, cable tray, and similar Service as high as possible to conserve headroom and/or ceiling space. Notify the Consultant where headroom or ceiling space appears to be inadequate prior to installation of the Work.
- .3 Revise or alter the arrangement of Work that has been installed without proper coordination, study and review, even if it was completed in accordance with the Contract Documents, in order to conceal the Work behind finishes, or to allow the installation of other Work, at no additional cost. In addition, pay for the cost of alterations in other Work required by the alterations to the electrical Work.
- .4 All outlet boxes, junction boxes, pullboxes, equipment and similar Products, particularly such Products located above suspended ceilings, must be located for easy access for servicing and/or removal. Products which do not meet this location requirement are to be relocated to an accessible location at no additional cost.
- .5 Layout Drawings: Do not use the Contract Drawing measurements for prefabrication and layout of Work. Locations and routing are to generally be in accordance with the Contract Drawings, however, layout Drawings are to be prepared for all such Work. Use established bench marks for both horizontal and vertical measurements. Coordinate with and make allowances for the Work of other trades, accurately layout the Work, and be entirely responsible for all Work installed in accordance with layout Drawings.
- .6 Interference Drawings: Prepare dimensioned Working interference Drawings, supplementary to the Contract Drawings for all areas where multiple Service and/or equipment occur, or where the Work due to architectural and structural considerations requires special study and treatment. Review interference Drawings with the Consultant before the Work is installed. Where this Contractor's Work has been installed in such areas without preparation of interference Drawings and conflicts occur, revise this Work to suit at no additional cost.

## **1.8 COORDINATION OF THE WORK**

- .1 Review all the Contract Documents and coordinate the Work with the Work of all Subcontractors. Coordination requirements are to include, but not be limited to, the following:
  - .1 Written notification of all concrete Work such as housekeeping pads, bases, etc., required for electrical Work, and including required dimensions, operating weight of equipment, location, etc.
  - .2 Depth and routing of excavation required for electrical Work, and requirements for bedding and backfill

**1.9 PHASING OF THE WORK**

- .1 Phasing of the Work is required to maintain the existing building in operation, all as specified in Division 01. Include all costs for phasing the Work including all required “off hours” premium time labour costs.

**1.10 QUALITY ASSURANCE**

- .1 All electrical Work is to be done by journeyman tradesmen who perform only the Work that their certificates permit, or by apprentice tradesmen under direct on site supervision of an experienced journeyman tradesman. The use of apprentice tradesmen is to be limited and the journeyman/apprentice ratio is subject to the Consultant’s approval.
- .2 All journeyman tradesmen are to have valid trade certificates available at the site for review by the Consultant at any time.
- .3 An experienced and qualified superintendent is to be on-site at all times when electrical Work is being performed.

**1.11 EQUIPMENT AND MATERIALS**

- .1 Unless otherwise specified, all equipment and materials are to be new.
- .2 All equipment is to be installed in accordance with the manufacturer’s published instructions, unless specified otherwise in the Specification or on the Drawings.
- .3 Where price, quality, and local service facilities are equivalent, preference will be given to Products produced in the locality of the Work or by producers located in the locality of the Work. The decision as to the equality of Products rests solely with the Owner.

**1.12 EQUIPMENT AND MATERIAL MANUFACTURERS**

- .1 Equipment and materials selected, scheduled or specified on the Drawings or in the Specification have been selected to establish a performance and quality standard, and, in some cases, a dimensional standard for the Project. In most cases acceptable manufacturers are listed for any Product specified by manufacturer’s name and model number. Bid Prices shall include only Products specified or approved equivalents. Contractors may propose unsolicited alternatives to the Products specified. Alternative proposals shall be submitted in sealed envelope at time of General Contract Bid submission and shall include full description and technical data, and a statement of the related increase or decrease in Bid Price should alternatives be accepted. All additional costs associated with unsolicited alternative proposals such as larger motor starters, larger power feeders, space revisions to associated equipment, controls, etc. shall be included in the alternative proposals. Prior approval by consultant is not required for unsolicited alternative proposals.
- .2 Where Contractor uses equipment other than that first named, on which the design is based, he shall be responsible for all details of installation including equipment size, arrangement, fit, and maintenance of all required clearances. Contractor shall prepare and submit revised layouts to indicate arrangement of all affected piping, ductwork, conduit, lighting, equipment, etc. Failure by Contractor to provide such Drawings will be considered indication that original arrangements and space allocations are adequate. All additional costs associated with equivalent equipment such as larger motor starters, larger power feeders, space revisions to associated equipment, controls, etc. shall be included in Bid Price.
- .3 If Products supplied by a manufacturer named as acceptable are used in lieu of the Products specified by first named manufacturer’s name and model number, ensure that the Product is equivalent in performance and operating characteristics (including energy

efficiency if applicable) to the specified Product. Pay for any additional costs and changes to associated or adjacent Work resulting from the use of Products supplied by a manufacturer other than the first named specified manufacturer. In addition, in equipment spaces where Products named as acceptable are used in lieu of the specified Products and the dimensions of such Products differ from the specified Products, prepare and submit for review, accurately dimensioned layouts of the rooms affected to prove that all the equipment in the room will fit properly.

- .4 Do not supply Products of different types that have been “bulked” by a supplier who has quoted a lump sum price for the “bulked” Products.
- .5 The Consultant will review and evaluate unsolicited alternatives and substitutions proposed by the Contractor. Such review and evaluation Work will be undertaken by the Consultant on an additional fee basis. The Contractor shall reimburse the Owner for all costs associated with such reviews and evaluations. The Contractor shall also reimburse the Owner for any and all costs incurred in updating Contract Documents to reflect such changes.

### **1.13 SUBSTITUTED OR ALTERNATIVE PRODUCTS**

- .1 Products supplied by a manufacturer/supplier other than a manufacturer listed as acceptable may be considered for acceptance by the Consultant if requested in writing a minimum of ten (10) full Working days prior to the Bid Closing Date. Requests may be made by letter, by fax, or by email. Telephone requests will not be considered.
- .2 Each request for acceptance of a proposed substitution or alternative Product must be accompanied by detailed catalogue and engineering data, fabrication information, and performance characteristics to permit the Consultant to make an informed decision.
- .3 Pay for any additional costs and changes to associated or adjacent Work resulting from the use of Products supplied by a substituted or alternative or other than first named manufacturer. In addition, in equipment spaces where substituted or alternative or other than first named Products are used in lieu of the specified first named Products and the dimensions of such Products differ from the specified first named Products, prepare and submit for review, accurately dimensioned layouts of the rooms affected to prove that all the equipment in the room will fit properly.
- .4 The Consultant’s decision regarding any proposed substitution or alternative Product is final.

### **1.14 CODES, REGULATIONS, AND STANDARDS**

- .1 All Codes, Regulations, and Standards referred to in this Section are the latest edition of the Codes, Regulations, and Standards in effect at the time of tendering this Project.
- .2 All Work is to be in accordance with requirements with Codes, Regulations, and Standards applied by governing authorities.
- .3 Where any governing Code, Regulation, or Standard requires preparation and submission of special details or Drawings for review they are to be prepared and submitted. Pay all associated costs associated with these Submittals.
- .4 All electrical items associated with mechanical equipment are to be certified and bear the stamp or seal of a recognized testing agency such as CSA, UL, ULC, ETL, etc., or bear a stamp to indicate special electrical utility approval.
- .5 Requirements of the Contract Documents are to take precedence when they are more stringent than codes, ordinances, standards, and statutes.

### **1.15 PERMITS, FEES, AND CERTIFICATES**

- .1 Apply for, obtain and pay for all permits required to complete the electrical Work.

- .2 Submit to the Consultant, all approval/inspection certificates issued by governing authorities to confirm that the Work as installed is in accordance with the rules and regulations of the governing authorities. Pay any costs associated with issue of the certificates.
- .3 Include a copy of all approval/inspection certificates in each operating and maintenance manual.

#### **1.16 WORKPLACE SAFETY**

- .1 Comply with requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding the use, handling, storage and disposal of hazardous materials. Submit WHMIS SDS (Safety Data Sheets) for all Products where required, and maintain one copy at the site in a visible and accessible location available to all personnel.
- .2 Comply with all requirements of Occupational Health and Safety Regulations and all other regulations pertaining to health and safety, including Worker's compensation/insurance board and fall protection regulations.

#### **1.17 SHOP DRAWINGS AND PRODUCT DATA SHEETS**

- .1 Prior to supplying any Products to the site, submit for review, Shop Drawings and/or Product data sheets indicating in detail the design, Construction, and performance of Products as requested in Sections of this Specification. The number of copies of Shop Drawings and/or Product data sheets will be as later directed.
- .2 Wherever possible, Shop Drawings and/or Product data sheets are to be 216 mm x 280 mm (8½" x 11"), 216 mm x 356 mm (8½" x 14"), or 356 mm x 432 mm (14" x 17") single side white bond paper with sufficient clear space for review stamps and comments.
- .3 Each shop drawing or Product data sheet is to be properly identified with the Project name and the Product drawing or Specification reference, i.e. "Panelboard A", and all shop drawing or Product data sheet dimensions are to be either SI or Imperial to match dimensions on the Drawings.
- .4 Where any item of equipment is required by Code or Standard or By-Law to meet a specific energy efficiency level, or any other specific requirement, ensure that this requirement is clearly indicated on the submission.
- .5 Carefully review each shop drawing and Product data sheet prior to submittal to ensure that the proposed Product is correct, as per the Electrical Supplementary Bid Form as applicable, and meets with all requirements of the Project. Endorse each copy of each shop drawing or Product data sheet "CERTIFIED TO BE IN ACCORDANCE WITH ALL REQUIREMENTS" and include the company name, the submittal date, and the signature of an officer of the company to indicate your review and approval as above.
- .6 The Consultant will review Shop Drawings and Product data sheets and will indicate the review status by stamping the Shop Drawings and Product data sheets as follows:
  - .1 "Reviewed" or "Reviewed As Modified" to indicate that his review is final and no re-submittal is required
  - .2 "Revise and Resubmit" to indicate that the submission is rejected and is to be revised in accordance with comments marked on the Shop Drawings and Product data sheets by the Consultant and re-submitted
- .7 The Consultant will retain one or two copies of each shop drawing or Product data sheet submission.
- .8 The following is to be read in conjunction with the wording on the Consultant's review stamp applied to each and every electrical Work shop drawing or Product data sheet submitted:
  - .1 "This review is for the sole purpose of ascertaining conformance with the general design concept. This review does not approve the detail design inherent in the

Shop Drawings, responsibility for which remains with the Contractor, and such review does not relieve the Contractor of the responsibility for errors or omissions in the Shop Drawings or of his responsibility for meeting all requirements of the Contract Documents. Be responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of Construction and installation, and for coordination of the Work of all sub-trades.”

- .9 Submit preliminary short circuit study with distribution equipment Shop Drawings in sufficient detail to include and provide ratings for all components and wiring and be in conformance with Section 26 05 73.
- .10 Provide final commissioning report with record Drawings.
- .11 Provide draft copy of all manuals 100 days prior to expected date of Completion of Work for review by Owner.
- .12 Prepare copies of all schematics for training purposes and submit to Owner for review 30 days prior to demonstration and training purposes.

**1.18 CHANGES OR REVISIONS TO THE WORK**

- .1 Whenever the Consultant proposes in writing to make a change or revision to the design, arrangement, quantity or type of any Work from that required by the Contract Documents, prepare and submit to the Consultant for approval, a quotation being your proposed cost for executing the change or revision.
- .2 The Contractor’s quotation is to be a detailed and itemized estimate of all Product, labour, and equipment costs associated with the change or revision, plus overhead and profit percentages and all applicable taxes and duties.
- .3 The following requirements apply to all quotations submitted:
  - .1 When the change or revision involves deleted Work as well as additional Work, the cost of the deleted Work (less overhead and profit percentages but including taxes and duties) is to be subtracted from the cost of the additional Work before overhead and profit percentages are applied to the additional Work
  - .2 Material costs are not to exceed those published in local estimating price guides
  - .3 Costs for journeyman and apprentice labour must not exceed prevailing rates at the time of execution of the Contract and listed in the Supplementary Bid Form and must reflect the actual personnel performing the Work
  - .4 The cost for the site superintendent must not exceed 10% of the total hours of labour estimated for the change or revision, and the change or revision must be such that the site superintendent’s involvement is necessary
  - .5 Costs for rental tools and/or equipment are not to exceed local rental costs
  - .6 Refer to the General Conditions of the Contract, the Supplementary Conditions, and all Sections of Division 01 for allowable percentages for overhead and profit.
  - .7 The overhead percentage will be deemed to cover all quotation costs other than actual site labour and materials, and rentals
  - .8 All quotations, including those for deleted Work, must include a figure for any required change to the Contract time
- .4 Quotations submitted that are not in accordance with requirements specified above will be rejected and returned for re-submittal. Failure to submit a proper quotation to enable the Consultant to expeditiously process the quotation and issue a Change Order will not be grounds for any additional change to Contract time.
- .5 If, in the Contractor’s opinion, changes or revisions to the Work should be made, inform the Consultant in writing and, if the Consultant agrees a Notice of Change will be issued.
- .6 Do not execute any change or revision until written authorization for the change or revision has been obtained.

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**1.19 NOTICE FOR REQUIRED FIELD REVIEWS**

- .1 Whenever there is a requirement for the Consultant to perform a field review prior to concealment of any Work, to inspect/re-inspect the Work for deficiencies prior to Substantial Performance, for commissioning demonstrations, and any other such field review, give the Consultant adequate notice in writing.
- .2 If the Consultant is unable to attend a field review when requested, arrange an alternative date and time.
- .3 Do not conceal Work until the Consultant advises that it may be concealed.
- .4 When the Consultant is requested to perform a field review and the Work is not ready to be reviewed, reimburse the Consultant for all time and travel expenses.

**1.20 SCAFFOLDING, RIGGING, AND HOISTING**

- .1 Unless otherwise specified or directed, supply, erect and operate all scaffolding, rigging, hoisting equipment and associated hardware required for the Work of this Division. Immediately remove from the site all scaffolding, rigging, and hoisting equipment when no longer required.
- .2 Do not place major erection loads on any portion of the structure without approval from the Consultant.

**1.21 TRIAL USAGE**

- .1 When directed by the Consultant, promptly arrange, pay for, and perform site tests on any piece of equipment or any system for such reasonable lengths of time and at such times as may be required to prove compliance with the Specification and governing Codes and Regulations, prior to Substantial Performance of the Work.
- .2 When, in the opinion of the Consultant, tests are required to be performed by a certified testing laboratory, arrange and pay for such tests.
- .3 All tests are not to be construed as evidence of acceptance of the Work, and it is agreed and understood that no claim for damage will be made for injury or breakage to any part or parts of the equipment or system due to the test where such injuries or breakage were caused by faulty parts and/or Workmanship of any kind.
- .4 When, in the Consultant's opinion, tests indicate that equipment, Products, etc., are defective or deficient, immediately remove such equipment and/or Products from the site and replace them with acceptable equipment and/or Products, at no additional cost.

**1.22 PROJECT CLOSEOUT SUBMITTALS**

- .1 Prior to application for Substantial Performance of the Project, submit all required documentation specified, including the following:
  - .1 Operating and Maintenance Manuals
  - .2 As-built record Drawings and associated data
  - .3 Extended warranties for equipment as specified
  - .4 Identified keys for mechanical equipment and/or panels for which keys are required
  - .5 Other data or Products specified

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**1.23 OPERATING AND MAINTENANCE MANUALS**

- .1 Submit, prior to application for Substantial Performance, 3 hard copies of operating and maintenance manuals consolidated in black hardcover 3 "D" ring binders, each binder sized to include approximately 25% spare space for future data, and identified permanently on binder spine with the Project name, "ELECTRICAL OPERATING AND MAINTENANCE MANUAL" wording, and the date. Manuals are to include the following:
  - .1 An introduction sheet listing the Consultant's, Contractor's, and Subcontractor names, street addresses, telephone and fax numbers, and e-mail addresses. Include special telephone numbers for service departments on normal and emergency call basis.
  - .2 A Table of Contents sheet, and corresponding index tab sheets. Use plastic tab indices for all sections of the manual with separate sections for each different type of equipment item.
  - .3 A copy of each "Reviewed" or "Reviewed As Modified" shop drawing or Product data sheet, with manufacturer's/supplier's name, telephone and fax numbers, email address, and the email address for local source of parts and service
  - .4 Operating data, which is to include:
    - .1 Description of each system and its controls
    - .2 System schematic wiring diagrams; mark correct operating settings for each device on these diagrams
    - .3 Operation instruction for each system and each component
    - .4 Description of actions to be taken in event of equipment failure; step by step procedure to follow in putting each piece of equipment into service.
    - .5 Drawings of each control panel completely identifying all components on the panels and their functions.
    - .6 Include Owner's equipment numbers on all equipment submitted.
    - .7 Diagram of the electrical system indicating the wiring of all related electrical components such as fuses, interlocks, electrical switches and relays
  - .5 Maintenance data, which is to include:
    - .1 Manufacturer's maintenance instructions, servicing maintenance, operation and trouble-shooting instructions for each item of equipment; list parts numbers and lists, name of supplier and maintenance and lubrication instructions
    - .2 Schedules of tasks, frequency, tools required, and task time
    - .3 Complete parts lists with numbers
    - .4 Balancing and testing reports
    - .5 Where fuses with maximum let-through current are indicated, provide manufacturer's fuse curve data in Operating and Maintenance Manuals showing fuse coordination with system interrupting capacity at that location in the system
  - .6 Performance data, which is to include:
    - .1 Equipment and system start-up data sheets
    - .2 Equipment performance verification test results, and commissioning report
- .2 Submit, prior to application for Substantial Performance, four digital versions of the hard copy manual using the latest version of Adobe Acrobat Portable Document Format and enhanced with bookmarks, internet links, and internal document links. The digital copies are to be copied to CDR with custom labels which indicate the Project name, date, the Consultant's name, and "Operating & Maintenance Manual for Electrical Systems". Provide one additional digital version copy for Consultant's use.



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**1.24 RECORD “AS-BUILT” DRAWINGS**

- .1 Obtain PDF’s from the Consultant for the Production of record “AS-BUILT” Drawings and pay for costs of reproduction and transmission costs. As Work progresses at the site, clearly mark in red in a neat and legible manner on a set of white prints of the Drawings, all significant changes and deviations from the routing of Service and locations of equipment shown on the Contract Drawings and resulting from the issue of Addenda, Site Instructions, Change Orders, and job conditions. Use notes marked in red as required. Maintain the white print red line as-built set at the site for the exclusive use of recording as-built conditions, keep the set up-to-date at all times, and ensure that the set is always available for periodic review. The as-built set is also to include the following:
  - .1 The location of all Work such as junction boxes and pullboxes concealed in inaccessible locations
  - .2 The locations of control devices with identification for each
  - .3 For underground Work, record dimensions, invert elevations, all offsets, fittings, and locate dimensions from benchmarks that will be preserved after Construction is complete
  - .4 The location of all concealed Service terminated for future extension
- .2 When Work on site is complete, transfer all the as-built red line information from the site as-built Drawings to a recordable and identified CAD disc with CAD Work of equal quality to the Contract Drawings. Obtain a CAD disc as described below.
- .3 The electrical Drawings have been prepared on a computer aided drafting system. Obtain and pay for an electronic version of the Drawings from the Consultant for use in producing final as-built Drawings.
- .4 Prior to inspection for Total Performance of the Work, submit for review, the red line site as-built white prints, a CAD disc of the as-built Drawings, and a bound set of white prints (of equal quality to the Contract Drawings) made from the disc. The Consultant will review the Drawings and, if necessary, return the disc and the marked-up white prints for corrections or further revisions, in which case complete the corrective and/or revision Work and resubmit the disc and white prints until they are determined to be acceptable.

**1.25 PROGRESS PAYMENT BREAKDOWN**

- .1 Within 15 Working days of written notification of Award of Contract submit a breakdown of the cost of the electrical Work to assist the Consultant in reviewing and approving monthly progress payment claims.
- .2 The payment breakdown is subject to the Consultant’s approval and progress payments will not be processed until an approved breakdown is in place. The breakdown is to include one time claim items such as mobilization and demobilization, insurance, bonds (if applicable), Shop Drawings and Product data sheets, commissioning including testing, and Project closeout Submittals.

**1.26 REQUIREMENTS FOR CONTRACTOR RETAINED ENGINEERS**

- .1 All professional engineers retained by this Contractor to perform consulting Service with regard to his Work are to be members in good standing with the local Association of Professional Engineers, and are to carry and pay for errors and omissions professional liability insurance in compliance with requirements of the governing authorities in the locale of the Work.
- .2 This Contractor’s retained engineer’s professional liability insurance is to protect his Consultants and Sub-Consultants, and their respective servants, agents, and employees against any loss of damage resulting from the professional Service rendered by his Consultants, Sub-Consultants, and their respective servants, agents, and employees in

regards to the Work of this Contract.

- .3 Liability insurance requirements are as follows:
  - .1 Coverage is to be a minimum of \$1,000,000.00 inclusive of any one occurrence, or as indicated in the Division 0.
  - .2 The insurance policy is not to be cancelled or changed in any way without the insurer giving the Owner a minimum of thirty days written notice
  - .3 Liability insurance is to be obtained from an insurer registered and licensed to underwrite such insurance in the location of the Work
  - .4 Evidence of the required liability insurance in such forms as may be required is to be issued to the Owner, the Owner's Consultant, and Municipal Authorities as required prior to commencement of your Consultant's Service

### **1.27 GENERAL RE: INSTALLATION OF EQUIPMENT**

- .1 Unless otherwise specified all equipment is to be installed in accordance with the equipment manufacturer's recommendations and instructions, and requirements of governing Codes, Standards, and Regulations.
- .2 Ensure that proper access and code required service clearances are maintained around equipment, and, where applicable, access space for future equipment removal or replacement is not impeded.

### **1.28 EXTENDED WARRANTIES**

- .1 All extended warranties specified in electrical Work Sections of the Specification are to be full parts and labour warranties, at the site, and in accordance with requirements of the Contract Warranty, but direct from the equipment manufacturer/supplier to the Owner. Submit signed and dated copies of extended warranties which clearly state requirements specified above.

### **1.29 CONTRACTOR'S MATERIAL AND TEST CERTIFICATES**

- .1 Submit Contractor's Material and Test Certificates for each system installed. Certificates shall include:
  - .1 Description of the system (designation and type),
  - .2 Description of the tests conducted and results observed, including re-testing where necessary,
  - .3 Description of any corrective measures undertaken,
  - .4 Description of materials used,
  - .5 List of witnesses for each test conducted,
  - .6 Date system left ready for service,
  - .7 Signature of installing Contractor.
- .2 Where certificates are prescribed by regulations, codes or standards, they shall conform to the requirements of those documents (eg. NFPA Standards, Electrical Safety Authority (ESA) Standards). A copy of each certificate shall be included in the Operating and Maintenance manuals.

### **1.30 PRODUCT DELIVERY, HANDLING AND STORAGE**

- .1 Immediately after letting of Contract, review material and equipment requirements for this Work, determine supply and delivery dates for all items, and notify Consultant of any potential delays in Completion of this Project in order that remedial action may be taken.
- .2 Store neatly out of the way and protected from damage and theft, materials and equipment supplied under this Division that are received at the site by this Division.

**1.31 WARRANTY**

- .1 Refer to General Conditions. Arrange with each manufacturer/supplier to extend warranties as necessary to coincide with Warranty period or those periods specified.
- .2 Make submissions necessary to register Product warranties to the benefit of the Owner.
- .3 Submit to Consultant, prior to Substantial Performance of the Contract, manufacturer's written warranties covering periods longer than one year or offering greater benefits than required in Specifications and in the Owner's name.

**1.32 PROTECTION**

- .1 Protect finished and unfinished Work by tarpaulins, or other covering, from damage due to execution of Work under this Division.
- .2 Repair to satisfaction of Consultant, damage to building resulting from failure to provide such protection.

**1.33 EQUIPMENT AND SYSTEM MANUFACTURER'S CERTIFICATION**

- .1 When equipment/system installation is complete, but prior to start-up procedures, arrange and pay for the equipment/system manufacturer's authorized representative to visit the site to examine the installation, and when any required corrective measures have been made, to certify in writing to the Consultant that the equipment/system installation is complete in accordance with the equipment/system manufacturer's instructions.

**1.34 EQUIPMENT AND SYSTEM START-UP**

- .1 When installation of equipment/systems is complete but prior to commissioning, perform start-up for equipment/systems as specified in electrical Work Sections in accordance with the following requirements:
- .2 Under direct on-site supervision and involvement of the equipment/system manufacturer's representative, start-up the equipment/systems, make any required adjustments, document the procedures, leave the equipment/systems in proper operating condition, and submit a complete set of start-up documentation sheets signed by the manufacturer/supplier and the Contractor.

**1.35 EQUIPMENT AND SYSTEM COMMISSIONING**

- .1 After successful start-up and prior to Substantial Performance, commission the electrical Work. Commissioning Work is the process of the Contractor demonstrating to the Owner and Consultant, for the purpose of final acceptance by means of successful and documented functional performance testing, that all systems and/or subsystems are capable of being operating and maintained to perform in accordance with requirements of the Contract Document, as further described below.
  - .1 Operational Performance Testing: The Contractor is to test, adjust and operate components, equipment, systems and /or subsystems after start-up but before functional performance testing, to confirm that all components, equipment, systems and/or subsystems operate in accordance with requirements of the Contract Documents, including all modes and sequences of control and monitoring, interlocks ,and responses to emergency conditions. The Contractor is to complete commissioning data sheets to document successful operational performance testing.
  - .2 Functional Performance Testing: The Contractor is to repeat successful operational performance testing with complete commissioning data sheet documentation by the Contractor in the presence of the Consultant and Owner to

validate and verify that the equipment, systems, and subsystems are complete in all respects, function correctly, and are ready for acceptance.

- .3 Submittals: The Contractor is to submit final commissioning data sheets and other required Submittals. NOTE: Ref: paragraph .3. Use only if a Commissioning Agent is required and commissioning is specified in section 16095 – 26 03 20.
- .2 Commissioning and the use of an independent Commissioning Agent is specified in the electrical Work Section entitled Electrical Work Commissioning. Carefully read the Electrical Work Commissioning Section and include for all specified requirements.

### **1.36 EQUIPMENT AND SYSTEM O & M DEMONSTRATION AND TRAINING**

- .1 Refer to equipment and system operational and maintenance training requirements specified in Division 01.
- .2 Train the Owner's designated personnel in all aspects of operation and maintenance of equipment and systems as specified in electrical Work Sections of the Specification. All demonstrations and training is to be performed by qualified technicians employed by the equipment/system manufacturer/supplier.
- .3 For each item of equipment and for each system for which training is specified, prepare training modules as specified below. Operating and Maintenance Manuals are to be used during the training sessions, and training modules are to include:
  - .1 Operational Requirements and Criteria: Requirements and criteria are to include but not be limited to equipment function, stopping and starting, safeties, operating standards, operating characteristics, and limitations.
  - .2 Troubleshooting: Troubleshooting is to include but not be limited to diagnostic instructions, test and inspection procedures.
  - .3 Documentation: Documentation is to include but not be limited to equipment/system warranties, and manufacturer's supplier's parts and service facilities, telephone numbers, email addresses, and the like.
  - .4 Maintenance: Maintenance requirements are to include but not be limited to inspection instructions, types of cleaning agents to be used as well as cleaning methods, preventative maintenance procedures, and use of any special tools.
  - .5 Repairs: Repair requirements are to include but not be limited to diagnostic instructions, disassembly, component removal and repair instructions, instructions for identifying parts and components, and review of any spare parts inventory.

### **1.37 SPECIAL TOOLS AND SPARE PARTS**

- .1 Identify spare parts containers as to contents and replacement parts number.
- .2 Provide one set of special tools required to service equipment as recommended by manufacturers.
- .3 Prepare a complete itemized list of special tools and spare parts and submit to consultant for review. List will be used as a checklist and should include provision for sign off by Owner on receipt.

**END OF SECTION**

## **1 GENERAL**

### **1.1 APPLICATION**

- .1 This Section specifies Products, common criteria and characteristics, and methods and execution that are common to one or more electrical Work Sections of the Specification, and it is intended as a supplement to each Section and is to be read accordingly.

### **1.2 SUBMITTALS**

- .1 Submit the following for review:
  - .1 Product data sheets: submit for:
    - .1 Firestopping and smoke seal Products
    - .2 Waterproofing seal assemblies
    - .3 Electrical Work identification Products
  - .2 Sleeve and formed opening location Drawings: upon notification of Award of Contract begin to prepare accurately dimensioned Drawings to locate all required electrical Work sleeves, formed openings, and recesses in poured concrete Work, and submit the Drawings prior to concrete Work commencing. Provide a copy of approved sleeving Drawings to the reinforcement detailer well in advance of planned pours.
  - .3 Access door locations: submit white prints of architectural reflected ceiling plan Drawings and elevation Drawings to indicate proposed access door locations in walls and ceilings in finished areas.
  - .4 Samples: submit a sample of each proposed type of access door, and samples of materials and any other items as specified in electrical Work Sections of the Specification.
  - .5 List of equipment nameplates: submit a list of equipment identification nameplates indicating proposed wording and sizes.
  - .6 Waste management and reduction plan: submit a waste management and reduction plan prior to commencing Work and as per requirements specified in this Section.
  - .7 Additional Submittals: submit any other Submittals specified in this Section or other electrical Work Sections of the Specification.

## **2 PRODUCTS**

### **2.1 SLEEVES**

- .1 Galvanized Sheet Steel: Minimum #16 Gauge galvanized steel with an integral flange at one end to secure the sleeve to formwork Construction.
- .2 Polyethylene: Factory fabricated, flanged, high density polyethylene sleeves with reinforced nail bosses.
- .3 Galvanized Steel Pipe – Waterproof: Schedule 40 mild galvanized steel pipe with a welded-on square steel anchor and water stop plate at the sleeve midpoint.
- .4 Galvanized Steel or Cast-Iron Pipe: Schedule 40 mild galvanized steel pipe, or Class 4000 cast iron pipe, cut to length.

### **2.2 FIRESTOPPING AND SMOKE SEAL MATERIALS**

- .1 Asbestos-free elastomeric materials tested, listed, and labelled by ULC in accordance with CAN4-S115 and CAN/ULC-S01 for installation in ULC designated firestopping and smoke seal systems to provide a positive fire, water and smoke seal, and a fire-

resistance rating (flame, hose stream and temperature) not less than the fire resistance rating of surrounding Construction.

- .2 Materials are to be compatible with abutting dissimilar materials and finishes and complete with primers, damming and back-up materials, supports and anchoring devices in accordance with the firestopping manufacturer's recommendations and the ULC tested assembly.
- .3 Multi-Cable Transits: UL/ULC listed and labelled multi-cable transits sized to the fire barrier opening and to suit the number of cables/conduits involved, and to provide a minimum two-hour water-tight fire and smoke seal. Each assembly is to be complete with a stainless-steel frame, cadmium plated compression bolts, proper end packing, compression plates, steel stay plates, and fire rated neoprene insert blocks.

### **2.3 WATERPROOFING SEAL MATERIALS**

- .1 Modular, mechanical seal assemblies consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the conduit, duct, etc., and the sleeve or wall opening, assembled with stainless steel bolts and pressure plates, and designed so that when the bolts are tightened the links expand to seal the opening watertight. The seal assemblies are to be selected to suit the conduit, duct, etc., size and the sleeve size or wall opening size. Acceptable Products are:
  - .1 Thunder line Corp. (Power Plant Supply Co.) "LINK SEAL" Model S
  - .2 The Metra flex Co. "Metra Seal" type ES

### **2.4 ESCUTCHEON PLATES**

- .1 One-piece chrome plated brass or #4 finish type 302 stainless steel plates with matching screws for attachment to the building surface, each plate sized to completely cover the sleeve or building surface opening, and to fit tightly around the conduit or cable.

### **2.5 ACCESS DOORS**

- .1 Prime coat painted steel (unless otherwise specified) flush access doors, each complete with a minimum #16-gauge frame, minimum #18-gauge door panel, heavy-duty rust-resistant concealed hinges, a positive locking screwdriver lock, and mounting and finishing features to suit the particular Construction in which it is to be installed.
- .2 Access door sizes are to suit the concealed Work for which they are supplied, and wherever possible they are to be of a standard size for all applications, but in any case, they are to be minimum 300 mm x 300 mm (12" x 12") for hand entry and 600 mm x 600 mm (24" x 24") for body entry.
- .3 Access doors in fire rated Construction are to be ULC listed and labelled and of a rating to maintain the fire separation integrity.
- .4 Where access doors are located in surfaces where special finishes are required, they are to be of a recessed door type capable of accepting the finish in which they are to be installed so as to maintain the final building surface appearance throughout and constructed of stainless steel with a #4 finish.

### **2.6 ELECTRICAL WORK IDENTIFICATION MATERIALS**

- .1 Equipment Nameplates: Minimum 3 mm (1/8") thick 2-ply laminated, engraved, coloured plastic plates, minimum 12 mm x 50 mm (1/2" x 2") for smaller items such as single-phase starters and disconnect switches, minimum 25 mm x 65 mm (1" x 2 1/2") for equipment, and minimum 50 mm x 100 mm (2" x 4") for panelboards and similar items. Additional requirements are as follows:

- .1 Unless otherwise specified or required, nameplates are to be white with black wording, except for emergency power system equipment nameplates which are to be red with white wording.
  - .2 Each nameplate is to be complete with bevelled edges and wording is to be as large as possible and completely identify the equipment and its use with no abbreviations.
  - .3 Wording is generally to be as per the Drawings, i.e. LIGHTING PANEL A, and is to include the building area/zone served but must be reviewed and approved by the Consultant prior to engraving.
  - .4 Supply stainless steel self-tapping screws for securing nameplates in place.
  - .5 Nameplates for equipment suspended above floor level or generally not within easy viewing from floor level are to be increased in size so as to be easily readable from floor level.
- .2 Self-Adhesive Labels: Equal to Brother “P-Touch” or Thomas & Betts Canada Ltd. “EZCODE” Model EZL500 electronic labelling system self-adhesive labels with size and colour as directed, and permanently printed circuit identification nomenclature which is to be approved by the Consultant prior to producing the labels.
  - .3 Warning Signs: Equal to Thomas & Betts Canada Ltd. “BP” Series 250 mm x 355 mm (10” x 14”) semi-rigid vinyl signs with corner screw holes, the required printed wording (generally red on a white background with black trim) and pressure sensitive adhesive pads on the back.
  - .4 Conduit and Armoured Cable Identification: Equal to Brady Canada minimum 50 mm (2”) wide self-adhesive coloured vinyl tape.
  - .5 Conductor Terminations: Equal to Electrovert Ltd. slip-on “Z” type.

## **2.7 WALL MOUNTING EQUIPMENT BACKBOARDS**

- .1 Construction grade fir plywood, G1S, 20 mm (¾”) thick, with width and length as indicated on the Drawings or as required for the equipment to be mounted. Each backboard is to be coated on all surfaces with a white flame-retardant primer for a flame spread rating in accordance with Code requirements.

## **2.8 FASTENING AND SECURING HARDWARE**

- .1 Concrete Inserts: Zinc alloy cast-in-place or “wood-knocker” type formwork anchors for single or double runs of conduit, cable tray, etc, and for equipment, and Unistrut Ltd. or equal multi type inserts for runs of three or more conduits, etc, or where a grid support system is required.
- .2 Concrete Fasteners: Equal to wej-it Fastening Systems anchors or self-drilling anchors, or, for light loads, lead plugs and screws.
- .3 Masonry Fasteners: Equal to wej-it Fastening Systems expansion shields and machine bolts, or, for light loads, lead plugs and screws.
- .4 Gypsum Board Fasteners: Two-wing spring toggles, for light loads only.
- .5 Structural Steel: Equal to Erico International Corp. “CADDY” beam clamps to suit the application.

## **2.9 ELECTRICAL ENCLOSURES**

- .1 Unless otherwise specified herein or on the Drawings, NEMA, EEMAC, and CSA enclosures for transformers, switchgear, switchboards, panelboards, disconnect switches, starters, motor control centres, and similar equipment are to be as follows:
  - .1 Indoor in sprinklered areas – type 2
  - .2 Indoor in high humidity/washdown areas – type 4 water-tight

- .3 Indoor in corrosive environments – type 4X 304 stainless steels
- .4 Indoor explosion-proof (Class 1, Groups C & D) – type 7
- .5 Outdoor – type 3R rain-proof
- .6 Indoor in non-hazardous areas except as noted above – type 1.

### **3 EXECUTION**

#### **3.1 GENERAL**

- .1 **Manufacturer's Instructions:** For all materials and equipment, ensure that the manufacturers' installation instructions are followed unless otherwise specified herein or on the Drawings, and unless such instructions contradict governing codes and regulations.
- .2 **Cleaning:** Clean all conduit and equipment prior to installation. Temporarily cap or plug ends of conduits/ducts which are open and exposed during Construction.
- .3 **Surfaces To Receive Your Work:** Inspect surfaces and structure prepared by other trades before performing your Work. Verify that surfaces or the structure to receive your Work have no defects or discrepancies which could result in poor application or cause latent defects in installation and Workmanship. Report defects in writing. Installation of your Work will constitute acceptance of such surfaces as being satisfactory.
- .4 **Repair of Finished Surfaces:** For factory applied finishes, repaint, or refinish all surfaces damaged during shipment and installation. The quality of the repair Work is to match the original finish. This requirement also applies to galvanized finishes.
- .5 **Work In High Humidity Areas:** Where electrical Work is located in high humidity areas or other "wet" areas where ferrous metal Products will be subject to corrosion and protection for such Products is not specified, provide finishes on the Products to protect against corrosion or provide Products which will not corrode in the environment, i.e. galvanized hanger and support hardware, aluminium cable tray, etc.
- .6 **Accessibility:** Locate all Work to permit easy access for service or maintenance as required and/or applicable. Locate all junction boxes and pull boxes, and any other equipment which will or may need access, maintenance, or repairs and which are installed in accessible Construction so as to be easily accessible from access doors. Where boxes and similar conduit and conductor system accessories occur in vertical Service in shafts, conduit/conductor spaces or partitions, locate the accessories at the floor level.

#### **3.2 GENERAL CONDUIT & CONDUCTOR SYSTEM INSTALLATION REQUIREMENTS**

- .1 Unless otherwise specified, locate, and arrange horizontal conduit and conductors above or at the ceiling on floors on which they are shown, arranged so that under consideration of all other Work in the area, the maximum ceiling height and/or usable space is maintained.
- .2 Unless otherwise specified, install all conduit and conductors concealed in finished spaces, and concealed to the degree possible in partially finished and unfinished spaces. Refer to and examine the Architectural Drawings and room finish schedules to determine finished, partially finished, and unfinished areas. Note that walls which are painted are considered finished.
- .3 Conduit and main distribution conductors may be exposed in electrical and mechanical rooms unless otherwise specified or indicated on the Drawings or specified in the Specification.
- .4 Install all exposed conduit and conductors parallel to building lines and to each other. Neatly group and arrange all exposed Work.
- .5 Do not install conduit and conductors within 150 mm (6") of "hot" piping or equipment



unless the conduit and conductors are associated with the equipment.

- .6 All conduit and conductors must be supported from the structure, not from ceiling hangers, piping, ductwork, cable tray, and similar mechanical or electrical Products.
- .7 All isolated ground circuits must contain separate phase, neutral, and ground conductors (i.e. common neutral configuration is not acceptable). For all non-isolated ground circuits feeding non-linear loads, use of a common neutral configuration is optional but neutral conductors must be oversized to 175% of phase conductor ampacity and circuit breakers in the panelboards are to be located adjacent to each other. All conductors for the common neutral must be in the same conduit.

### **3.3 INSTALLATION OF SLEEVES**

- .1 Where conduits, round ducts, and armoured cables pass through concrete and/or masonry surfaces provide sleeves as follows:
- .2 In poured concrete slabs, unless otherwise specified - minimum 16 gauge flanged galvanized steel or, where permitted by governing authorities, factory fabricated plastic sleeves.
- .3 In concrete or masonry walls - Schedule 40 galvanized steel pipe or Class 4000 cast iron pipe, cut to length.
- .4 Waterproof Sleeves: Sleeves in waterproofed slabs or walls are to be lengths of Schedule 40 mild galvanized steel pipe with a water stop. Provide waterproof sleeves in the following locations:
  - .1 In mechanical room floor slabs, except where on grade
  - .2 In slabs over mechanical, fan, electrical and telephone equipment rooms, or closets
  - .3 In all floors equipped with waterproof membranes
  - .4 In the roof slab
  - .5 In waterproof walls
- .5 Size sleeves, unless otherwise specified, to leave 12 mm ( $\frac{1}{2}$ " ) clearance around the conduit, duct, or cable.
- .6 Pack and seal the void between the sleeves and the conduit, duct, or cable for the length of the sleeves as follows:
  - .1 Fire rated Construction: pack sleeves in fire rated Construction as specified in the article below entitled "INSTALLATION OF FIRESTOPPING AND SMOKE SEAL MATERIALS"
  - .2 Non-fire rated Construction: pack sleeves in non-fire rated interior Construction with mineral wool and seal both ends of the sleeves with non-hardening silicone base caulking compound.
  - .3 Exterior walls above grade: pack sleeves in exterior walls above grade with mineral wool and seal both ends of the sleeve's water-tight with approved non-hardening silicone base caulking compound unless mechanical type seals have been specified.
  - .4 Exterior walls below grade: seal sleeves in exterior walls below grade (and any other wall where water leakage may be a problem) with link type mechanical seals as specified below
- .7 Where sleeves are required in masonry Work, accurately locate, and mark the sleeve location, and hand the sleeves to the mason for installation.
- .8 Terminate piping used for sleeves that will be exposed so that the sleeve is flush at both ends with the building surface concerned so that the sleeve may be completely covered by an escutcheon plate, except for sleeves in waterproof floors which are to terminate 100 mm (4") above the finished floor.
- .9 "Gang" type sleeving will not be permitted.
- .10 Where sleeves are provided for future piping, or where piping has been removed from

existing sleeves, cap, and seal both ends of the sleeved opening. Where the sleeve is located in fire rated Construction, ensure that the sleeve is sealed with firestopping material.

### **3.4 INSTALLATION OF WATERPROOF MECHANICAL SEALS**

- .1 Provide watertight link type mechanical seals for conduit, round ducts, and/or conductors through exterior wall openings were shown and/or specified.
- .2 Assemble and install each mechanical seal in accordance with the manufacturer's instructions.
- .3 After installation, periodically check each mechanical seal installation for leakage and, if necessary, tighten link seal bolts until the seal is completely watertight.

### **3.5 RECTANGULAR OPENINGS**

- .1 Openings for cable tray, multiple conduits and/or cables and similar rectangular openings will be provided in poured concrete Work, masonry, drywall and other building surfaces by the trade responsible for the particular Construction in which the opening is required.

### **3.6 INSTALLATION OF FIRESTOPPING AND SMOKE SEAL MATERIALS**

- .1 Where electrical Work penetrates fire rated Construction, provide ULC listed and labelled firestopping and smoke seal materials installed in accordance with requirements of CAN4-S115 and CAN/ULC-S101-M to seal the penetrations.
- .2 Work is to be performed only by a specialist company using tradesmen experienced in firestopping and smoke seal Work.
- .3 When firestopping and smoke seal Work is complete, obtain from the specialist firm who performed the Work a letter certifying that all required firestopping and smoke seal Work has been completed in strict accordance with requirements of the Building Code, ULC requirements, any other applicable local Municipal Codes or Regulations, and the instructions of the firestopping and smoke seal manufacturer. Submit the letter to the Consultant.

### **3.7 INSTALLATION OF CABLE AND CONDUIT TRANSITS**

- .1 Provide fire rated UL/ULC listed transits in rectangular openings in fire rated slabs and walls where cable tray or multiple conduits, ducts, and/or cables penetrate the fire barrier.

### **3.8 INSTALLATION OF ESCUTCHEON PLATES**

- .1 Provide escutcheon plates suitable secured over all exposed conduit, duct, and armoured cable passing through finished building surfaces. A finished building surface is any surface with a factory finish or that receives a site applied finish.
- .2 Install the plates so that they are tight against the building surface concerned and ensure that the plates completely cover sleeves and/or openings, except where waterproof sleeves extend above floors, in which case the plate is to fit tightly around the sleeve.

### **3.9 INSTALLATION OF FASTENING AND SECURING HARDWARE**

- .1 Provide all fastening and securing hardware required for electrical Work to maintain installations attached to the structure or to finished floors, walls, and ceilings in a secure and rigid manner capable of withstanding the dead loads, live loads, superimposed dead loads, and any vibration of the installed Products.

- .2 Use fasteners compatible with structural requirements, finishes and types of Products to be connected. Do not use materials subject to electrolytic action or corrosion where conditions are liable to cause such action.
- .3 Where the floor, wall or ceiling Construction is not suitable to support the loads, provide additional framing or special fasteners to ensure proper securement to the structure that is to support the Products. Provide reinforcing or connecting supports where required to distribute the loading to the structural components.
- .4 Obtain written consent before using explosive actuated fastening devices. If consent is obtained, comply with requirements of CSA Standards CAN3-Z166.1 and 2.
- .5 Do not attach fasteners to steel deck without written consent from the Consultant.

### **3.10 SUPPLY OF ACCESS DOORS**

- .1 Supply access doors to give access to all electrical Work which may need maintenance or repair, but which is concealed in inaccessible Construction, except as otherwise specified herein or on the Drawings.
- .2 Locate access doors as inconspicuously as possible in walls and partitions and arrange electrical Work such that it is clearly within view and accessible for inspection and servicing, and to suit access door locations shown on the reviewed and approved white prints of reflected ceiling plan and elevation Drawings submitted as per Part 1 of this Section.
- .3 Group Work wherever possible to ensure the minimum number of access doors is required. Access doors will be installed by the trades responsible for the particular type of Construction in which the doors are required.
- .4 Submit a sample of each proposed access door for review prior to ordering.

### **3.11 ELECTRICAL WORK IDENTIFICATION**

- .1 General: The following requirements apply to electrical Work identification:
  - .1 The size and wording of identification nameplates must be approved by the Consultant prior to manufacture. Provide shop Drawings of all nameplates and labels for review and comment.
  - .2 Identification wording for equipment is to follow drawing nomenclature for the equipment, unless otherwise specified.
  - .3 secure nameplate to equipment with stainless steel screws unless such a practice is prohibitive, in which case use epoxy cement applied to cleaned surfaces.
  - .4 locate equipment nameplates in the most conspicuous and readable location.
  - .5 for multi-cell or multiple component equipment, provide a main nameplate and a smaller nameplate for each component to identify its name and service.
  - .6 Colour code: comply with OESC-4-036.
- .2 Distribution Equipment: Provide identification nameplates for new each piece of equipment, including items such as substations, switchgear, switchboards, distribution panels, and similar Products. Identification to include registration plates, ULC and CSA approvals, size, equipment model, manufacturers name, serial number, voltage, phase.
- .3 Terminal Cabinets, Pull Boxes, Junction Boxes, etc. Clearly identify main pull and junction boxes by spray painting the outside surface of the covers. Paint colours are to be as specified below for conduit and conductor identification. For communication systems, i.e. intercom, TV, etc., provide a nameplate on the painted cover to identify the system involved.
- .4 Transformers: Provide a nameplate to identify the transformer, its capacity, and primary and secondary voltages. Include ULC and CSA approvals, equipment model, manufacturers name, serial number.

- .5 Lighting Switches and Receptacles: Unless otherwise specified identify the source panel and circuit number by means of an identification label applied to the wall above the device and inside the outlet box for each device.
- .6 Conduit & Cable: Colour code conduit and armoured cable by means of 25 mm (1") wide primary colour plastic adhesive backed tape or neatly applied suitable paint with, where scheduled, a 20 mm (3/4") wide auxiliary colour at points where the conduit or cable enters a wall, ceiling or floor, at least once in each room or accessible ceiling space, at each access door location, and elsewhere at maximum 15 m (45') intervals. Unless otherwise specified herein or on the Drawings, colours are to be as follows:

SERVICE	PRIMARY COLOUR	SECONDARY COLOUR
Up to 250 volts	Yellow	
Up to 600 volts	Yellow	Green
Up to 5 kV	Yellow	Blue
Up to 15 kV	Yellow	red
Up to 28 kV	Yellow	Black
Telephone	Green	
Other communication systems	Green	Blue
Fire Alarm	Red	
Emergency Voice	Red	Blue
Security Systems	Red	Yellow
Isolated Power	Orange	

- .7 Wire and Cable Terminations: Identify both ends of wire and cable terminations with the same unique number. Where numbers are not indicated or specified, assign a number, and record them.

**3.12 FINISH PAINTING OF ELECTRICAL WORK**

- .1 Finish paint exposed electrical Work as specified and/or scheduled in accordance with requirements of the painting Section in Division 09.

**3.13 GENERAL ELECTRICAL WORK TESTING**

- .1 In addition to tests required by Codes and Regulations, or tests specified in other electrical Work sections of the Specification, perform the following:
  - .1 After all luminaires, switches, receptacles, motors, signals, and similar electrical items are installed, whether as part of the electrical Work or as part of the Work of other sections of the Specification (telephone system excepted), test all Work to ensure that there are no grounds or crosses.
  - .2 Establish proper motor rotation, measure full load running currents, and check overload elements, and report any discrepancies to the Consultant.
  - .3 Demonstrate to the Consultant that branch circuit voltage drop is within specified limits.
  - .4 Ensure that all devices are commissioned and operable.

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### **3.14 BRANCH CIRCUIT BALANCING**

- .1 Connect all branch circuits to panelboards so as to balance the actual loads (wattage) to within 5%. If required, transpose branch circuits to achieve this requirement.
- .2 When requested by the Consultant, and after the building is occupied, perform tests to demonstrate that branch circuit balancing has been achieved.

### **3.15 ELECTRICAL WIRING WORK FOR MECHANICAL WORK**

- .1 Unless otherwise specified or indicated, the following electrical wiring Work for mechanical equipment is to be done as part of the electrical Work:
  - .1 "line" side power wiring to motor starters or disconnects, and "load" side wiring from the starters or disconnects to the equipment.
  - .2 "line" side power wiring to pre-wired power and control panels and variable frequency drives, and "load" side power wiring from the panels and VFDs to the equipment
  - .3 Provision of receptacles for plug-in equipment
  - .4 Provision of disconnect switches for all motors that are in excess of 10 m (30') from the starter location, or that cannot be seen from the combination disconnect/starter location and all associated power wiring.
  - .5 All motor starter interlocking in excess of 24 volts.
  - .6 Wiring from motor winding thermistors in motors 30 HP and larger to motor starter contacts
  - .7 Provision of dedicated 120 volt, 15A-1P circuits terminated in junction boxes in mechanical equipment rooms for automatic control and building automation system wiring connections to be made as part of the automatic controls Work.
  - .8 120-volt power connections to electrical receptacles integral with small ceiling exhaust fans, including wiring through light switches or speed controllers
  - .9 120-volt wiring connections to lighting fixture/switch combinations integral with air handling units
  - .10 120-volt wiring connections to duplex receptacles integral with air handling unit control panels
  - .11 120/208-volt wiring connections to electric heating unit's integral with air handling units.
- .2 Mechanical wiring Work not listed above or specified herein or on the Drawings to be done as part of the electrical Work will be done as part of the mechanical Work.

### **3.16 INTERRUPTION TO AND SHUTDOWN OF ELECTRICAL SERVICE AND SYSTEMS**

- .1 Co-ordinate all shutdown and interruption to existing electrical systems with the Owner. Generally, shutdowns may be performed only between the hours of 12:00 midnight until 6:00 a.m.
- .2 Upon Award of a Contract, submit a list of anticipated shut-down times and their maximum duration.
- .3 Prior to each shut-down or interruption, inform the Owner and Consultant in writing 3 Working days in advance of the proposed shut-down or interruption and obtain written approval to proceed. Do not shutdown or interrupt any system or service without such written approval.
- .4 Perform Work associated with shut-downs and interruptions as continuous operations to minimize the shut-down time and to reinstate the systems as soon as possible, and, prior to any shut-down, ensure that all materials and labour required to complete the Work for which the shut-down is required are available at the site.
- .5 Coordinate with the Owner all start-up of existing electrical systems which have been

shut down.

- .6 Include in Bid Price for all overtime or premium time hours necessary to minimize duration of service interruptions.

### **3.17 EQUIPMENT BASES, SUPPORTS AND CURBS**

- .1 Concrete Housekeeping Pads: Unless otherwise specified or required, set all floor mounted equipment on minimum 100 mm (4") high reinforced concrete housekeeping pads 200 mm (8") clear of the equipment on each side and end, or a minimum of 200 mm (8") from the centreline of equipment anchor bolts to the edge of the base, whichever is larger. Conform to the following requirements:
  - .1 Supply dimensioned Drawings and equipment base templates and provide anchor bolts for proper setting and securing of equipment on pads.
  - .2 Place anchor bolts during the concrete pour and be responsible for all required levelling, alignment, and grouting of the equipment.
  - .3 As a minimum, use wire mesh reinforcement, however, for pads for large heavy equipment, use reinforcement as per structural drawing details.
- .2 Structural Steel Stands/Supports: For equipment not designed for base mounting, where required, provide welded, cleaned, and prime coat painted structural steel stands or supports conforming to the following requirements:
  - .1 All stands and supports, except those for small equipment, are to be designed by a structural engineer registered in the jurisdiction of the Work, and stamped and signed design Drawings with calculations are to be submitted as shop Drawings for review.
  - .2 All steel stands are to be flange bolted to concrete housekeeping pads.
- .3 Equipment Curbs
  - .1 Provide 100 mm (4") high concrete curbs around all openings through floors for electrical and system risers. Ensure joint between curb and floor is watertight and maintains integrity of floor membrane where applicable.

### **3.18 CUTTING, DRILLING, AND PATCHING FOR ELECTRICAL WORK**

- .1 Provide all cutting, drilling, and patching of the building for the installation of the Work. Perform all cutting and drilling with proper tools and equipment. Confirm the exact location of cutting and drilling with the Consultant prior to commencing the cutting and/or drilling Work.
- .2 Patch surfaces, where required, to exactly match existing finishes using tradesmen skilled in the particular trade or application Worked on.
- .3 Where new conduits, conductors, etc., pass through existing Construction, core drill an opening. Size openings to leave 12 mm (1/2") clearance around the conduit conductor, etc.
- .4 Prior to drilling or cutting an opening in poured concrete Construction, determine the location, if any, of existing Service concealed in the Construction to be drilled or cut. X-ray or Ferro Scan test the walls or slabs required.
- .5 The Contractor will be responsible for the repair of any damage to existing Service, exposed or concealed, caused as a result of this cutting or drilling Work.
- .6 Where drilling is required in waterproof slabs, size the opening to permit snug and tight installation of a sleeve which is sized to leave 12 mm (1/2") clearance around the conduit, duct, etc. Provide a sleeve in the opening. Sleeves are to be Schedule 40 galvanized steel pipe with a flange at one end and a length to extend 100 mm (4") above the slab. Secure the flange to the underside of the slab and caulk the void between the sleeve and slab opening with proper non-hardening silicone base caulking compound to produce a water-tight installation.

- .7 Ensure that cutting and patching of roofs and reinforced concrete structures is executed by specialists familiar with the materials affected and is performed in a manner to neither damage nor endanger the Work. Coordinate and supervise such cutting and patching.

### **3.19 PACKING AND SEALING CORE DRILLED OPENINGS**

- .1 Pack and seal the void between the conduit, conductor, etc., opening and the conduit, conductor, etc., for the length of the opening as follows:
  - .1 Non-fire rated interior Construction: pack openings in non-fire rated interior Construction with mineral wool and seal both ends of the opening with non-hardening silicone base caulking compound to produce a water-tight seal.
  - .2 Fire rated Construction: pack and seal openings in fire rated walls and slabs as specified in this Section.
  - .3 Exterior walls above grade: pack sleeves in exterior walls above grade with mineral wool and seal both ends of the sleeve's water-tight with approved non-hardening silicone base caulking compound unless mechanical type seals have been specified.
  - .4 Exterior walls below grade: seal sleeves in exterior walls below grade (and any other wall where water leakage may be a problem) with link type mechanical seals as specified below

### **3.20 FLASHING FOR ELECTRICAL WORK PENETRATING THE ROOF**

- .1 Provide all required flashing Work, including counterflashing, for electrical Work penetrating and/or set in the roof.
- .2 Perform flashing Work in accordance with requirements of drawing details, and requirements specified in Division 07.

### **3.21 INSTRUCTIONS TO OWNER**

- .1 Instruct the Owner's Designated Representatives in all aspects of the operation and maintenance of electrical systems and equipment, on two separate occasions.
- .2 Arrange and pay for the Service at the site, for the length of time required, of qualified technicians and other manufacturer's representatives to instruct on specialized portions of the installation.
- .3 Ensure each instruction period includes but is not limited to the following.
  - .1 A classroom seminar with operating manuals, Product and system Drawings and such other audio/visual aids as may be appropriate,
  - .2 Instruction during the classroom seminar by the manufacturer's representative regarding the proper operating and maintenance procedures for each item of equipment,
  - .3 Demonstration of the proper operating procedures for each item of equipment,
  - .4 Explanation of the purpose and function of all safety devices provided,
  - .5 Demonstration of all measures required for safe and proper access for operation and maintenance.
- .4 Provide a period of follow-up instruction (on two occasions) approximately one month after completing Owner's instruction to clarify and reinforce earlier instructions.
- .5 Submit, prior to Substantial Performance, a complete list of systems for which instructions were given, stating for each system:
  - .1 Date instructions were given to the Owner's staff.
  - .2 Duration of instruction
  - .3 Names of persons instructed.
  - .4 Other parties present (manufacturer's representatives, etc.)

- .6 Obtain the signatures of the Owner's staff to verify they properly understood the system installation, operation and maintenance requirements and have received operating and maintenance manuals and record Drawings.

### **3.22 CLEANING ELECTRICAL WORK**

- .1 Refer to cleaning requirements specified in Division 01.
- .2 Clean all electrical Work prior to application for Substantial Performance of the Work.

### **3.23 USE OF ELECTRICAL SYSTEMS FOR TEMPORARY POWER AND LIGHTING**

- .1 Permanent electrical systems in the building may be used for temporary power and lighting during Construction subject to the Owner's conditions.
- .2 Each entire system is complete, tested, and commissioned.
- .3 Building has been closed in and areas are clean and will not thereafter be subjected to dust-producing processes.
- .4 There is no possibility of damage from any cause.
- .5 All systems are operated as per the manufacturer's recommendations or instructions and are monitored on a regular and frequent basis.
- .6 Warranties are not affected in any way.
- .7 Regular preventive and all other manufacturer's recommended maintenance routines are performed.
- .8 before Substantial Performance, each entire system is to be refurbished, cleaned internally and externally, and restored to "as-new" condition, and lighting fixture lamps are replaced.
- .9 Energy costs are to be paid by the Contractor.

### **3.24 MAINTAINING EQUIPMENT PRIOR TO ACCEPTANCE**

- .1 Maintain all equipment in accordance with the manufacturer's printed instructions prior testing and commissioning.

### **3.25 CONNECTIONS TO OTHER EQUIPMENT**

- .1 Carefully examine the Contract Documents during the bidding period and include for electrical Work connections to equipment requiring such connections.

### **3.26 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with requirements of Canadian Construction Association Standard Document CCA 81, A Best Practices Guide to Solid Waste Reduction.
- .2 Prepare a waste management and reduction plan and submit a copy for review prior to Work commencing at the site.
- .3 Place materials defined as hazardous or toxic waste in designated containers.
- .4 Ensure emptied containers are sealed and stored safely for disposal.

### **3.27 REQUIREMENTS FOR BARRIER FREE ACCESS**

- .1 Include for all applicable requirements for barrier free access in accordance with requirements of the OBC, whether shown on the Drawings or not.

**END OF SECTION**



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**1 GENERAL**

**1.1 APPLICATION**

- .1 This Section specifies requirements, criteria, methods and execution for electrical demolition Work that are common to one or more electrical Work Sections, and it is intended as a supplement to each Section and is to be read accordingly.

**1.2 SUBMITTALS**

- .1 Submit documentation to confirm that hazardous materials have been properly removed and stored, recycled, or disposed of as applicable.

**2 PRODUCTS**

Not Applicable

**3 EXECUTION**

**3.1 DISCONNECTION AND REMOVAL AND/OR RELOCATION OF EXISTING ELECTRICAL WORK**

- .1 Where indicated on the Drawings, disconnect and remove existing obsolete electrical Work. Disconnect at the point of supply, remove obsolete connecting Services and conductors, and make the system safe. Cut back obsolete conduit behind finishes and cap water-tight unless otherwise specified.
- .2 Relocate existing items as indicated. Include for new boxes, conduit, conductors, etc., as required, and test all relocated Work as for new Work. Provide blank coverplates on existing obsolete boxes which are to remain in position. Material and finish of blank coverplates is to match existing coverplates in the area.
- .3 The scope and extent of the demolition or revision Work is only generally indicated on the Drawings. Determine the scope, extent and cost of the Work at the site during the bidding period site visit(s). Claims for extra costs for demolition Work not shown or specified but clearly visible or ascertainable at the site during bidding period site visits will not be allowed.
- .4 If any re-design is required due to discrepancies between the electrical Drawings and site conditions, notify the Consultant who will issue a Site Instruction. If, in the opinion of the Consultant, discrepancies between the electrical Drawings and actual site conditions are of a minor nature, the required modifications are to be done at no additional cost.
- .5 Where existing electrical Services extend through or are in an area to serve items which are to remain, maintain the Services in operation. Include for rerouting existing Services concealed behind existing finishes and which become exposed during the renovation Work, so as to be concealed behind new or existing finishes.
- .6 Under all conditions and circumstances, existing electrical systems and Services serving operating portions of the building must be maintained in service. Include for all Work to comply with this requirement.
- .7 If and where new openings for doors, windows, etc., are to be cut in existing building surfaces, be present when the Work is done and should any damage occur to existing systems required to remain in operation, repair the damage immediately and report the incident to the Consultant.
- .8 Unless otherwise specified, remove from the site and dispose of all existing materials which have been removed and are not to be relocated or reused. Refer to waste

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management and disposal requirements specified in the Basic Electrical Materials and Methods Section.

- .9 Where existing panel board breakers are removed, replaced, or otherwise revised, provide new typed panelboard circuit directories.
- .10 Before beginning Work and admittance of any Workers on the site, furnish the Consultant with a report in the form of a deficiency list, covering all fittings, fitments, fixtures, surfaces, and any other building component in the existing buildings and exterior building surfaces or site Work where Work is being done, whose proximity to alteration Work renders it vulnerable to damage.
- .11 Existing raceways shall not be used for new and/or relocated wiring unless otherwise noted and/or approved in writing by the Consultant.
- .12 Existing items to be relocated shall be cleaned and repaired or altered as required to suit the new location. All damaged or ineffective parts shall be replaced, and the item made "as new".
- .13 Make good all surfaces and finishes in areas from which items have been removed and in which items are relocated. Cap all existing Services required to be severed to effect alterations and do all other Work necessary to make good such areas to satisfaction of consultant.
- .14 Openings in existing floor assemblies and vertical fire separations necessitated by the installation of equipment and systems or Construction in general to be temporarily sealed with fire barrier materials such as mineral wool or other noncombustible insulation.
- .15 Existing equipment and systems that are shut down due to Work of this Project, shall be tested and proper operation verified when returned to service.
- .16 All existing dead wiring and conduit in renovated areas shall be removed in its entirety where accessible. Where not accessible, wiring only shall be removed and conduit shall remain.
- .17 Disconnect and remove any electrical equipment in ceiling space or walls that causes interferences during renovation Work. All equipment shall be reinstalled and reconnected upon Completion of renovation Work.

### **3.2 HAZARDOUS MATERIALS AND/OR WASTE**

- .1 Be advised that items such as oil filled transformers, capacitors and old lighting fixture ballasts may contain hazardous waste. Governing Codes and Regulations, and caution is to be taken when disconnecting and removing/storing these items.
- .2 If hazardous waste not listed in the Specification is found, notify the Owner and Consultant immediately and await directions.
- .3 Asbestos, Mould, Lead Paint, etc. If at any time during the course of the Work asbestos containing materials, black mould, lead paint, or any other such materials are encountered or suspected, immediately report the discovery to the Consultant and cease all Work in the area in question. Do not resume Work in affected areas until the situation has been properly corrected and without written approval from the Owner.

### **3.3 INTERRUPTION TO AND SHUTDOWN OF ELECTRICAL SERVICES AND SYSTEMS**

- .1 Co-ordinate all shutdown and interruption to existing electrical systems with the Owner. Generally, shutdowns may be performed only between the hours of 12:00 midnight until 6:00 a.m.
- .2 Upon award of Contract, submit a list of anticipated shut-down times and their maximum duration.
- .3 Prior to each shut-down or interruption, inform the Owner in writing [3] [5] Working Days in advance of the proposed shut-down or interruption and obtain written approval to proceed. Do not shutdown or interrupt any system or service without such written

- approval.
- .4 Perform Work associated with shut-downs and interruptions as continuous operations to minimize the shut-down time and to reinstate the systems as soon as possible, and, prior to any shut-down, ensure that all materials and labour required to complete the Work for which the shut-down is required are available at the site.
  - .5 Coordinate all start-up of existing electrical systems which have been shut down with the Owner.
  - .6 Include in Bid Price for all overtime or premium time hours necessary to minimize duration of service interruptions.

### **3.4 ROOFING WORK**

- .1 Where roof revisions and/or replacements are part of the Project, include for disconnecting, lifting, or temporarily removing/relocating electrical equipment on the roof as required to permit Completion of the roofing Work, and for re-installing the equipment when the roofing Work is complete.
- .2 Where existing motorized mechanical equipment on the roof is to be removed/relocated/reinstalled to permit new roofing Work, include for electrical disconnection and reconnection of the equipment.

**END OF SECTION**

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**1 GENERAL**

**1.1 SUBMITTALS**

- .1 Product Data: Submit Product data sheets for all Products specified in this Section. Indicate compatibilities and limitations, and application instructions and include data to confirm that the Product proposed meets all requirements of the Specification.
- .2 Samples: If requested, submit identified conductor samples.
- .3 SDS Sheets: Submit Safety Data Sheets for conductor pulling lubricants.

**2 PRODUCTS**

**2.1 DISTRIBUTION AND BRANCH CIRCUIT CONDUCTORS**

- .1 Minimum gauge: #12 AWG, unless specifically noted otherwise. Conductors #12 and #10 AWG are to be solid. Conductors #8 AWG and larger are to be stranded. Use #14 AWG for control wiring unless noted otherwise. All conductors are to be constructed from 98% conductive copper and are to be approved for 600 volts. Conductors are to be colour coded, factory identified on the insulation with the manufacturer's name, conductor size and metal, voltage rating, and CSA type and designation. Conductors are to be as follows:
  - .1 "T-90 Nylon" single copper conductor in accordance with CSA C22.2 No. 75, Thermoplastic-Insulated Wires and Cables, 90° C (194° F) rated, PVC insulated, and nylon covered for #10 AWG and smaller.
  - .2 "RW-90" single copper conductor in accordance with CAN/CSA C22.2 No 38, Thermoset-Insulated Wires and Cables, 90°C (194° F) rated, X-link polyethylene insulated for #8 AWG and larger.
  - .3 "TWU" single copper conductor in accordance with CSA C22.2 No. 75, 60° C (140° F) rated, PVC insulated.
  - .4 "AC90" flexible cable to CSA C22.2 No. 51, Armoured Cable, with 90° C (194° F) rated, X-linked polyethylene insulated copper conductors, a concentric ground conductor, and an interlocking aluminum armor jacket.
  - .5 Equal to Tyco/Raychem "CI" cable in accordance with requirements of CSA C22.2 No. 208, Fire Alarm and Signal Cable, FAS90 shielded or un-shielded as required, 90°C (194°F) rated, consisting of a copper conductor, silicone rubber insulation, and a polyolefin outer jacket.
  - .6 Equal to Nexans Canada "Corflex II" RA90 flexible cable in accordance with requirements of CSA C22.2 No. 123, Aluminum Sheathed Cable, consisting of single or multiple copper conductors with X-link polyethylene insulation enclosed in a liquid and vapour-tight solid corrugated aluminum sheath and, an overall PVC jacket.
  - .7 Equal to Nexans Canada "Firex II" TECK 90 cable in accordance with requirements of CSA C22.2 No. 131, Type TECK 90 Cable, consisting of single or multiple copper conductors with X-link polyethylene insulation enclosed in a liquid and vapour-tight solid corrugated aluminum sheath and, an overall PVC jacket.

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## **2.2 LOW VOLTAGE (24 VOLT) CONDUCTORS**

- .1 "T-90" or "RW90" stranded copper conductors as specified above
- .2 Equal to Nexans Canada "Securex II" FAS/LVT/FT1300 volt wire to CSA C22.2 No. 208, Fire Alarm and Signal Wire, 105° C (220° F) rated, consisting of solid copper conductors (stranded for control wiring), flame retardant PVC insulation, an aluminum/Mylar optional shield with a #22 AWG tinned copper drain wire, if required for the application, an outer PVC jacket, and, if required for the application, interlocking aluminum armour with or without an overall jacket.

## **2.3 CONNECTORS**

- .1 Conductors In Conduit: Except as noted, equal to Ideal Industries Inc. "Wing Nut" CSA certified, 600 volt rated pressure type twist connectors.
- .2 Conductors 3/0 AWG and Larger: Long barrel, double crimp, compression type lug connectors, unless otherwise specified.
- .3 Armored Cable: Except as noted, proper squeeze type connectors and plastic anti-short bushings at terminations in accordance with requirements of CSA C22.2 No. 18.3, Conduit, Tubing and Cable Fittings.
- .4 Corflex/Teck Cable: Connector and termination hardware supplied by the cable manufacturer to suit the application.

## **2.4 CONDUCTOR PULLING LUBRICANT**

- .1 Equal to Ideal Industries Inc. "Yellow 77" or Clear Glide", as required.
- .2 French Chalk or Talcum Powder conductor pulling lubricant.

## **3 EXECUTION**

### **3.1 GENERAL RE: CONDUCTOR INSTALLATIONS**

- .1 Conform to the following conductor installation requirements:
  - .1 Conductor Routing: Conductor routing indicated on the Drawings is schematic and approximate. Determine exact routing and conductor lengths at the site. Route conductors to avoid interference with other Work. Unless otherwise specified or shown install conductors parallel to building lines.
  - .2 Conductor Pulling: When pulling conductors into conduit use lubricant and ensure that the conductors are kept straight and are not twisted.
  - .3 Securing/Supporting Conductors: Conform to the following requirements:
    - .1 Neatly secure exposed conductors in equipment enclosures with proper supports and/or ties
    - .2 Support flexible armored cable in ceiling spaces and stud walls with steel two-hole cable straps to Code requirements.
  - .4 Conductor Splicing: Generally, conductor splicing is not permitted unless otherwise approved by the Consultant, and if approved, splicing is subject to the following conditions:
    - .1 Splicing is permitted to extend existing conductors.
    - .2 For thermoplastic insulated conductors, splices are to be made within an approved electrical box with mechanical compression connectors to suit the type and size of conductors, and the box(es) are to be properly identified and locations are to be indicated on "as built" Drawings.
    - .3 Do not splice "Corflex" cable unless justified by cable pulling tension calculations and when approved by the Consultant, and, if approved,

- .4 locate splices were directed by the Consultant.
- .4 Do not splice "Teck" cable unless justified by cable pulling tension calculations and when approved by the Consultant, and, if approved, locate splices were directed by the Consultant.

### **3.2 INSTALLATION OF DISTRIBUTION AND BRANCH CIRCUIT CONDUCTORS**

- .1 Provide all required conductors.
- .2 Non-Fire Rated Conductors: Unless otherwise specified herein or on the Drawings, non-fire rated conductors are to be as follows:
  - .1 Conductors underground inside or outside the building, and in non-climate-controlled areas – TWU
  - .2 Flexible armoured cable AC90 (BX) may be used ONLY for short drops to lighting fixtures (not more than 1525 mm (5 ft.) per drop.)
- .3 "Corflex" Cable Installation Requirements: Install "Corflex" cable in accordance with the manufacturer's instructions, including the following requirements:
  - .1 Support and secure overhead suspended "Corflex" cable on a system of cable tray where indicated.
  - .2 Secure individual cables to cable tray or, where shown, directly to building surfaces by means of single screw non-ferrous clamps.
  - .3 Ground and bond single conductor cable at both ends where the sheath currents do not affect the cable ampacity.
  - .4 For certain areas, where the sheath currents will reduce the cable ampacity, ground and bond the cable at the supply end and isolate the cable at the load end as recommended by the cable manufacturer, and provide a No. 3/0 AWG green TW ground conductor for each cable, all as per Section No. 10 of the Ontario Electrical Safety Code
- .4 "Teck" Cable Installation Requirements: Install "Teck" cable in accordance with the manufacturer's instructions, including the following requirements:
  - .1 Support and secure overhead suspended "Teck" cable on a system of cable tray where indicated.
  - .2 Secure individual cables to cable tray or, where shown, directly to building surfaces by means of single screw non-ferrous clamps.
  - .3 Terminate cable with lugs and termination kits supplied with the cable.
- .5 Conductor Sizing: Generally, conductor sizes are indicated on the Drawings. Unless otherwise specified, do not use conductors smaller than No. 12 AWG in systems over 30 volts. Unless otherwise specified, do not use conductors smaller than No. 6 AWG for exterior luminaire wiring. Conductor sizes indicated on the Drawings are minimum sizes and must be increased, where required, to suit length of run and voltage drop in accordance with the voltage drop schedule found at the end of this Section.
- .6 Conductor Colour Coding: Unless otherwise specified, colour code conductors identify phases, neutral, and ground by means of self-laminating coloured vinyl tape, coloured conductor insulation, or properly secured coloured plastic discs. Colours are to be as follows:
  - .1 Phase A – red
  - .2 Phase B – black
  - .3 Phase C – blue
  - .4 Neutral – white
  - .5 Control – orange.

**3.3 MAXIMUM BRANCH WIRING DISTANCE FOR 120 VOLT SYSTEM AT 3% VOLTAGE DROP**

Wire Size	Breaker Size (Amperes)	15	20	30	40	50	60	70	80	100
	Max. Load At 80% (Amperes)	12	16	24	32	40	48	56	68	80
No.12	---	22.0	16.0	---	---	---	---	---	---	---
No.10	---	36.0	27.0	18.0	---	---	---	---	---	---
No.8	---	59.0	44.0	30.0	22.0	---	---	---	---	---
No.6	---	91.0	70.0	47.0	35.0	28.0	23.0	---	---	---
No.4	---	---	109.0	73.0	54.0	42.0	35.0	30.0	25.0	---
No.2	---	---	---	114.0	85.0	68.0	57.0	50.0	41.0	35.0
No.1	---	---	---	---	103.0	85.0	73.0	61.0	50.0	43.0
No.1/0	---	---	---	---	128.0	102.0	85.0	73.0	60.0	48.0
No.2/0	---	---	---	---	---	121.0	100.0	86.0	74.0	60.0
No.3/0	---	---	---	---	---	---	118.0	102.0	88.0	70.0
No.4/0	---	---	---	---	---	---	---	120.0	102.0	83.0
250 MCM	---	---	---	---	---	---	---	---	114.0	91.0
300 MCM	---	---	---	---	---	---	---	---	---	103.0

NOTE: DISTANCES INDICATED IN METERS FROM PANEL TO LOAD FOR A SINGLE PHASE.

**END OF SECTION**

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**1. GENERAL**

**1.1 REQUIREMENTS INCLUDED**

1. Conform to Division 01, General Conditions and Section 260501, General Electrical Provisions as applicable.
2. Related Work
  - .1 Submittals Section 260502

**1.2 DESCRIPTION**

- .1 Changes and alterations to existing facilities and equipment caused by the Work of this division.

**1.3 EXISTING EQUIPMENT**

- .1 All existing equipment and associated wiring and conduit shall be removed from the renovated area unless noted otherwise on Drawings.
- .2 All existing equipment removed shall be handed over to the Owners and/or discarded at their discretion.

**1.4 FAMILIARIZATION**

- .1 It is this Contractor's responsibility to visit the site and become thoroughly familiar with the existing building, equipment and systems prior to submitting tender price.

**2. PRODUCT**

**2.1 GENERAL**

- .1 Provide under this Section for the relocation or re-routing of existing conduits and other electrical equipment remaining which are exposed during the Work.
- .2 Where existing wall or ceiling is being removed and/or replaced or where new drywall is being installed on existing studs, remove and reinstall all electrical equipment and wiring. Use information from the site and from architectural Drawings to determine this division's scope of Work.
- .3 It is the responsibility of this division to patch and repair all surfaces affected by Work of this trade. All patching and repairs must be done by an approved means acceptable to the Architect.
- .4 Refer to the asbestos audit for the building, prior to proceeding with Work.
- .5 Where asbestos will be disturbed in the execution of this Contract, comply with the regulation respecting asbestos on Construction Projects and in buildings and repair operations made under the Occupational Health and Safety Act, Ontario Regulation 645/85 and local requirements pertaining to asbestos. Asbestos inspection Reports have been bound into this Specification for use by this Contractor. Employ only licensed asbestos removal Contractors to execute abatement of all asbestos.
- .6 This Contractor shall visit the site and examine the existing conditions and make necessary allowances in his tender price for removal, rerouting, relocation and reconnecting of equipment as may be necessary for the execution and Completion of this Project.
- .7 Wiring, conduits, etc., located in areas being altered or demolished, but feeding outlets or equipment required to remain in service shall be rerouted as required to maintain the continuity of these Services to the satisfaction of the Engineer.
- .8 Include for strapping existing conduits and cables that are not properly supported and are



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- required to remain above the ceilings. Determine exact extent of Work on site.
- .9 This Contractor shall provide adequate protection to existing equipment throughout the Project and particularly where wiring, piping, equipment, etc. have become exposed to mechanical injury or moisture in the course of the alternations.
  - .10 Existing distribution equipment in areas designated to be demolished shall be permitted to be reused only as indicated on the Drawings.
  - .11 Existing equipment being reused shall be checked for proper operation. Reused equipment shall not have any sign of physical abuse or corrosion. Any knockouts removed in existing equipment being reused shall be plugged.
  - .12 All wiring made redundant due to demolition/renovation Work shall be disconnected and removed to the nearest distribution point upstream that is not affected by demolition/renovation Work. All concealed conduits made redundant due to demolition/renovation Work may remain provided it does not adversely affect any new installations, unless it is noted to be removed on the Drawings. All exposed conduit in finished areas made redundant due to demolition/renovation Work shall be removed and the wall patched.
  - .13 Existing wiring devices shall be permitted to be reused as indicated on the Drawings. Existing outlet boxes may be reused if "as new" condition. Existing branch circuit wiring will only be permitted to be reused in existing non accessible walls/ceilings where the existing wiring is of adequate size, has acceptable bonding conductor and is as new condition.
  - .14 All existing panel schedules, zone legends and distribution equipment identification shall be reworked to reflect any changes made by any demolition/renovation Work.

### **3. EXECUTION**

#### **3.1 CHANGE OVER SERVICES**

- .1 To obtain permission for an interruption, submit a request at least two weeks before, stating the time the interruption is to begin, expected duration and the Services and area affected. Where in the opinion of the Consultant it is advisable or desirable to maintain service in the area or any part of the area involved during the interruption, provide such temporary wiring, equipment, etc., as required or as may be deemed necessary by the Consultant to maintain Services. No additional payments will be made for any additional cost or inconveniences which may incur. Under NO circumstances will the Contractor's operation be allowed to interfere with or interrupt the tenants or the Owners of the building

**END OF SECTION**

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**1 GENERAL**

**1.1 SUBMITTALS**

- .1 Shop Drawings/Work Data: Submit Shop Drawings and Work data sheets for Works specified in this Section.
- .2 Test Reports: Submit signed test Reports for all testing work specified.

**2 WORKS**

**2.1 GROUNDING AND BONDING CONDUCTORS**

- .1 Equipment Grounding Conductors: Unless otherwise specified, insulated (green colour) stranded copper conductors, except those conductors #10 gauge and smaller may be solid copper.
- .2 Bonding Conductors: As for equipment, ground conductors but bare copper.

**2.2 GROUNDING AND BONDING CONNECTIONS**

- .1 Below Grade: Equal to Erico International Corp. "Cadweld" exothermic welded connections.
- .2 Above Grade: Compression type connectors with zinc-plated fasteners and external tooth lock washers, or, if approved by the Consultant, exothermic connections as for below grade connections

**3 EXECUTION**

**3.1 GENERAL ELECTRICAL WORK GROUNDING REQUIREMENTS**

- .1 Perform all required electrical Work grounding and bonding. Unless otherwise specified, grounding and bonding Work is to be in accordance with requirements of CAN/CSA-C22.2 No. 0.4-04. Bonding of Electrical Equipment, and the requirements of all other governing authorities.
- .2 Bond metallic conduits, boxes, cable trays, ducts, and non-current carrying metal parts of equipment together to form a continuous ground system. In electrical equipment rooms, solidly bond circuits, switchgear, switchboards, panelboards, transformers, conduits, equipment enclosures, and other equipment to perimeter ground bus using bronze connectors and hardware.
- .3 Install connectors in accordance with the manufacturer's instructions.
- .4 Protect exposed grounding conductors from mechanical injury. Install underground conductors a minimum of 450 mm (18") below grade.
- .5 Use tinned copper conductors for aluminum structures.
- .6 Do not use bare copper conductors near un-jacketed lead sheath cables.

**3.2 EQUIPMENT GROUNDING**

- .1 Provide grounding connections to mechanical and electrical equipment as shown and/or specified on the Drawings and in accordance with CAN/CSA C22.2 No. 0.4 and requirements of governing authorities.
- .2 Ground hinged doors of electrical equipment to the equipment enclosure main frame using flexible jumpers.

### **3.3 NEUTRAL GROUNDING**

- .1 Connect transformer neutral and distribution neutral together using 1000 volt insulated conductor to one side of ground test link, the other side of the test link being connected directly to the main station ground. Ensure that distribution neutral and neutrals of potential transformers and service banks are bonded directly to the transformer neutral and not to the main station ground.
- .2 Interconnect electrodes and neutrals at each grounding installation.
- .3 Connect the neutral of the station transformer to main neutral bus with a tap of the same size as the secondary neutral.
- .4 Ground the transformer tank with a continuous conductor from the tank ground lug through the connector on the ground bus to the primary neutral. Connect neutral bushing at the transformer to the primary neutral in the same manner.

**END OF SECTION**

## **1 GENERAL**

### **1.1 RELATED DOCUMENTS**

- .1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### **1.2 SUMMARY**

- .1 This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

### **1.3 SUBMITTALS**

- .1 Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

### **1.4 QUALITY ASSURANCE**

- .1 Listing and Labeling: Provide raceways and boxes specified in this Section that are listed and labeled.
- .1 The Terms "Listed" and "Labeled": As defined in ESA.
- .2 Comply with ESA.

### **1.5 COORDINATION**

- .1 Coordinate layout and installation of raceways and boxes with other Construction elements to ensure adequate headroom, working clearance, and access.
- .2 Provide a layout and installation of raceways and boxes to coordinate the Work requirements for this and other Divisions:
  - .1 Coordinate installation with other trades.
  - .2 Route upward, and then horizontally in ceiling space to maximize space for other Services.
  - .3 Avoid flanges of members that support hangers of other systems.

### **1.6 MANUFACTURERS**

- .1 Manufacturers: Unless otherwise directed by the Owner, provide Products by one of the following:
  - .1 Metal Conduit and Tubing
    - .2 Anamet, Inc.; Anaconda Metal Hose.
    - .3 Grinnell Co.; Allied Tube and Conduit Div.
    - .4 Triangle PWC, Inc.
  - .2 Nonmetallic Conduit and Tubing
    - .1 George-Ingraham Corp.
    - .2 Lamson & Sessions; Carlon Electrical Products
  - .3 Conduit Bodies and Fittings
    - .1 Crouse-Hinds; Div. of Cooper Industries.
    - .2 Emerson Electric Co.; Appleton Electric Co.
    - .3 Hubbell, Inc.; Killark Electric Manufacturing Co.
    - .4 O-Z/Gedney; Unit of General Signal.

- .4 Metal Wireways
  - .1 Hoffman Engineering Co.
  - .2 Square D Co.
  - .3 Surface Metal Raceways
  - .4 Wiremold Co. (The); Electrical Sales Division.
- .5 Boxes, Enclosures, and Cabinets
  - .1 Appleton Electric Co.
  - .2 Crouse-Hinds; Div. of Cooper Industries.
  - .3 Hubbell Inc.; Killark Electric Manufacturing Co.
  - .4 Hubbell Inc.; Raco, Inc.
  - .5 O-Z/Gedney; Unit of General Signal.

### **1.7 METAL CONDUIT AND TUBING**

- .1 Rigid Steel Conduit: ANSI C80.1.
- .2 IMC (Intermediate Metal Conduit): ANSI C80.6.
- .3 EMT (Electrical Metallic Tubing) and Fittings: ANSI C80.3.
  - .1 Fittings: Compression type. Setscrew type not acceptable.
- .4 FMC (Flexible Metal Conduit): Zinc-coated steel.
- .5 LFMC (Liquid tight Flexible Metal Conduit): Flexible steel conduit with PVC jacket.
- .6 Fittings: NEMA FB 1; compatible with conduit/tubing materials.
- .7 Nonmetallic conduit and tubing
- .8 ENT (Electrical Nonmetallic Tubing): NEMA TC 13.
- .9 RNC (Rigid Nonmetallic Conduit): NEMA TC 2, Schedule 40 or 80 PVC.
- .10 ENT and RNC Fittings: NEMA TC 3; match to conduit or conduit/tubing type and material.
- .11 LFNC (Liquid tight Flexible Nonmetallic Conduit): UL 1660.

### **1.8 METAL WIREWAYS**

- .1 Material: Sheet metal sized and shaped as indicated.
- .2 Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- .3 Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.
- .4 Wireway Covers: Hinged type.
- .5 Finish: Manufacturer's standard enamel finish.

### **1.9 OUTLET AND DEVICE BOXES**

- .1 Sheet Metal Boxes: NEMA OS 1.
- .2 Cast-Metal Boxes: NEMA FB 1, Type FD, cast box with gasketed cover.

### **1.10 PULL AND JUNCTION BOXES**

- .1 Small Sheet Metal Boxes: NEMA OS 1.
- .2 Cast-Metal Boxes: NEMA FB 1, cast aluminum with gasketed cover.

### **1.11 ENCLOSURES AND CABINETS**

- .1 Hinged-Cover Enclosures:
  - .1 NEMA 250, Type (1, 3R, 4, 7, 12, etc.) as specified

- .2 Galvanized steel box
- .3 Continuous hinged cover with flush latch.
- .4 Finished inside and out with manufacturer's standard enamel.
- .2 Examine surfaces to receive raceways, boxes, enclosures, and cabinets for compliance with installation tolerances and other conditions affecting performance of raceway installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

### **1.12 WIRING METHODS**

- .1 Outdoors: Use the following wiring methods:
  - .1 Exposed: Rigid steel or IMC.
  - .2 Concealed: Rigid steel or IMC.
  - .3 Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - .4 Boxes and Enclosures: NEMA 250, Type 3R or Type 4.
- .2 Communications:
  - 1. Provide raceways for telephone, data, audio-visual and other communication systems as noted.
  - 2. Provide a floor box raceway system in the conference room, for the media system, as indicated.
- .3 Indoors: Use the following wiring methods:
  - .1 Exposed: Rigid steel conduit to 10 feet above floor and EMT above that point.
  - .2 Concealed: EMT.
  - .3 Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except in wet or damp locations, use LFMC.
  - .4 Underfloor, Damp or Wet Locations: Rigid steel conduit.
  - .5 Boxes and Enclosures: NEMA 250, Type 1, except as follows:
    - .1 Production facilities: NEMA 250, Type 12.
    - .2 Damp or Wet Locations: NEMA 250, Type 4, stainless steel, or Type 4X, fiberglass-reinforced polyester.

### **1.13 INSTALLATION**

- .1 Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions and the following:
  - .1 Provide minimum 1/2-inch trade size.
  - .2 Conceal raceway in finished walls, ceilings, and floors, unless otherwise indicated,
  - .3 Maintain at least 6 inches clearance from parallel flues, steam or hot-water pipes.
  - .4 Install level and square and at proper elevations.
  - .5 Provide adequate headroom.
  - .6 Complete installation before starting conductor installation.
  - .7 Use temporary closures to prevent foreign matter from entering.
  - .8 Protect stub-ups through floor slabs from damage.
  - .9 Make bends and offsets so as not to reduce the ID.
  - .10 Keep bends in the same plane and straight legs of offsets parallel.
  - .11 Provide fittings compatible with raceways and suitable for use and location.
  - .12 Provide threaded rigid steel conduit fittings for intermediate steel conduit.
  - .13 Route with a minimum of bends, in the shortest practical distance, considering the type of building Construction and obstructions.

- .14 Tighten setscrew fittings with suitable tools.
- .2 Install exposed raceways parallel to or at right angles to nearby surfaces or structural members and follow the surface contours as much as practical.
  - .1 Run parallel or banked raceways together, on common supports where practical.
  - .2 Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
- .3 Join raceways with fittings designed and approved for the purpose and make joints tight.
  - .1 Make raceway terminations tight.
  - .2 Provide bonding bushings or wedges at connections subject to vibration.
  - .3 Provide bonding jumpers where joints cannot be made tight.
  - .4 Provide insulating bushings to protect conductors.
- .4 Terminations:
  - .1 Align raceways to enter boxes squarely and install locknuts.
  - .2 Provide one locknut inside and one outside a box where one locknut is not secure.
  - .3 Screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder at threaded hubs,
  - .4 Align raceways so the coupling is square to the box.
  - .5 Tighten so that no threads remain exposed where chase nipples are used.
- .5 Install pull wires in empty raceways.
  - .1 Provide #14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb tensile strength.
  - .2 Provide at least 12 inches of slack at each end of the pull wire.
- .6 Telephone and Signal System Raceways, 2-Inch Trade Size and Smaller:
  - .1 Install raceways in continuous lengths not to exceed 250 feet.
  - .2 Install raceways with a maximum of four 90-degree bends or equivalent.
  - .3 Provide pull or junction boxes where necessary to comply with these requirements.
  - .4 Provide an insulating bushing for each conduit not terminated in a box or fitting.
- .7 Flexible Connections:
  - .1 Use maximum of 6 feet of conduit for recessed and semi-recessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and motors.
  - .2 Provide liquid tight flexible conduit in wet or damp locations.
  - .3 Provide separate equipment grounding conductor.
- .8 Install hinged-cover enclosures and cabinets plumb. Support at each corner.

#### **1.14 PROTECTION**

- .1 Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensures coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
  - .1 Repair damage to galvanized finishes with zinc-rich paint recommended by the manufacturer.

#### **1.15 CLEANING**

- .1 After Completion of installation, including outlets, fittings and devices:
  - .1 Inspect exposed finishes.
  - .2 Remove burrs, dirt, and Construction debris.
  - .3 Repair finishes that have damage such as chips, scratches, and abrasions.

**END OF SECTION**

**1 GENERAL**

**1.1 RELATED DOCUMENTS**

- .1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- .1 This Section includes identification of electrical materials, equipment, and installations.

**1.3 QUALITY ASSURANCE**

- .1 Comply with ESA.

**1.4 SEQUENCING AND SCHEDULING**

- .1 Coordinate and install electrical identification after completion of finishing where identification is applied to field-finished surfaces.
- .2 Coordinate and install electrical identifying devices and markings prior to installing acoustical ceilings and similar finishes that conceal such items.

**1.5 MANUFACTURERS**

- .1 Manufacturers: Unless otherwise directed by the Owner, provide Products by one of the following:
  - .1 Almetek
  - .2 Brady USA, Inc.; Industrial Products Div.
  - .3 Carlton Industries, Inc.
  - .4 Ideal Industries, Inc.
  - .5 Panduit Corp.
  - .6 Seton Name Plate Co.

**1.6 RACEWAY AND CABLE LABELS**

- .1 Underground Line Warning Tape: Permanent, bright-colored, continuous-printed vinyl tape with the following features:
  - .1 Size: Not less than 6 inches wide by 4 mils thick.
  - .2 Compounded for permanent direct-burial Service.
  - .3 Embedded continuous metallic strip or core.
  - .4 Printed Legend: Indicates type of underground line.

**1.7 ENGRAVED NAMEPLATES AND SIGNS**

- .1 Products: Refer to Detail Drawings.
- .2 Engraving Stock, Laminate, and Legends: Refer to Detail Drawings.
- .3 Fasteners for Plastic-Laminated and Metal Signs: Self-tapping stainless-steel screws or No. 10/32 stainless steel machine screws with nuts and flat and lock washers.

**1.8 MISCELLANEOUS IDENTIFICATION PRODUCTS**

- .1 Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties with the following features:
  - .1 Minimum Width: 3/16 inch.



- .2 Tensile Strength: 50 lb minimum.
- .3 Temperature Range: Minus 40 to 185 deg F.
- .4 Color: As indicated where used for color coding.

## **1.9 INSTALLATION**

- .1 Install labels where indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.
- .2 Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations used in the Contract Documents or required by codes and standards. Use consistent designations throughout the Project.
- .3 Sequence of Work: Where identification is to be applied to surfaces that require finish, install identification after Completion of finish Work.
- .4 Self-Adhesive Identification Products: Clean surfaces of dust, loose material, and oily films before applying.
- .5 Install Warning Labels on Enclosures containing voltages over 120 Volts: Use pressure-sensitive, self-adhesive label indicating highest voltage present. Letters to be black, preprinted on orange field. Install warning label on exterior of enclosure where plainly visible even when the enclosure door(s) are open or removed.
- .6 Install Identification and Voltage Warning labels on electrical busway, including cable tab boxes, expansion sections, and bus plugs. Locate voltage warning labels every 50 feet on the busway. The lettering of label to be a minimum of 3 inches tall and visible from the plant floor.
- .7 Install a warning label on the disconnecting device of a panel if the panel is interconnected to other equipment and remains energized from a source other than its disconnecting device. The sign shall be legible and shall read "Warning – Parts of the Control Panel are NOT de-energized by this Switch".
- .8 Install Circuit Identification Labels on Boxes: Label externally as follows:
  - .1 Exposed Boxes: Pressure-sensitive, self-adhesive plastic label on cover.
  - .2 Concealed Boxes: Plasticized card-stock tags.
  - .3 Labeling Legend: Permanent, waterproof listing of panel and circuit number or equivalent.
- .9 Install identification as follows:
  - .1 Apply equipment identification labels on each major unit of equipment, including central or master unit of each system. This includes communication, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Except as otherwise indicated, provide a single line of text with 1/2-inch-high lettering on 1-1/2-inch-high label; where 2 lines of text are required, use label 2 inches high. Use black lettering on white field. Apply labels for each unit of the following categories of equipment.
    - .1 Panelboards, electrical cabinets, and enclosures.
    - .2 Motor starters.
    - .3 Contractors.
  - .2 Apply designation labels for disconnect switches, breakers, push buttons, pilot lights, motor control centers, and similar items for power distribution and control components above, except panelboards and alarm/signal components where labeling is specified elsewhere. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker.

**END OF SECTION**

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## **1 GENERAL**

### **1.1 SUBMITTALS**

- .1 Shop Drawings and Product Data: Submit Shop Drawings and Product data sheets for wiring devices. Ensure that the sheets indicate all features of the devices to confirm that the devices are in accordance with the requirements of this Section, including colours and faceplate finishes.

### **1.2 QUALITY ASSURANCE**

- .1 All wiring devices are to be CSA certified as a minimum, in accordance with the following standards, as applicable:
  - .1 CAN/CSA C22.2 No 42, General Use Receptacles, Attachment Plugs and Similar Wiring Devices
  - .2 CAN/CSA C22.2 No 42.1, Cover Plates for Flush Mounted Devices
  - .3 CSA C22.2 No. 111, General Use Snap Switches
- .2 Wherever possible, all wiring devices are to be supplied by the same manufacturer.
- .3 Acceptable Manufacturers: Unless otherwise specified in this Section or on the Drawings, acceptable manufacturers are:
  - .1 Hubbell Canada
  - .2 Cooper Industries (Arrow Hart)
  - .3 Legrand/Pass & Seymour
  - .4 Leviton Canada

### **1.3 WIRING DEVICE AND PLATE COLOURS**

- .1 Unless otherwise specified, wiring device colours will be as specified in Part 3 of this Section.

## **2 PRODUCTS**

### **2.1 SWITCHES**

- .1 Unless otherwise specified, Specification Grade, Premium Quality, back and side wired, 20 ampere, 120 or 347 volt A.C. quiet action toggle switches, single pole, 2-pole, 3-way, 4-way or key type as indicated on the Drawings, each complete with a nickel plated steel ground terminal, brass power wiring terminals and screws, silver cadmium oxide contacts with a moveable brass contact arm, and nylon toggle with colour as specified below. Switch types are as follows:
  - .1 Standard Wall Toggle Switches: As above.
  - .2 Decorative Wall Rocker Switch: Generally, as specified above for standard toggle switches but rectangular decorative rocker type with rocker handles.
  - .3 Motor Control Snap Action Switch: Illuminated handle snap action horsepower rated switch CSA certified for motor control and sized to suit the application.

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## **2.2 OCCUPANCY SENSOR SWITCHES**

- .1 Combination passive infrared and ultrasonic sensor/switch assemblies with a rating to suit the connected load, wall (180° coverage) and/or ceiling mounted (360° coverage) as indicated on the Drawings, white, almond or ivory colour as directed, each complete with time, range and light adjustments, adjustable blinders to block peripheral signals, a photocell to detect light to enable ambient light override, Fresnel lens, LED indicator which flashes when the sensor detects motion, and a manual on-off push button.

## **2.3 SPECIFICATION GRADE STANDARD RECEPTACLES**

- .1 Back or side wired, U-ground, 2-pole receptacles as follows:
  - .1 15 AMP. 125 Volt Duplex Receptacle: 3-wire receptacles, NEMA configuration 5-15R
  - .2 15 AMP. 250 Volt Duplex Receptacle: 3-wire receptacles, NEMA configuration 6-15R
  - .3 20 AMP. 125 Volt Duplex Receptacle: 3-wire receptacles, NEMA configuration 5-20R
  - .4 20 AMP. 250 Volt Duplex Receptacle: 3-wire receptacles, NEMA configuration 6-20R

## **2.4 SPECIFICATION GRADE GROUND FAULT RECEPTACLES**

- .1 Heavy-duty, 15/20 ampere, 125 volt, ULC Class "A", Group 1. automatic ground fault circuit interrupting duplex receptacles with a 10-kA short circuit current rating, automatic self-test diagnostics, green power on LED, and red ground fault LED. Ground fault receptacles for indoor climate controlled and outdoor or non-climate-controlled areas are to be as follows:
  - .1 Indoor climate-controlled areas: equal to Hubbell Canada No. GFST20 "AUTOGUARD"
  - .2 Outdoor areas and indoor non-climate-controlled area: equal to Hubbell Canada No. GFR 5362 "AUTOGUARD"

## **2.5 DEVICE FACEPLATES**

- .1 Device faceplates are to be ULC listed, and CSA certified and, unless otherwise specified, supplied by the device manufacturer. Where two or more devices are installed in a common box, a common one-piece faceplate is to be used. Faceplate colours are specified in Part 3. Faceplates, unless otherwise specified, are to be as follows:
  - .1 Phenolic switch and receptacle faceplates, complete with color matching screws
  - .2 "Decorator" type Phenolic switch and receptacle faceplates
  - .3 Type 302/304 stainless steel switch and receptacle faceplates, satin finish as directed, with stainless steel screws.
  - .4 High impact smooth finish nylon switch and receptacle faceplates
  - .5 Hot dipped galvanized steel switch and receptacle faceplates
  - .6 NEMA 3 rated, single gang, horizontal/vertical mounting, weather-proof in use, gasketed cast aluminum receptacle faceplates to suit the type of receptacle used.
  - .7 Weather-proof, gasketed, water-tight single gang type 302 stainless steel switch plate with clear silicone rubber bubble over the switch toggle.

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### **3 EXECUTION**

#### **3.1 GENERAL REINSTALLATION OF WIRING DEVICES**

- .1 Provide all required wiring devices and faceplates.
- .2 Confirm exact locations, including mounting heights, prior to roughing-in.
- .3 For barrier-free mounting heights for devices, conform to requirements of the governing code or regulation.
- .4 Ensure that switches located adjacent to doors are located at the strike side of the door. Confirm door swings prior to roughing-in.
- .5 Install single throw switches with the handle in the up position when the switch is closed.
- .6 Confirm all switch, receptacle, and faceplate types, colours and finishes prior to ordering.
- .7 Faceplates for computer equipment receptacles are to be permanently identified with "Computer Equipment Only" wording.
- .8 Faceplates for housekeeping receptacles are to be permanently identified with "Housekeeping Only" wording.
- .9 Do not install faceplates for flush devices until wall, etc., finishing Work is complete.

#### **3.2 WIRING DEVICE AND FACEPLATE TYPES & COLOURS**

- .1 Standard switches and receptacles in finished areas, non-essential circuits: white with stainless steel faceplates
- .2 'Decorator' switches and receptacles in finished areas, non-essential circuits: white
- .3 Switches and receptacles in unfinished areas, non-essential circuits: white with galvanized steel faceplates
- .4 Isolated power receptacles: orange.
- .5 Weather-proof receptacles: cast aluminum gasketed weather-proof faceplates to suit the type of receptacle installed.
- .6 Weather-proof switches and weather-proof gray neoprene press-switch plate and press switch.
- .7 Faceplate materials: stainless steel 302/304 satin finish

#### **3.3 TESTING**

- .1 When installation is complete, test operation of all devices.

**END OF SECTION**

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**1 GENERAL**

**1.1 SUBMITTALS**

- .1 Shop Drawings/Product Data: Submit shop Drawings and Product data sheets for the fire alarm system. Ensure that the shop Drawings and Product data sheets indicate all features of the system and its components to confirm that the system is in accordance with requirements of this Section. Include the following:
  - .1 Identified wiring schematics with component identification and Product/catalogue numbers for the central control facility and all associated components
  - .2 Complete documentation of system(s) testing.
  - .3 Certification that the system has been inspected and tested, is/are installed entirely in accordance with the applicable codes, standards, manufacturer's recommendations and ULC listings, and is/are in proper working order.
- .2 Submittals To Fire Authority: Submit to the local fire authority at the same time as Submittal to the Consultant, all items required by subparagraphs of paragraph .1 above.
- .3 System Review and Confirmation: As specified in Part 3 of this Section, submit a letter from the system manufacturer/Supplier which confirms that the system has been properly installed in accordance with issued installation instructions, and an inspection and test report in accordance with CAN/ULC-S536.
- .4 Manufacturer's Support of System Components: Submit, on the system manufacturer's letterhead and signed by a signing officer of the company, a written declaration that manufacturer will supply system replacement parts for a minimum of ten years from Substantial Performance of the Work.
- .5 As-Built Record Drawing Requirements: In addition to all other "as-built" conditions, indicate on as-built record Drawings the locations of all end-of-line resistors and all line isolation modules.
- .6 Independent Third Party Testing and Verification Agency: Submit the name, qualifications, and certification of the independent third party testing and verification agency proposed for the project.
- .7 Certificate of Insurance: As specified in Part 3, submit a Certificate of Insurance covering testing and verification of the fire alarm system.
- .8 Extended Warranty: Submit a signed extended Warranty in the name of the Owner covering the entire fire alarm system for a period of two years after the Contract Warranty expires. The terms of the extended Warranty are to be full parts and on-site labour as for the Contract Warranty.

**1.2 QUALITY ASSURANCE**

- .1 The fire alarm system and its installation is, as applicable, to be in accordance with requirements of the following:
  - .1 CSA B222, Installation Code for Local Fire Alarm Systems
  - .2 CSA C22.2 No. 208, Fire Alarm and Signal Cable
  - .3 CAN/ULC-S524, Standard for the Installation of Fire Alarm Systems
  - .4 CAN/ULC-S525, Audible Signal Devices for Fire Alarm Systems, Including Accessories
  - .5 CAN/ULC-S526, Visual Signal Devices for Fire Alarm Systems, Including Accessories
  - .6 CAN/ULC-S527, Control Units for Fire Alarm Systems
  - .7 CAN/ULC-S528, Manual Pull Stations for Fire Alarm Systems, Including Accessories
  - .8 CAN/ULC-S529, Smoke Detectors for Fire Alarm Systems
  - .9 CAN/ULC-S530, Heat Detectors

- .10 CAN/ULC-S531, Smoke Alarms
  - .11 CAN/ULC-S533, Egress Door Securing and Release Devices
  - .12 CAN/ULC-S536, Inspection and Testing of Fire Alarm Systems
  - .13 CAN/ULC S537, Standard for the Verification of Fire Alarm Systems
  - .14 CAN/ULC-S552, Maintenance and Testing of Smoke Alarms
  - .15 CAN/ULC-S553, Installation of Smoke Alarms
  - .16 CAN/ULC-S559, Equipment for Fire Signal Receiving Centres and Systems
  - .17 CAN/ULC-S561, Installation and Services for Fire Signal Receiving Centres and Systems
  - .18 ULC/ORD 693, Central Station Fire Protective Signalling
  - .19 ULC-S548, Alarm Initiating and Supervisory Devices for Water Type Extinguishing Systems
  - .20 National, Provincial and Local Building Codes
  - .21 Ontario Electrical Safety Code
- .2 System Components: All system components are to be ULC listed and labelled in accordance with standards listed above, and, unless otherwise specified, are to be supplied by a single manufacturer. All components must be suitable in all respects for conditions of the installation location. Any equipment not bearing a ULC label shall be removed and replaced with compatible ULC labelled equipment at the Contractors expense.

### **1.3 WARRANTY PERIOD REQUIREMENTS**

- .1 The system manufacturer/Supplier must have a local repair and maintenance facility and must respond to any system operational problem during the Warranty Period (including the extended Warranty) within four hours of notification by the Owner, twenty-four hours a day, seven days a week.
- .2 The system manufacturer/Supplier is to maintain accurate record of each Warranty call to the site and document the date and time of the call, the reason for the call, and the duration and type of the corrective action taken.
- .3 During the Warranty Period, any spare parts in the Owner's possession are to be replaced if used for corrective actions.
- .4 Include for a one year no cost (to the Owner) maintenance period to commence at notification of Substantial Performance and which is to include two site inspections of the system with Reports. Inspections are to be scheduled with the Owner and Consultant.

### **1.4 SOFTWARE REVISIONS**

- .1 After successful testing, verification and commissioning of the system, but prior to turn over to the Owner, obtain a list of final room, area, and , if applicable, building names and revise system software to incorporate all required revisions.
- .2 Include for an additional software update to suit any requirements of governing authorities.
- .3 In addition to programming revisions specified above, include for, after system turn over to the Owner, another site visit to make any supplementary software revisions requested by the Owner.
- .4 Where the Work is phased and completed phases will be accepted and occupied by the Owner, include for requirements of paragraphs 1 to 3 above for each such phase.

### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with requirements specified in the Section entitled Basic Electrical Materials and Requirements.

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## **1.6 ACCEPTABLE MANUFACTURERS**

- .1 To match existing.

## **1.7 GENERAL**

- .1 Provide all labour, Services and materials necessary to provide and install a complete, functional life safety fire system. The System shall comply in respects with all pertinent codes, rules, regulations and laws of the local Authority Having Jurisdiction. The System shall comply in all respects with the requirements of these Specifications, manufacturer's recommendations and Underwriters' Laboratories of Canada (ULC) listings.
- .2 This Fire Alarm / Life Safety System Specification must be conformed to, in its entirety to ensure that the installed and programmed Life Safety System will function as designed, and will accommodate the future requirements and operations required by the building Owner. All specified operational features must be met without exception.
- .3 Upon Completion of this Work, Provide the Owner with: Complete information and Drawings describing and depicting the entire system(s) as installed, including all information necessary for maintaining, troubleshooting, and/or expanding the system at a future date.
- .4 The system shall include, but not be limited to:
  - .1 Fire alarm control panel and remote annunciator(s).
  - .2 Automatic and manually activated alarm initiating and monitoring devices
  - .3 Conduit, wire, and accessories required to provide a complete and operational life safety system

## **1.8 DEFINITIONS / ABBREVIATIONS**

- .1 AFF: Above Finished Floor.
- .2 AHJ: Authority Having Jurisdiction.
- .3 Approved: Unless otherwise stated, materials, equipment or Submittals approved by the Authority or AHJ.
- .4 Circuit: Wire path from a group of devices or appliances to a control panel or transponder.
- .5 Class A Circuit: (Return Loop Circuit) – A circuit having one continuous path connecting all components on the circuit and terminating through an alternate connection path in the source enclosure.
- .6 Class B Circuit: (Terminated Circuit) – A circuit having one continuous path connecting all devices on the circuit and terminating at an end-of-line device.
- .7 CPU: The central computer of a multiplex fire alarm or voice command control system.
- .8 Data communications Link (DCL): the data channel between the control units, annunciators, active field devices and supporting field devices of a distributed type system.
- .9 FACP: Fire Alarm Control Panel.
- .10 IDC: Initiating Device Circuit.
- .11 NAC: Notification Appliance (Signal) Circuit.
- .12 ULC: Underwriters Laboratories of Canada
- .13 ULC Listed: Materials or equipment listed and included in the most recent edition of the ULC Fire Protection Equipment Directory.
- .14 Zone: Combination of one or more circuits or devices in a defined building area, i.e. 3 circuits on a floor combined to form a single zone.

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## **1.9 EXISTING SYSTEMS**

- .1 Before Construction begins on any phase as outlined in architectural Contract documents, the fire alarm system verification and certification Contractor shall verify the existing fire alarm system.
- .2 At the beginning of each Construction phase, existing initiating devices, in the area of Construction, shall be disconnected and removed. Provide in area of Construction, during the Construction period, temporary life safety devices and/or fire watch personnel as required by applicable codes.
- .3 At the Completion of Construction, at Completion of each phase of Construction, and after attaining Substantial Performance, and after verification and certification of the total system the verification and certification Contractor shall insert on Autocad CD floor plans supplied by the Consultant, the address of each intelligent/addressable initiating and signal device and each intelligent/addressable module for non-addressable fire alarm zones and each non-addressable initiating and signal device. The Autocad version shall match that of the Contract Drawings. Submit a copy of the record CD to the Contractor and to the Consultant. Include a verification statement as per CAN/ULC-S537.

## **2 PRODUCTS**

### **2.1 MANUFACTURER**

- .1 The manufacturer of the system equipment shall be regularly involved in the design, manufacture, and distribution of all Products specified in this document. These processes shall be monitored under a quality assurance program that meets the ISO 9001:2008 requirements.
- .2 All System components shall be the catalogued Products of a single Supplier. All Products shall be listed by the manufacturer for their intended purpose.
- .3 All control panel assemblies and connected field appliances shall be both designed and manufactured by the same company, and shall be tested and cross-listed as to ensure that a fully functioning is designed and installed. The system supplied under this Specification shall be a microprocessor-based, direct wired, multi-priority peer-to-peer networked system. The system shall utilize electronically addressed, microprocessor-based smoke detectors, heat detectors, and modules as described in this Specification.
- .4 Notification Appliance Circuits:
  - .1 Provide as indicated on the plans, supervised hard-wired Notification Appliance (Signal) Circuits (NAC) for the control of 24Vdc notification appliances.
  - .2 NAC's shall be capable of providing steady, 20bps, 120bps or temporal rate outputs.

### **2.2 FIELD MOUNTED SYSTEM COMPONENTS**

- .1 Analytical Microprocessor-based Addressable Detectors - General:
  - .1 Early warning analog addressable detectors shall use state-of-the-art multi-sensor or technology. Each detector shall incorporate a microprocessor capable of making alarm decisions based on fire parameter algorithms stored in the detectors head. The microprocessor shall evaluate all sensing elements simultaneously and take into account real-time environmental conditions and the duration of an event, resulting in reliable and accurate decisions that distinguish real fire conditions from unwanted deceptive nuisance alarms. Digital filters shall eliminate signal patterns that are not typical of fires. Detectors that use the control panel processor to make alarm decisions are not acceptable.
  - .2 Addressable detectors shall be capable of full digital communications using both



broadcast and polling protocols. The maximum total analog loop response time for detectors shall be 750 ms. The maximum alarm response time for the system to sound an alarm shall not be more than 3-seconds regardless of the detector location or the number of detectors on the addressable loop. The analog loop controller shall support up to 250 devices including 125 modules, 125 detectors and 125 isolator bases. The analog loop must not require shielded wire and shall be capable of a total distance of 1219 m (4000 feet) minimum using #18AWG twisted pair when 100 addressable detectors and 100 addressable modules are connected. The analog loop shall support up to 124 wiring T-taps.

- .3 Each detector shall have the ability to learn its environment and automatically adjust its reference value for changes in its environment. Detectors that require adjustments to their sensitivity settings months after they are installed are not acceptable. Environmental compensation shall allow each sensing element to adapt to short and long term changes caused by dirt, dust, humidity, temperature and ageing. The detector shall adjust and update its sensitivity (% obscuration) and ambient temperature baselines for each sensing element approximately six times per hour. The detector shall utilise a 4-hour rolling average of the environmental information and for verification purposes also maintain a 24-hour average of the analog values, both of which may be taken into account in the alarm decision making process.
- .4 The detectors on-board micro-processor shall monitor the environmental effects on its baseline and generate a "maintenance alert" message at the control panel when the detectors environmental compensation is 80% used up indicating it should be cleaned. This event shall be programmable to initiate any type of system response such as send a pocket pager message to maintenance. When the environmental compensation head room is 100% used up, a trouble condition shall latch on the system to advise that the detector requires cleaning immediately. Up to this point the detectors sensitivity shall not have been compromised. Dirty detectors that continue to be ignored will eventually post an internal device fault and will not false alarm as a result of the accumulation of dirt. Dirty detectors that false alarm if not cleaned are not acceptable.
- .5 The detector shall be capable of identifying up to 32 self-diagnostic codes including verification that the detectors reference value is within its prescribed factory and ULC limits. Sensitivity Reports shall include the percent obscuration that the detectors alarm level is set at and the percentage of compensation used as a result of environmental factors (dirt, dust, humidity, etc). This information shall be available for system maintenance and may be requested per device or generate Reports based on only the detectors that require cleaning.
- .6 The early warning analog addressable detectors and the analog loop controller shall provide increased reliability and inherent survivability through intelligent analog conventional operation. Detectors shall automatically change to stand alone, conventional device operation in the event of a loop controller polling communications failure. In the analog conventional detector mode, each detector shall continue to operate using its programmed sensitivity and "learned" environmental information stored in the detector's memory at the time of communication failure. The analog loop controller shall be capable of monitoring the loop and activating a loop alarm, without communicating to the devices, if any detector reaches its alarm sensitivity threshold.
- .7 Each detector shall have a separate means of displaying communication and alarm status. A green LED shall flash to confirm normal status communication with the analog loop controller. A red LED shall flash to display alarm status. Both LED's on steady shall indicate an alarm in the conventional stand-alone

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- mode status. The LEDs shall be visible through a full 360 degree viewing angle.
- .8 It shall be possible to matrix program Signature analog detectors. Responses shall be programmable based on activated detectors within the physical location to one another and/or the number of activated detectors in a programmable group or groups.
  - .9 All detectors shall be compatible with all Signature Series mounting bases.
- .2 Detectors – 3D Multi-Sensor Detectors (Photoelectric, Thermal & Time)
- .1 Provide intelligent Signature Series 3D multi-sensor smoke detectors. The multi-sensor analog detector shall gather analog information from each of its two sensors: a light scattering type photoelectric sensor and an ambient temperature sensor. The integral microprocessor shall employ time-based algorithms to dynamically examine values from each sensor simultaneously and make an alarm decision based on that data. Separately mounted photoelectric and heat detectors in the same location are not acceptable alternatives.
  - .2 Each detector shall be capable of adapting to ambient environmental conditions and the integral heat sensor shall be capable of causing an alarm when it reaches its fixed temperature alarm set point of 57°C (135°F) nominal.
  - .3 The detector shall have a ULC Smoke Sensitivity Range of 0.67-3.7% obscuration/ft 305mm (foot). The alarm smoke obscuration per foot setting shall be field selectable to any one of five sensitivity settings ranging from 1.0% to 3.5%. The pre-alarm smoke obscuration per foot setting shall be field selectable in .05% increments for a total of 19 selections per sensitivity setting starting at 0.05% smoke obscuration per foot. Multi-sensor analog detectors shall be capable of an automatic day/night alternate sensitivity adjustment for both alarm and pre-alarm thresholds. Alarm and pre-alarm events shall have independent programmable responses. The pre-alarm message shall display in the monitor queue and the alarm message in the alarm queue.
  - .4 The multi-sensor detectors shall be suitable for area protection and for direct insertion into air ducts up to 0.91m (3 ft) high and 0.91m (3 ft) wide and air velocities up to 25.4 m/sec (5000 ft/min.) without requiring specific duct detector housings or supply tubes. The multi-sensor detector shall be rated for ceiling installation with maximum 9.1m (30-foot) centers. For clean room applications requiring very early warning pre-alarm sensitivities, recommended area coverage is 18.6m<sup>2</sup> (200 square feet).
  - .5 The detector shall be protected by a ULC listed protective guard in areas where subjected to mechanical damage or abuse. The design must be 100% compatible with the detector and must not affect the detector sensitivity or reduce detector spacing. The guard shall be low profile and suitable for flush or surface mounted detectors.
  - .6 The multi-sensor detector shall be suitable for operation in the following environment:
    - .1 Temperature: 0°C to 38°C (32°F to 100°F)
    - .2 Humidity: 0-93% RH, non-condensing
    - .3 Elevation: no limit
- .3 Detectors – Combination Fixed Temperature/Rate of Rise Heat Detector
- .1 Heat Detector shall have a solid state heat sensor, and shall transmit an alarm at a fixed temperature of 57°C (135°F) or due to a temperature Rate of Rise of 9°C/minute (15°F/minute). The detector shall continually monitor the temperature of the air in its surroundings to minimize thermal lag to the time required to process an alarm.
  - .2 The heat detector shall be rated for ceiling installation at 21.3m (70 ft) centers and be suitable for wall mount applications.

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- .4 Detectors - Fixed Temperature Heat Detector,
    - .1 Heat detector shall have a solid-state heat sensor, and shall transmit an alarm at a fixed temperature of 57°C (135°F). Detector shall continually monitor the temperature of the air in its surroundings to minimize thermal lag to the time required to process an alarm.
    - .2 Heat detector shall be rated for ceiling installation at 21.3m (70 ft) centers and be suitable for wall mount applications.
  - .5 Detectors - Mounting Bases
    - .1 Mounting bases shall support all microprocessor-based detector types detailed in this Specification
    - .2 Removal of the respective detector shall not affect communications with other addressable devices.
    - .3 Field wiring connections shall be made to the room side of the base, so that wiring connections can be made or disconnected by the Contractor without the need for remove the mounting base from the electrical box.
    - .4 Bases will have the option of external LED operation, Relay Base or Data Line Isolator Base.
    - .5 The relay base shall support all Addressable Detector types and have the following requirements:
      - .1 Form "C" contacts rated at 1 amp @ 30VDC and listed for "pilot duty".
      - .2 The position of the contact shall be supervised
      - .3 Separate power shall not be required to the relay base.
      - .4 The relay shall automatically de-energize when a detector is removed
      - .5 The relay operation shall be exercised by the detector processor on power up.
      - .6 The relay shall be a bi-stable type and selectable for normally open or normally closed operation.
      - .7 For added survivability, relay operation shall be controlled by the detectors microprocessor. The relay shall be capable of operation in the conventional stand-alone mode in the event communication is lost with the loop controller. Relay bases not controlled by the detector's microprocessor shall not be acceptable.
    - .6 The isolator base shall support all Addressable Detector types and have the following requirements:
      - .1 The isolator shall operate within a minimum of 23msec of a short circuit condition on the analog communication wiring.
      - .2 An analog addressable detector mounted with an isolator base shall only use 1 address on the loop. It shall be possible to provide one isolator for every detector to achieve the highest level of survivability possible. The analog loop controller shall support up to 250 devices including 125 modules and 125 detectors with 125 isolator bases.
      - .3 In a Class A configuration, the analog loop controller shall identify an isolated circuit condition and provide communications to all non-isolated analog devices.
      - .4 Isolators are required between all Floor Areas as defined in the NBC.

## **2.3 MICROPROCESSOR-BASED ADDRESSABLE MANUAL PULL STATIONS**

- .1 Fire Alarm / Life Safety System shall incorporate single stage microprocessor-based

addressable Manual Pull Stations connected over a 2 wire electronic communications loop, using both broadcast and serial polling protocols. All Manual Pull Stations shall display communications and alarm status via LED's mounted on their integral, factory assembled module.

- .2 All addressing of the Manual Pull Stations shall be done electronically, and the electrical location of each station shall be automatically reported to the Fire Alarm Control Panel, where it may be downloaded into a PC, or printed out. The addressing of the Manual Pull Station will not be dependent on their electrical location on the circuit.
- .3 Provide intelligent single action single-stage fire alarm stations where shown on plans. The fire alarm station shall be of metal Construction with an integral toggle switch to activate alarm signals. Stations shall be finished in red with silver "PULL IN CASE OF FIRE" lettering in [English ] [English-French]. The manual station shall be suitable for mounting on a North American 64 mm (2-1/2") deep, single-gang electrical box.
- .4 All Manual Fire Alarm station shall be suitable for operation in the following environment:
  - .1 Temperature: 0°C to 49°C (32°F to 120°F)
  - .2 Humidity: 0-93% RH, non-condensing

#### **2.4 FIRE ALARM NOTIFICATION APPLIANCES - GENERAL REQUIREMENTS**

- .1 All appliances which are supplied for the requirements of this Specification shall be ULC Listed.
- .2 All appliances shall be of the same manufacturer as the Fire Alarm Control Panel specified to insure absolute compatibility between the appliances and the control panels, and to insure that the application of the appliances are done in accordance with the single manufacturer's instructions.
- .3 Any appliances that do not meet the above requirements, and are submitted for use must show written proof of their compatibility for the purpose intended. Such proof shall be in the form of documentation from all manufacturers that clearly states that their equipment (as submitted) is 100% compatible with each other for the purpose intended.
- .4 Self-Synchronized Horns and Strobes
  - .1 Provide electronic horn/strobes to match existing. Horn and strobe power shall be provided on one pair of wires. It shall be possible to control the horn (on, off and coded) independently from the strobe. The horn shall be selectable for continuous or synchronized temporal operation. The strobe shall be selectable for a continuous or temporal synchronized flash rate to match the horn and meet the intent of the National Building Code, Appendix Clause 3.2.4.20 (1).
  - .2 The horn shall provide an output of 94 dB peak using a low frequency tone for superior wall penetration. The strobe output shall be synchronized and available in 15, 30, 60, 75 & 110 candela (cd) as listed on the plans. The light output shall be an even "Full Light" pattern throughout the strobes protected area. Strobes utilizing a traditional specular reflector with uneven light distribution are not acceptable.
  - .3 The horn/strobe shall be an ultra low profile single gang design, finished in UV stable textured red and shall not protrude more than 25.4 mm (1") from the wall. All mounting hardware shall be captive and there shall be no mounting screws visible after the device is installed.
  - .4 The devices shall mount to a standard single gang electrical box and have an optional trim ring for 2-gang, octagonal or 102 mm (4") square boxes. The signalling device series shall share a common appearance and be available in a horn, strobe or combination horn/strobe unit as listed on the plans.

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## **2.5 WIRING**

- .1 In accordance with CSA C22.2 No. 208, CAN/ULC-S524, and governing Codes and Regulations, all electrically supervised, and as follows:
  - .1 All other wiring unless otherwise specified: minimum 105°C (220°F) rated with copper conductors and colour coded insulation, and, unless otherwise shown or specified, sized in accordance with the fire alarm system manufacturer's instruction but in any case minimum No. 16 AWG.
  - .2 Install all wiring in conduit, except M.I. cables, conduit sized to code. Minimum conduit size 19 mm (3/4").
  - .3 Install alarm indicating circuits and alarm receiving circuits in separate conduits.
  - .4 Provide end-of-line resistors to electrically supervise all wiring.
  - .5 Ground and bond all system cabinets and other Work to the building grounding system.

## **3 EXECUTION**

### **3.1 INSTALLATION:**

- .1 The entire system shall be installed in accordance with the latest edition of CAN/ULC-S524 and the approved manufacturer's manuals and wiring diagrams. The Contractor shall provide all labour, conduit, wiring, outlet boxes, junction boxes, cabinets and similar devices necessary for a complete, functional life safety fire alarm system. Provide all necessary power supply, interconnecting and remote signal wire in dedicated conduit throughout and installed in accordance with the manufacturer's wiring diagrams and the requirements of the Ontario Electrical Safety Code and the Inspection Authority. All penetration of floor slabs and fire walls shall be fire stopped in accordance with all local fire codes. End-of-line resistors shall be provided as required for mounting as directed by the manufacturer.

### **3.2 TESTING AND INSPECTION:**

- .1 The manufacturer's representative shall make an inspection of the fire alarm equipment, including those components necessary to the direct operation of the system such as manual stations, thermal and smoke actuated detectors and controls, whether or not manufactured by the manufacturer. The inspection shall comprise an examination and test of such equipment for the following:
  - .1 That the type of equipment installed is that designated by the Specifications.
  - .2 That the wiring connections to all equipment components show that the installer undertook to have observed ULC requirements.
  - .3 That all Products of combustion (smoke) detectors have been properly calibrated and adjustments set correctly.
  - .4 That the representatives equipment has been installed in accordance with the manufacturer's recommendations.
  - .5 That the supervisory wiring of all devices connected to a supervised circuit is operating and that the wiring having been met to the satisfaction of the inspecting officials.
  - .6 Testing to be done in the presence of the local building inspector and the local Fire Marshall.
  - .7 Fire alarm System shall be verified as per the latest issue of CAN/ULC-S537, Verification of Fire Alarm Systems standard.

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### **3.3 SYSTEM PROGRAMMING**

- .1 Arrange for all required system programming to be done by the system manufacturer's technical representatives.

### **3.4 SYSTEM TESTING, CERTIFICATION, AND VERIFICATION**

- .1 The system manufacturer and an independent third party testing company are to test and verify the completed system. The independent third party testing company is to have primary responsibility for testing and verification.
- .2 Commissioning, System Manufacturer's Testing and Verification: Accompanied by qualified personnel of the system manufacturer, the Commissioning Agent is to visually inspect the system for completeness, then test system operation, including all alarm initiating devices, signal devices, and all other system operations and functions. When the Commissioning Agent and system manufacturer confirm that the system is operating as intended, obtain from the Commissioning Agent and manufacturer and submit copies of signed test, inspection, and commissioning sheets, and a signed letter from the system manufacturer certifying that the system has been checked, tested, operated, adjusted, and is operating as intended, all as per CAN/ULC-S536. Qualified personnel system manufacturer's personnel are also to be available on-site to accompany independent third party personnel testing and verification.
- .3 Independent Third Party System Testing and Verification: Retain and pay all costs for independent third party testing and verification of the system in accordance with CAN/ULC S537. The independent third party is to be a qualified and experienced testing agency with personnel trained in accordance with the Fire Alarm Technology Program of the Canadian Fire Protection Association, or Certified Fire Alarm Electricians certified by the Electrical Contractors Association of Ontario. All such personnel are to carry identification cards at all times while on-site. Third party independent testing and verification is to be responsible for:
  - .1 Coordinating attendance at the site of all required fire inspection personnel so as to obtain their approval of testing and verifying Work
  - .2 Coordinating attendance at the site of system manufacturer's technical personnel to advise as required
  - .3 Written confirmation that all alarm initiating devices, signals, paging, telephone, and all other components have been tested and operate properly
  - .4 Written confirmation that all supervised wiring is properly installed and operating and is in accordance with all applicable requirements
  - .5 Written confirmation that the overall system and sequences of operation, including operation of communication equipment, mechanical equipment, elevators, similar equipment as specified, battery power and charging have been tested and are in accordance with all requirements and meet with the approval of local governing authorities
  - .6 Submittal of signed test report sheets and a signed Verification Certificate and approval documentation issued by the local Fire Authorities

### **3.5 LIABILITY INSURANCE POLICY**

- .1 Within fifteen days of written notification of Award of Contract, submit a Certificate of Insurance for a Commercial General Liability Insurance Policy from an insurer licensed to do business in the Province of the Work and signed by an officer of the insurer covering public liability and property damage in a minimum amount of two millions dollars inclusive in Canadian funds and insuring all Services, operations, Products, and fire alarm system Work. The policy is to be extended to include bodily injury, property damage, personal and advertising injury, Products and completed operations, Contractual liability, Owners and Contractors protective liability and to a limit of not less than two million dollars Canadian per occurrence.
- .2 The policy is to:
  - .1 Include a cross liability clause and be endorsed to include the Owner
  - .2 Include non-owned automobile insurance to a limit of not less than two million dollars Canadian
  - .3 Include automobile insurance (OAP1) for both owned and leased vehicles with inclusive limits of two million dollars Canadian
  - .4 Be non-contributing with and will apply only as primary and not excess to any other insurance or self-insurance available to the Owner
  - .5 Contain an undertaking by the insurers to notify the Owner in writing not less than thirty days before any material change in coverage or cancellation of coverage.

**END OF SECTION**

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**1 GENERAL**

**1.1 RELATED WORK SPECIFIED ELSEWHERE**

- .1 Basic Materials and methods Section 26 05 03

**1.2 PROJECT DESCRIPTION**

- .1 Work within this section includes (but is not limited to) provision of the following major components:
  - .1 BIX style IDC cross connect panels in main computer rooms (voice).
  - .2 Category 6 (copper) patch panels for termination of voice and data cabling in computer rooms and LAN rooms.
  - .3 Patch cords and line cords.
  - .4 19" relay racks for installation of patch panels (copper and fiber optic).
  - .5 Category 6 horizontal cabling (voice and data).
  - .6 Consolidation points and transition cables.
  - .7 Telecom outlets and jacks.
  - .8 Testing and Certification.

**1.3 MATERIAL**

- .1 Supply and installation of all materials will be the responsibility of Division 27 unless indicated otherwise.
- .2 This specification has been developed on the basis of a complete cabling system utilizing AMP NETCONNECT Products. Equivalent Products/materials as manufactured by NORDX will also be acceptable.

**1.4 APPLICABLE DOCUMENTS**

- .1 Under no circumstances will changes to the project be made without the approval of the Consultant.
- .2 The cabling system described in this specification is derived in part from the recommendations made in industry standard documents. The list of documents below are incorporated by reference:
  - .1 This Technical Specification and Associated Drawings
  - .2 TIA/EIA 568-B.2-1 Performance Specification for 4-Pair 100 Ohm Category 6 Cabling (latest revision)
  - .3 TIA/EIA-568-B Commercial Building Telecommunications Cabling Standard- April 2001
  - .4 TIA/EIA-569-A Commercial Building Standard for Telecommunications Pathways and Spaces - February 1998
  - .5 TIA/EIA-606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings- February 1993
  - .6 TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications- August 1994
  - .7 Building Industries Consulting Specifications, International (BICSI) Telecommunications Distribution Methods Manual (TDMM) - 9.1<sup>st</sup> edition
  - .8 AMP NETCONNECT Design and Installation Contractor Agreement (current)
- .3 If a conflict exists between applicable documents, then the order in the list above shall dictate the order of precedence in resolving conflicts. This order of precedence shall be maintained unless a lesser order document has been adopted as code by a local, state



or federal entity, and is therefore enforceable as law by a local, state or federal inspection agency.

- .4 If this document and any of the documents listed above are in conflict, then the more stringent requirement shall apply. All documents listed are believed to be the most current releases of the documents; the vendor is responsible to determine and adhere to the most recent release when developing the proposal for installation.

## **1.5 TELECOMMUNICATIONS SYSTEM DESCRIPTION**

- .1 Typically, one data circuit and one voice circuit will be provided to each user outlet as a standard configuration. The data circuits are provided via one Category 6 cable to each outlet, and the one voice circuit is provided through one Category 6 cable. Horizontal data and voice cables are terminated on rack-mounted Category 6 patch panels. Horizontal data circuits are connected to LAN electronics within each LAN room or computer room. Horizontal voice circuits are cross-connected to backbone riser frames within each LAN room or computer room.
- .2 Where applicable a fiber optic data backbone is employed between the LAN room(s) and main computer room for data connectivity. High pair count Category 3 CMR backbone riser cables are employed between the LAN room(s) and main computer room for voice connectivity. Within the LAN rooms and computer rooms, backbone fiber strands are terminated and housed in rack-mount fiber optic enclosures. Within the LAN rooms and computer rooms, backbone copper pairs are terminated on rack mounted patch panels or wall-mount BIX XC termination frames as noted on Drawings.

## **1.6 DEFINITIONS**

- .1 The following abbreviations, used within this design, are defined as follows:
  - .1 GP Grid Point
  - .2 CP Consolidation Point

## **2 PRODUCT**

### **2.1 RACEWAYS**

- .1 Refer to Section 27 05 28, Telecommunications Systems Raceways for details regarding conduit, cable trays and bonding.

### **2.2 HORIZONTAL DATA AND VOICE CABLING**

- .1 Horizontal Voice and Data Cabling
  - .1 Unless noted otherwise, all horizontal voice and data cabling will be 23 AWG, 4- pair UTP CMP (FT6) rated, with a plenum-rated PVC jacket. Individual conductors shall be FEP insulated. Cable jacketing shall be lead free. Cable must meet or exceed the Specifications of the EIA/TIA 568 or CSA 529 Category 6 performance standards. AMP NETCONNECT #219567-X or approved equal.
  - .2 Category 6 Cable Performance Characteristics:

Frequency (MHZ)	Attenuation (dB/100m)	NEXT (dB)		PSNEXT (dB)		ELFEXT (dB)		PSELFEXT (dB)		RL (dB)		ACR (dB)		PSACR (dB)	
		Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical	Minimum	Typical
0.772	1.8	79	82	77	79	70	73	67	69	—	—	77.2	80.2	75.2	77.2
1	2.0	77	80	75	77	68	71	65	67	20	28	75.0	78.3	73.0	75.3
4	3.8	68	71	66	68	56	59	53	55	23	31	64.2	67.5	62.2	64.5
8	5.3	64	67	62	64	50	53	47	49	24.5	32.5	58.7	61.4	56.7	58.4
10	6.0	62	65	60	62	48	51	45	47	25	33	56.0	59.3	54.0	56.3
16	7.6	59	62	57	59	44	47	41	43	25	33	51.4	54.7	49.4	51.7
20	8.5	58	61	56	58	42	45	39	41	25	33	49.5	52.3	47.5	49.3
25	9.5	56	59	54	56	40	43	37	39	24.3	32.3	46.5	49.8	44.5	46.8
31.25	10.7	55	56	53	55	38	41	35	37	23.6	31.6	44.3	47.2	42.3	44.2
62.5	15.4	50	53	48	50	32	35	29	31	21.5	29.5	34.6	37.9	32.6	34.9
100	19.8	47	50	45	47	28	31	25	27	20.1	28.1	27.2	30.4	25.2	27.4
155	25.3	44	47	42	44	24	27	21	23	18.8	26.8	18.7	22.1	16.7	19.1
200	29.0	43	46	41	43	22	25	19	21	18	26	14.0	16.6	12.0	13.6
250	32.8	41	44	39	41	20	23	17	19	17.3	25.3	8.2	11.3	6.2	8.3
300	36.6	40	43	38	40	18	21	15	17	16.8	24.8	3.4	6.5	1.4	3.5
350	40.0	39	42	37	39	17	20	14	16	16.3	24.3	—	2.1	—	—
400	43.2	38	41	36	38	16	19	13	15	15.9	23.9	—	—	—	—
450	46.3	38	41	36	38	15	18	12	14	15.5	23.5	—	—	—	—
500	49.2	37	40	35	37	14	17	11	13	15.2	23.2	—	—	—	—
550	52.0	36	39	34	36	13	16	10	12	14.9	22.9	—	—	—	—
600	54.8	36	39	34	36	12	15	9	11	14.7	22.7	—	—	—	—

.3 Cable Colour:

Cable Purpose and Location	Cable Colour
<b>NCC/RCR to Grid/Consolidation Point</b>	
<i>Home Run's used</i>	
Patch Panel (LAN Room) to Outlet (Data)	Blue
Patch Panel (LAN Room) to Outlet (Voice)	White
<i>Consolidation Points Used</i>	
Patch Panel (LAN Room) to Consolidation Point (Data)	Blue
Consolidation Point to Workstation or Wall Outlet (Data)	Blue
Patch Panel (LAN Room) to Consolidation Point (Voice)	White
Consolidation Point to Workstation or Wall Outlet (Voice)	White
<b>Common Cables</b>	
Backbone UTP (Data)	Orange/Yellow
Backbone Multi-pair Copper (Voice/Fax)	White
Cross-Over	Red
Data Patch Cords (NCC/RCR/Workstations)	Blue
Telephone Patch Cords	Grey/Silver
ISDN	Yellow

- .2 Above colour scheme may be altered upon receiving written authorization from Owner.

**2.3 TELECOMMUNICATION OUTLETS**

- .1 Each outlet location, unless otherwise noted, shall be provided with two Category 6 cables. Each Category 6 cable shall be terminated on an 8-position, 8-conductor Category 6 jack to the T568A color code. The outlet plates, unless otherwise noted, shall be mounted to single gang boxes, box eliminators, surface mount boxes and/or floor monuments (3" party) as required.

**2.4 MODULAR JACKS**

- .1 All modular jacks shall be wired to the T568A wiring pattern. Modular jacks shall be constructed with a housing of polyphenylene oxide, 94V-O rated. Modular jacks shall be terminated using a 110-style pc board connector (made of 94V-O rated polycarbonate), color-coded for both T568A and T568B wiring. The 110 connector shall terminate 22-24.
- .2 AWG solid conductors with a maximum insulation diameter of .050 inches. The modular jack contacts shall be plated with a minimum of 50 microinches of gold in the contact area over 50 microinches minimum nickel underplate. Modular jacks shall be compatible with panel thicknesses of .058"- .063". Modular jacks shall snap into a .790" X .582" opening.
- .3 Modular jacks shall be UL Listed under file number E81956. Category 6 modular (data/voice) jacks shall be unkeyed 4-pair and shall meet the performance requirements listed in the table below. Modular jacks shall fit in a .790" X .582" opening. Modular jacks shall be terminated using a 110-style pc board connector, color-coded for both T568A and T568B wiring. Each jack shall be wired to T568B. Modular jacks shall be UL Listed under file number E81956. Modular jacks shall be AMP NETCONNECT part number 1375055-X (X indicates color).
- .4 Category 6 Modular Jack Performance Characteristics:

Frequency MHz	Insertion Loss dB	Return Loss dB	NEXT dB	FEXT dB
1	0.02	52.4	84.8	83.7
4	0.02	53.7	80.3	74.8
8	0.02	55.3	77.4	69.4
10	0.03	56.1	76.4	67.5
16	0.03	57.6	72.0	62.9
2	0.04	59.3	71.9	61.7
2	0.04	59.4	69.1	59.8
31.25	0.05	56.8	67.7	58.2
62.5	0.06	42.3	61.5	52.6
100	0.06	33.2	57.7	48.7
200	0.06	21.2	52.5	42.2
250	0.10	17.4	47.9	40.1

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## **2.5 OFFICE/WALL OUTLETS**

- .1 Use 4-port flush 110 Connect faceplates. Faceplates shall be constructed of ABS molding compound and be 115mm x 70mm x 15mm (4.53" x 2.77" x .60") in size. Each faceplate shall contain two Category 6 jacks and appropriate blank filler plates. Faceplates shall accommodate two labels and provide a clear polycarbonate cover for each. Faceplates shall be gray in color. Faceplates shall be AMP part number 406185-4 or an approved equivalent.

## **2.6 EQUIPMENT RACKS (RELAY TYPE)**

- .1 EIA compliant 19" open frame rack shall be Middle Atlantic Products model #RL-10-45 or approved equal.
- .2 Rack shall have self-aligning design to speed field assembly.
- .3 Overall dimensions of rack shall be 500mm W x 390mm D x 2100mm H (19.62" W x 15.25"D X 84" H ; 5.5" deep at top), with a useable rack height of 45 rack spaces.
- .4 Weight capacity shall be 200 lbs., evenly distributed with the base securely fastened, and 400 lbs., evenly distributed with the base of the rack securely fastened and the top of the rack braced to a structural building component.
- .5 Relay rack channels shall be constructed of 11-9auge steel with tapped 10-32 holes in universal EIA spacing, top angles shall be 3mm (0.125") thick aluminum which can be easily field drilled for cable ladder installation.
- .6 Gusseted foot base shall have taper on feet to allow rack to self-stabilize on uneven floors.
- .7 Open frame rack shall be phosphate pre-treated and finished in a durable black powder coat.
- .8 Rack shall be supplied complete with the following options:
  - .1 CSB Cantilever support base.
  - .2 CK-45 Center cable organizer (45 space)
  - .3 CK-45E End cable organizer (45 space)
  - .4 CK-45C Cable organizer covers (45 space)

## **2.7 DATA PATCH PANELS**

- .1 The horizontal category 6, data cables shall terminate inside the LAN Rooms and Computer Rooms onto AMP NETCONNECT category 6 patch panels. The data patch panels shall be installed onto the racks. Category 6 patch panels shall be 2U, 48-Port, wired to T568A, and shall accept RJ-45, 8-Position modular plugs. Patch panels shall be configured as 6-port modules with individually replaceable jacks. The front of each module shall be capable of accepting 9mm to 12mm labels. Each port shall be capable of accepting an icon to indicate its function. Patch panels shall terminate the building cabling on 110-style insulation displacement connectors. The installed system shall comply with the Category 6 performance characteristics listed in the following table listed below. Patch panels must be UL Listed under file number E81956. Patch panels shall be AMP NETCONNECT part number 1479515-1 or an approved equivalent.
- .2 Where indicated on Drawings 24 port data patch panels shall be provided: Specifications similar to above.

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## 2.8 VOICE PATCH PANELS

- .1 The horizontal category 6, data cables shall terminate inside the LAN rooms and Computer Rooms onto AMP NETCONNECT category 6 patch panels. The data patch panels shall be installed onto the racks. Category 6 patch panels shall be 2U, 48-Port, wired to T568A, and shall accept RJ-45, 8-Position modular plugs. Patch panels shall be configured as 6-port modules with individually replaceable jacks. The front of each module shall be capable of accepting 9mm to 12mm labels. Each port shall be capable of accepting an icon to indicate its function. Patch panels shall terminate the building cabling on 110-style insulation displacement connectors. The installed system shall comply with the Category 6 performance characteristics listed in the following table listed below. Patch panels must be UL Listed under file number E81956. Patch panels shall be AMP NETCONNECT part number 1479515-1 or an approved equivalent.
- .2 Where indicated on Drawings 24 port data patch panels shall be provided: Specifications similar to above.

## 2.9 DATA PATCH CORDS & LINE CORDS

- .1 Patch cords used at the telecommunication racks and at the workstation shall be Category 6, 4-pair assemblies. Patch cords shall be factory-assembled by the manufacturer of the cabling system. Each workstation shall require one 10-foot Category 6 patch cord.
- .2 In the LAN rooms and Computer Rooms, 8-, 10-, and 12-foot patch cords shall be provided to cross-connect between the data patch panels and network equipment. One patch cord per user outlet is to be provided. The total quantity of patch cords required are equally divided between three assembly lengths. Optical patch cords shall be provided to patch the network equipment to the enclosures and shall be 1 meter in length. [MT-RJ to MT-RJ, MT-RJ to SC, or MT-RJ of S7] Fiber optic patch cords shall be provided depending upon LAN electronic interface. Four optical patch cords are provided for each closet.

Cat 6 Patch Cable, 8 ft, Black	<b>AMP Part No. 219884-8</b>
Cat 6 Patch Cable, 10 ft, Black	<b>AMP Part No. 1-219884-0</b>
Cat 6 Patch Cable, 12 ft, Black	<b>AMP Part No. 1-219884-2</b>
Optical Fiber, Zip Cord, MT-RJ to MT-RJ, 1M	<b>AMP Part No. 1278128-1</b>
Optical Fiber, Zip Cord, MT-RJ to SC, 1M	<b>AMP Part No. 1278126-1</b>
Optical Fiber, Zip Cord, MT-RJ to ST, 1M	<b>AMP Part No. 127899-1</b>

## 2.10 VOICE PATCH CORDS & LINE CORDS

- .1 Patch cords used at the telecommunication racks shall be Category 6, 4-pair assemblies. Patch cords shall be factory-assembled by the manufacturer of the cabling system. The workstation phone cords shall be provided by the Owner.

- .2 In the LAN rooms and Computer Rooms, 8-, 10-, and 12-foot patch cords shall be provided to cross-connect between the workstation voice patch panels and backbone voice patch panels. One patch cord per user outlet is to be provided. The total quantity of patch cords required are equally divided between three assembly lengths.
- |                                 |                         |
|---------------------------------|-------------------------|
| Cat 6 Patch Cable, 8 ft, Black  | AMP Part No. 219884-8   |
| Cat 6 Patch Cable, 10 ft, Black | AMP Part No. 1-219884-0 |
| Cat 6 Patch Cable, 12 ft, Black | AMP Part No. 1-219884-2 |

## **2.11 CONSOLIDATION POINTS**

- .1 All Category 6, horizontal cables will be terminated in a consolidation point. Consolidation points shall be provided with Category 6 modules. The modules shall be constructed with individual unkeyed, 4-pair modular jacks. Modular jacks shall be terminated using 110-style pc board connectors, color-coded for both T568A and T568B wiring. Each jack shall be wired to T568A. Modular jacks shall be UL Listed under file number E81956. Category 6 consolidation point modules shall be AMP NETCONNECT part number 1375367-1.
- .2 A small brightly coloured (orange) sticker shall be placed on the T-bar to indicate the area in each zone where:
- .1 The spare cables are coiled and hung in the ceiling space (if it's a Grid Point for a Home Run installation).
  - .2 The Consolidation Point is located if Consolidation Points are being used (and located above the ceiling).

## **2.12 TRANSITION CABLES**

- .1 Work area outlets shall be created using factory-terminated plug-to-jack transition cable assemblies. Each transition cable assembly shall be plenum-rated and wired to T568A. Transition cable assemblies shall be AMP NETCONNECT part number 219598-X. Cable lengths shall be a nominal 50'; provide longer cables as required by layout (refer to Drawings).
- .2 Provide one transition cable for each horizontal cable (voice and data) installed to the consolidation points.

## **3 EXECUTION**

### **3.1 HORIZONTAL CABLING INSTALLATION**

- .1 Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
- .2 Cable raceways shall not be filled greater than the OESC maximum fill for the particular raceway type.
- .3 Cables shall be installed in continuous lengths from origin to destination (no splices) unless specifically addressed in this document.
- .4 Where cable splices are allowed, they shall be in accessible locations and housed in an enclosure intended and suitable for the purpose.
- .5 The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- .6 If a J-hook or trapeze system is used to support cable bundles all horizontal cables shall be supported at a maximum of four-foot intervals. At no point shall cable(s) rest on acoustic ceiling grids or panels.
- .7 Horizontal distribution cables shall be bundled in groups of not greater than 40 cables.

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- .8 Cable bundle quantities in excess of 40 cables may cause deformation of the bottom cables within the bundle.
  - .9 Cable shall be installed above fire-sprinkler and systems and shall not be attached to the system or any ancillary equipment or hardware. The cabling system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
  - .10 Cables shall not be attached to ceiling grid or lighting support wires. Where light support for drop cable legs are required, the Contractor shall install clips to support the cabling.
  - .11 Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the Contractor prior to final acceptance at no cost to the Owner.
  - .12 Cables shall be identified by a self-adhesive label in accordance with the System Documentation Section of this specification. The cable label shall be applied to the cable behind the faceplate on a section of cable that can be accessed by removing the cover plate.
  - .13 Unshielded twisted pair cable shall be installed so that there are no bends less than four times the cables' outside diameter (4 X cable O.D.) at any point in the run.
  - .14 Pulling tension on 4-pair UTP cables shall not exceed 25-pounds for a single cable or cable bundle.
  - .15 Electromagnetic Interference
    - .1 Cable runs shall not be installed near sources of electromagnetic interference (motors, distribution/isolation transformers) and the following clearances shall be adhered to: 1200 millimeters (4 feet) from large motors or transformers, 300 millimeters (1 foot) from conduits or cables used for electrical power distribution, 120 millimeters (5 inches) from fluorescent lighting. Pathways should cross at 90 degrees from fluorescent lighting and electrical power cables or conduits.
  - .16 Horizontal Cable Length
    - .1 The combined length of any one cable run, consisting of the patch cord in the LAN or Computer room; the horizontal length to the consolidation point or workstation; the transition cable length from consolidation point to workstation; and the station cord length at the workstation, shall not exceed 100 meters (330 feet).
    - .2 The horizontal length of any cable, measured from the LAN room or Computer room, to the workstation RJ45 jack, shall not exceed 90 meters (295 feet).
    - .3 The combined length of a patch cord and a station cord used to connect a workstation shall not exceed 10 meters (35 feet).

### **3.2 TELECOMMUNICATIONS OUTLET INSTALLATION**

- .1 All outlets shall be installed in the following manner:
  - .1 Cables shall be coiled in the in-wall or surface-mount boxes if adequate space is present to house the cable coil without exceeding the manufacturer's bend radius. In hollow wall installations where box-eliminators are used, excess wire can be stored in the wall. No more than 12" of slack shall be stored in an in-wall box, modular furniture raceway, or insulated walls. Excess slack may be neatly coiled and stored in the ceiling above each drop location when there is not enough space present in the outlet box to store slack cable.
  - .2 In addition, each cable type shall be terminated as indicated below:

- .3 Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-B document, manufacturer's recommendations and/or best industry practices.
- .4 Pair untwist at the termination shall not exceed .24 inch for Category 6 connecting hardware.
- .5 Bend radius of the cable in the termination area shall not be less than 4 times the outside diameter of the cable.
- .6 The cable jacket shall be maintained as close as possible to the termination point.
- .7 Voice jacks, unless otherwise noted in Drawings, shall be located in the bottom position(s) of each faceplate. Voice jacks in horizontally oriented faceplates shall occupy the right-most position(s). Modem jacks shall be considered the last voice jack in the sequence.
- .8 Data jacks shall occupy the top position(s) on the faceplate. Data jacks in horizontally oriented faceplates shall occupy the left-most position(s).

### 3.3 CABLE LABELLING

- .1 All labels for the cable should be self laminating vinyl Contract with a white printing area and a clear tail that self laminates the printed area when wrapped around the cable.
- .2 Provide the following system of labelling:
  - .1 Horizontal Cable: Tfloor.GP/CP.cable  
Where:  
T indicates the type of cable Voice (V) or Data (D).  
floor indicates the numeric floor value, where Basement is 'B' and Ground Floor is '01'.  
GP indicates the Grid or Consolidation Point that the cable belongs, 01 to XX.  
cable indicates the cable number in the Grid or Consolidation Point  
*Example:* 002.17.09, indicates the 2<sup>nd</sup> floor, 17<sup>th</sup> Grid Point, the 9<sup>th</sup> cable for Data.  
*Note:* The labelling for the cables should be within 4" of either end of the cable, 6" before the cable reaches the centre point of the Grid Point, at the faceplate and at the patch panel / IDC field.
  - .2 Horizontal Cable- In LAN Room: **T.cable**  
Where:  
**T** indicates the type of application where, IR is In-Room cabling  
**cable** indicates the cable number in the Work Area, 01 to XX.  
*Example:* IR.09  
indicates the In-Room Cable for the LAN, 9<sup>th</sup> cable.  
*Note:* The labelling for the In-Room cables should be within 4" of either end of the cable, at the faceplate and at the patch panel.
  - .3 Grid Point/Consolidation Point Labelling: GPICP.grid\_number  
Where:  
GPICP indicates Grid Point or Consolidation Point.  
grid\_number indicates the grid number, 01 to XX.  
*Example:* GP.03, indicates the third Grid Point on the floor.  
Note: The labelling for the Grid Points should be on the T-bar at the centre of the Grid Point. The colour is to be Orange.

### 3.4 ZONE IDENTIFICATION



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- .1 A small brightly coloured (orange) sticker shall be placed on the T-bar to indicate the area in each zone where:
    - .1 The spare cables are coiled and hung in the ceiling space (if it's a Grid Point for a Home Run installation).
    - .2 The Consolidation Point is located if Consolidation Points are being used (and located above the ceiling).

### **3.5 CABLE TESTING -GENERAL**

- .1 All testing to be performed to verify performance requirements to ANSI/TIA/EIA 568-B Standard.
- .2 All cables and termination hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. All conductors of each installed cable shall be verified useable by the Contractor prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feedthrough couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.
- .3 All cables shall be tested in accordance with this document and best industry practices. If any of these are in conflict, the Contractor shall be responsible to bring any discrepancies to the attention of the project team for clarification and/or resolution.

### **3.6 CABLE TESTING-COPPER**

- .1 Each cable shall be tested for continuity on all pairs and/or conductors. Twisted-pair voice cables shall be tested for continuity, pair reversals, shorts, and opens using a "green light" type test set. Twisted-pair data cables shall be tested for all of the above requirements, plus tests that indicate installed cable performance. These data cables shall be tested using a (Class I or Class II) cable analyzer.
  - .1 **Continuity**  
Each pair of each installed cable shall be tested using a "green light" test set that shows opens, shorts, polarity and pair-reversals. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test set in accordance with the manufacturers recommended procedures and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
  - .2 **Length**  
Each installed cable shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the TIA/EIA-58-A Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multipair cables, the longest pair length shall be recorded as the length for the cable.
  - .3 **Performance Verification**  
Category 6 data cable shall be performance verified using an automated test set. Test results shall be automatically evaluated by the equipment, using the most up-to-date criteria from the TIA/EIA Standard (including draft or published Category 6 requirements), and the result shown as pass/fail. Test results shall be printed directly from the test unit or from a download file

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using an application from the test equipment manufacturer. The printed test results shall include all tests performed, the expected test result and the actual test result achieved.

### **3.7 DOCUMENTATION**

- .1 The cabling Contractor will document the location of all zones, horizontal cabling, and spares in a final "as built drawing". Two copies of these Drawings will be supplied in both electronic format and hard copy. One copy will remain on site. The electronic Drawings shall be in AutoCAD (2004 version) or compatible format on compact discs (CD's).
- .2 All cable test results will be documented. Two copies of the test results will be supplied in both electronic format and hard copy. The electronic documentation shall use Comma Separated Variable (CSV) format and be supplied on compact discs (CD's).
- .3 All documentation records will include name, address, and telephone number of the Contractor, the Contract project number if known, the building name, the full address, the postal code, and the date of Completion.
- .4 When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be collocated in the binder.

### **3.8 WARRANTY AND SPECIFICATIONS**

- .1 The Contractor shall provide a system Warranty covering the installed cabling system against defects in workmanship, components, and performance, and follow-up support after project Completion.

### **3.9 INSTALLATION WARRANTY**

- .1 The Contractor shall warrant the cabling system against defects in workmanship for a period of one year from the date of system acceptance. The Warranty shall cover all labour and materials necessary to correct a failed portion of the system and to demonstrate performance within the original installation Specifications after repairs are accomplished. This Warranty shall be provided at no additional cost to the Owner.

### **3.10 CABLING SYSTEM WARRANTY**

- .1 The Contractor shall facilitate a 25-year system performance Warranty between the manufacturer and the Owner. An extended component Warranty shall be provided which warrants functionality of all components used in the system for 25 years from the date of acceptance. The performance Warranty shall warrant the installed 250 MHz horizontal copper, and both the horizontal and the backbone optical fiber portions of the cabling system. Copper links shall be warranted against the link performance minimum expected results defined in TIA/EIA-568-B.2-1 (latest draft). Fiber optic links shall be warranted against the link and segment performance minimum expected results defined in TIA/EIA 568-B.1.

### **3.11 POST INSTALLATION MAINTENANCE**

- .1 The Contractor shall furnish an hourly rate with the proposal Submittal which shall be valid for a period of one year from the date of acceptance. This rate will be used when

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cabling support is required to affect moves, adds, and changes to the system (MACs).  
MACs shall not void the Contractor's nor manufacturer's Warranty.

**3.12 CABLING SYSTEM ACCEPTANCE**

- .1 The Customer's Technical Representative will make periodic inspection of the project in progress. One inspection will be performed at the conclusion of cable pulling, prior to closing of the false ceiling, to inspect the method of cable routing and support, and the firestopping of penetrations. A second inspection will be performed at Completion of cable termination to validate that cables were dressed and terminated in accordance with TIA/EIA Specifications for jacket removal and pair untwist, compliance with manufacturer's minimum bend radius, and that cable ends are dressed neatly and orderly.

**3.13 TEST VERIFICATION**

- .1 Upon receipt of the test documentation, The Customer reserves the right to perform spot testing of a representative sample of the cabling system to validate test results provided in the test document. Customer testing will use the same method employed by the Contractor, and minor variations will be allowed to account for differences in test equipment. If significant discrepancies are found the Contractor will be notified for resolution.

**3.14 SYSTEM PERFORMANCE**

- .1 During the three-week period between final inspection and delivery of the test and as-built documentation, the Customer will activate the cabling system. The Customer will validate operation of the cabling system during this period.

**3.15 FINAL ACCEPTANCE**

- .1 Completion of: the installation; in-progress and final inspections; receipt of the test and as-built documentation; and successful performance of the system for a two-week period will constitute acceptance of the system.

**END OF SECTION**

**ELECTRICAL DRAWING LIST**

- E0.0 GENERAL NOTES, LEGEND AND DRAWING LIST
- E1.0 STORAGE BUILDING & LANDFILL GAS COLLECTION BUILDING FIRE ALARM PROPOSED PLAN
- E.2.0 FIRE ALARM RISER DIAGRAM

**GENERAL NOTES**

1. DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM DRAWINGS, MANUFACTURER'S SHOP DRAWINGS, AND ON SITE INSPECTIONS.
2. PRIOR TO INSTALLATION OF BOXES IN WALLS, VERIFY THAT NO INTERFERENCES EXIST.
3. ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH EACH OTHER SO AS TO AVOID INTERFERENCES BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
4. WORK IN CONJUNCTION WITH THE EXISTING LIGHT LOCATION ON SITE.
5. REVIEW THE ELECTRICAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
6. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE (OBC), ONTARIO ELECTRICAL SAFETY CODE (OESC) AND THE LOCAL AUTHORITIES REQUIREMENTS.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION WITH THE WORK OF OTHER TRADES, PROVIDE HORIZONTAL AND/OR VERTICAL OFFSETS AS REQUIRED TO SUIT THIS COORDINATION.
8. ALL WIRING SHALL BE A MINIMUM #12 AWG IN CONDUIT SUITABLE FOR THE APPLICATION.
9. AC90 (BX) SHALL ONLY BE ALLOWED FOR SHORT RUNS OF LESS THAN 5 FEET IN LENGTH, UNLESS OTHERWISE NOTED.
10. ALL MATERIALS SHALL BEAR A CSA (CANADIAN STANDARDS ASSOCIATION) LABEL.
11. ELECTRICAL SWITCHES, OUTLETS, PUSH-BUTTONS ETC. SHALL COMPLY WITH ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT (AODA) FOR MOUNTING HEIGHTS AND LOCATION WHERE APPLICABLE.
12. PROVIDE FIRE-STOP MATERIAL AS REQUIRED FOR ALL WALL PENETRATIONS TO MAINTAIN THE SMOKE SEAL AND FIRE RATING. FOR RECESSED JUNCTION BOXES USE HILTI - FIRE BLOK.
13. UPON THE COMPLETION OF THE CONTRACT, ISSUE A FORMAL CERTIFICATE INDICATING THE DATE OF COMPLETION OF WORK, REPAIR OR REPLACE ANY DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE (1) YEAR.

**LEGEND - FIRE ALARM SYSTEM**

THIS LEGEND OF SYMBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD LEGEND. ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.

SYMBOL	DESCRIPTION
	BELL - WALL
	BELL AND STROBE - WALL
	HORN - WALL
	STROBE - CEILING
	STROBE - WALL
	FIRE ALARM SPEAKER - CEILING
	FIRE ALARM SPEAKER AND STROBE - CEILING
	FIRE ALARM PULLSTATION
	HORN AND STROBE - CEILING
	HORN AND STROBE - WALL
	SMOKE DETECTOR - CEILING
	DUCT SMOKE DETECTOR
	SMOKE DETECTOR W/CARBON MONOXIDE - CEILING
	HEAT DETECTOR - CEILING
	SMOKE ALARM W/CARBON MONOXIDE & STROBE
	SMOKE ALARM - CEILING
	CARBON MONOXIDE - CEILING
	FIRE ALARM/ANNUNCIATOR PANEL
	FLOW SWITCH
	PRESSURE SWITCH
	SUPERVISORY VALVE
	LINE ISOLATOR
	END OF LINE RESISTOR
	DOOR HOLD OPEN

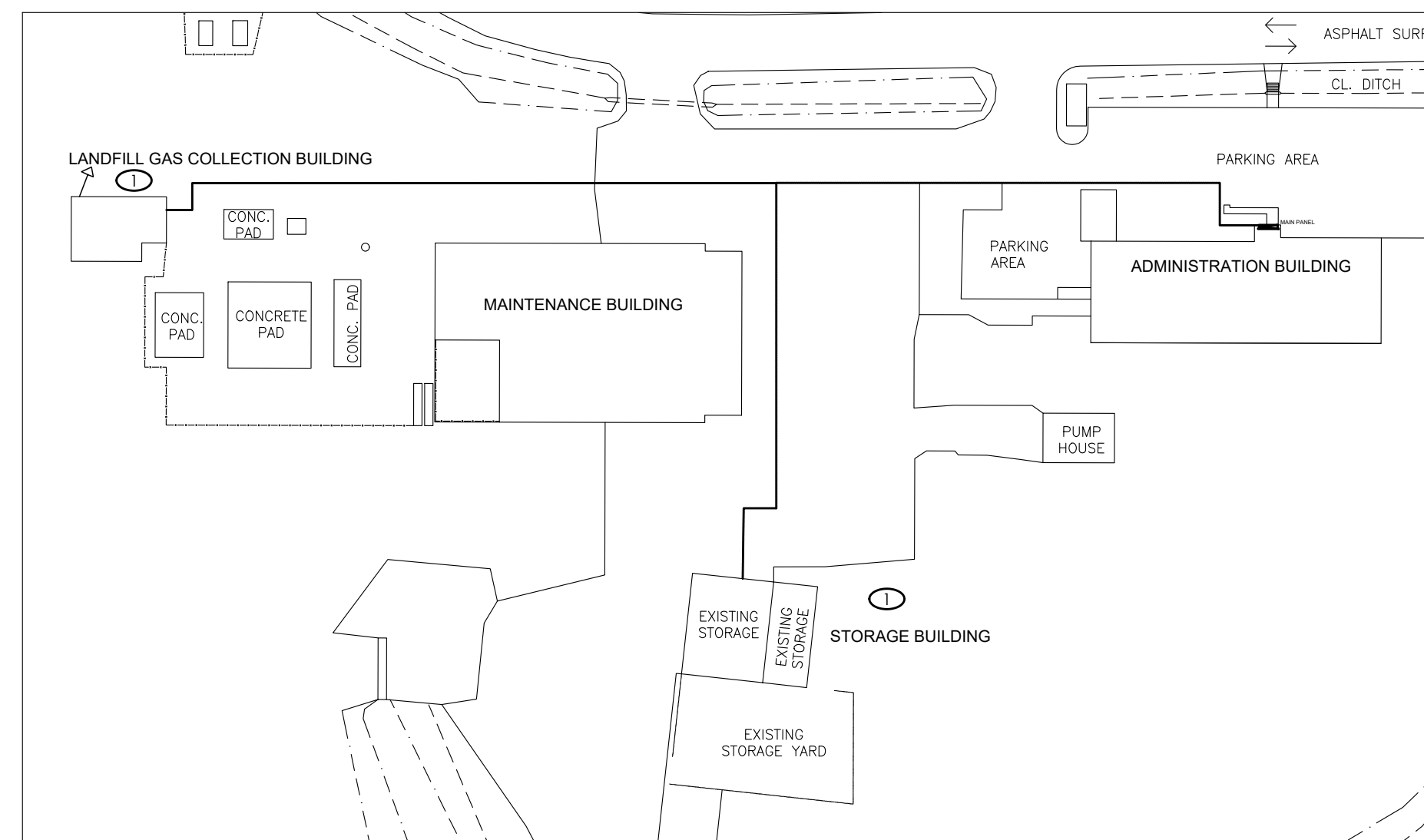
**LEGEND - ABBREVIATION**

THIS LEGEND OF SYMBOLS REPRESENTS MANTECON PARTNERS INC. STANDARD LEGEND. ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.

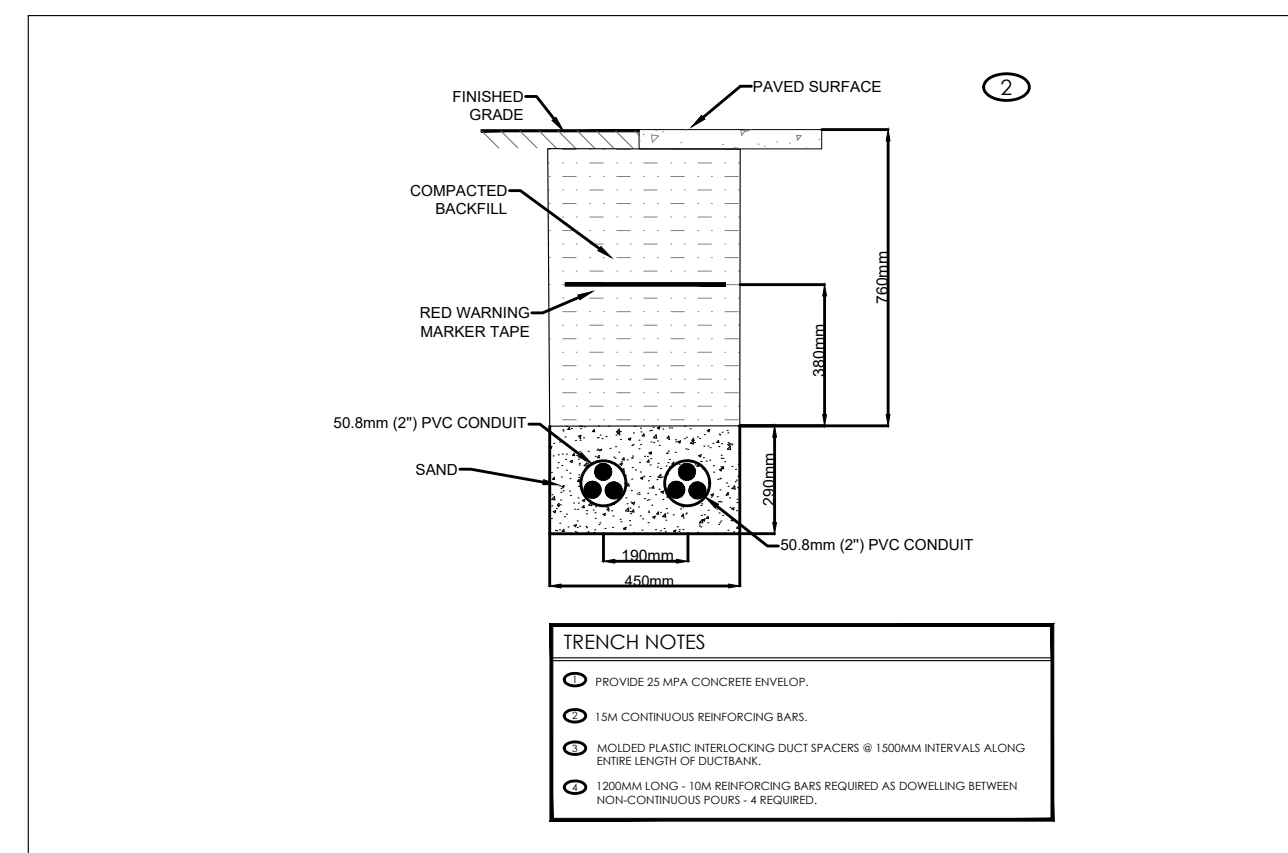
SYMBOL	DESCRIPTION
R	REMOVE
R/R	REMOVE AND REINSTALL
ER	EXISTING TO BE RELOCATED
EX	EXISTING TO REMAIN
GFI	GROUND FAULT INTERRUPT
NL	NIGHT LIGHT
WP	WEATHER-PROOF
ADO	AUTOMATIC DOOR OPENER
HD	HAND DRYER
D/W	DISHWASHER
F/R	REFRIGERATOR
M/W	MICROWAVE



**1 SITE MAP**  
E0.0 SCALE: NTS



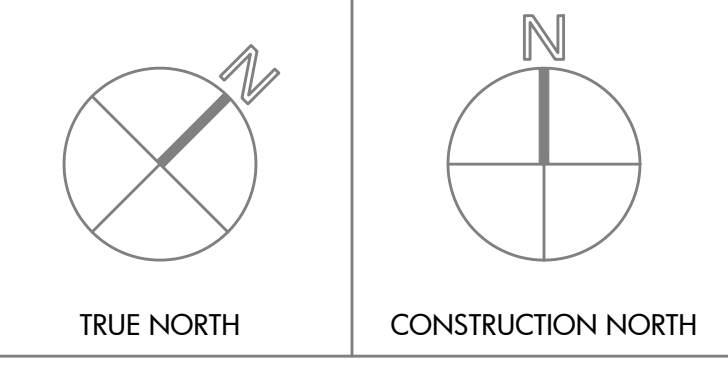
**2 SITE PLAN**  
E0.0 SCALE: 1:1000



**3 TRENCH DETAILS**  
E0.0 SCALE: 1:1000

**DRAWING NOTES**

- 1 THE MAIN FIRE ALARM PANEL IN THE ADMIN BUILDING TO BE CONNECTED WITH THE SUB PANELS IN STORAGE BUILDING AND THE LANDFILL GAS COLLECTION BUILDING.
- 2 THE TRENCH DETAILS IS REPRESENTING THE SITE PLAN WIRING.



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2	ISSUED FOR PERMIT	2024-05-07	A.S.
1	ISSUED FOR 80 % REVIEW	2024-02-22	F.S.



CLIENT  
Regional Municipality of Halton

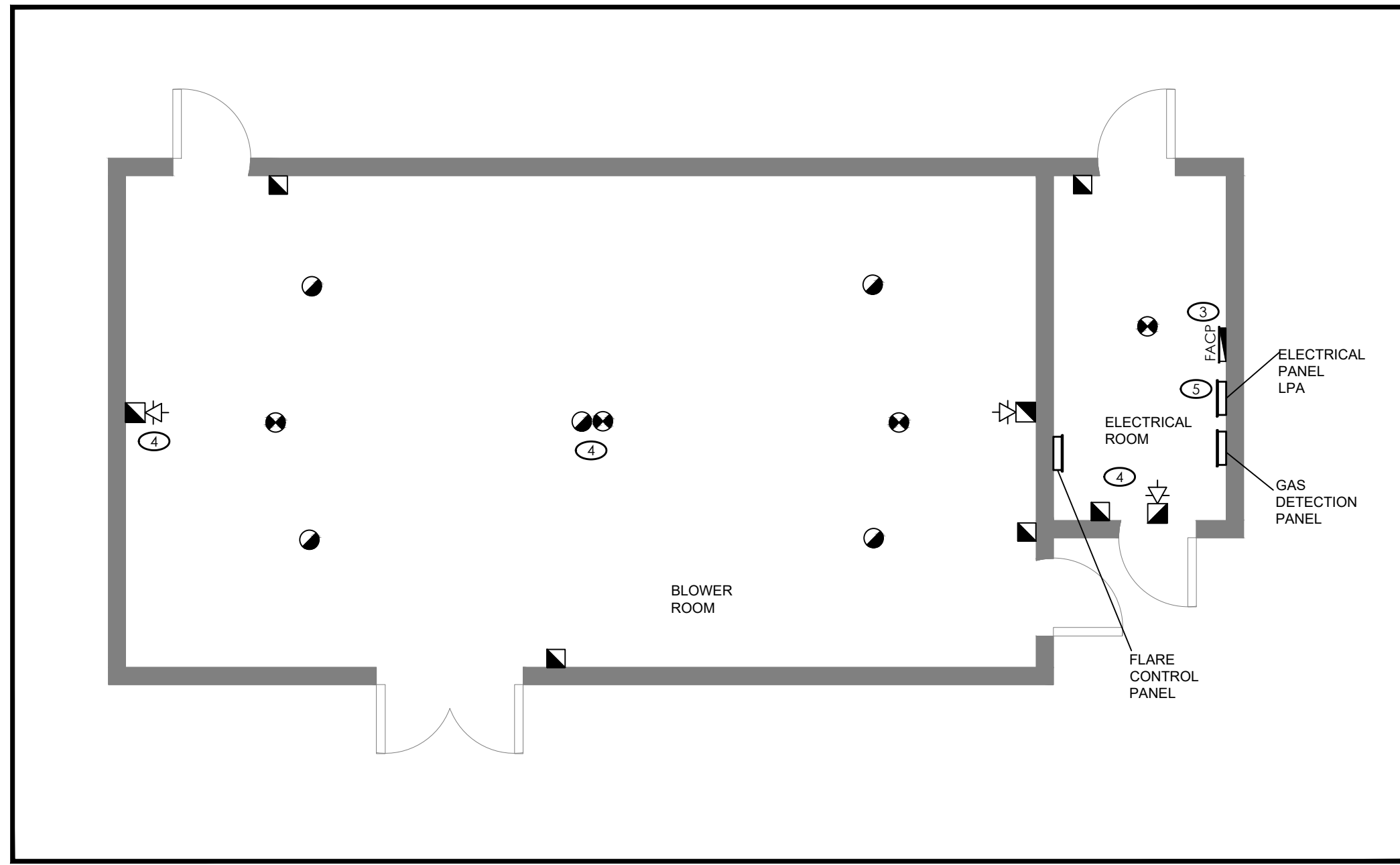
PROJECT:  
FIRE ALARM REPLACEMENT  
5400 REGIONAL RD 25,  
MILTON ON

DRAWING TITLE:  
GENERAL NOTES, LEGEND AND  
DRAWING LIST

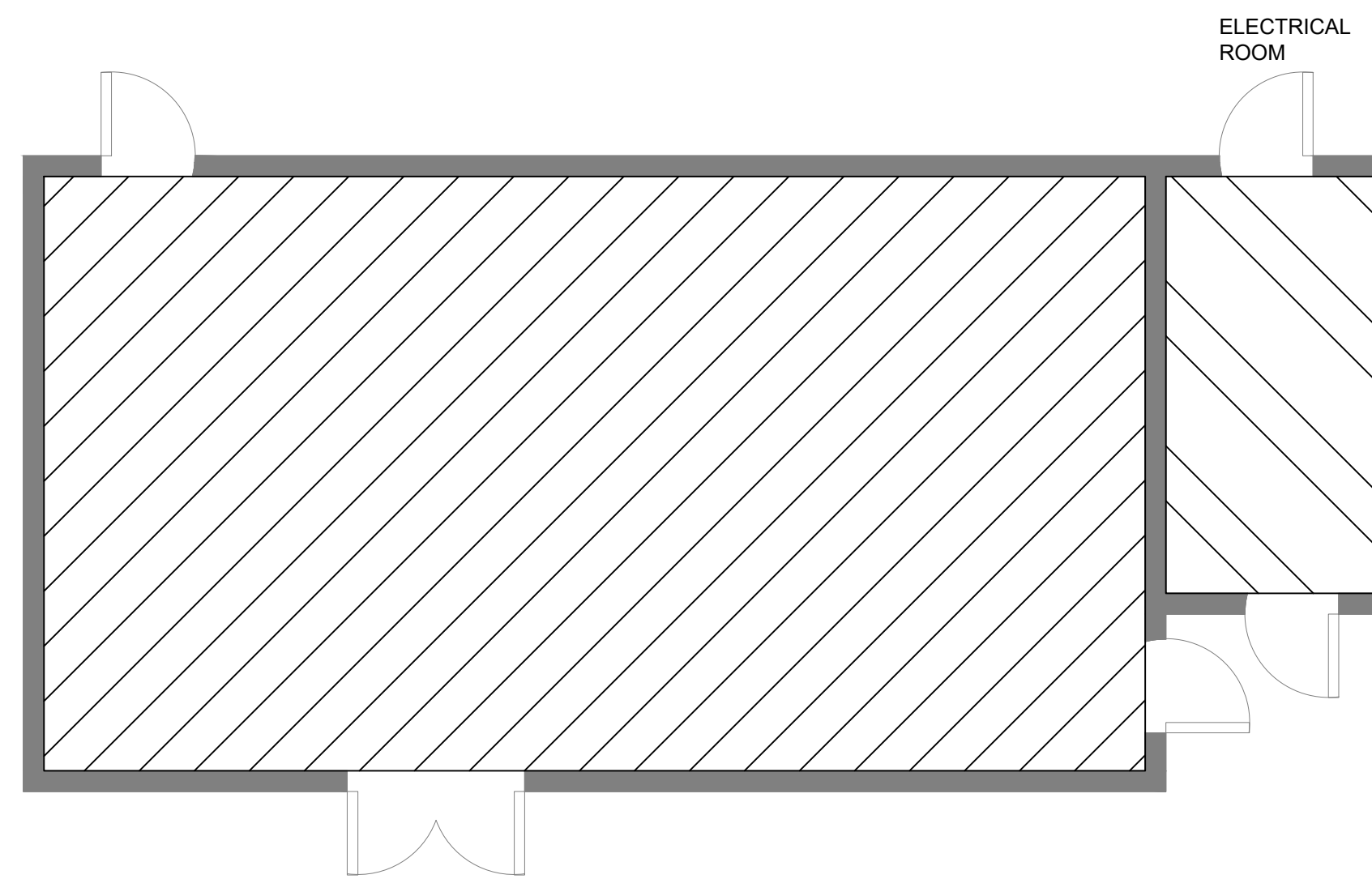
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CHECKED BY: N.A	DRAWING NUMBER: E0.0
DATE: JAN-2024	
PROJECT NUMBER: 23-119	



1 STORAGE BUILDING FIRE ALARM PROPOSED PLAN  
SCALE: 1:100



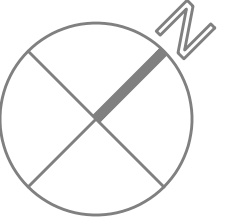
2 LANDFILL GAS COLLECTION BUILDING FIRE ALARM PROPOSED PLAN  
SCALE: 1:100



3 HAZARDOUS CLASSIFICATION PLAN  
SCALE: 1:100

DRAWING NOTES

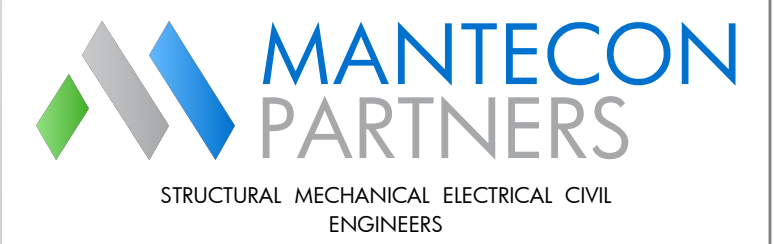
- 1 THE SCOPE OF WORK EXCLUDES THE ADMINISTRATION BUILDING, HOWEVER THE EXISTING MAIN FIRE ALARM CONTROL PANEL AND REMOTE ANNUNCIATOR ARE LOCATED IN THE ADMINISTRATION BUILDING WHICH IS CONNECTED WITH THE STORAGE BUILDING & LANDFILL GAS COLLECTION BUILDING.
- 2 ENSURE EACH NEW SUB FIRE ALARM CONTROL PANEL INSTALLED IS CONNECTED BACK TO THE EXISTING MAIN FIRE ALARM CONTROL PANEL (EDWARDS - FIRE SHIELD) IN THE ADMINISTRATION BUILDING USING THE NEW COMMUNICATION LINK. UPON ACTIVATION OF ANY SUB FIRE ALARM CONTROL PANEL, THE EXISTING MAIN FIRE ALARM CONTROL PANEL SHALL PROVIDE A SIGNAL TO THE FIRE DEPARTMENT.
- 3 PROVIDE NEW SINGLE STAGE FIRE ALARM PANEL, SURFACE MOUNTED, CONVENTIONAL OR ADDRESSABLE TYPE, AND ULC APPROVED.
- 4 PROVIDE NEW FIRE ALARM DEVICES (ULC APPROVED) AS SHOWN IN THE DRAWING. DETAILS, SPECIFICATIONS, AND FINAL LOCATION TO BE DETERMINED.
- 5 PROVIDE NEW TANDEM BREAKERS 15A1P TO REPLACE ONE OF THE EXISTING 15A1P BREAKERS IN THE ELECTRICAL PANEL LPA, MAKING POSSIBLE TO FEED THE NEW FIRE ALARM CONTROL PANEL.
- 6 PROVIDE NEW 15A1P CIRCUIT BREAKER, IN THE EXISTING ELECTRICAL PANEL, TO FEED FIRE ALARM CONTROL PANEL.



TRUE NORTH



CONSTRUCTION NORTH



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1	ISSUED FOR 80% REVIEW	2024-02-22	F.S.



CLIENT  
Regional Municipality of Halton

PROJECT:  
FIRE ALARM REPLACEMENT  
5400 REGIONAL RD 25,  
MILTON ON

DRAWING TITLE:  
STORAGE BUILDING & LANDFILL  
GAS COLLECTION BUILDING FIRE  
ALARM PROPOSED PLAN

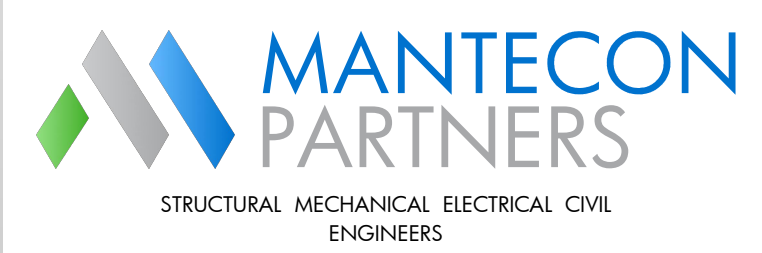
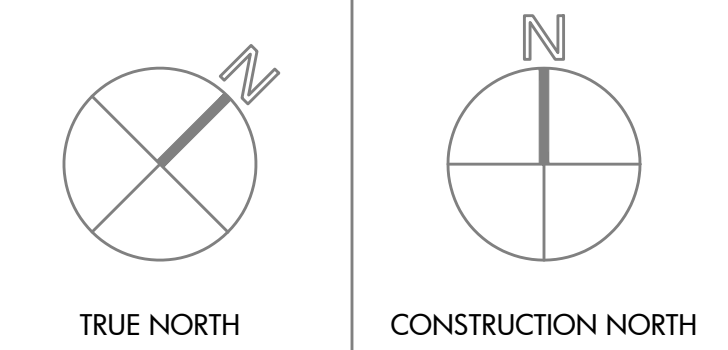
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CHECKED BY: N.A	DRAWING NUMBER: E1.0
DATE: JAN-2024	
PROJECT NUMBER: 23-119	

File: J:\Drawings\23-119 - Fire Alarm Systems - Storage Building and Landfill Gas Collection Building at HWMS - Halton Region\3-Working Documents\E4.0 STORAGE BUILDING PROPOSED PLAN.dwg

**DRAWING NOTES**

① SUPPLY AND INSTALL A NEW SINGLE STAGE FIRE ALARM PANEL, SURFACE MOUNTED, CONVENTIONAL OR ADDRESSIBLE TYPE, AND ULC APPROVED.

② PROVIDE NEW ALARM SIGNAL FROM GAS DETECTION PANEL AND FLARE CONTROL PANEL TO THE FIRE ALARM CONTROL PANEL, AS SHOWN IN THE DRAWING.

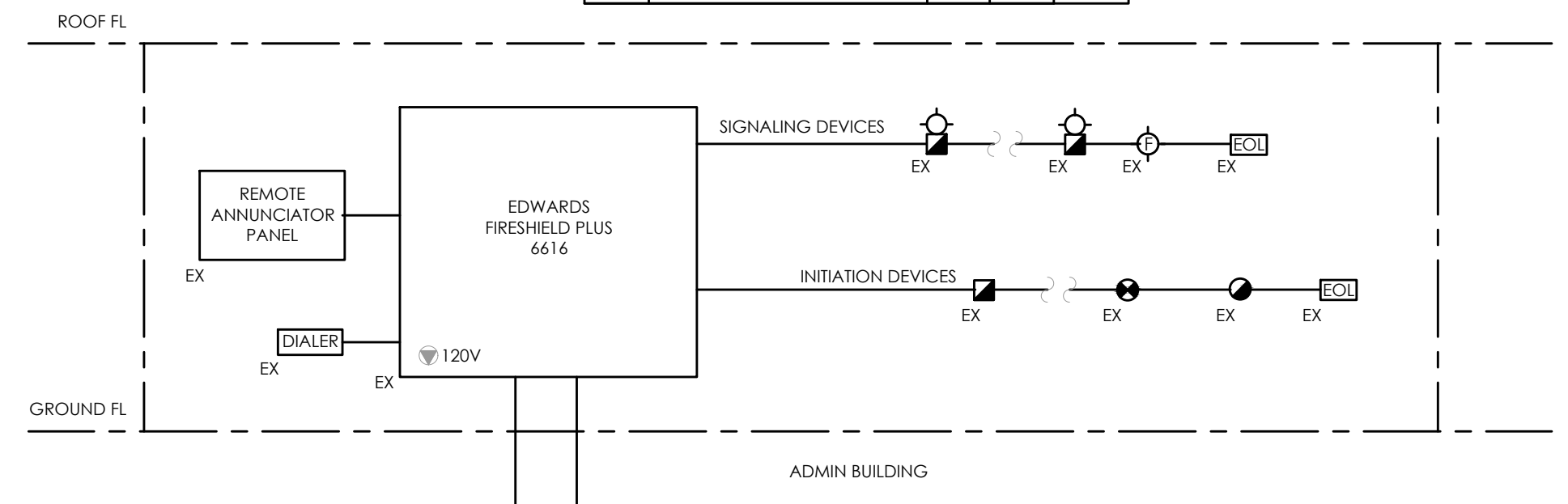


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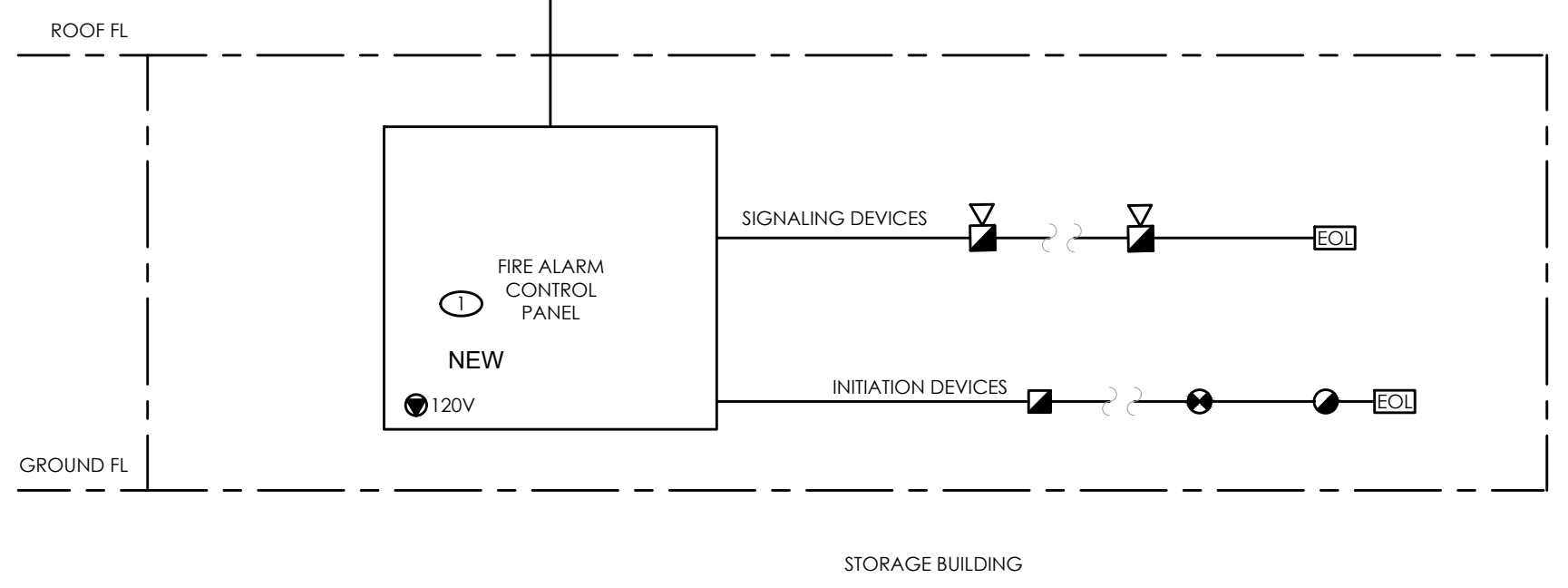
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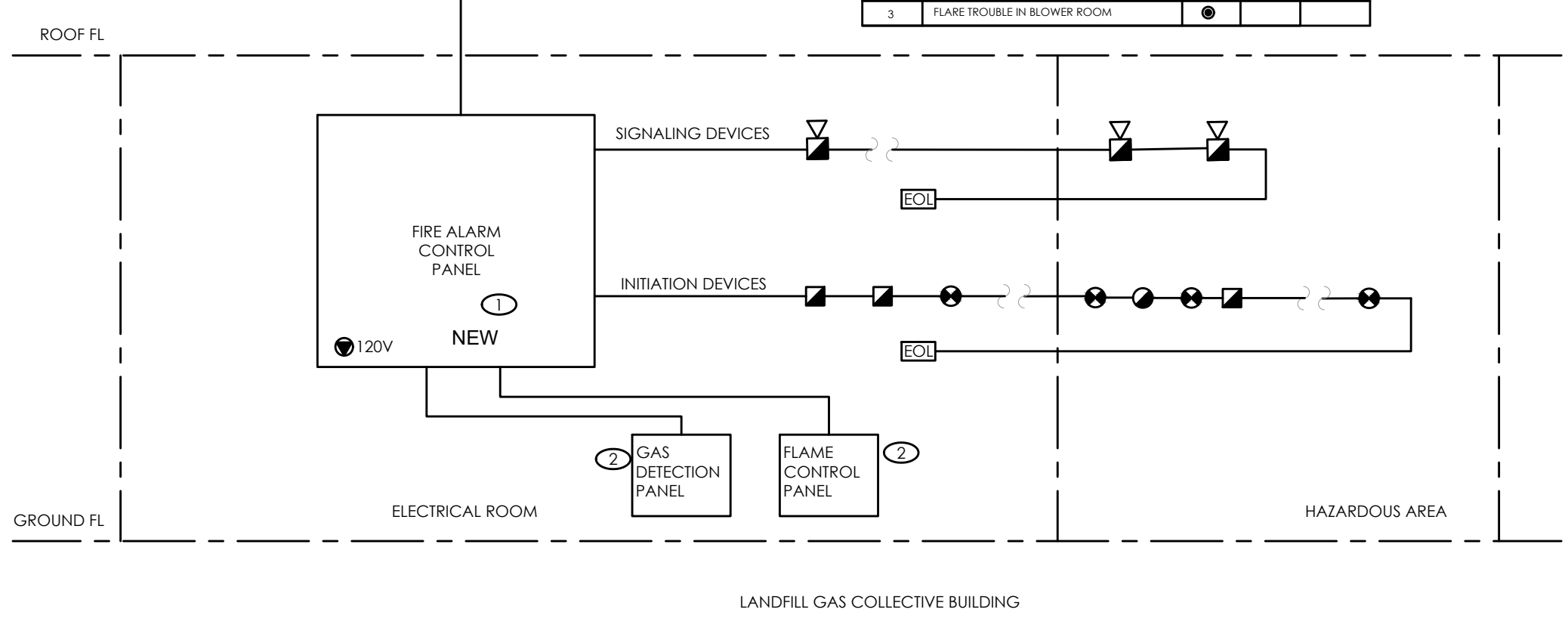
FIRE ALARM ZONE SCHEDULE		NOTIFICATION LED		
ZONE	DESCRIPTION	ALARM	TROUBLE	SUP/MOIN
1	MAINTENANCE GARAGE EX	●		
2	PUMP HOUSE EX	●		
3	SCALE HOUSE EX	●		
4	CONTAINER STATION EX	●		
5	ADMIN OFFICE EX	●		
4	TRANSFER STATION EX	●		
7	DUCT SUPPLY EX	●		
8	DUCT RETURN EX	●		
9	STORAGE BUILDING- NEW	●		
10	LANDFILL GAS COLLECTION BUILDING NEW	●		



FIRE ALARM ZONE SCHEDULE		NOTIFICATION LED		
ZONE	DESCRIPTION	ALARM	TROUBLE	SUP/MOIN
1	STORAGE 302 & 303	●		
2	STORAGE 201	●		



FIRE ALARM ZONE SCHEDULE		NOTIFICATION LED		
ZONE	DESCRIPTION	ALARM	TROUBLE	SUP/MOIN
1	GAS DETECTOR IN BLOWER ROOM	●		
2	GAS DETECTOR IN ELECTRICAL ROOM	●		
3	FLARE TROUBLE IN BLOWER ROOM	●		



① FIRE ALARM RISER DIAGRAM  
E2.0 SCALE: 1:100



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FIRE ALARM REPLACEMENT  
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FIRE ALARM RISER DIAGRAM

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CHECKED BY: N.A	DRAWING NUMBER: E2.0
DATE: JAN-2024	
PROJECT NUMBER: 23-119	



## **Asbestos Assessment**

Halton Waste Management Office  
and Site Buildings  
5400 Regional Road 25, Milton,  
Ontario, L9T 2X5

Prepared for:

**Halton Region**  
1151 Bronte Road  
Oakville, Ontario, L6M 3L1

July 18, 2023

Pinchin File: 320580.001



**Asbestos Assessment**

Halton Waste Management Office and Site Buildings, 5400 Regional Road 25, Milton,  
Ontario, L9T 2X5  
Halton Region

July 18, 2023  
Pinchin File: 320580.001

**Issued to:** Halton Region  
**Issued on:** July 18, 2023  
**Pinchin File:** 320580.001  
**Issuing Office:** Hamilton, ON

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**Asbestos Assessment**

Halton Waste Management Office and Site Buildings, 5400 Regional Road 25, Milton,  
Ontario, L9T 2X5  
Halton Region

July 18, 2023

Pinchin File: 320580.001

## **EXECUTIVE SUMMARY**

Halton Region (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials assessment of the Halton Waste Management Office and Site Buildings located at 5400 Regional Road 25, Milton, Ontario, L9T 2X5. The assessment was performed on April 24, 2023.

The objectives of the assessment were to document the locations of asbestos-containing building materials, evaluate their condition and develop corrective action plans as required for the purposes of long-term management. The results of this assessment are not intended for construction, renovation, demolition, or project tendering purposes.

## **SUMMARY OF FINDINGS**

Asbestos-containing materials (ACM) were not found during this assessment.

## **SUMMARY OF RECOMMENDATIONS**

The following is a summary of significant recommendations; refer to the body of the report for detailed recommendations:

1. Perform a pre-construction assessment and remove all ACM prior to alteration or maintenance work if ACM may be disturbed by the work.
2. Sample any presumed ACM if presumed ACM may be disturbed by any planned work.

*This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.*



**Asbestos Assessment**

Halton Waste Management Office and Site Buildings, 5400 Regional Road 25, Milton,  
Ontario, L9T 2X5  
Halton Region

July 18, 2023

Pinchin File: 320580.001

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APPENDIX II Asbestos Analytical Certificates

APPENDIX III Methodology

APPENDIX IV Location Summary Report

APPENDIX V Asbestos Material Summary Report / Sample Log

APPENDIX VI HMIS Data Report



## 1.0 INTRODUCTION AND SCOPE

Halton Region (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials assessment of Halton Waste Management Office and Site Buildings located at 5400 Regional Road 25, Milton, Ontario, L9T 2X5.

Pinchin performed the assessment on April 24, 2023. The surveyor was accompanied by a representative of the Client during the assessment. The assessed area was occupied at the time of the assessment.

The objectives of the assessment were to document the locations of asbestos-containing building materials, evaluate their condition and develop corrective action plans as required. This assessment is only to be used for the purposes of long-term management and routine maintenance. The results of this assessment are not to be used for construction, renovation, demolition, or project tendering purposes.

### 1.1 Scope of Assessment

The assessment was performed to establish the location and type of asbestos building materials incorporated in the structure(s) and its finishes. The **assessed area** consisted of all parts of the building, excluding the building exterior (e.g., exterior cladding and roof).

## 2.0 METHODOLOGY

Pinchin conducted a room-by-room assessment (rooms, corridors, service areas, etc.) to identify the asbestos-containing building materials as defined in the scope.

The assessment was limited to non-intrusive testing. Concealed spaces such as those above solid ceilings and within shafts and pipe chases were accessed via existing access panels only. Demolition of walls, solid ceilings, structural items, interior finishes, or exterior building finishes, to determine the presence of concealed materials was not conducted.

Demolition of masonry block walls (core holes) was not conducted to investigate for loose fill vermiculite insulation. Sampling of roofing materials was not conducted.

For further details on the methodology including test methods, refer to Appendix III.

## 3.0 BACKGROUND INFORMATION

### 3.1 Building Description

Description Item	Details
Use	Waste management administration and operations
Number of Floors	The buildings are one to two storeys.

Description Item	Details
Total Area	The total area of the buildings is 32,035 square feet.
Year of Construction	The buildings were constructed in 1992.

### 3.2 Inaccessible Locations

The following rooms or areas were not accessible and are therefore not included in the report:

Area or Room	Reason
Location 5001, Interim Transfer Station	Construction taking place in building with heavy machinery

## 4.0 FINDINGS

The following section summarizes the findings of the assessment and provides a general description of the asbestos-containing materials (ACM) identified and their locations. For details on approximate quantities, condition, friability, accessibility, and locations of asbestos materials; refer to the Asbestos Material Summary Report and All Data Report in Appendices V and VI.

### 4.1 Spray-Applied Insulation

Non-asbestos spray-applied insulation and overspray is present on the structure and walls throughout Building 8 Storage Bay (Location 8002, samples S0020A-E, photos 1 and 2).



Photo 1



Photo 2

### 4.2 Pipe Insulation

Pipes are either uninsulated or insulated with non-asbestos fibreglass.

### 4.3 Duct Insulation and Mastic

Ducts present in Building 2 Mezzanine Storage (Location 2009) are insulated with non-asbestos fibreglass insulation and jacketed with canvas (S0013A-C, photo 1).

Ducts are either uninsulated or insulated with non-asbestos fibreglass (foil-faced or canvas).



Photo 1

**4.4 Mechanical Equipment Insulation**

Mechanical equipment (i.e., fan unit, hot water tank, air handling unit, radiator, compressor) is either uninsulated or insulated with non-asbestos fibreglass.

**4.5 Acoustic Ceiling Tiles**

Acoustic ceiling tiles are present in the assessed area, as follows:

Size, Type, Pattern	Sample Locations	Sample Number or Composition	Asbestos Type
24"x48", lay-in, pinhole with horizontal fissure, photo 1	Building 1 Planroom (Location 1004)	S0004A-C	None detected
24"x48", lay-in, random pinhole, photo 2	Building 1 Meeting Room 2 (1011)	S0006A-C	None detected
24"x48", lay-in, pinhole with random fleck, photo 3	Building 7 Operations (7001)	S0018A-C	None detected
	Building 7 Storage/Kitchen (7002) Building 7 Electrical Room (7004)		
24"x48", lay-in, pinhole with fleck, photo 4	Building 9 Office (9001)	S0021A-C	None detected
24"x48", lay-in, fibreglass, photo 5	N/A	Fibreglass	N/A

Ceiling tiles not sampled are presumed to be non-asbestos based on the composition of the tiles (e.g., fibreglass).



**Asbestos Assessment**

Halton Waste Management Office and Site Buildings, 5400 Regional Road 25, Milton,  
Ontario, L9T 2X5  
Halton Region

July 18, 2023

Pinchin File: 320580.001



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

**4.6 Drywall Joint Compound**

Drywall joint compound present on wall and ceiling finishes throughout the assessed area does not contain asbestos (samples S0001A-G, S0011A-C, S0014A-C, S0017A-E, S0019A-C, S0022A-C).

#### 4.7 Vinyl Sheet Flooring

Vinyl sheet flooring is present as follows:

Pattern, Colour and Photo Number	Sample Locations	Sample Number	Asbestos Type	Asbestos Type (Adhesive)
Pebbled, red, photo 1	Building 2 Vestibule/ Janitors Closet (Location 2004)	S0012A-C	None detected	None detected
Grey marble, photo 2	Building 7 Operations (7001) Building 7 Storage/Kitchen (7002) Building 7 Washroom (7003)	S0016A-C	None detected	None detected

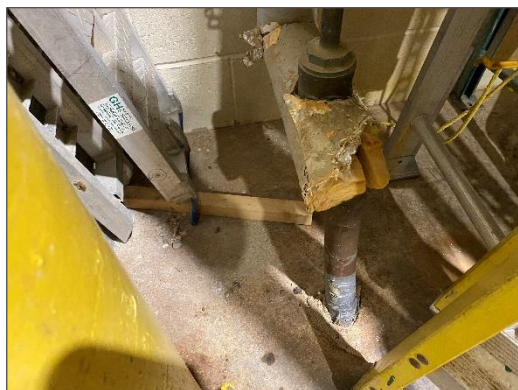


Photo 1



Photo 2

#### 4.8 Vinyl Floor Tiles

Vinyl floor products are present as follows:

Size, Pattern, Colour	Sample Locations	Sample Number	Asbestos Type (tile)	Asbestos Type (mastic)
12"x12", white with blue fleck, photo 1	Building 1 Office Area (Location 1002)	S0002A-C	None detected	None detected



**Asbestos Assessment**

Halton Waste Management Office and Site Buildings, 5400 Regional Road 25, Milton, Ontario, L9T 2X5  
Halton Region

July 18, 2023

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Size, Colour	Pattern,	Sample Locations	Sample Number	Asbestos (tile) Type	Asbestos (mastic) Type
12"x12", grey with blue fleck, photo 2		Building 1 Office Area (Location 1002) Building 1 Planroom (Location 1004) Building 1 Storage Room (Location 1010)	S0003A-C	None detected	None detected
12"x12", white with black fleck, photo 3		Building 1 Corridor (Location 1005) Building 1 Electrical Room/ Janitors Closet (Location 1008)	S0005A-C	None detected	None detected
12"x12", beige with blue fleck, photo 4		Building 2 Storage Room 1 (Location 2001)	S0009A-C	None detected	None detected
12"x12", white with grey fleck, photo 5		Building 9 Electrical Room (Location 9003)	S0023A-C	None detected	None detected



Photo 1



Photo 2





Photo 3



Photo 4



Photo 5

#### 4.9 Other Building Materials

The following is a summary of other materials sampled, for a complete list of locations, refer to Appendix V.

Description	Sample Location (Location #)	Sample Number	Asbestos
Black sink mastic, photo 1	Building 1 Meeting Room 2 (1011)	S0007A-C	None detected
Paint on concrete block walls, photo 2	Throughout assessed area	S0008A-C, S0010A-G, S0015A-C	None detected



Photo 1

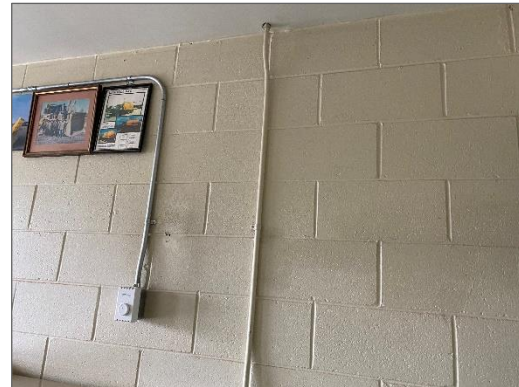


Photo 2

#### **4.10 Excluded Asbestos Materials**

The following is a list of materials which may contain asbestos and was excluded from the assessment. These materials are presumed to contain asbestos until otherwise proven by sampling and analysis:

- Roofing felts and tar, mastics
- Ceramic tile setting compound
- Elevator and lift brakes
- Electrical components
- Mechanical packing, ropes and gaskets
- Vermiculite
- Adhesives and duct mastics
- Caulking and putties
- Paper products
- Fire resistant doors
- Vibration dampers on HVAC equipment
- Ropes and gaskets in cast-iron bell and spigot joints
- Sealants on pipe threads

## **5.0 RECOMMENDATIONS**

### **5.1 General**

Perform a detailed intrusive assessment prior to building renovation or demolition operations. The assessment should include destructive testing (e.g., coring and/or removal of building finishes and



components), and other hazardous materials (lead, mercury, PCBs, mould, etc.) and materials not tested in this study (e.g., roofing materials, caulking, mastics).

## **5.2 Remedial Work**

No remedial work is recommended.

## **5.3 On-going Management and Maintenance**

The following recommendations are made regarding on-going management and maintenance work involving the asbestos materials identified.

### **5.3.1 Asbestos**

Sample any presumed asbestos-containing materials (ACM) prior to alteration or maintenance work if presumed ACM may be disturbed by the work.

## **6.0 TERMS AND LIMITATIONS**

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

## **7.0 REFERENCES**

The following legislation and documents were referenced in completing the assessment and this report:

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
2. Designated Substances, Ontario Regulation 490/09.
3. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.

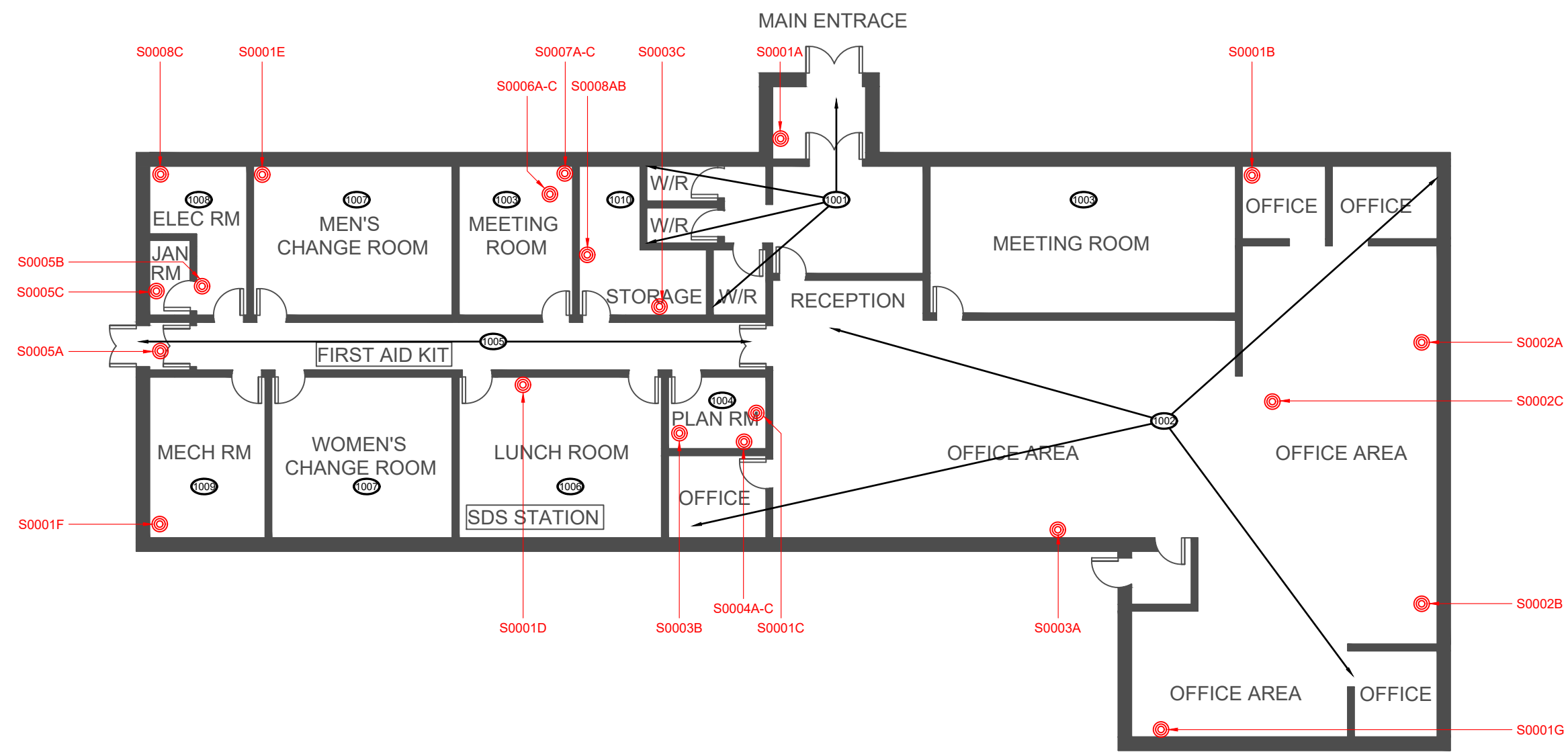
\\pinchin.com\ham\Job\320000s\0320580.000 HALTON,Various2023Projects,HAZ,CONS\0320580.001 HALTON,VariousSites&Facilities,HAZ,ASSMT\Deliverables\16\_Halton Waste Mgmt Office\Deliverables\320580.001 ACM Report 5400 Regional Rd 25 Milton HALTON July 18 2023.docx

Template: Master Report for Asbestos Assessment, HAZ, July 29, 2021

**APPENDIX I**  
**Drawings**



# ADMINISTRATION BUILDING



- LEGEND**
- X PINCHIN LOCATION NUMBER
  - ⊙ ASBESTOS BULK SAMPLE

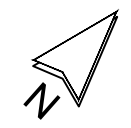
NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

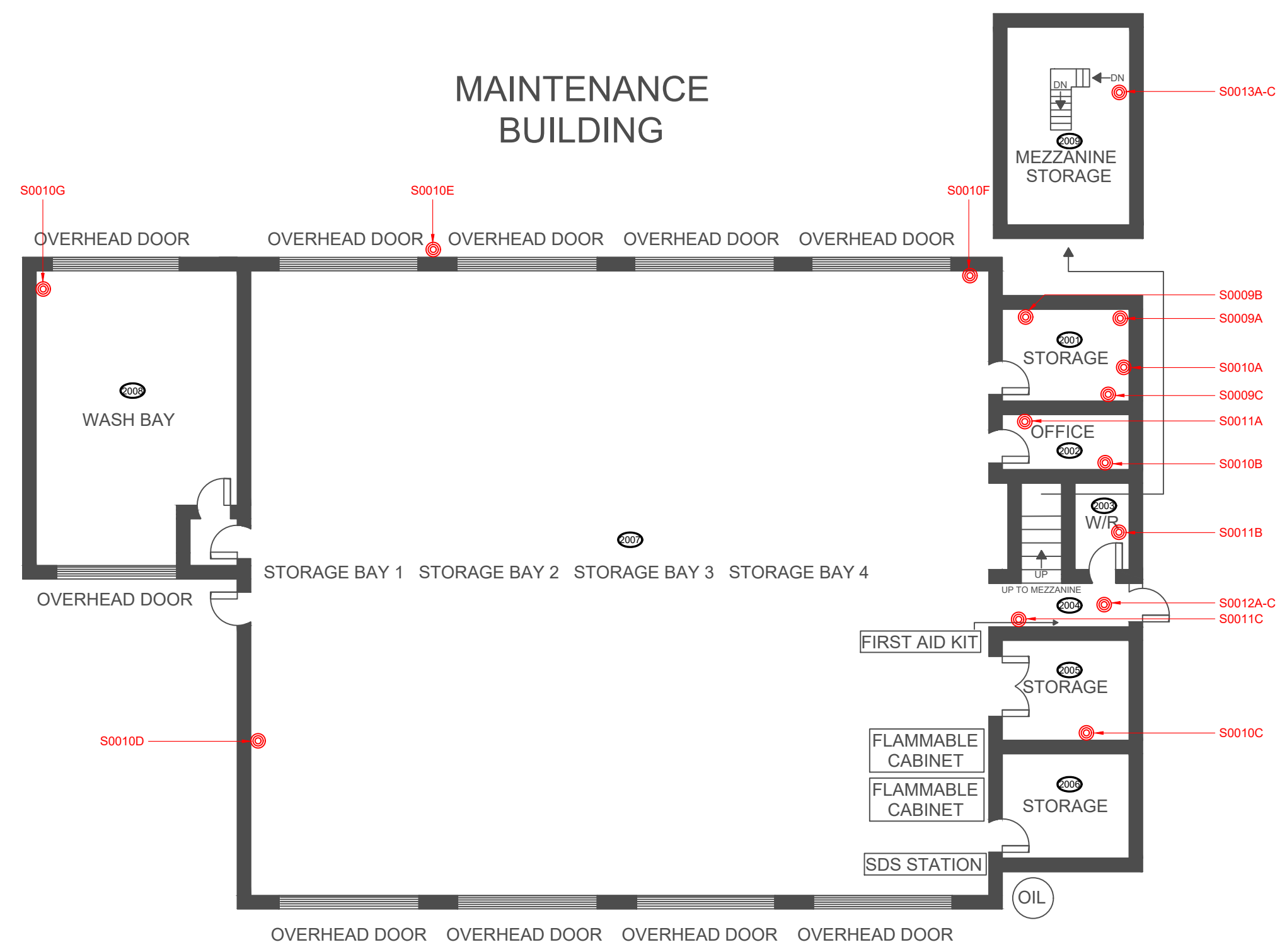
BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME: <b>ASBESTOS ASSESSMENT</b>	
CLIENT NAME: <b>HALTON REGION</b>	
PROJECT LOCATION: <b>HALTON WASTE MANAGEMENT SITE 5400 REGIONAL RD 25 MILTON, ON</b>	
FIGURE NAME: <b>ADMINISTRATION BUILDING MAIN FLOOR</b>	
PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>1 OF 9</b>



- LEGEND**
- X PINCHIN LOCATION NUMBER
  - ⊙ ASBESTOS BULK SAMPLE



NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME:  
**ASBESTOS ASSESSMENT**

CLIENT NAME:  
**HALTON REGION**

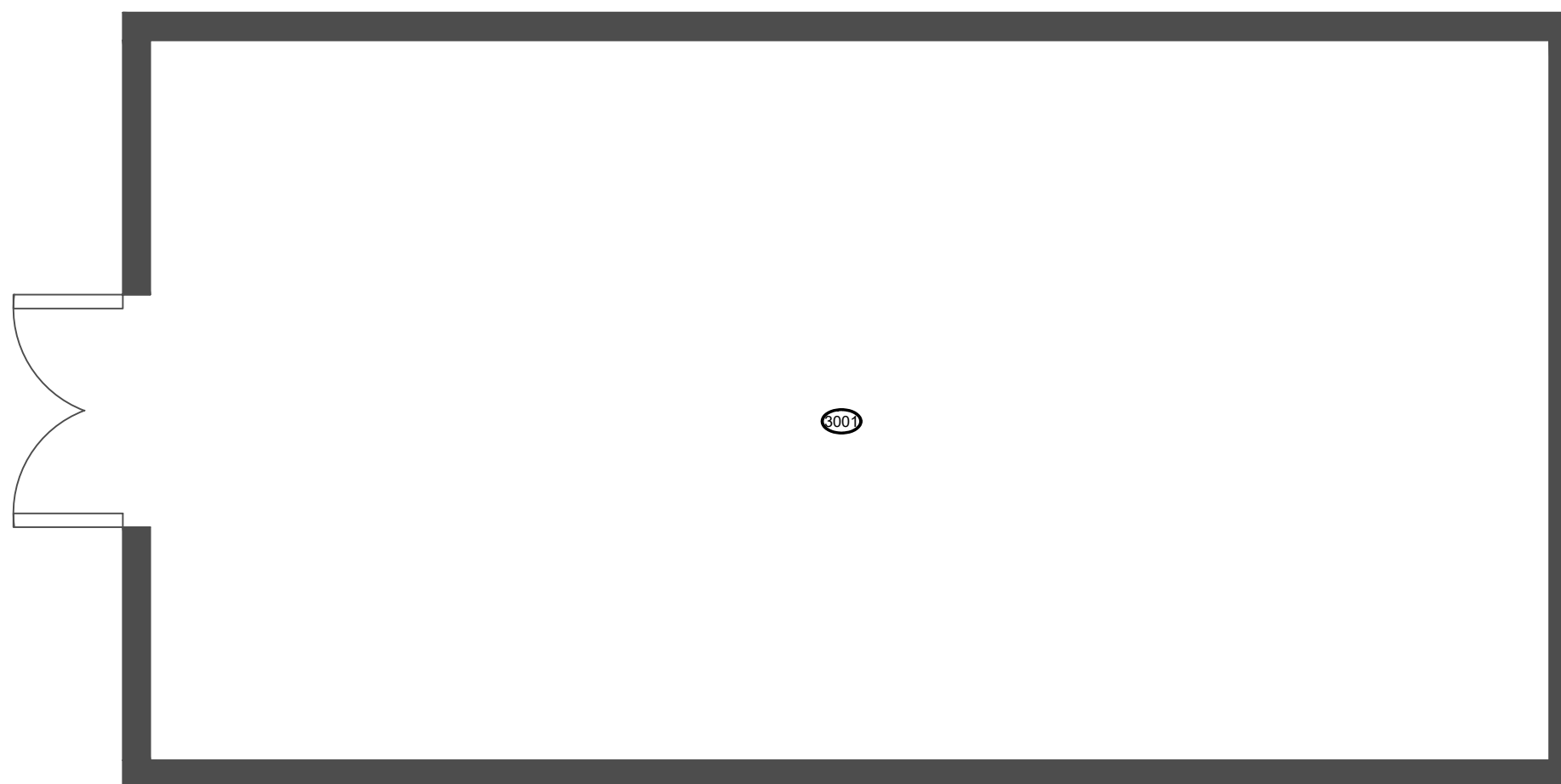
PROJECT LOCATION:  
**HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON**

FIGURE NAME:  
**MAINTENANCE BUILDING  
MAIN FLOOR**

PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>2 OF 9</b>



# PUMP HOUSE



### LEGEND

- X PINCHIN LOCATION NUMBER
- ⊙ ASBESTOS BULK SAMPLE

NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME:  
ASBESTOS ASSESSMENT

CLIENT NAME:  
HALTON REGION

PROJECT LOCATION:  
HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON

FIGURE NAME:  
PUMP HOUSE  
MAIN FLOOR

PROJECT NUMBER: 320580.001	SCALE: NOT TO SCALE
-------------------------------	------------------------

DRAWN BY: NM	REVIEWED BY: AL
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DATE: JULY 2023	FIGURE NUMBER: 3 OF 9
--------------------	--------------------------



**LEGEND**

- X PINCHIN LOCATION NUMBER
- ASBESTOS BULK SAMPLE

NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



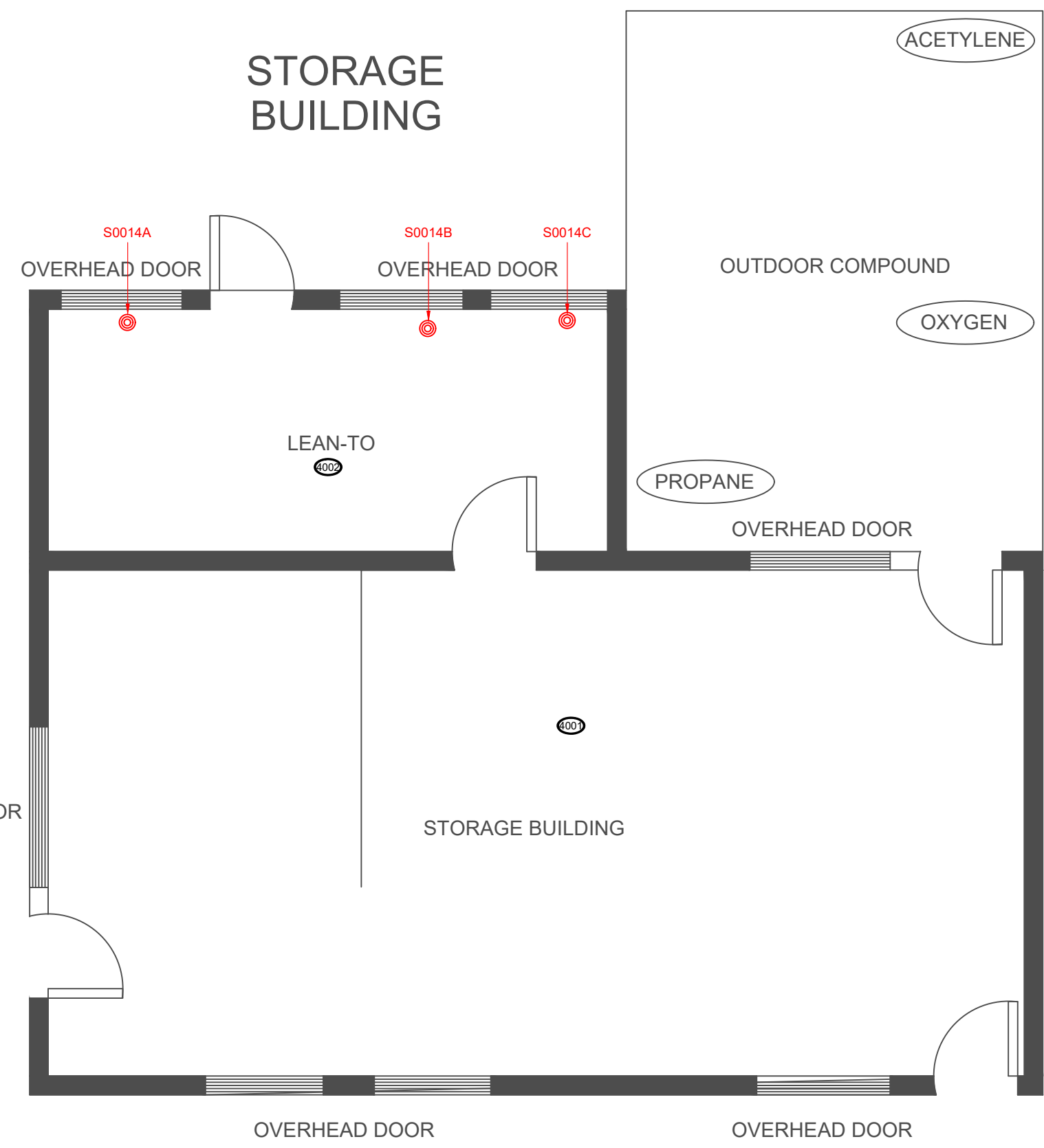
PROJECT NAME:  
**ASBESTOS ASSESSMENT**

CLIENT NAME:  
**HALTON REGION**

PROJECT LOCATION:  
**HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON**

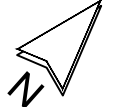
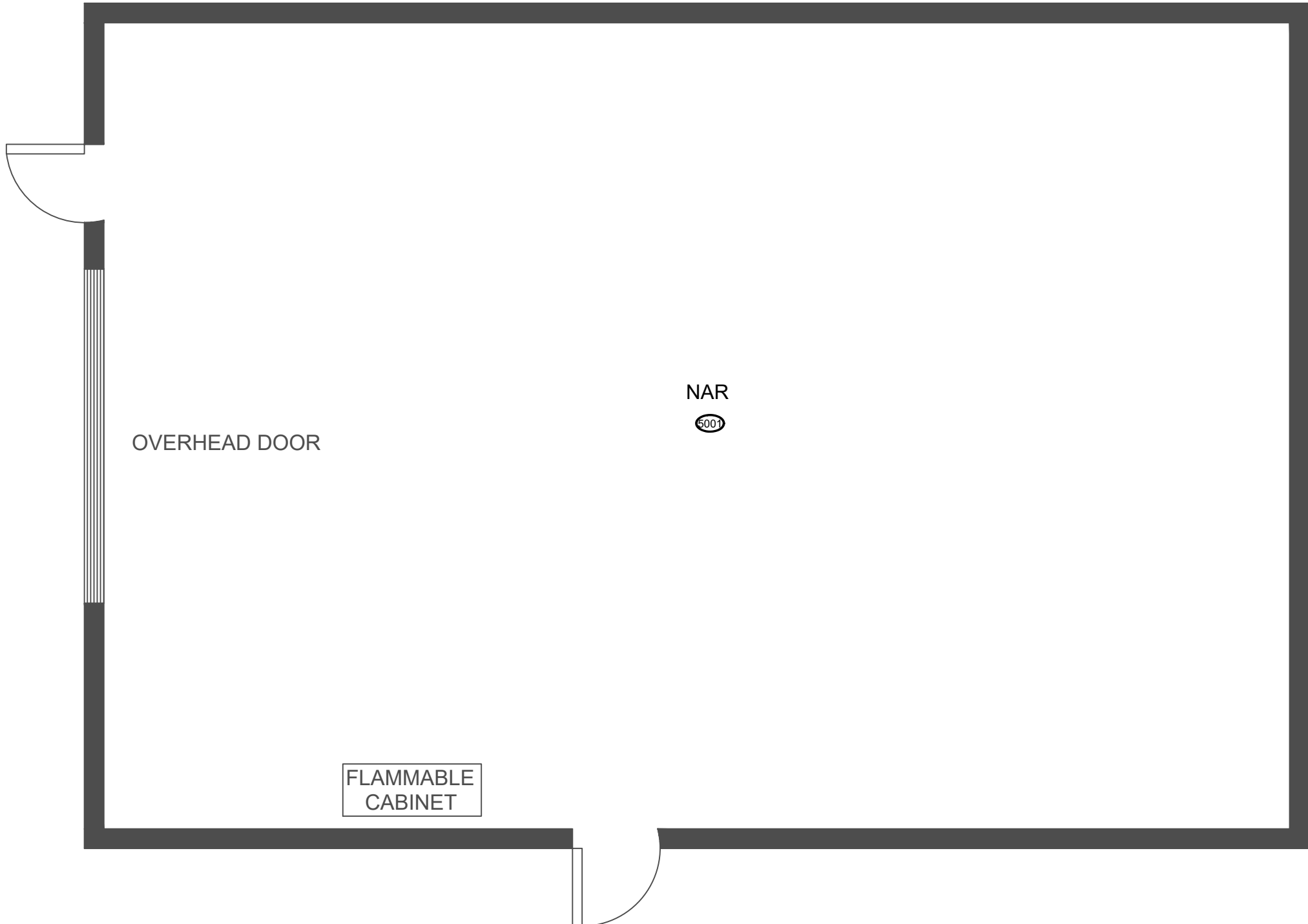
FIGURE NAME:  
**STORAGE BUILDING  
MAIN FLOOR**

PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>4 OF 9</b>





# INTERIM TRANSFER STATION



- LEGEND**
- X PINCHIN LOCATION NUMBER
  - ASBESTOS BULK SAMPLE
  - NAR NO ACCESS TO ROOM/AREA

NOT ALL KNOWN OR SUSPECTED HAZARDOUS BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED HAZARDOUS BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.



BASE PLAN PROVIDED BY CLIENT.



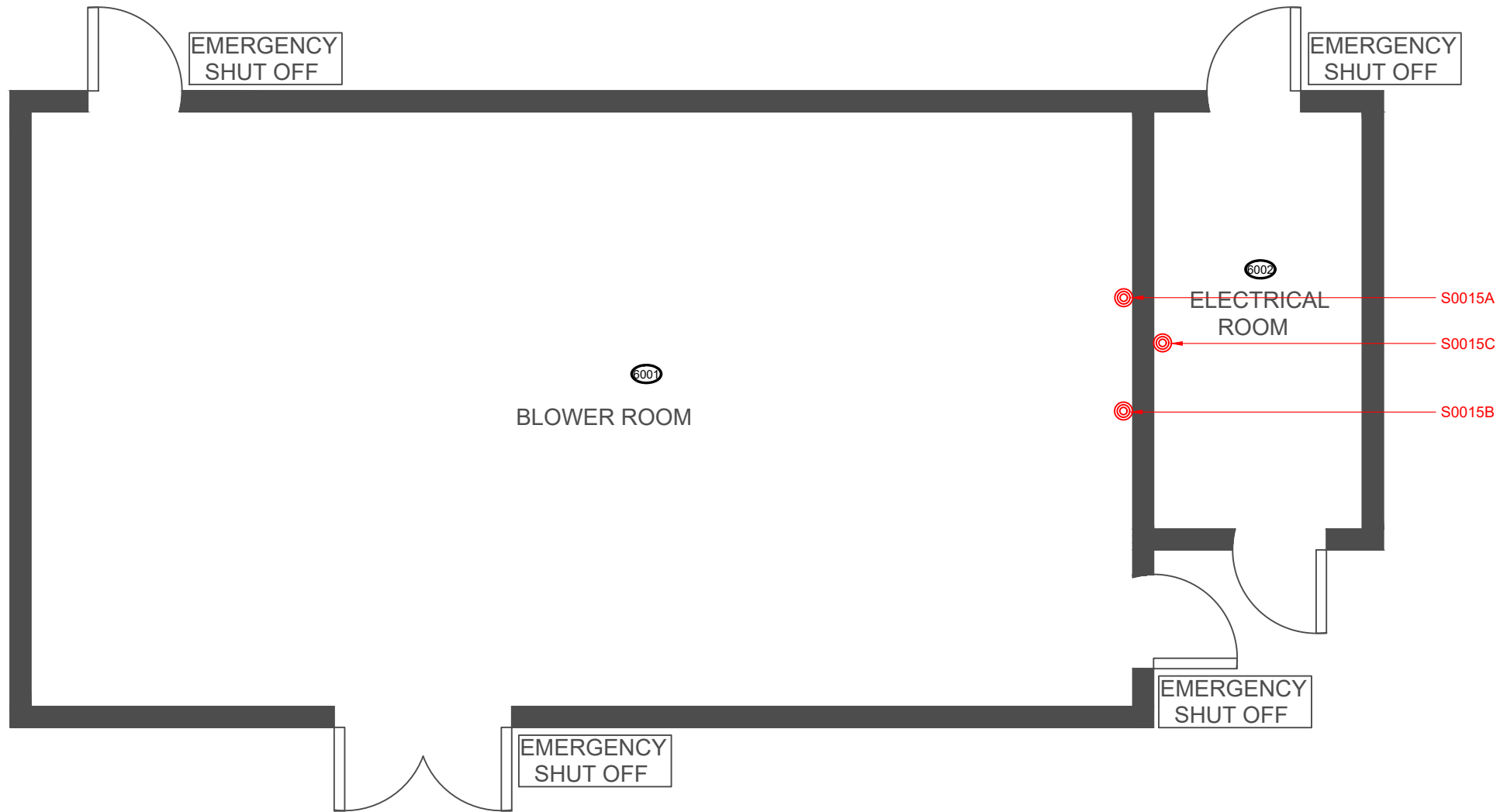
PROJECT NAME: <b>ASBESTOS ASSESSMENT</b>	
CLIENT NAME: <b>HALTON REGION</b>	
PROJECT LOCATION: <b>HALTON WASTE MANAGEMENT SITE 5400 REGIONAL RD 25 MILTON, ON</b>	
FIGURE NAME: <b>INTERIM TRANSFER STATION MAIN FLOOR</b>	
PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>5 OF 9</b>



**LEGEND**

-  PINCHIN LOCATION NUMBER
-  ASBESTOS BULK SAMPLE

# LANDFILL GAS BLOWER BUILDING



NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME:  
**ASBESTOS ASSESSMENT**

CLIENT NAME:  
**HALTON REGION**

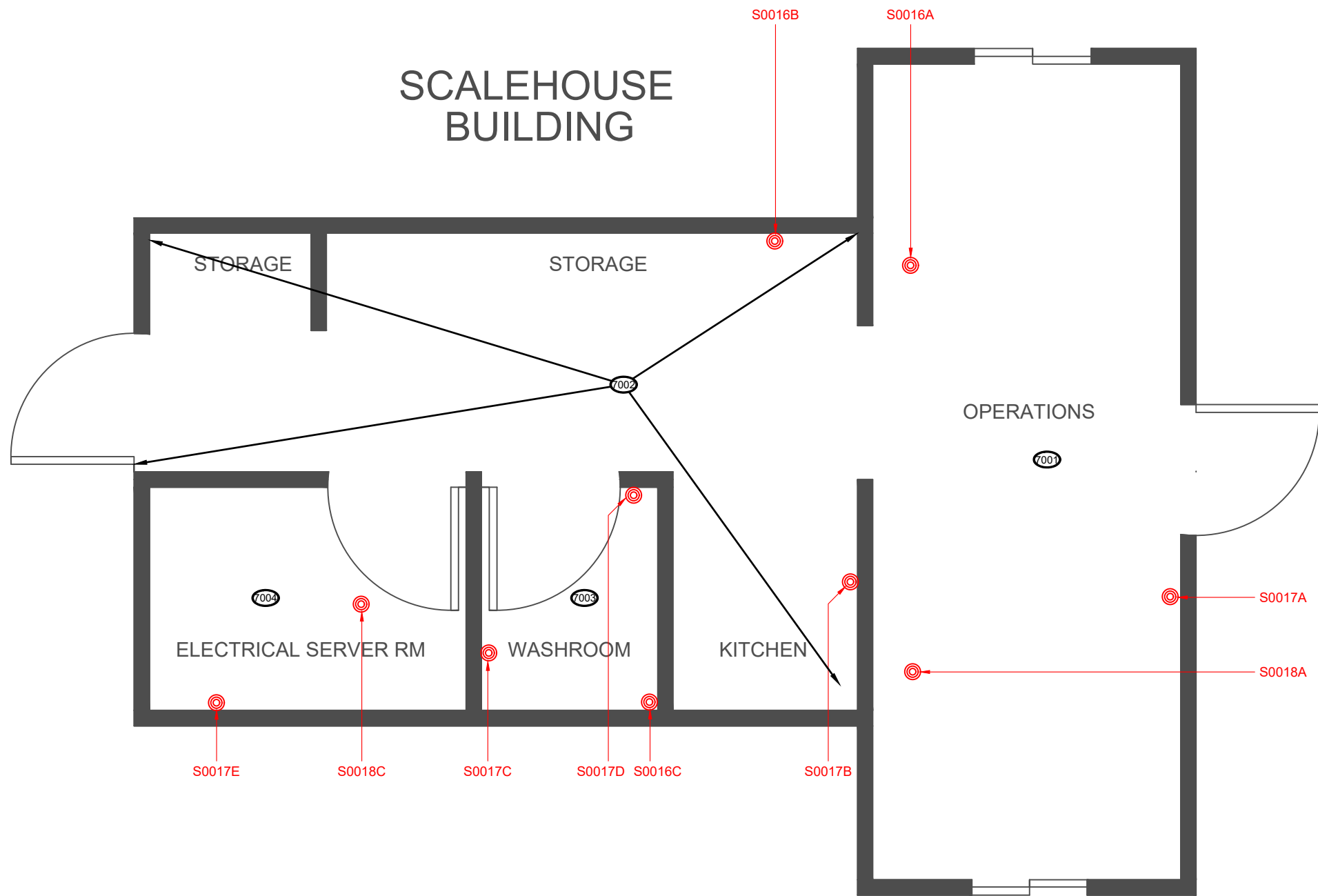
PROJECT LOCATION:  
**HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON**

FIGURE NAME:  
**LANDFILL GAS BLOWER BUILDING  
MAIN FLOOR**

PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>6 OF 9</b>



- LEGEND**
- X PINCHIN LOCATION NUMBER
  - ⊙ ASBESTOS BULK SAMPLE



NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



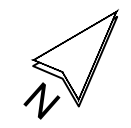
PROJECT NAME:  
**ASBESTOS ASSESSMENT**

CLIENT NAME:  
**HALTON REGION**

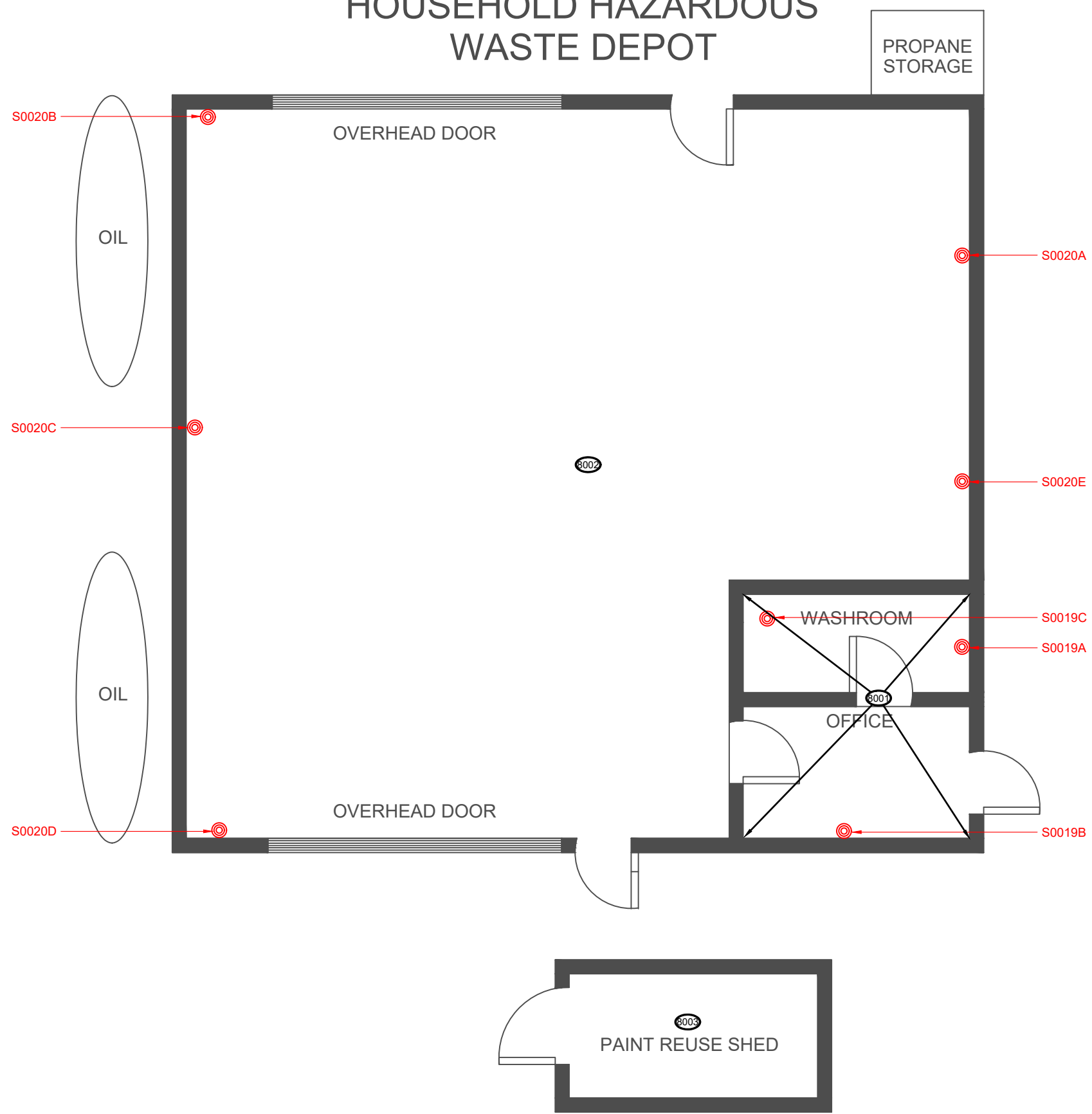
PROJECT LOCATION:  
**HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON**

FIGURE NAME:  
**SCALEHOUSE BUILDING  
MAIN FLOOR**



PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>7 OF 9</b>



# HOUSEHOLD HAZARDOUS WASTE DEPOT



### LEGEND

-  PINCHIN LOCATION NUMBER
-  ASBESTOS BULK SAMPLE

NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

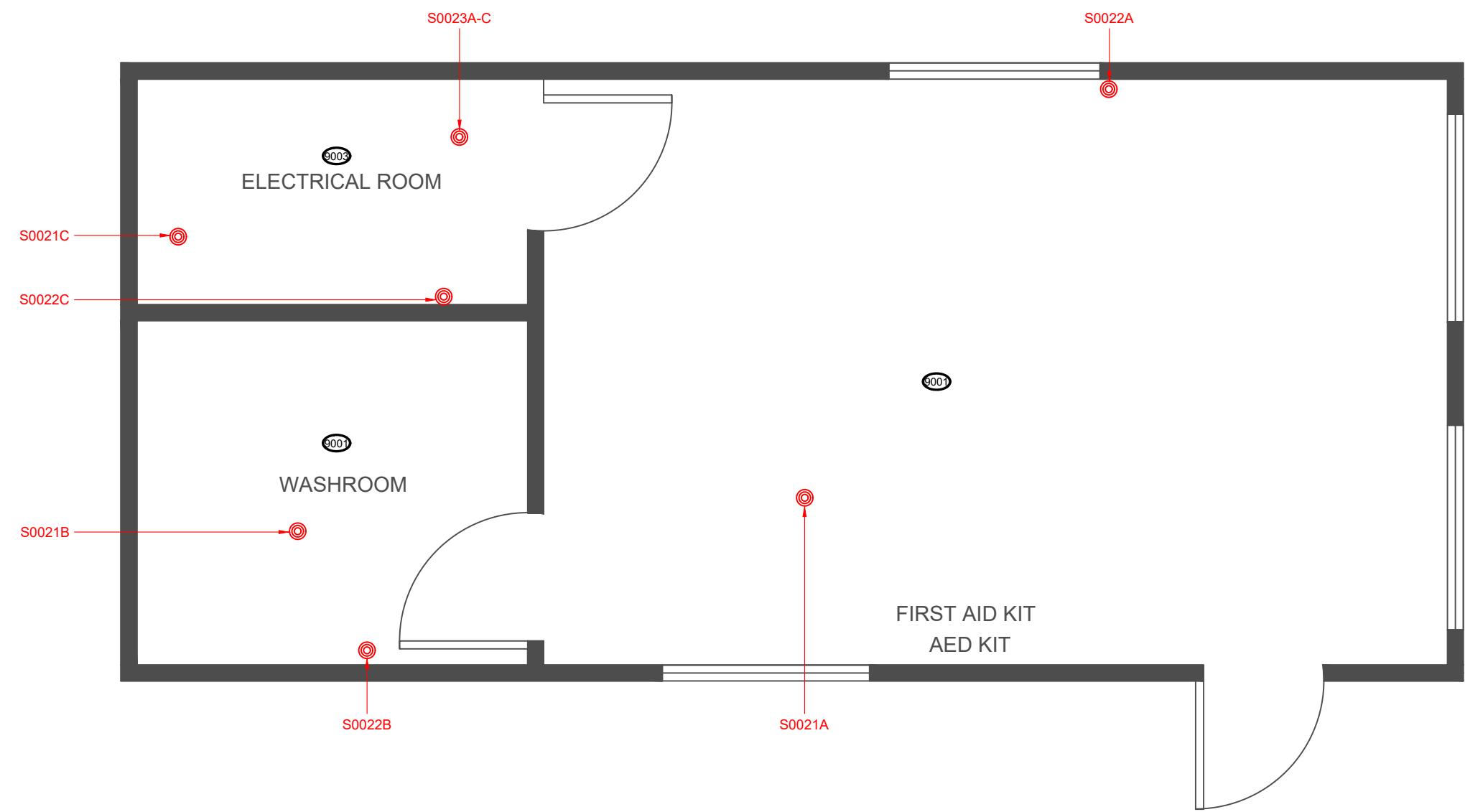
BASE PLAN PROVIDED BY CLIENT.





PROJECT NAME: <b>ASBESTOS ASSESSMENT</b>	
CLIENT NAME: <b>HALTON REGION</b>	
PROJECT LOCATION: <b>HALTON WASTE MANAGEMENT SITE 5400 REGIONAL RD 25 MILTON, ON</b>	
FIGURE NAME: <b>HOUSEHOLD HAZARDOUS WASTE DEPOT MAIN FLOOR</b>	
PROJECT NUMBER: <b>320580.001</b>	SCALE: <b>NOT TO SCALE</b>
DRAWN BY: <b>NM</b>	REVIEWED BY: <b>AL</b>
DATE: <b>JULY 2023</b>	FIGURE NUMBER: <b>8 OF 9</b>



# CONTAINER STATION OFFICE



- LEGEND**
-  PINCHIN LOCATION NUMBER
  -  ASBESTOS BULK SAMPLE

NOT ALL KNOWN OR SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS MAY BE DEPICTED ON THE DRAWING. REFER TO THE ASBESTOS ASSESSMENT REPORT FOR A COMPLETE LIST OF KNOWN AND SUSPECTED ASBESTOS-CONTAINING BUILDING MATERIALS.

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

BASE PLAN PROVIDED BY CLIENT.



PROJECT NAME:  
**ASBESTOS ASSESSMENT**

CLIENT NAME:  
**HALTON REGION**

PROJECT LOCATION:  
**HALTON WASTE MANAGEMENT SITE  
5400 REGIONAL RD 25  
MILTON, ON**

FIGURE NAME:  
**CONTAINER STATION OFFICE  
MAIN FLOOR**

PROJECT NUMBER: 320580.001	SCALE: NOT TO SCALE
DRAWN BY: NM	REVIEWED BY: AL
DATE: JULY 2023	FIGURE NUMBER: 9 OF 9

**APPENDIX II**  
**Asbestos Analytical Certificates**



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0001A	Ceiling,Drywall And Joint Compound,Loc:1001,Building 1 Vestibule/Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0001					Crushed
S0001B	Wall,Drywall And Joint Compound,Loc:1002,Building 1 Office Area	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0002					Crushed
S0001C	Wall,Drywall And Joint Compound,Loc:1004,Building 1 Planroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0003					Crushed
S0001D	Wall,Drywall And Joint Compound,Loc:1006,Building 1 Lunchroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0004					Crushed
S0001E	Ceiling,Drywall And Joint Compound,Loc:1007,Building 1 Men's And Women's Changeroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0005					Crushed
S0001F	Wall,Drywall And Joint Compound,Loc:1009,Building 1 Mechanical Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0006					Crushed
S0001G	Wall,Drywall And Joint Compound,Loc:1002,Building 1 Office Area	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0007					Crushed
S0002A - A	Floor,Vinyl Floor Tile And Mastic,12x12 White With Blue Fleck,Loc:1002,Building 1 O	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0008	tile				Crushed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogenous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Lachlan Krenz (102)

Analyst

Approved Signatory



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0002A - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Blue Fleck, Loc:1002, Building 1 O	None Detected		100% Other	Gray, Yellow Non-Fibrous Homogeneous
10022025_0082	mastic with leveling				Ashed
S0002B - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Blue Fleck, Loc:1002, Building 1 O	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0009	tile				Crushed
S0002B - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Blue Fleck, Loc:1002, Building 1 O	None Detected		100% Other	Gray, Yellow Non-Fibrous Homogeneous
10022025_0083	mastic with leveling				Ashed
S0002C - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Blue Fleck, Loc:1002, Building 1 O	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0010	tile - ashed				Ashed
S0002C - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Blue Fleck, Loc:1002, Building 1 O	None Detected		100% Other	Gray, Yellow Non-Fibrous Homogeneous
10022025_0084	mastic with leveling				Ashed
S0003A - A	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc:1002, Building 1 Office Area	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0011	tile				Crushed
S0003A - B	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc:1002, Building 1 Office Area	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0085	mastic				Dissolved
S0003B - A	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc:1004, Building 1 Planroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0012	tile				Crushed

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Lachlan Krenz (102)

Analyst

Approved Signatory





# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0003B - B	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc: 1004, Building 1 Planroom	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0086	mastic				Dissolved
S0003C - A	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc: 1010, Building 1 Storage Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0013	tile - ashed				Ashed
S0003C - B	Floor, Vinyl Floor Tile And Mastic, 12x12 Grey With Blue Fleck, Loc: 1010, Building 1 Storage Room	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0087	mastic				Dissolved
S0004A	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Horizontal Fissure, Loc: 1004, Building 1	None Detected	40% Cellulose 40% Fiber Glass	20% Other	Gray Fibrous Homogeneous
10022025_0014					Teased
S0004B	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Horizontal Fissure, Loc: 1004, Building 1	None Detected	40% Cellulose 40% Fiber Glass	20% Other	Gray Fibrous Homogeneous
10022025_0015					Teased
S0004C	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Horizontal Fissure, Loc: 1004, Building 1	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0016					Teased
S0005A - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1005, Building 1 C	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0017	tile				Crushed
S0005A - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1005, Building 1 C	None Detected		100% Other	Beige, Yellow Non-Fibrous Homogeneous
10022025_0088	mastic				Ashed

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Lachlan Krenz (102)

Analyst

Approved Signatory



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0005B - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1008, Building 1 E1	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0018	tile				Crushed
S0005B - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1008, Building 1 E1	None Detected		100% Other	Beige, Yellow Non-Fibrous Homogeneous
10022025_0089	mastic				Ashed
S0005C - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1008, Building 1 E1	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0019	tile - ashed				Ashed
S0005C - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Black Fleck, Loc: 1008, Building 1 E1	None Detected		100% Other	Beige, Yellow Non-Fibrous Homogeneous
10022025_0090	mastic				Ashed
S0006A	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Random Pinhole, Loc: 1011, Building 1 Meeting Room 2	None Detected	40% Cellulose 40% Fiber Glass	20% Other	Gray Fibrous Homogeneous
10022025_0020					Teased
S0006B	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Random Pinhole, Loc: 1011, Building 1 Meeting Room 2	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0021					Teased
S0006C	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Random Pinhole, Loc: 1011, Building 1 Meeting Room 2	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0022					Teased
S0007A	Sink, Mastic, Black, Loc: 1011, Building 1 Meeting Room 2	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0023					Dissolved, Ashed

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Lachlan Krenz (102)

Analyst

Approved Signatory



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0007B	Sink,Mastic, Black,Loc:1011,Building 1 Meeting Room 2	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0024					Dissolved, Ashed
S0007C	Sink,Mastic, Black,Loc:1011,Building 1 Meeting Room 2	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0025					Dissolved, Ashed
S0008A	Wall,Masonry,Paint On Concrete Block,Loc:1010,Building 1 Storage Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0026					Dissolved, Crushed
S0008B	Wall,Masonry,Paint On Concrete Block,Loc:1010,Building 1 Storage Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0027					Dissolved, Crushed
S0008C	Wall,Masonry,Paint On Concrete Block,Loc:1008,Building 1 Electrical Room/Janitors Clos	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0028					Dissolved, Crushed
S0009A - A	Floor,Vinyl Floor Tile And Mastic,12x12 Beige With Blue Fleck,Loc:2001,Building 2 St	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0029	tile				Crushed
S0009A - B	Floor,Vinyl Floor Tile And Mastic,12x12 Beige With Blue Fleck,Loc:2001,Building 2 St	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0091	mastic				Dissolved
S0009B - A	Floor,Vinyl Floor Tile And Mastic,12x12 Beige With Blue Fleck,Loc:2001,Building 2 St	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0030	tile				Crushed

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Lachlan Krenz (102)

Analyst

Approved Signatory



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0009B - B	Floor, Vinyl Floor Tile And Mastic, 12x12 Beige With Blue Fleck, Loc:2001, Building 2 St	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0092	mastic				Dissolved
S0009C - A	Floor, Vinyl Floor Tile And Mastic, 12x12 Beige With Blue Fleck, Loc:2001, Building 2 St	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0031	tile - ashed				Crushed
S0009C - B	Floor, Vinyl Floor Tile And Mastic, 12x12 Beige With Blue Fleck, Loc:2001, Building 2 St	None Detected		100% Other	Black Non-Fibrous Homogeneous
10022025_0093	mastic				Dissolved
S0010A	Wall, Masonry, Paint On Concrete Block, Loc:2001, Building 2 Storage Room 1	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0032					Crushed, Dissolved
S0010B	Wall, Masonry, Paint On Concrete Block, Loc:2002, Building 2 Office	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0033					Dissolved, Crushed
S0010C	Wall, Masonry, Paint On Concrete Block, Loc:2005, Building 2 Storage Room 2	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0034					Crushed, Dissolved
S0010D	Wall, Masonry, Paint On Concrete Block, Loc:2007, Building 2 Storage Bay	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0035					Crushed, Dissolved
S0010E	Wall, Masonry, Paint On Concrete Block, Loc:2007, Building 2 Storage Bay	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0036					Crushed, Dissolved

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Lachlan Krenz (102)

Analyst

Approved Signatory



# Bulk Asbestos Analysis

By Polarized Light Microscopy  
EPA Method: 600/R-93/116 and  
40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
6-875 Main St West, Suite 200  
Hamilton, ON L8S 4R9

**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0010F	Wall,Masonry,Paint On Concrete Block,Loc:2007,Building 2 Storage Bay	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0037					Crushed, Dissolved
S0010G	Wall,Masonry,Paint On Concrete Block,Loc:2008,Building 2 Washbay	None Detected		100% Other	Beige Non-Fibrous Homogeneous
10022025_0038					Crushed, Dissolved
S0011A	Ceiling,Drywall And Joint Compound,Loc:2002,Building 2 Office	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0039					Crushed
S0011B	Ceiling,Drywall And Joint Compound,Loc:2003,Building 2 Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0040					Crushed
S0011C	Ceiling,Drywall And Joint Compound,Loc:2004,Building 2 Vestibule/Janitors Closet	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0041					Crushed
S0012A - A	Floor,Vinyl Sheet Flooring,Red Pebbled,Loc:2004,Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Red, Beige Non-Fibrous Homogeneous
10022025_0042	vinyl sheet flooring				Ashed
S0012A - B	Floor,Vinyl Sheet Flooring,Red Pebbled,Loc:2004,Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Gray, Beige Non-Fibrous Homogeneous
10022025_0094	mastic with leveling				Ashed
S0012B - A	Floor,Vinyl Sheet Flooring,Red Pebbled,Loc:2004,Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Red, Beige Non-Fibrous Homogeneous
10022025_0043	vinyl sheet flooring				Ashed

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By Polarized Light Microscopy  
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40 CFR, Part 763, Subpart E, App.E



**Customer:** Pinchin Ltd.  
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**Attn:** Anthony LoDuca  
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**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0012B - B	Floor, Vinyl Sheet Flooring, Red Pebbled, Loc:2004, Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Gray, Beige Non-Fibrous Homogeneous
10022025_0095	mastic with leveling				Ashed
S0012C - A	Floor, Vinyl Sheet Flooring, Red Pebbled, Loc:2004, Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Red, Beige Non-Fibrous Homogeneous
10022025_0044	vinyl sheet flooring				Ashed
S0012C - B	Floor, Vinyl Sheet Flooring, Red Pebbled, Loc:2004, Building 2 Vestibule/Janitors Closet	None Detected		100% Other	Beige, Gray Non-Fibrous Homogeneous
10022025_0096	mastic with leveling				Ashed
S0013A	Duct, Fibreglass, Loc:2009, Building 2 Mezzanine Storage	None Detected	70% Cellulose 20% Fiber Glass	10% Other	Brown, Beige Non-Fibrous Homogeneous
10022025_0045	wrap on foil				Ashed
S0013B	Duct, Fibreglass, Loc:2009, Building 2 Mezzanine Storage	None Detected	70% Cellulose 20% Fiber Glass	10% Other	Beige, Brown Non-Fibrous Homogeneous
10022025_0046	wrap on foil				Ashed
S0013C	Duct, Fibreglass, Loc:2009, Building 2 Mezzanine Storage	None Detected	70% Cellulose 20% Fiber Glass	10% Other	Brown, Beige Non-Fibrous Homogeneous
10022025_0047	wrap on foil				Ashed
S0014A	Ceiling, Drywall And Joint Compound, Loc:4002, Building 4 Lean-to	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0048					Crushed
S0014B	Ceiling, Drywall And Joint Compound, Loc:4002, Building 4 Lean-to	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0049					Crushed

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**Customer:** Pinchin Ltd.  
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**Analysis:** PLM  
**Date Received:** 04/26/2023  
**Date Reported:** 05/04/2023

**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0014C	Ceiling,Drywall And Joint Compound,Loc:4002,Building 4 Lean-to	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0050					Crushed
S0015A	Wall,Masonry,Paint On Concrete Block,Loc:6001,Building 6 Blower Room	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0051					Dissolved, Crushed
S0015B	Wall,Masonry,Paint On Concrete Block,Loc:6001,Building 6 Blower Room	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0052					Dissolved, Crushed
S0015C	Wall,Masonry,Paint On Concrete Block,Loc:6002,Building 6 Electrical Room	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0053					Dissolved, Crushed
S0016A - A	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7001,Building 7 Operations	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0054	vinyl sheet flooring				Ashed
S0016A - B	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7001,Building 7 Operations	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0097	mastic				Ashed
S0016B - A	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7002,Building 7 Storage/Kitchen	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0055	vinyl sheet flooring				Ashed
S0016B - B	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7002,Building 7 Storage/Kitchen	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0098	mastic				Ashed

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# Bulk Asbestos Analysis

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**Customer:** Pinchin Ltd.  
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**Attn:** Anthony LoDuca  
Leslie Heywood

**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
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Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0016C - A	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7003,Building 7 Washroom	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0056	vinyl sheet flooring				Ashed
S0016C - B	Floor,Vinyl Sheet Flooring,Grey Marble,Loc:7003,Building 7 Washroom	None Detected		100% Other	Gray Non-Fibrous Homogeneous
10022025_0099	mastic				Ashed
S0017A	Wall,Drywall And Joint Compound,Loc:7001,Building 7 Operations	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0057					Crushed
S0017B	Wall,Drywall And Joint Compound,Loc:7002,Building 7 Storage/Kitchen	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0058					Crushed
S0017C	Ceiling,Drywall And Joint Compound,Loc:7003,Building 7 Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0059					Crushed
S0017D	Wall,Drywall And Joint Compound,Loc:7003,Building 7 Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0060					Crushed
S0017E	Wall,Drywall And Joint Compound,Loc:7004,Building 7 Electrical Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0061					Crushed
S0018A	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Random Fleck,Loc:7001,Building 7 O	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0062					Teased

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**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
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**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0018B	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Random Fleck,Loc:7002,Building 7 St	None Detected	40% Cellulose 40% Fiber Glass	20% Other	Gray Fibrous Homogeneous
10022025_0063					Teased
S0018C	Ceiling,Acoustic Tile,Ceiling Tiles (lay-in),24x48 Pinhole With Random Fleck,Loc:7004,Building 7 El	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0064					Teased
S0019A	Wall,Drywall And Joint Compound,Loc:8001,Building 8 Office/Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0065					Crushed
S0019B	Ceiling,Drywall And Joint Compound,Loc:8001,Building 8 Office/Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0066					Crushed
S0019C	Wall,Drywall And Joint Compound,Loc:8001,Building 8 Office/Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0067					Crushed
S0020A	Wall,Fireproofing (cementitious),Loc:8002,Building 8 Storage Bay	None Detected	60% Cellulose	40% Other	Gray Fibrous Heterogeneous
10022025_0068					Teased
S0020B	Wall,Fireproofing (cementitious),Loc:8002,Building 8 Storage Bay	None Detected	60% Cellulose	40% Other	Gray Fibrous Heterogeneous
10022025_0069					Teased
S0020C	Wall,Fireproofing (cementitious),Loc:8002,Building 8 Storage Bay	None Detected	60% Cellulose	40% Other	Gray Fibrous Heterogeneous
10022025_0070					Teased

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**Attn:** Anthony LoDuca  
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**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
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**Project:** Halton Building 16

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0020D	Wall, Fireproofing (cementitious), Loc:8002, Building 8 Storage Bay	None Detected	60% Cellulose	40% Other	Gray Fibrous Heterogeneous
10022025_0071					Teased
S0020E	Wall, Fireproofing (cementitious), Loc:8002, Building 8 Storage Bay	None Detected	60% Cellulose	40% Other	Gray Fibrous Heterogeneous
10022025_0072					Teased
S0021A	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Fleck, Loc:9001, Building 9 O	None Detected	40% Cellulose 40% Fiber Glass	20% Other	Gray Fibrous Homogeneous
10022025_0073					Teased
S0021B	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Fleck, Loc:9001, Building 9 O	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0074					Teased
S0021C	Ceiling, Acoustic Tile, Ceiling Tiles (lay-in), 24x48 Pinhole With Fleck, Loc:9001, Building 9 O	None Detected	40% Fiber Glass 40% Cellulose	20% Other	Gray Fibrous Homogeneous
10022025_0075					Teased
S0022A	Wall, Drywall And Joint Compound, Loc:9001, Building 9 Office	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0076					Crushed
S0022B	Wall, Drywall And Joint Compound, Loc:9002, Building 9 Washroom	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0077					Crushed
S0022C	Wall, Drywall And Joint Compound, Loc:9003, Building 9 Electrical Room	None Detected		100% Other	White Non-Fibrous Homogeneous
10022025_0078					Crushed

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**Lab Order ID:** 10022025  
**Analysis:** PLM  
**Date Received:** 04/26/2023  
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Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0023A - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Beige, White Non-Fibrous Homogeneous
10022025_0079	tile				Crushed
S0023A - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Yellow Non-Fibrous Homogeneous
10022025_0100	mastic				Dissolved
S0023B - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Beige, White Non-Fibrous Homogeneous
10022025_0080	tile				Crushed
S0023B - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Yellow Non-Fibrous Homogeneous
10022025_0101	mastic				Dissolved
S0023C - A	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Beige, White Non-Fibrous Homogeneous
10022025_0081	tile - ashed				Ashed
S0023C - B	Floor, Vinyl Floor Tile And Mastic, 12x12 White With Grey Fleck, Loc:9003, Building 9 El	None Detected		100% Other	Yellow Non-Fibrous Homogeneous
10022025_0102	mastic				Dissolved

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**APPENDIX III**  
**Methodology**



## 1.0 GENERAL

An inspection was conducted to identify the asbestos-containing materials (ACM) incorporated in the structure and its finishes as defined by the scope of work.

Information regarding the location and condition of ACM encountered and visually estimated quantities were recorded. The locations of any samples collected were recorded on small-scale plans. As-built drawings and previous reports were referenced where provided.

Sample collection was conducted in accordance with our Standard Operating Procedures.

The inspection for asbestos included friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure.

A separate set of samples was collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA as material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials were determined by visual examination and available information on the phases of construction and prior renovations.

Samples were collected at a rate that is in compliance with the requirements of local regulations and guidelines. In some cases, manufactured products such as asbestos cement pipe were visually identified without sample confirmation.

The analysis was performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

Analytical results were compared to the following criteria.

Jurisdiction*	Friable	Non-Friable
Ontario	0.5%	0.5%

Where building materials are described in the report as “non-asbestos” or “does not contain asbestos”, this means that either no asbestos was detected by the analytical method utilized in any of the multiple samples or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation. Additionally, these terms are used for materials which historically are known to not include asbestos in their manufacturing.

Asbestos materials were evaluated in order to make recommendations regarding remedial work. The priority for remedial action was based on several factors:

- Friability (friable or non-friable);



- Condition (good, fair, poor, debris);
- Accessibility (ranking from accessible to all building users to inaccessible);
- Visibility (whether the material is obscured by other building components).
- Efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).

For a complete description of the Evaluation Criteria and Basis of Recommendations, refer to Annex A.

Template: Methodology for Asbestos Assessment, HAZ, July 22, 2021

## METHODOLOGY ANNEX A EVALUATION CRITERIA

## 1.0 EVALUATION CRITERIA AND BASIS OF RECOMMENDATIONS

The detailed asbestos assessment provides information regarding the location, condition, accessibility and friability of the asbestos-containing materials (ACM). In order to make recommendations for compliance with current regulations, Pinchin developed the following criteria.

## 2.0 EVALUATION OF CONDITION

### 2.1 Friable Sprayed or Trowelled Fireproofing, Thermal Insulation and Texture Finishes (Surfacing Materials)

To evaluate the condition of ACM sprayed or trowelled on fireproofing, sprayed or trowelled thermal insulation (non-mechanical), or texture, decorative or acoustic finishes, the following criteria are applied:

<b>Good</b>	Surface of material shows no significant signs of damage, deterioration or delamination. Good condition includes unencapsulated or unpainted fireproofing or texture finishes, where no or limited delamination or damage is observed, or encapsulated fireproofing or texture finishes where the encapsulant or paint has been applied after the damage or fallout occurred.
<b>Poor</b>	A sprayed material that shows signs of significant damage or is significantly delaminating or deteriorating. This may be limited to surface delamination or some portion of the substrate may be exposed.

In Locations where damage exists in isolated areas, both good and poor condition may be applicable. The extent of each condition will be recorded. Fair condition is not utilized in the evaluation of ACM sprayed or trowelled fireproofing, sprayed or trowelled thermal insulation (non-mechanical), or texture, decorative or acoustic finishes.

The evaluation of the above products above ceilings may be limited by the number of observations and by building components such as ducts or full height walls that obstruct the above ceiling observations.

### 2.2 Friable Mechanical or Thermal System Insulation (TSI)

To evaluate the condition of mechanical insulation on vessels, boilers, breeching, ducts, pipes, fan units, equipment etc. the following criteria are applied:

<b>Good</b>	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor damage (i.e. scuffs or stains), but the jacketing is not penetrated.
<b>Fair</b>	Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges from minor to none. Damage can be repaired.



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<b>Poor</b>	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired. Includes components where insulation may have been removed incompletely.
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The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. It is often not possible to observe each foot of mechanical insulation from all angles.

### **2.3 Potentially Friable Materials and Miscellaneous Friable Materials**

Potentially friable ACM are products that are basically non-friable while in place but have the potential to generate friable dust upon removal or if significantly disturbed without appropriate procedures. These products may become friable if damaged. Potentially friable materials include materials such as acoustic ceiling tiles and plaster. To evaluate the condition of potentially friable materials, the following criteria are applied:

---

<b>Good</b>	No significant damage or deterioration. Still serving its intended use as a building material or finish.
<b>Fair</b>	Showing signs of some cracking or breakage, but is not deteriorating (e.g. cracked plaster, broken but in place ceiling tile, missing tile or section of plaster etc.). The condition is such that it is still serving its intended use as a building material or finish but may require repair for mainly cosmetic purposes.
<b>Poor</b>	Significant deterioration or breaking apart of the material. Material has deteriorated to the point it is not serving its intended use as building material or finish. Material has deteriorated to a point it has become friable. Normally potentially friable ACM in Poor condition is not repairable and requires at least localized removal and replacement.

---

### **2.4 Non-Friable Materials**

Non-friable ACM cover a wide range of products with a wide variation in their tendency to release dust or asbestos fibres to the air. Many of these materials, (particularly where the matrix is an unweathered bitumen, asphalt or tar material) do not release fibres except in very unusual circumstances or during significant disturbance (e.g. use of abrasive power tools). Others with a cementitious matrix (asbestos-cement products) can more readily release dust due to abrasion, demolition, weathering, etc. The potential for asbestos release from non-friable ACM is always lower than from friable ACM. To evaluate the condition of non-friable Materials, the following criteria are applied:

---

<b>Good</b>	No significant damage or deterioration. Still serving its intended use as a building material or finish.
-------------	--

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<b>Fair</b>	Showing signs of some cracking or breakage but is not deteriorating (e.g. cracked vinyl floor tile, missing piece of tile or transite, etc.). The condition is such that it is still serving its intended use as a building material or finish but may require repair for mainly cosmetic purposes.
<b>Poor</b>	Significant deterioration or breaking apart of the material to the point at which it cannot be repaired, and it will require at least local removal. Material has deteriorated to the point it is not serving its intended use as building material or finish. Material may have deteriorated to a point where traffic or disturbance may cause it to become friable.

## 2.5 Evaluation of ACM Debris

The identification of the exact location or presence of debris on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations.

The presence of fallen or dislodged ACM is noted separately from the ACM source and is referred to as Debris. Debris may be friable if from a friable ACM source or a badly deteriorated non-friable ACM source. Debris may also be non-friable (such as fallen pieces of transite sheet or mastic fittings, or broken, dislodged floor tiles).

<b>Debris</b>	Debris may be friable or non-friable but is always identified as debris.
---------------	--

## 2.6 Evaluation of Presumed Asbestos-Containing Material (PACM)

Presumed asbestos-containing materials (PACM), are building materials that may contain asbestos but were not sampled or analyzed due to inaccessibility or the need to perform destructive testing to obtain a reasonable sample set. Evaluation of these materials is based on the assumption that these PACM are asbestos-containing.

A list of PACM is provided in the report and they are generally not included in the detailed room by room reports. Typically, they are excluded because they are inaccessible or present in very small quantities. If PACM are evaluated, Pinchin uses the criteria that correspond with the type (and friability) of the material listed above.

### 3.0 EVALUATION OF ACCESSIBILITY

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

<b>Access (A)</b>	Common areas of the building within reach of all building users (approximately 8' - 9' from floor or standard ceiling height). Includes other areas where occupant activities may result in disturbance of material that is not normally within reach from floor level, but may be disturbed by common activities (e.g. gymnasiums, workshops)
<b>Access (B)</b>	Areas of the building accessed primarily by Maintenance/Caretaking/Janitorial Staff and within reach without use of a ladder. Includes areas within reach in Boiler Rooms, Electrical Rooms, Janitors Closets, Elevator Rooms, Mechanical Rooms, etc. Includes materials within reach from fixed ladders or catwalks, mezzanines, and accessible pipe chases.
<b>Access (C) and Visible</b>	Areas of the building above 8' - 9' where use of a ladder or scaffold is required to reach the ACM. Only includes ACM that are visible to view without the removal or opening of other building components such as ceiling tiles or service access panels. Visible column on HMIS sheets will say YES.
<b>Access (C) and not Visible</b>	Areas of the building above 8' - 9' where use of a ladder or scaffold is required to reach the ACM. Includes ACM that are not visible to view and require the removal of a building component to see, such as ceilings tiles or access panels to view and access. Includes rarely entered crawl spaces, attic spaces, etc. Observations will be limited to the extent visible from the access points. Visible column on HMIS sheets will say NO.
<b>Access (D)</b>	Areas of the building behind inaccessible solid ceiling systems, walls or equipment etc. where demolition of the ceiling, wall or equipment etc. is required to reach the ACM. Material inaccessible due to height or location or is only accessed under unusual situations. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in Access D.

### 4.0 ACTION MATRIX AND DEFINITIONS

Pinchin's evaluation of the viability of a specific asbestos control option is based on the consideration of the friability, condition, accessibility and visibility of a material. The logic used is that damaged ACM located in an area frequently accessed by all building occupants is of a higher priority than damaged ACM located in an infrequently accessed service area. The action matrix considers the potential for fibre release (primarily from friable ACM) and the possible concerns from regulatory bodies and many building occupants to all damaged ACM (including non-friable).

In any building with asbestos, many current regulations require an Asbestos Management Program be implemented. Depending on the condition and the accessibility, more active measures such as repair or removal may be recommended. The following matrix provides guidance for recommended Actions in the absence of renovation or demolition. In the event of construction or maintenance activity which will disturb ACM more aggressive control or removal will be required.

#### 4.1 Action Matrix

The following tables outline the action decisions based on the relationship of assessed factors. Table I applies to friable ACM. Table II applies to non-friable ACM.

**Table I Decision Matrix for Friable ACM**

Access	Condition			Debris
	Good	Fair	Poor	
(A)	Action 5 <sup>1</sup>	Action 5 <sup>2</sup>	Action 3	Action 1
(B)	Action 7	Action 6 <sup>3</sup>	Action 3	Action 1
(C) Visible	Action 7	Action 6	Action 3	Action 2
(C) Not Visible	Action 7	Action 7	Action 4	Action 2
(D)	Action 7	Action 7	Action 7	Action 7

**Table II Decision Matrix for Potentially Friable and Non-Friable ACM**

Access	Condition			Debris
	Good	Fair	Poor	
(A)	Action 7	Action 7 <sup>4</sup>	Action 3	Action 1
(B)	Action 7	Action 7	Action 3	Action 1
(C) Visible	Action 7	Action 7	Action 4	Action 2
(C) Not Visible	Action 7	Action 7	Action 4	Action 2
(D)	Action 7	Action 7	Action 7	Action 7

#### 4.2 Action Definitions

The following are the definitions in the Action Matrix Table presented above:

##### Action Definitions

<b>Action 1</b>	Clean-Up of ACM Debris Restrict access that is likely to cause a disturbance of the ACM Debris and clean up ACM Debris. Utilize appropriate asbestos precautions.
-----------------	--

<sup>1</sup> If friable ACM in access (A)/Good condition is not proactively removed Action 7 (Manage) is recommended.

<sup>2</sup> If friable ACM in access (A)/Fair condition is not proactively removed repair is recommended.

<sup>3</sup> If friable ACM in access (B)/Fair condition is likely to be disturbed after repair proactive removal is recommended.

<sup>4</sup> Action 7 is recommended for all non-friable ACM in Fair condition however some clients may wish to repair or take some action primarily for cosmetic reasons



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### Action Definitions

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<b>Action 2</b>	<p>Precautions for Access Which may Disturb ACM Debris</p> <p>Use appropriate means to isolate the debris or to limit entry to the area which may disturb the material. At locations where ACM Debris can remain in place in lieu of removal or clean-up (e.g. Debris on top of ceiling tiles or behind lockable door), Utilize appropriate asbestos precautions to enter the area if this will disturb debris. The precautions will be required until the ACM Debris has been cleaned up.</p>
<b>Action 3</b>	<p>ACM Removal</p> <p>Remove ACM. Utilize asbestos procedures appropriate to the scope of the removal work. Until it is removed, restrict access to the material so it is not disturbed.</p>
<b>Action 4</b>	<p>Precautions for Work Which may Disturb ACM in Poor Condition. Utilize appropriate asbestos precautions if ACM may be disturbed by work on or near ACM. This does not require restricting access to the area, only control of work which may contact or disturb the ACM. Removal is the only viable option if work will disturb ACM.</p>
<b>Action 5</b>	<p>Proactive ACM Removal</p> <p>Remove friable ACM where the presence of friable asbestos in Good condition is not desirable. If friable ACM in Fair condition is not removed, then Repair friable ACM.</p>
<b>Action 6</b>	<p>ACM Repair</p> <p>Repair friable ACM in Fair condition which is not likely to be damaged again or disturbed by normal use of the area or room. Pinchin recommends proactive removal if friable ACM is likely to be damaged or disturbed during normal use of the area or room</p>
<b>Action 7</b>	<p>Asbestos Management Program with Routine Surveillance Implement an Asbestos Management Program, including routine surveillance of ACM. Reassess materials regularly (typically once per year).</p>

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Master Template: Methodology Annex A to Appendix I Evaluation Criteria, HAZ, January 10, 2020

**APPENDIX IV**  
**Location Summary Report**

Client: Halton Region

Site: 5400 Regional Road 25, Milton, ON

Building Name: Halton Waste Mgmt. Admin. Offices And Site Building

Survey Date:

Last Re-Assessment:

Building Phases: A: 1992

Location No.	Name or Description	Area ft <sup>2</sup>	Floor No.	Bldg. Phase	Notes
1001	Building 1 Vestibule/Washroom	503	1	A	
1002	Building 1 Office Area	2474	1	A	
1003	Building 1 Meeting Room	775	1	A	
1004	Building 1 Planroom	120	1	A	
1005	Building 1 Corridor	490	1	A	
1006	Building 1 Lunchroom	425	1	A	
1007	Building 1 Men's And Women's Changeroom	940	1	A	
1008	Building 1 Electrical Room/Janitors Closet	280	1	A	
1009	Building 1 Mechanical Room	207	1	A	
1010	Building 1 Storage Room	130	1	A	
1011	Building 1 Meeting Room 2	204	1	A	
2001	Building 2 Storage Room 1	251	1	A	
2002	Building 2 Office	182	1	A	
2003	Building 2 Washroom	95	1	A	
2004	Building 2 Vestibule/Janitors Closet	240	1	A	
2005	Building 2 Storage Room 2	300	1	A	
2006	Building 2 Storage Room 3	252	1	A	
2007	Building 2 Storage Bay	9700	1	A	
2008	Building 2 Washbay	1753	1	A	
2009	Building 2 Mezzanine Storage	720	2	A	
3001	Building 3 Pumphouse	810	1	A	
4001	Building 4 Storage Building	3800		A	
4002	Building 4 Lean-to	910	1	A	
5001	Building 5 Interim Transfer Station	0		A	NO ACCESS - Heavy machinery in building
6001	Building 6 Blower Room	1800	1	A	
6002	Building 6 Electrical Room	195	1	A	
7001	Building 7 Operations	261	1	A	
7002	Building 7 Storage/Kitchen	310	1	A	
7003	Building 7 Washroom	55	1	A	
7004	Building 7 Electrical Room	86	1	A	
8001	Building 8 Office/Washroom	210	1	A	
8002	Building 8 Storage Bay	1125	1	A	
8003	Building 8 Paint Reuse Shed	175	1	A	
9001	Building 9 Office	190	1	A	
9002	Building 9 Washroom	50	1	A	
9003	Building 9 Electrical Room	25	1	A	

**APPENDIX V**  
**Asbestos Material Summary Report / Sample Log**



Client: Halton Region

Site: 5400 Regional Road 25, Milton, ON

Building Name: Halton Waste Mgmt. Admin. Offices And Site Building

Survey Date:

HAZMAT	Sample No	System/Component/Material/Sample Description	Locations	Bldg. Phase	LF	SF	EA	%	Type	Positive	Friability
Asbestos	S0001 ABCDEFGF	Ceiling, Wall, Ceiling, Wall     Drywall And Joint Compound	1001,1002,1003,1004,1005,1006,1007,1009,1010 1011	A	0	21555	0	0	None Detected	No	
Asbestos	S0002 ABC	Floor     Vinyl Floor Tile And Mastic   12x12 White With Blue Fleck	1002	A	0	474	0	0	None Detected	No	
Asbestos	S0003 ABC	Floor     Vinyl Floor Tile And Mastic   12x12 Grey With Blue Fleck	1002,1003,1004,1005,1006,1008,1009,1010	A	0	5223	0	0	None Detected	No	
Asbestos	S0004 ABC	Ceiling   Acoustic Tile   Ceiling Tiles (lay-in)   24x48 Pinhole With Horizontal Fissure	1004	A	0	120	0	0	None Detected	No	
Asbestos	S0005 ABC	Floor     Vinyl Floor Tile And Mastic   12x12 White With Black Fleck	1005,1008	A	0	290	0	0	None Detected	No	
Asbestos	S0006 ABC	Ceiling   Acoustic Tile   Ceiling Tiles (lay-in)   24x48 Random Pinhole	1011	A	0	204	0	0	None Detected	No	
Asbestos	S0007 ABC	Other   Sink   Mastic, Black	1011	A	0	2	0	0	None Detected	No	
Asbestos	S0008 ABC	Wall     Masonry   Paint On Concrete Block	1008,1009,1010	A	0	925	0	0	None Detected	No	
Asbestos	S0009 ABC	Floor     Vinyl Floor Tile And Mastic   12x12 Beige With Blue Fleck	2001	A	0	251	0	0	None Detected	No	
Asbestos	S0010 ABCDEFGF	Wall     Masonry   Paint On Concrete Block	2001,2002,2003,2004,2005,2006,2007,2008,2009	A	0	13975	0	0	None Detected	No	
Asbestos	S0011 ABC	Ceiling     Drywall And Joint Compound	2002,2003,2004	A	0	517	0	0	None Detected	No	
Asbestos	S0012 ABC	Floor     Vinyl Sheet Flooring   Red Pebbled	2004	A	0	240	0	0	None Detected	No	
Asbestos	S0013 ABC	Duct     Canvas	2009	A	0	8	0	0	None Detected	No	
Asbestos	S0014 ABC	Ceiling     Drywall And Joint Compound	4002	A	0	910	0	0	None Detected	No	
Asbestos	S0015 ABC	Wall     Masonry   Paint On Concrete Block	6001,6002	A	0	400	0	0	None Detected	No	
Asbestos	S0016 ABC	Floor     Vinyl Sheet Flooring   Grey Marble	7001,7002,7003,7004	A	0	712	0	0	None Detected	No	
Asbestos	S0017 ABCDE	Ceiling, Wall     Drywall And Joint Compound	7001,7002,7003,7004	A	0	1955	0	0	None Detected	No	
Asbestos	S0018 ABC	Ceiling   Acoustic Tile   Ceiling Tiles (lay-in)   24x48 Pinhole With Random Fleck	7001,7002,7004	A	0	657	0	0	None Detected	No	
Asbestos	S0019 ABC	Ceiling, Wall     Drywall And Joint Compound	8001	A	0	810	0	0	None Detected	No	
Asbestos	S0020 ABCDE	Wall     Fireproofing (cementitious)	8002	A	0	3300	0	0	None Detected	No	
Asbestos	S0021 ABC	Ceiling   Acoustic Tile   Ceiling Tiles (lay-in)   24x48 Pinhole With Fleck	9001,9002,9003	A	0	265	0	0	None Detected	No	
Asbestos	S0022 ABC	Wall     Drywall And Joint Compound	9001,9002,9003	A	0	300	0	0	None	No	

HAZMAT	Sample No	System/Component/Material/Sample Description	Locations	Bldg. Phase	LF	SF	EA	%	Type	Positive	Friability
									Detected		
Asbestos	S0023 ABC	Floor    Vinyl Floor Tile And Mastic   12x12 White With Grey Fleck	9003	A	0	25	0	0	None Detected	No	
Asbestos	V9500	Duct    Mastic, Grey   Too High To Sample	2007	A	0	8	0	0	Presumed Asbestos	Yes	NF
Asbestos	V9500	Floor    Mortar   Thin-set	1001,1007,1011,2003,8001,9002	A	0	2002	0	0	Presumed Asbestos	Yes	NF
Asbestos	V9500	Wall    Mortar   Thin-site, Thin-set	1001,1007	A	0	2900	0	0	Presumed Asbestos	Yes	NF
Asbestos	V0000	Ceiling   Acoustic Tile   Ceiling Tiles (lay-in)   Fibreglass 24x48	1001,1002,1003,1005,1006	A	0	4417	0	0	Non Asbestos	No	

## Legend:

Sample number		Units			
S####	Asbestos sample collected	SF	Square feet	NF	Non Friable material.
L####	Paint sample collected	LF	Linear feet	F	Friable material
P####	PCB sample collected	EA	Each	PF	Potentially Friable material
M####	Mould sample collected	%	Percentage		
V####	Material visually similar to numbered sample collected				
V0000	Known non Hazardous Material				
V9000	Material is visually identified as Hazardous Material				
V9500	Material is presumed to be Hazardous Material				
[Loc. No.]	Abated Material				

**APPENDIX VI**  
**HMIS Data Report**

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
Offices And Site Building

**Location:** #1001 : Building 1 Vestibule/Washroom

**Floor:** 1

**Room #:**

**Area (sqft):** 503

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		250			SF	S0001A	None Detected	N.D.	None	
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), Fibreglass 24x48			C	Y		253			SF	V0000	Non-Asbestos		None	
Duct		Foil Face			C	Y										
Floor		Ceramic Tiles, 24x48 grey			A	Y										
Floor		Mortar, Thin-set			D	N		503(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment	Not Accessible															
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		1400			SF	V0001	None Detected	N.D.	None	
Wall		Ceramic Tiles, 4x4 white			A	Y										
Wall		Mortar, Thin-site			D	N		400(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
Offices And Site Building

**Location:** #1002 : Building 1 Office Area

**Floor:** 1

**Room #:**

**Area (sqft):** 2474

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), Fibreglass 24x48			C	Y		2474			SF	V0000	Non-Asbestos		None	
Duct		Foil Face			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 white with blue fleck			A	Y		474			SF	S0002ABC	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		2000			SF	S0003A	None Detected	N.D.	None	
Mechanical Equipment	Heating Ventilating Air Conditioning Unit	Not Insulated			C	Y										
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		5200			SF	S0001BG	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #1003 : Building 1 Meeting Room

**Floor:** 1

**Room #:**

**Area (sqft):** 775

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), Fibreglass 24x48			C	Y		775			SF	V0000	Non-Asbestos		None	
Duct		Foil Face			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		2000			SF	V0003	None Detected	N.D.	None	
Mechanical Equipment		None Found														
Piping		Fibreglass			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		5200			SF	V0001	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #1004 : Building 1 Planroom

**Floor:** 1

**Room #:**

**Area (sqft):** 120

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with horizontal fissure			C	Y		120			SF	S0004ABC	None Detected	N.D.	None	
Duct	Not Accessible	Fibreglass insulation above ceiling			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		120			SF	S0003B	None Detected	N.D.	None	
Mechanical Equipment	Not Accessible	Fiberglass insulation above ceiling														
Piping	Not Accessible	Fiberglass insulation above ceiling			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		360			SF	S0001C	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #1005 : Building 1 Corridor**

**Floor: 1**

**Room #:**

**Area (sqft): 490**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), Fibreglass 24x48			C	Y		490			SF	V0000	Non-Asbestos		None	
Duct		Foil Face			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 white with black fleck			A	Y		200			SF	S0005A	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		190			SF	V0003	None Detected	N.D.	None	
Mechanical Equipment	Heating Ventilating Air Conditioning Unit	Not Insulated			C	Y										
Piping		Fibreglass			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		5200			SF	V0001	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #1006 : Building 1 Lunchroom**

**Floor: 1**

**Room #:**

**Area (sqft): 425**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), Fibreglass 24x48			C	Y		425			SF	V0000	Non-Asbestos		None	
Duct		Foil Face			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		425			SF	V0003	None Detected	N.D.	None	
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Piping		Fibreglass			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		1200			SF	S0001D	None Detected	N.D.	None	



**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #1007 : Building 1 Men's And Women's Changeroom

**Floor:** 1

**Room #:**

**Area (sqft):** 940

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		940			SF	S0001E	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Ceramic Tiles, 24x24 dark grey			A	Y										
Floor		Mortar, Thin-set			D	N		940(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment	Not Accessible															
Piping		Not Insulated			A	Y										
Piping	Not Accessible															
Structure	Beam	Steel			C	Y										
Wall		Ceramic Tiles, 6x24 white			A	Y										
Wall		Mortar, thin-set			D	N		2500(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin. Offices And Site Building**

**Location: #1008 : Building 1 Electrical Room/Janitors Closet**

**Floor: 1**

**Room #:**

**Area (sqft): 280**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found														
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		149		1	SF	V0003	None Detected	N.D.	None	
Floor		Vinyl Floor Tile and Mastic, 12x12 white with black fleck			A	Y		90			SF	S0005BC	None Detected	N.D.	None	
Mechanical Equipment	Domestic Hot Water Tank	Not Insulated			A	Y										
Mechanical Equipment	Heating Ventilating Air Conditioning Unit	Not Insulated			C	Y										
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		600			SF	S0008C	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #1009 : Building 1 Mechanical Room**

**Floor: 1**

**Room #:**

**Area (sqft): 207**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found														
Duct		Foil Face			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		207		1	SF	V0003	None Detected	N.D.	None	
Mechanical Equipment	Air Handling Unit	Not Insulated			A	Y										
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		225			SF	S0001F	None Detected	N.D.	None	
Wall		Masonry, Paint on concrete block		Paint	A	Y		200			SF	V0008	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #1010 : Building 1 Storage Room**

**Floor: 1**

**Room #:**

**Area (sqft): 130**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		130			SF	V0001	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Vinyl Floor Tile and Mastic, 12x12 grey with blue fleck			A	Y		130			SF	S0003C	None Detected	N.D.	None	
Mechanical Equipment	Not Accessible															
Piping	Not Accessible															
Piping	Not Accessible															
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		250			SF	V0001	None Detected	N.D.	None	
Wall		Masonry, Paint on concrete block		Paint	A	Y		125			SF	S0008AB	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #1011 : Building 1 Meeting Room 2**

**Floor: 1**

**Room #:**

**Area (sqft): 204**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 random pinhole			C	Y		204			SF	S0006ABC	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Floor		Ceramic Tiles, 6x48 wood look			A	Y										
Floor		Mortar, Thin-set			D	N		204(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment		None Found														
Other	Sink	Mastic, Black			A	Y		2			SF	S0007ABC	None Detected	N.D.	None	
Piping		Fibreglass			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Drywall and joint compound			A	Y		1200			SF	V0001	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
**Offices And Site Building**

**Location:** #2001 : Building 2 Storage Room 1

**Floor:** 1

**Room #:**

**Area (sqft):** 251

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Duct		None Found														
Floor		Vinyl Floor Tile and Mastic, 12x12 beige with blue fleck			A	Y		251			SF	S0009ABC	None Detected	N.D.	None	
Mechanical Equipment	Radiator	Not Insulated			A	Y										
Piping		Fibreglass			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		700			SF	S0010A	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
**Offices And Site Building**

**Location:** #2002 : Building 2 Office

**Floor:** 1

**Room #:**

**Area (sqft):** 182

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		182			SF	S0011A	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Not Accessible															
Piping		Fibreglass			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		575			SF	S0010B	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #2003 : Building 2 Washroom**

**Floor: 1**

**Room #:**

**Area (sqft): 95**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		95			SF	S0011B	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Ceramic Tiles			A	Y										
Floor		Mortar, Thin-set			D	N		95(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment	Radiator	Not Insulated														
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		300			SF	V0010	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #2004 : Building 2 Vestibule/Janitors Closet

**Floor:** 1

**Room #:**

**Area (sqft):** 240

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		240			SF	S0011C	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Vinyl Sheet Flooring, Red pebbled			A	Y		240			SF	S0012ABC	None Detected	N.D.	None	
Mechanical Equipment	Not Accessible															
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		300			SF	V0010	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #2005 : Building 2 Storage Room 2

**Floor:** 1

**Room #:**

**Area (sqft):** 300

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Duct		None Found														
Floor		Concrete (poured)			A	Y										
Mechanical Equipment		None Found														
Piping		Fibreglass			A	Y										
Piping		Not Insulated														
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		900			SF	S0010C	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin. Offices And Site Building**

**Location: #2006 : Building 2 Storage Room 3**

**Floor: 1**

**Room #:**

**Area (sqft): 252**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Compressor	Not Insulated			A	Y										
Mechanical Equipment	Domestic Hot Water Tank	Not Insulated			A	Y										
Mechanical Equipment	Unidentified Tank	Not Insulated			A	Y										
Piping		Fibreglass			A	Y										
Piping		Plastic			C	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		900			SF	V0010	None Detected	N.D.	None	



**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #2007 : Building 2 Storage Bay

**Floor:** 1

**Room #:**

**Area (sqft):** 9700

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Duct		Not Insulated			C	Y										
Duct		Mastic, Grey, Too high to sample			C	Y		8(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Radiator	Not Insulated			C	Y										
Piping		Fibreglass			A	Y										
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		6000			SF	S0010DEF	None Detected	N.D.	None	
Wall		Metal			A	Y										

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #2008 : Building 2 Washbay**

**Floor: 1**

**Room #:**

**Area (sqft): 1753**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Mechanical Equipment	Radiator	Not Insulated			C	Y										
Piping		Fibreglass			A	Y										
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		3300			SF	S0010G	None Detected	N.D.	None	
Wall		Metal			A	Y										

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #2009 : Building 2 Mezzanine Storage  
Survey Date: 2023-04-24**

**Floor: 2**

**Room #:  
Last Re-Assessment: 0000-00-00**

**Area (sqft): 720**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found			C	Y										
Duct		Canvas			A	Y		8			SF	S0013ABC	None Detected	N.D.	None	
Duct		Not Insulated			A	Y										
Floor		Concrete (poured)			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		1000			SF	V0010	None Detected	N.D.	None	
Wall		Metal			A	Y										

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #3001 : Building 3 Pumphouse  
Survey Date: 2023-04-24**

**Floor: 1**

**Room #:  
Last Re-Assessment: 0000-00-00**

**Area (sqft): 810**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		None Found														
Duct		None Found														
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Mechanical Equipment	Heating Ventilating Air Conditioning Unit	Not Insulated			A	Y										
Mechanical Equipment	Unidentified Tank	Not Insulated			A	Y										
Piping		Fibreglass			A	Y										
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Structure	Beam	Steel			C	Y										
Wall		Metal			A	Y										

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
Offices And Site Building

**Location:** #4001 : Building 4 Storage Building  
**Survey Date:** 2023-04-24

**Floor:** Basement (0)

**Room #:**  
**Last Re-Assessment:** 0000-00-00

**Area (sqft):** 3800

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		None Found														
Floor		Concrete (poured)			A	Y										
Mechanical Equipment		None Found														
Piping		None Found														
Structure		Metal			C	Y										
Structure	Beam And Joist	Wood			C	Y										
Wall		Wood			A	Y										
Wall		Metal			A	Y										

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
Offices And Site Building

**Location:** #4002 : Building 4 Lean-to  
**Survey Date:** 2023-04-24

**Floor:** 1

**Room #:**  
**Last Re-Assessment:** 0000-00-00

**Area (sqft):** 910

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		910			SF	S0014ABC	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Piping	Not Accessible															
Structure		Metal			C	Y										
Structure	Beam And Joist	Wood			C	Y										
Wall		Wood			A	Y										
Wall		Metal			A	Y										

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #5001 : Building 5 Interim Transfer Station

**Floor:** Basement (0)

**Room #:**

**Area (sqft):** 0

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

**ASBESTOS - NO ACCESS**

System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
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Heavy machinery in building

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #6001 : Building 6 Blower Room

**Floor:** 1

**Room #:**

**Area (sqft):** 1800

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

**ASBESTOS**

System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		Fibreglass		Metal	C	Y										
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	All	Not Insulated			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Piping		None Found														
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		200			SF	S0015AB	None Detected	N.D.	None	
Wall		Metal			A	Y										

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
**Offices And Site Building**

**Location:** #6002 : Building 6 Electrical Room

**Floor:** 1

**Room #:**

**Area (sqft):** 195

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		Fibreglass		Metal	C	Y										
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	All	Not Insulated			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Piping		None Found														
Structure	Beam	Steel			C	Y										
Wall		Masonry, Paint on concrete block		Paint	A	Y		200			SF	S0015C	None Detected	N.D.	None	
Wall		Metal			A	Y										

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin.  
**Offices And Site Building**

**Location:** #7001 : Building 7 Operations

**Floor:** 1

**Room #:**

**Area (sqft):** 261

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with random fleck			C	Y		261			SF	S0018A	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Vinyl Sheet Flooring, Grey marble			A	Y		261			SF	S0016A	None Detected	N.D.	None	
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Wall		Drywall and joint compound			A	Y		300			SF	S0017A	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #7002 : Building 7 Storage/Kitchen  
Survey Date: 2023-04-24**

**Floor: 1**

**Room #:  
Last Re-Assessment: 0000-00-00**

**Area (sqft): 310**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with random fleck			C	Y		310			SF	S0018B	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Vinyl Sheet Flooring, Grey marble			A	Y		310			SF	S0016B	None Detected	N.D.	None	
Mechanical Equipment	Domestic Hot Water Tank	Not Insulated			A	Y										
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Wall		Drywall and joint compound			A	Y		700			SF	S0017B	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #7003 : Building 7 Washroom  
Survey Date: 2023-04-24**

**Floor: 1**

**Room #:  
Last Re-Assessment: 0000-00-00**

**Area (sqft): 55**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		55			SF	S0017C	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Vinyl Sheet Flooring, Grey marble			A	Y		55			SF	S0016C	None Detected	N.D.	None	
Mechanical Equipment	Not Accessible															
Piping		Not Insulated			A	Y										
Structure		Metal			C	Y										
Wall		Drywall and joint compound			A	Y		700			SF	S0017D	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #7004 : Building 7 Electrical Room**

**Floor: 1**

**Room #:**

**Area (sqft): 86**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with random fleck			C	Y		86			SF	S0018C	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Vinyl Sheet Flooring, Grey marble			A	Y		86			SF	V0016	None Detected	N.D.	None	
Mechanical Equipment		None Found														
Piping		Fibreglass			C	Y										
Structure		Metal			C	Y										
Wall		Wood			A	Y										
Wall		Drywall and joint compound			A	Y		200			SF	S0017E	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #8001 : Building 8 Office/Washroom**

**Floor: 1**

**Room #:**

**Area (sqft): 210**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling		Drywall and joint compound			C	Y		210			SF	S0019B	None Detected	N.D.	None	
Duct	Not Accessible															
Floor		Ceramic Tiles			A	Y										
Floor		Mortar, Thin-set			D	N		210(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment	Domestic Hot Water Tank	Not Insulated			A	Y										
Piping		Not Insulated			A	Y										
Structure	Not Accessible															
Wall		Drywall and joint compound			A	Y		600			SF	S0019AC	None Detected	N.D.	None	



**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #8002 : Building 8 Storage Bay**

**Floor: 1**

**Room #:**

**Area (sqft): 1125**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		None Found														
Floor		Concrete (poured)			A	Y										
Mechanical Equipment	Fan Unit	Not Insulated			C	Y										
Piping		None Found														
Structure	Beam	Steel														
Wall		Fireproofing (Cementitious)			A	Y		3300			SF	S0020ABC DE	None Detected	N.D.	None	
Wall		Masonry			A	Y										

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #8003 : Building 8 Paint Reuse Shed**

**Floor: 1**

**Room #:**

**Area (sqft): 175**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Duct		None Found														
Floor		Concrete (poured)			A	Y										
Mechanical Equipment		None Found														
Piping		None Found														
Structure		Metal			C	Y										
Structure	Beam And Joist	Wood			C	Y										
Wall		Wood			A	Y										

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #9001 : Building 9 Office**

**Floor: 1**

**Room #:**

**Area (sqft): 190**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with fleck			C	Y		190			SF	S0021ABC	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Laminate			A	Y										
Mechanical Equipment	Not Accessible															
Piping	Not Accessible															
Structure	Not Accessible															
Wall		Drywall and joint compound			A	Y		600				S0022A	None Detected	N.D.	None	

**Client: Halton Region**

**Site: Buildings**

**Building Name: Halton Waste Mgmt. Admin.  
Offices And Site Building**

**Location: #9002 : Building 9 Washroom**

**Floor: 1**

**Room #:**

**Area (sqft): 50**

**Survey Date: 2023-04-24**

**Last Re-Assessment: 0000-00-00**

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with fleck			C	Y		50			SF	V0021	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Ceramic Tiles			A	Y										
Floor		Mortar, Thin-set			D	N		50(7)			SF	V9500	Presumed Asbestos		Presumed Asbestos	NF
Mechanical Equipment	Not Accessible															
Piping		Not Insulated														
Structure	Not Accessible															
Wall		Drywall and joint compound			A	Y		150			SF	S0022B	None Detected	N.D.	None	

**Client:** Halton Region

**Site:** Buildings

**Building Name:** Halton Waste Mgmt. Admin. Offices And Site Building

**Location:** #9003 : Building 9 Electrical Room

**Floor:** 1

**Room #:**

**Area (sqft):** 25

**Survey Date:** 2023-04-24

**Last Re-Assessment:** 0000-00-00

ASBESTOS																
System	Component	Material	Item	Covering	A*	V*	AP*	Good	Fair	Poor	Unit	Sample	Asbestos Type	Amount	Hazard	Friable
Ceiling	Acoustic Tile	Ceiling Tiles (lay-in), 24x48 pinhole with fleck			C	Y		25			SF	V0021	None Detected	N.D.	None	
Duct		Foil Face			C	Y										
Duct		Not Insulated			C	Y										
Floor		Vinyl Floor Tile and Mastic, 12x12 white with grey fleck			A	Y		25			SF	S0023ABC	None Detected	N.D.	None	
Mechanical Equipment	Domestic Hot Water Tank	Not Insulated			A	Y										
Piping		Not Insulated			A	Y										
Structure	Not Accessible															
Wall		Drywall and joint compound			A	Y		150			SF	S0022C	None Detected	N.D.	None	

## Legend:



Sample number		Units		Other	
S####	Asbestos sample collected	SF	Square feet	A	Access
V####	Material visually similar to numbered sample collected	LF	Linear feet	V	Visible
V0000	Known non-asbestos material	EA	Each	AP	Air Plenum
V9000	Visually identified as an asbestos material	%	Percentage	F	Friable material
V9500	Material is presumed to be an asbestos material			NF	Non Friable material
				PF	Potentially Friable material

Access	
A	Accessible to all building occupants
B	Accessible to maintenance and operations staff without a ladder
C	Accessible to maintenance and operations staff with a ladder. Also rarely entered, locked areas
D	Not normally accessible

Condition	
Good	No visible damage or deterioration
Fair	Minor, repairable damage, cracking, delamination or deterioration
Poor	Irreparable damage or deterioration with exposed and missing material

Visible	
Y	The material is visible when standing on the floor of the room, without the removal or opening of other building components (e.g. ceiling tiles or access panels).
N	The material is not visible to view when standing on the floor of the room and requires the removal of a building component (e.g. ceilings tiles or access panels) to view and access. Includes rarely entered crawlspaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.

Air Plenum	
Yes or No	The material is in a return air plenum or in a direct airstream or there is evidence of air erosion (e.g. duct for heating or cooling blowing directly on or across an ACM). This field is only completed where Air Plenum consideration is required by regulation.

Colour Coding	
	The material is known to contain regulated concentrations of asbestos; either by analytical results or visible identification (use of the V9000 code).
	The material is presumed to contain asbestos; based on visual appearances; typically a material known to historically contain asbestos; however, not sampled due to limited access or the destructive nature of the sampling.

Action					
(1)	Clean up of ACM Debris	(2)	Precautions for Access Which may Disturb ACM Debris	(3)	ACM removal
(4)	Precautions for Work Which may Disturb ACM in Poor Condition	(5)	Proactive ACM removal (Minimum repair required for fair condition)	(6)	ACM repair
(7)	Management program and surveillance				